

Summix FHS Developments Ltd

Tidbury Green
Solihull

Mobility and Transport Strategy

October 2018

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1 INTRODUCTION

- 1.1 Vectos has been commissioned by Summix FHS Developments LTD to provide transport and highways advice in relation to the promotion of land at Tidbury Green for development as part of the Solihull Local Plan Review.
- 1.2 The purpose of this document is to provide a high-level description of the mobility and transport strategy, focusing on modern design, the intergenerational divide, behavioural trends and the way in which this site can become the catalyst for more sustainable and healthier local living.
- 1.3 This document will also provide supporting evidence to support the mobility and transport strategy and also a consideration of the movement numbers including traffic demand for input to the Council's strategic traffic model.
- 1.4 The main focus of the report however, is to go beyond the simple numerical aspects of an assessment which considers the impact of traffic on a road network. It considers Mobility, not just traffic, and it has regard to current and future trends in the way people live and move around. Furthermore, it reflects current policy.
- 1.5 To achieve much needed economic and social growth, development needs to be located in the best places to enable access to day to day facilities by increasingly efficient means. This report concludes that this is one of those locations. It concludes that there will be substantial benefits to local living, social integration, health and most efficient use of the existing transport network. It concludes that there are no material disbenefits to the transport networks, and that there is a substantial net positive effect for Mobility.
- 1.6 The report will be structured as follows:
- **Section 2** – provides a background and accessibility audit of the site;
 - **Section 3** – describes the development proposals;
 - **Section 4** – sets out the high-level mobility and transport strategy with supporting evidence;
 - **Section 5** – provides a review of national, regional and local policy;
 - **Section 6** – provides an initial estimate of movement numbers for the site; and
 - **Section 7** – sets out the summary and conclusions of the report.

2 THE BACKGROUND

- 2.1 Tidbury Green is well located, and well designed to ensure that sustainable travel is an integral part of daily life. Sitting alongside approximately 1,450 new homes will be a primary school, a local centre with opportunities for retail and community facilities and an expansion of the existing rural employment cluster off Wood Lane.
- 2.2 Large strategic sites allow planned coordinated development, and provide effective mobility infrastructure. They are best placed to achieve all of these aims. They are substantially more effective than the alternative of smaller ad hoc and unplanned schemes.
- 2.3 Tidbury Green is a large strategic site, which by design will deliver all of these benefits within the site, and being located close to other local facilities will deliver growth in that coordinated and sustainable manner. It will be one of the catalysts for the uptake of the increasing realistic travel choices within the wider community, in accord with local policy.

Site Location

- 2.4 The site encompasses an area of 33.6 hectares of open farm land within Tidbury Green. The site is located approximately 7km south west of Solihull Town Centre and 12km south of Birmingham City Centre.
- 2.5 The western parcel of land currently benefits from two access points via Fulford Hall Road with the first situated approximately 200m south of Fulford Hall Road/Norton Lane crossroads and the second situated circa 230m from Fulford Hall Road/ Rumbush Lane T-junction.
- 2.6 The eastern parcel presently benefits from three current points of access, which are all accessible from Fulford Hall Road. The first and second points of access are situated circa 150m and 250m south of the Fulford Hall Road/ Norton Lane priority T-junction and the third access is located approximately 140m northwest of Fulford Hall Road/ Rumbush Lane T-junction.
- 2.7 A local benefit of the location of the site, is that it is within close proximity to the existing residential area of Tidbury Green and Wythall, which provides an attractive route to local facilities including transport hubs.

- 2.8 The site is located to the south of Norton Lane, while Rumbush Lane and Fulford Hall Road run through the site and is illustrated in its local context in **Figure 2.1**.

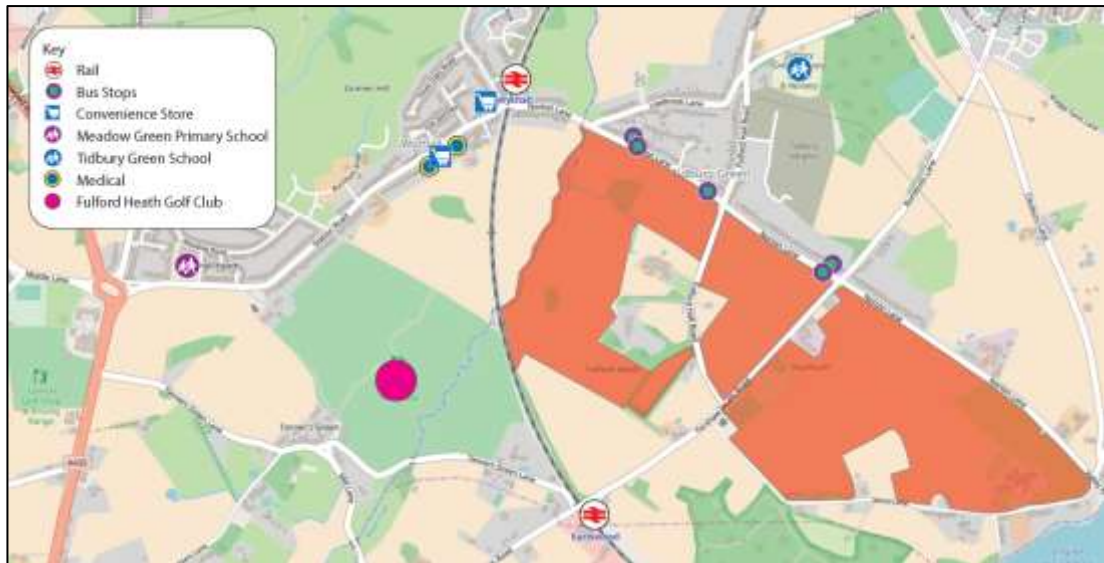
Figure 2.1 – Site Location in its Local Context



Local Facilities

- 2.9 One of the primary factors to be considered when determining the suitability of a new development is its proximity, accessibility and connectivity in relation to key local facilities by sustainable travel modes.
- 2.10 A number of schools and local facilities are located within the vicinity of the site, these are illustrated in **Figure 2.2**. The walking and cycling distances from the centre of the site, are indicated in **Table 2.1**.

Figure 2.2 – Local Facilities



2.11 The walking and cycling distances from the centre of the site, are indicated in **Table 2.1**.

Table 2.1 – Walking & Cycling Time to Local Facilities (from centre of site)

Local Facility	Distance (metres)	Walking Time (mins)	Cycling Time (mins)
Public Transport			
Fulford Hall Road Bus Stop	350	4	1
Rumbush Lane Bus Stop	750	9	3
Earlswood Rail Station	1000	13	4
Wythall Rail Station	1200	14	4
Shopping and Leisure			
Select and Save	1200	14	4
Londis	1400	18	5
Fulford Health and Fitness Golf Club	2100	26	7
Education Facilities			
Tidbury Green School and Nursery	1000	13	4
Meadow Green Primary School	2400	30	8
Medical			
Hollyoaks Medical Centre	1400	17	5
Lloyds Pharmacy	1400	17	5

- 2.12 **Table 2.1** demonstrates that the site is well connected and easily accessible by foot to facilities within Tidbury Green, such as primary schools, public transport provision, medical facilities and shopping and leisure destinations.
- 2.13 The site fully complies with local and national policy in this respect, offering real potential for a high proportion of journeys to be undertaken by foot and cycle and therefore improving health, well-being, and social inclusivity.

Accessibility by Sustainable Travel Modes

- 2.14 New developments are to be designed to encourage more trips to be made by sustainable travel modes including walking, cycling or on public transport in an effort to maximise social inclusion and minimise the number of single occupancy car trips. Providing travel choice is policy compliant and essential in terms of today's modern and dynamic society.

Walking

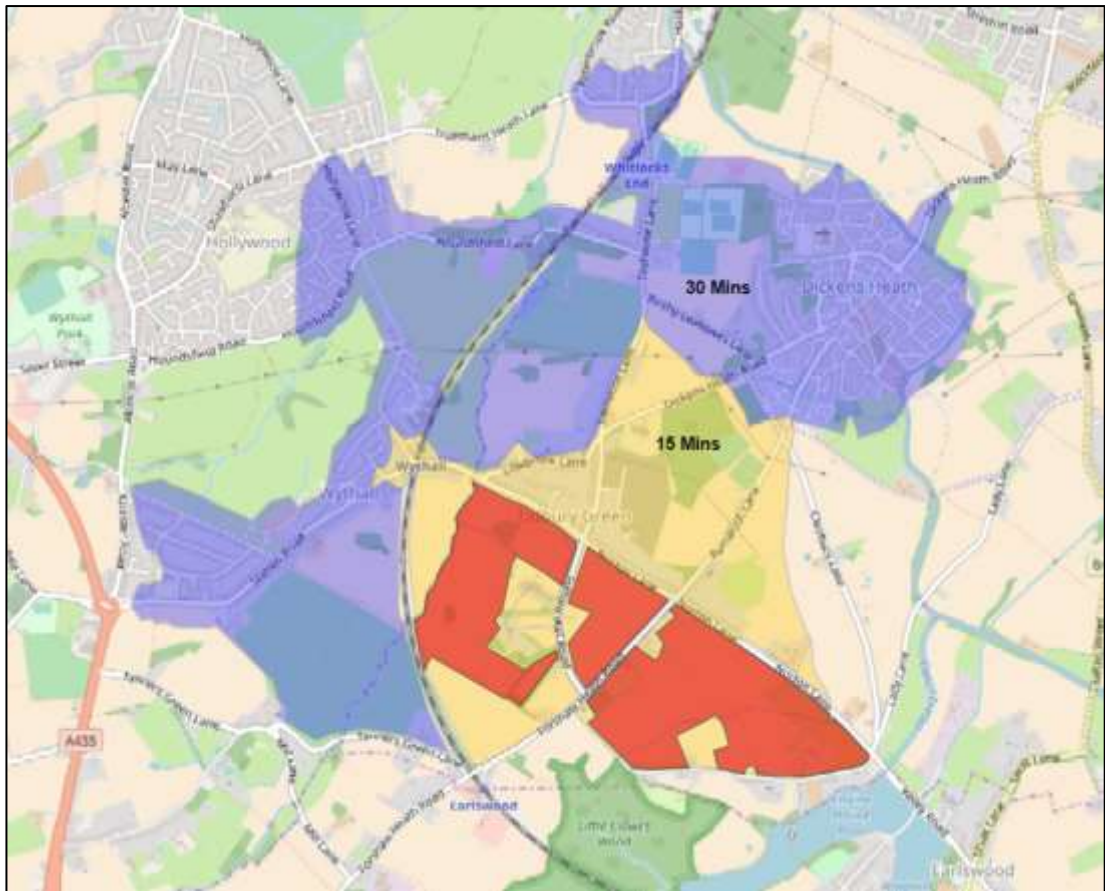
- 2.15 The area is served by pedestrian routes to the north of the site. The existing pedestrian facilities in the vicinity of the site includes formal footways and Public Rights of Way (PRoW).
- 2.16 Lit pedestrian footways are present on the northern edge of Norton Lane, to the north of the site. Dropped kerbs are present along Norton Lane where the footway is interrupted by side roads. Norton Lane provides a pedestrian link into Wythall and to Wythall Railway Station which is located to the west of the site.
- 2.17 Fulford Hall Road runs to the north of Norton Lane and lit pedestrian footways are provided on both sides of the carriageway between the junction with Norton Lane and Lowbrook Lane/Dickens Heath Road/Tilehouse Lane.
- 2.18 A canal towpath is located approximately 2.5km from the proposed development, and provides a local connection between Dickens Heath and Cheswick Green.
- 2.19 There are a number of PRoWs running to the south of the site. These are shown in **Figure 2.3**.

Figure 2.3 - Existing PRoWs in the Vicinity of the Site



2.20 **Figure 2.4** indicates the walking isochrones of 15 and 30 minutes walking time from the centre of the site, assuming a comfortable average walking speed of 5km/hr. This demonstrates that Wythall and Dickens Heath are within a comfortable 30-minute walk from the site.

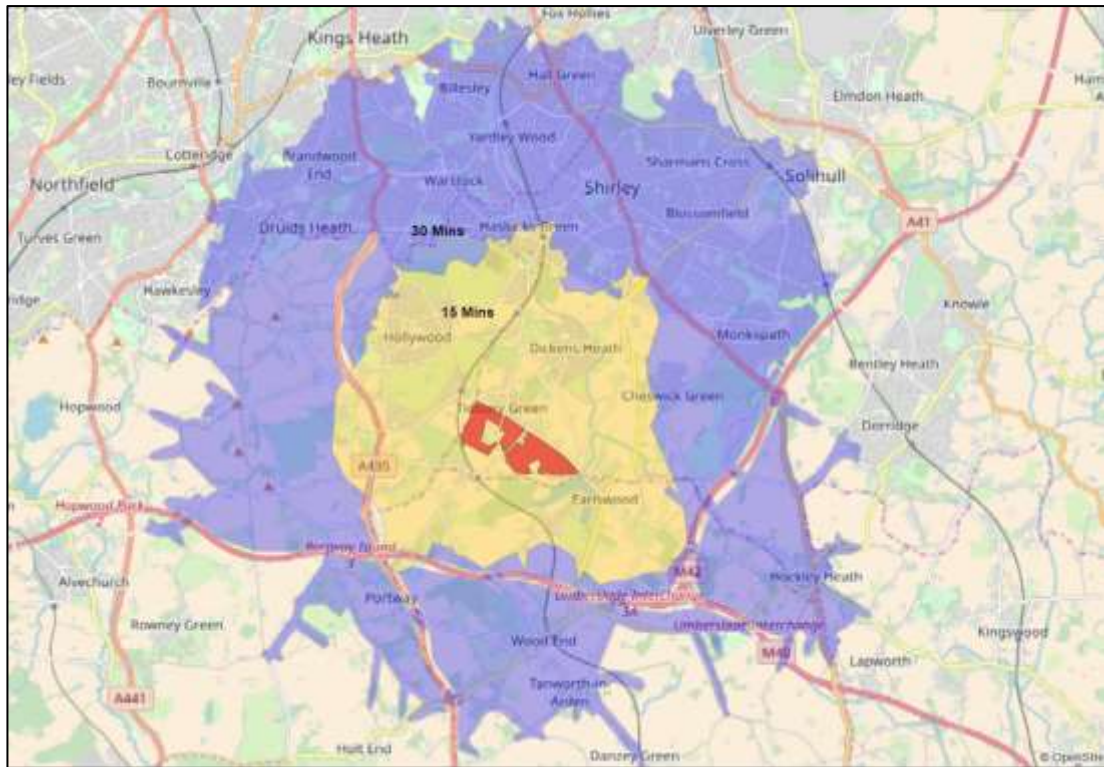
Figure 2.4 – 15 & 30 Minute Walking Isochrone



Cycling

- 2.21 There are currently no dedicated cycling routes within the vicinity of the site, however despite the lack of formal cycling infrastructure, the local roads lend themselves to cycling, due to their rural nature and low vehicle speeds.
- 2.22 **Figure 2.5** indicates the cycling isochrones of 15 and 30 minutes from the centre of the site, assuming a comfortable average cycle speed of 15km/hr. This demonstrates that Shirley, Druids Heath and parts of Solihull are all within a comfortable 30-minute cycle from the site.

Figure 2.5 – 15 & 30 Minute Walking Isochrones



Public Transport

Bus

- 2.23 The nearest bus stops to the site are located along Norton Lane and Fulford Hall Road, circa 400m and 700m from the centre of the site.
- 2.24 The ‘Fulford Hall Road’ bus stop is equipped with a pole containing concise timetabling information. The ‘Norton Lane’, ‘Rumbush Lane’ and ‘Lowbrook Lane’ are all unmarked bus stops.
- 2.25 A summary of the local bus services which serve these stops is set out in **Table 2.2**.

Table 2.2 – Bus Services

Service	Route	First Bus	Last Bus	Frequency (mins)			Provider
				M-F	S	S	
823	Dickens Heath – Cheswick Green – Blossomfield Schools	07:47	-	1 Daily	-	-	National Express
	Blossomfield Schools – Cheswick Green – Dickens Heath	15:42	-				
865	Branson’s Cross – Blossomfield	08:05	-	1 Daily	-	-	Hollywood Travel
	Blossomfield – Branson’s Cross	15:57	-				
S3	Aylesbury – Norton Lane	08:32	-	1 Daily	-	-	Diamond Bus
	Inkford Brook – Aylesbury	07:21	18:01	60 mins	60 mins	-	
S3W	Stratford – Wythall	07:27	19:10	60 mins	60 mins	-	Diamond Bus

Rail

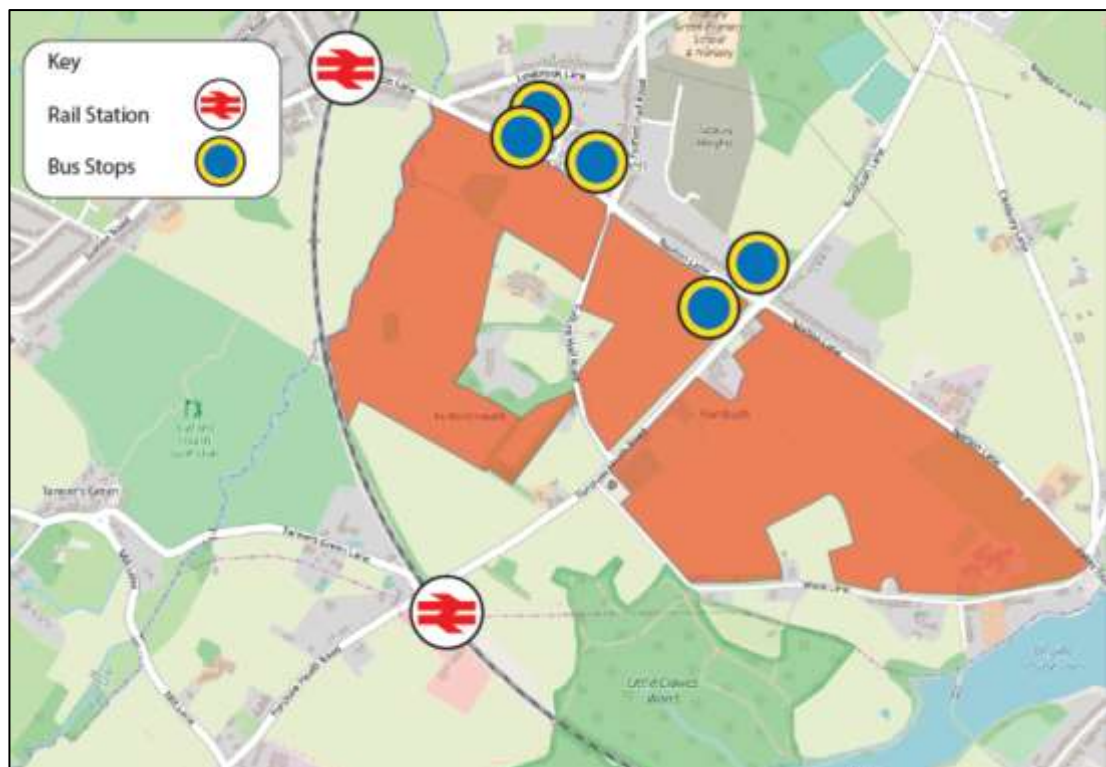
- 2.26 The site benefits from two rail stations within close proximity, Earlswood Railway Station is located approximately 1km south of the centre of the site and Wythall Railway Station is located approximately 1.2km west from the centre of the site.
- 2.27 Earlswood Railway Station is located to the south of the site and can be accessed by bicycle via Fulford Hall Road and Rumbush Lane.
- 2.28 There are no existing pedestrian facilities between the site and Earlswood Railway Station, therefore Wythall Railway Station is a more attractive station for pedestrians based on existing pedestrian facilities.
- 2.29 Earlswood Railway Station benefits from 20 car parking spaces including one disabled space and 20 cycle parking spaces which are located on Platform 1.
- 2.30 Wythall Rail Station is located to the west of the site and can be accessed on foot via Norton Lane. Wythall Rail Station benefits from six covered cycle stands which are located on both platforms. A summary of the destinations from these stations are set out in **Table 2.3**.

Table 2.3 – Rail Services

Station	Destination	Journey Time (mins)	Frequency (mins)	Provider
Wythall	Whitlocks End	2	60	West Midlands Trains
Wythall	Birmingham Moor Street	20	60	West Midlands Trains
Wythall	Stourbridge Junction	55	60	West Midlands Trains
Earlswood	Stratford-upon-Avon	30	60	West Midlands Trains
Earlswood	Wilmcote	22	60	West Midlands Trains
Earlswood	Old Hill	47	60	West Midlands Trains

2.31 The nearby railway stations and bus stops within close proximity of the site are illustrated in **Figure 2.6**, this demonstrates that the site is highly accessible to the bus and rail network.

Figure 2.6 – Public Transport Provision



Summary

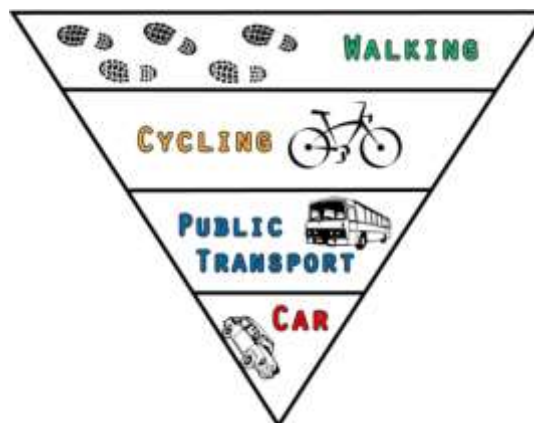
- 2.32 The site is located in a sustainable location and within close proximity to a number of local facilities in Tidbury Green and Dicken's Heath including primary schools, local shops, leisure facilities and medical facilities.
- 2.33 There are good opportunities for the site to connect well with all of the mobility networks, including walking, cycling, public transport and road, providing access by a choice of means of transport to day to day facilities and beyond.
- 2.34 Considering the above, the site is well placed in terms of existing, and certainly future connectivity opportunities.

3 THE PROPOSAL

- 3.1 The site has the potential to deliver up to 1,450 residential dwellings (Use Class C3) along with a primary school and local centre and the expansion of the existing rural employment cluster off Wood Lane.
- 3.2 The ethos is to integrate existing and new communities, creating attractive, sustainable connections between key destinations, including local centres, public transport nodes, and schools. Walking and cycling corridors within the site will link to adjacent development areas and the town centre. They will be attractive thoroughfares for movement.
- 3.3 Education travel is the most significant reason for movement in the morning commuter period, making up about 51% of travel¹, and one of the easiest to manage with good design. Starting from scratch, this is what this scheme does, with the inclusion of a 2 form entry Primary School on site. There will also be opportunities, through the travel plan, to encourage sustainable travel to the nearest secondary school to the site.
- 3.4 The Travel Plan will adopt sustainable measures such as walking buses, cycle trains and scoot to school initiatives. There will be no need for any schoolchild from the development to travel by car to the school under normal circumstances.
- 3.5 There are four key stages to creating a socially inclusive community, hereby encouraging community interaction (within and neighbouring the scheme), in such a way to encourage non-motorised travel modes, prioritising walking and cycling, followed by use of the bus.
- 3.6 **Design** is in terms of creating communities, where public interaction, outdoor and indoor, is the norm. Where friends and day to day activities are nearby and easy to get to, and where it is not an automatic reaction when leaving home to get into a car. The site is well placed to take advantage of the proximity of a range of day to day facilities.
- 3.7 The site design is of a pedestrian scale. Walking, cycling, and using a bus, will be easy, and vehicle intimidation will be at a minimum.

¹ NTS Table 05/02

- 3.8 **Choice** is in terms of providing the **infrastructure** and facilities to minimise reliance on any single option. This widens social inclusion, and for instance, on average, makes contributing to commuter car congestion more of a choice and less of a necessity.
- 3.9 Through increased choices a change in behaviour can be affected. The proposals will introduce and maintain any sustainable transport options and seek to encourage a net travel behavioural change.
- 3.10 **Behaviour** is in terms of educating people in the options and consequences. It brings together awareness, health, environment and personal convenience.
- 3.11 Finally, one of the ‘by design’ aims is to create an environment where less people automatically choose to use their cars when leaving their homes, therefore decreasing the impact on the road network. These proposals strive to not only influence the traffic impact of the proposed development, but also the surrounding communities.



- 3.12 **Network Management** is in terms of managing the road network in accord with the user hierarchy preferred by the Council. Car travel is the lowest capacity network in terms of space occupied per person. It also occupies the lowest priority in the user hierarchy. This means, for instance, prioritising the reliability and speed of bus and cycle movement over that of cars in the commuter peaks.

Masterplan

- 3.13 The Draft Development Framework for Tidbury Green, as shown in **Figure 3.1**, will be designed in such a way that it will complement the existing area. Integration with the

existing communities within Tidbury Green are paramount within the site’s design, with permeability as the highest priority.

- 3.14 Manual for Streets (MfS) and Manual for Streets 2 (MfS2) is used as a framework for the design philosophy, encompassing a comprehensive movement strategy which will inform and shape the layout of the streets serving the development. In particular, the movement strategy will focus on the movement hierarchy within MfS2 with priority given to pedestrians, cyclists and other non-motorised road users.

Figure 3.1 – Draft Development Framework for Tidbury Green



Access Strategy

Pedestrian and Cycle Access

- 3.15 Pedestrian and cycle access to the site will be provided in a number of locations along the site’s boundary on Norton Road and Fulford Hall Road, to suitably connect to the existing residential realm.

- 3.16 There will be strategic walking/cycling routes through the site which will link to the existing walking and cycling networks in the vicinity of the site.

Vehicle Access

- 3.17 Vehicle access could also be provided on Norton Road and Fulford Hall Road, as shown in the Draft Development Framework at **Figure 3.1** although the scale and location of the access junctions is to be confirmed.
- 3.18 The vehicular access junctions will also accommodate all users, providing attractive pedestrian and cyclist links to their respective existing transport networks. **Section 2** demonstrates that the site is well located on the edge of an existing pedestrian network, which takes the form of a typical residential area.

Public Transport Access

- 3.19 There is potential to provide an improved pedestrian connection from the site Earlswood Railway station which is located to the south west of the site.
- 3.20 There is also potential to provide a bus route through the development site which would ensure that all residents within the site would have access to bus services.

4 THE TRANSPORT VISION

4.1 This development has the opportunity to provide a step-change in the attitude towards large scale residential development in terms of sustainability, accessibility and Mobility as a Service. The Transport Vision seeks to do this in a number of ways.

Mobility as a Service

4.2 Mobility-as-a-Service (MaaS) is at the forefront of change, and is a concept of combining services from public and private transport providers in one place which allows users to create and manage trips, which they can then pay for from a single account, typically a single app.



4.3 MaaS can be delivered by a range of innovative new mobility services, complimenting more established transport modes, and can include:

- Demand Responsive Transport
- Active Travel Corridors – links to amenities, employment and Earlswood and Wythall rail stations
- Cycle Super highways
- Bike sharing/electric bike schemes

- Technology (Virtual Mobility)/Connected Autonomous Vehicles (CAVs)
- Car clubs/car pooling
- Safe Routes to School/School Travel Planning
- Community Hub/concierge

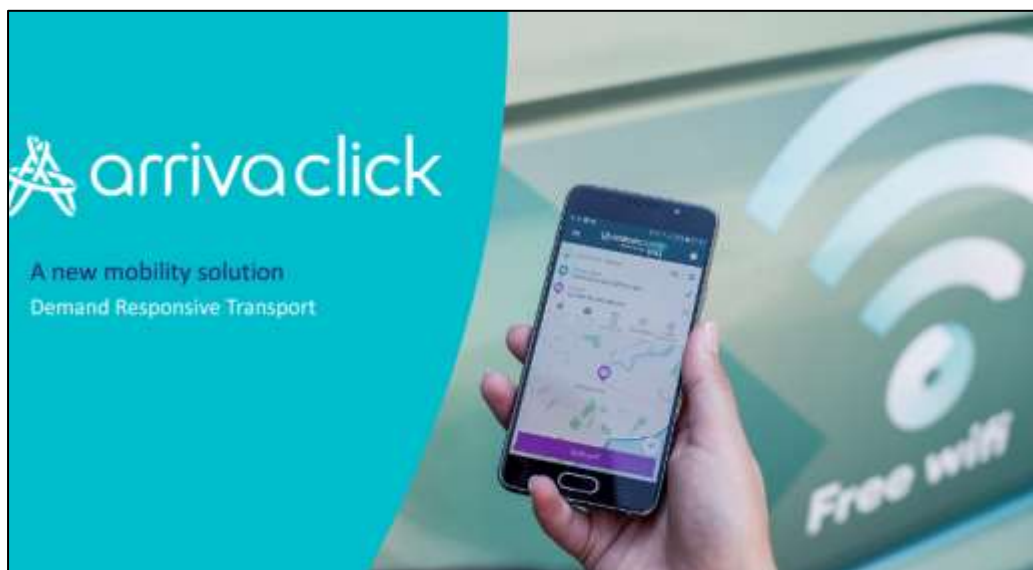
4.4 One single initiative will not deliver Mobility, but the combination of these services and the collection of access to each service in a single location (or app) will provide people with the Mobility and choice they desire.


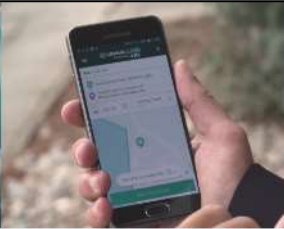
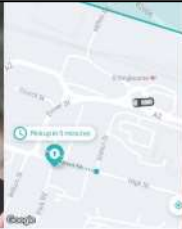

Demand Responsive Transport

4.5 Demand-responsive transport (DRT) is a modern, user-orientated form of public transport, with flexible routing, pick-up and drop-off locations, and timetabling matched to passenger needs. DRT is app based, convenient, flexible, and modern.

4.6 ArrivaClick is a Demand Responsive bus service which could provide a new service for the site and surrounding area with no fixed route of timetable, providing ultimate flexibility via app-based technology allowing passengers to be picked up when and where they want.

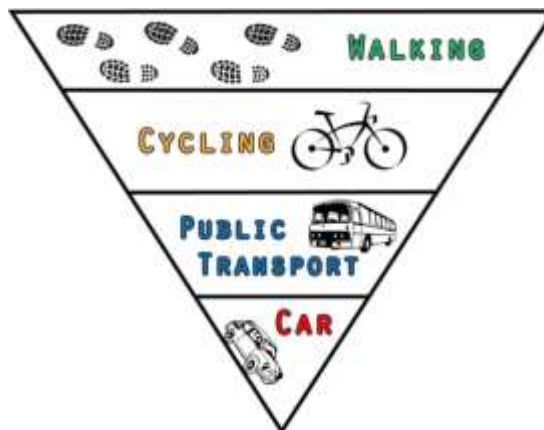
4.7 ArrivaClick operates an executive minibus service with air con, wifi, and table seats within a wide area, providing timely and convenient services connecting the site to local employment areas and public transport hubs.



			
On-demand	Transparency	Trackability	Communication
Customers can book a journey in real-time, when and where they want it, but also have the option to pre-book journeys.	Customers are given an ETA and flat fare before they book their journey.	Customers can track their vehicle en route.	Customers are always "in touch" with the service via the app (SMS and phone call).

Active Travel Corridors

4.8 Walkable and cycleable neighbourhoods; Active Travel Corridors for walking, cycling, electric vehicles to connect to key amenities including Earlswood and Wythall rail stations.



Cycle Super Highways

- 4.9 High quality, direct, safe and convenient routes for cyclists to local amenities and employment zones.



Bike Sharing and Electric Bike Schemes

- 4.10 Bike sharing schemes can make cycling as a travel mode more accessible and salient.
- 4.11 Bike sharing schemes can be defined as ‘short-term urban bicycle rental schemes that enable bicycles to be picked up at and returned to any self-service bicycle station, which makes bicycle-sharing ideal for point-to-point trips’.²
- 4.12 There are different types of schemes in place. There are schemes with or without fixed docking points, schemes with free access to members, or schemes which charge monthly or annually, pay-per-use schemes, and schemes which target a specific area and others which are area wide.

² (1 Definition of a bike-sharing scheme by the ECF – European Cyclists’ Federation, accessed January 21, 2016, <http://www.ecf.com/advocary/mobility/bike-sharing-scheme/>).

- 4.13 Developed in tandem with the provision of new active travel corridors to promote and encourage cycling, either as the main mode of transport for travelling to and from work or as part of a multi-modal journey, this has the potential to be a major mode of short distance travel.
- 4.14 The important role cycling now plays in providing mobility in cities around the world, including London, Helsinki and Paris, and the town and surrounding villages of Randers, Denmark.



- 4.15 Technology is also bringing significant change to the cycle industry, and e-bikes are now the biggest single market sector in the cycling industry³. In a recent trial in Randers, Denmark, 91% of participants approved of e-bikes after they had used them. Of those who used the pedal-assisted bikes 75% were women, and 70% were aged 35-54.
- 4.16 This can translate to Solihull, and demonstrates the future potential of cycling to accommodate a proportion of trips to and from the site at Tidbury Green.

³ The Bike Shed, Cardiff

Technology

- 4.17 The imminent arrival of Connected Autonomous Vehicles (CAVS) is highlighted by Business Secretary Greg Clark and Transport Minister John Hayes awarding £109.7 million of government funding in April 2017, alongside significant funding from industry, to help develop the next generation of driverless and low-carbon vehicles, as part of the [Industrial Strategy](#) and the government's [Plan for Britain](#)⁴.
- 4.18 In the budget in November 2017 Philip Hammond reaffirmed a government pledge to ensure "[genuine driverless vehicles](#)" on Britain's roads by 2021⁵. On 6th March 2018 Roads Minister Jesse Norman announced the start of a 3-year review by the Law Commission of England and Wales and the Scottish Law Commission to examine any legal obstacles to the widespread introduction of self-driving vehicles and highlight the need for regulatory reforms⁶.
- 4.19 This type of technology is development at an exponential rate and may soon be commonplace amongst the UK. CAVs are an ideal method of connecting the site with local employment hubs in and around Solihull, as well as the rail station. This could conceivably be achieved in the near future.

⁴ <https://www.gov.uk/government/news/over-109-million-of-funding-for-driverless-and-low-carbon-projects>

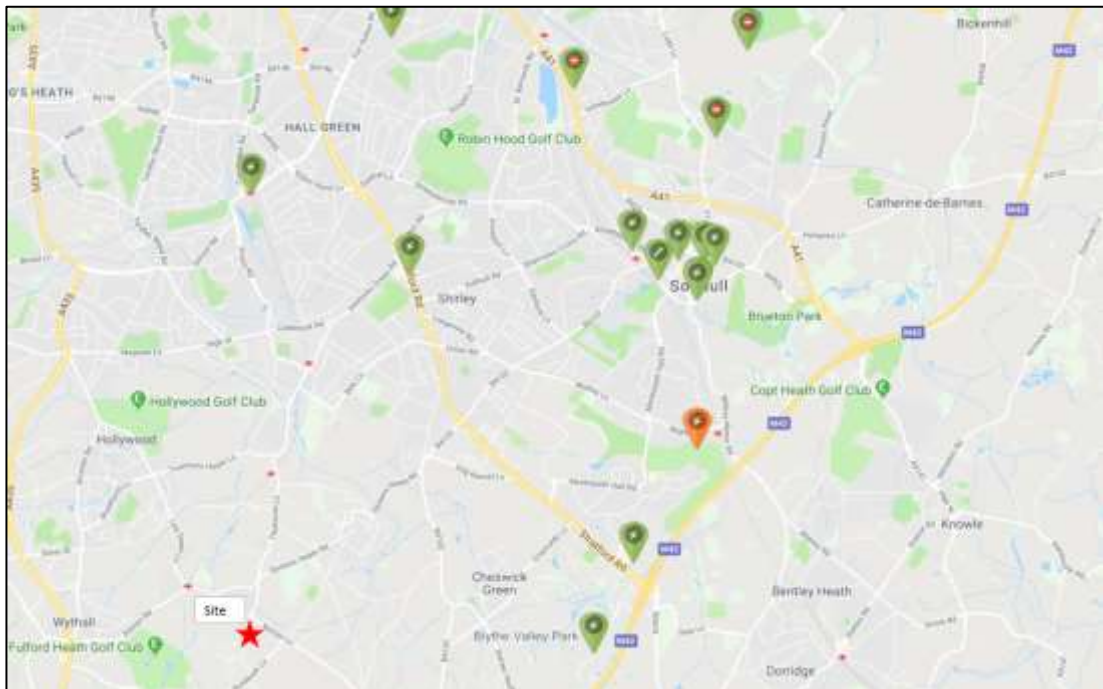
⁵ <https://www.theguardian.com/world/2017/nov/23/philip-hammond-pledges-driverless-cars-by-2021-and-warns-people-to-retrain>

⁶ <https://www.gov.uk/government/news/government-to-review-driving-laws-in-preparation-for-self-driving-vehicles>



Electric Vehicles

4.20 Electric vehicles are becoming an important feature on Solihull's network with many charging points available across Solihull and the local area, as shown below.



- 4.21 The rate of take up of Electric Vehicles in Solihull has been higher than in the West Midlands, with the Borough having the 11th highest level of EV take up of 217 upper tier local authority areas in the UK.⁷ Solihull also has the second highest level of EV registrations after Birmingham, and there has been a rapid growth in take up in Solihull from the end of 2015, far in excess of average growth across the UK as whole.⁸
- 4.22 The site will provide electric vehicle charging on site where possible and encourage use of electric vehicles to residents.

Car Clubs and Carpooling

- 4.23 A car club is where several people access and drive the same vehicle. For example, several people in the same community would drive the car on different days of the week.
- 4.24 This means that drivers have access to cars without the need to own them. Access without ownership is becoming more common in modern-day living.
- 4.25 Studies have demonstrated that each shared car replaces between eight and eleven private cars. Car clubs are becoming more prominent in towns and cities across the UK, and car club spaces can be located strategically at key destinations, major employment sites, transport hubs, and town and city centres. The membership of car clubs is increasing, reflecting people's changing attitudes towards Mobility.
- 4.26 There is potential to deliver a car club within the site at Tidbury Green.
- 4.27 Carpooling is where a car driver will use their own personal vehicle to give lifts to other passengers, usually whose origins and destinations are similar to their own.

⁷ Solihull Metropolitan Borough Council, *Developing a Strategy to test bed new models of Electric Vehicle Charging Infrastructure in Solihull*, 2018, p. 11

⁸ Solihull Metropolitan Borough Council, *Developing a Strategy to test bed new models of Electric Vehicle Charging Infrastructure in Solihull*, 2018, p. 11



- 4.28 App-based carpooling is now taking off, and lifts can be booked on demand, reflecting modern lifestyles, removing the requirement to plan journeys well in advance to participate in an effective carpooling system. Vectos plays a leading role in the SocialCar project, an EU funded research and innovation project, which is aiming to establish carpooling as a more accessible transport mode. The project is developing and demonstrating a new mobile phone application, in ten European cities, which allows users to find carpooling options in real-time and to connect with public transport services. We expect to be able to feedback results in due course
- 4.29 It is anticipated that many residents of the proposed site will work in Solihull, Birmingham or other outlying areas just out of reach of active travel zones. Therefore, encouraging carpooling from the outset will be a key component, in addition to public shared travel systems, to the Mobility Strategy at this site.

Safe routes to school/school travel planning

- 4.30 The proximity of the primary schools within development and to the schools (primary and secondary) within the development site and to the immediate north of the site on Dickens Heath Road have the ability to contain significant proportion of trips (up to 51%) in the morning peak hour.



- 4.31 Safe routes to school will be established as part of the development design and ethos of the site from the outset. Safe routes will be provided from the site to Tidbury Green School and Nursery. The existing route to the primary school will be reviewed to ensure that continuous pedestrian movement to the school is achievable.
- 4.32 It is anticipated that the new primary school within the site will take up excellent travel planning principles from the outset, however for already existing schools there are some easy wins to be had by implementing or updating Travel Plans to encourage sustainable travel to these schools. The effects of this are reducing car borne school movements, improving travel sustainability, improving health and reducing highway congestion.
- 4.33 Therefore, as part of development proposals, the intention is, with the assistance, support of lead of the Council, to design school specific travel planning. This will benefit the wider community as well as the development proposal.

Community Hub

- 4.34 To supplement MaaS, the development could include a Community Hub, occupied by a Community Concierge Team. The Community Hub could provide a range of facilities, including a coffee shop, community centre and retail facilities.
- 4.35 The Community Hub would effectively act as a Mobility Station – a hub where all modes of transport are available which will simplify planning and choosing how to travel.



- 4.36 A Transport Information Centre (TIC) could also be located at the Community Hub. The TIC would provide information in relation to bike sharing, car clubs, carpooling and electric vehicle charging points. Walking, cycling (active travel) and public transport maps, and public transport timetable information, will also be available.

5 POLICY REVIEW

National Policy

National Planning Policy Framework (NPPF, July 2018)

- 5.1 The National Planning Policy Framework was updated in July 2018 and sets out the Government's planning policies for England and how these should be applied.
- 5.2 In terms of transport related policies, it places the sustainability of development at the heart of the decision-making process (Sec 9). It is stated that *"transport issues should be considered from the earliest stages of plan-making and development proposals"*.
- 5.3 The NPPF states that sustainable travel is about *'offering a genuine choice of transport modes'*, with recognition given to the different travel needs of those who live in urban or rural areas. It advises that the safety and security of accesses to the site are achieved for all users and that *'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe'*. The bar to what is therefore unacceptable in transport impact terms is set very high.
- 5.4 In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:
- *'appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
 - *safe and suitable access to the site can be achieved for all users; and*
 - *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'*
- 5.5 The NPPF states that if setting local parking standards for residential and non-residential development, policies should consider:
- the accessibility of the development;
 - the type, mix and use of development;
 - the availability of and opportunities for public transport;

- local car ownership levels; the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.

5.6 The '*Promoting Sustainable Transport*' section concludes by stating that all applications for development should:

- give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- allow for the efficient delivery of goods, and access by service and emergency vehicles; and;
- be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

Manual for Streets

5.7 The Department for Transport's 'Manual for Streets' replaced their general road and street design guidance manual 'DB32' in 2007 and specifically focuses on lightly trafficked residential streets and highways.

5.8 'A key consideration for achieving sustainable development is how the design can influence how people choose to travel. Designers and engineers need to respond to a wide range of policies aimed at making car use a matter of choice rather than habit or dependence. Local transport plans and movement strategies can directly inform the design process as part of the policy implementation process.'

5.9 'By creating linkages between new housing and local facilities and community infrastructure, the public transport network and established walking and cycling routes are fundamental to achieving more sustainable patterns of movement and to reducing people's reliance on the car.'

Regional Policy

The West Midlands Strategic Transport Plan

5.10 The Strategic Transport Plan sets out Transport for West Midlands (TfWM)'s vision, priorities, approach and commitment to building a world class, sustainable, infrastructure system.

5.11 The objectives of the Strategic Transport Plan are:

- Introduce a fully integrated rail and rapid transit network that connects our main centres with quick, frequent services, and which is connected into wider local bus networks through high-quality multi-modal interchanges.
- Increase the number of people that are within 45 minutes travel time by public transport to a minimum of three main centres and the two HS2 stations in central Birmingham and the UK Central Hub.
- Reduce transport's impact on our environment – improving air quality, reducing carbon emissions and improving road safety.
- Use transport improvements to enhance the public realm and attractiveness of our centres.
- Ensure that walking and cycling are a safe and attractive option for many journeys especially short journeys, by delivering a strategic cycle network and enhancing local conditions for active travel.
- Facilitate the efficient movement of people on our transport networks to enable access to education and employment opportunities and health and leisure services.
- Enable businesses to connect to supply chains, key markets and strategic gateways, including Birmingham Airport, through improved strategic connections by road and rail.
- Maintain and develop our transport infrastructure and services to ensure they are efficient, resilient, safe and easily accessible for all.

5.12 The preferred approach of the Strategic Transport Plan aligns with the HS2 Growth Strategy, Midlands Connect, Birmingham Connected and is as follows:

- More effective use of existing capacity with smarter choice initiatives supporting capital improvements

- New transport capacity to meet new travel demand – very much based on additional public transport capacity (rail and rapid transit, integrated with bus), cycling infrastructure and key walking routes
- Better integration of transport through a smart mobility approach with public transport, car clubs, park and ride, cycle hire and use of powered two wheelers (motorbikes and mopeds)
- Transport improvements to unlock development and help businesses grow, including limited new highway capacity and more attractive centre environments
- Better walking conditions
- Better cycling, including a high-quality metropolitan cycle network
- Smart motorways/improved junctions
- Asset management
- Smart technology (for example, better Urban Traffic Control, cashless payments for public transport use and better travel information)
- Acceleration of the update of ultra-low emissions vehicles through the co-ordinated planning and delivery of ULEV (Ultra Low Emission Vehicle) infrastructure
- A metropolitan area parking policy co-ordinated with improvements to sustainable modes of walking, cycling and public transport.

5.13 The long-term strategy will see a shift in emphasis of travel in line with thriving, prosperous, attractive, large European city regions such as Munich, Stuttgart and Dusseldorf, where car use accounts for typically 35-45% of all journeys, compared to 63% in the West Midlands Metropolitan Area.

5.14 On a local level, the report states that there is great scope for a substantially increased role for walking, cycling and public transport to provide the West Midlands with sustainable, effective local accessibility.

Local Policy

Solihull Local Plan (2013)

5.15 The current local plan, the 'Solihull Local Plan', was adopted in December 2013 and covers the period 2011 to 2018.

- 5.16 Since the Local Plan was adopted an early review of the plan was triggered for the following reasons:
- A legal challenge to the adopted plan means that the current Local Plan has no overall housing requirement for the Plan period;
 - A review of the Birmingham Development Plan found that the City Council is unable to meet its own housing need within its boundaries and the shortfall would have to be met in areas such as Solihull; and
 - The arrival of HS2 to the borough, and in particular the interchange station in Solihull, marks a significant shift from the adopted plan.

Solihull Draft Local Plan (2016)

- 5.17 Once adopted, the new Local Plan will replace the 2013 Solihull Local Plan and its policies will no longer carry any weight. However, until the new Local Plan is adopted, the relevant policies in the 2013 Local Plan will continue to be applied as adopted development plan policy.
- 5.18 The vision for the areas of Dickens Heath, Tidbury Green, Cheswick Green and Blythe Valley Park is that the area will have provided new market and affordable housing through significant new developments to contribute towards the Borough's housing need. There will also be improvements to local facilities, services and public transport encouraging more sustainable travel patterns and improved connectivity to surrounding communities.
- 5.19 Policy P5 relates to the provision of land for housing and states that, unless there are exceptional circumstances, new housing will not be permitted in locations where accessibility to employment, centres and a range of services and facilities is poor.
- 5.20 Policy P7 Accessibility and Ease of Access states that all new development should be focussed in the most accessible locations and seek to enhance existing accessibility levels and promote ease of access.
- 5.21 Policy P8 Managing Travel Demand and Reducing Congestion states that the Council will support development proposals which:

- Are located in accordance with the spatial strategy in seeking to reduce the need to travel and that essential travel can be met by forms of sustainable transport in addition to the private car;
- Promote linked trips by encouraging mixed use development where appropriate;
- Do not result in the reduction of safety or users of the highway or other transport network;
- Takes an evidence-based approach to demonstrate appropriate car parking, taking account of location, trip rates and, where relevant, travel plan targets and forecast levels of car ownership.

Solihull Connect Transport Strategy 2016

5.22 The ambition behind 'Solihull Connected' is to create balanced investment in transport infrastructure that recognises the need to cater for cars and places appropriate and increasing emphasis on alternatives; such as:

- Options for game-changing public transport schemes that will be competitive, fast, reliable and frequent on key corridors across the Borough. We need to serve important destinations including the Airport, Jaguar Land Rover and Birmingham and Coventry city centres;
- High-quality cycling networks to encourage our residents to cycle to work; and
- Community-focused initiatives to encourage healthier transport choices where possible.

5.23 The Transport Strategy has 5 objectives:

- Objective 1 – Ensure that major transport investment enables and manages growth to achieve the council priorities for homes and jobs;
- Objective 2 – Support and enable the integrated delivery of sustainable and efficient forms of transport like mass-transit, cycling and walking;
- Objective 3 – Contribute to the council priorities to support people's everyday lives and improve health and wellbeing through the promotion of smarter choices programmes linked to major and local infrastructure investment;
- Objective 4 – Identify a prioritised short, medium and long-term delivery plan to achieve the overarching vision and objectives whilst recognising the specific needs of the different parts of the Borough; and

- Objective 5 – Ensure that the objectives of Solihull Connected are embedded in Local Plan and Health and Wellbeing policies to support walking, cycling and public transport use.

Summary

- 5.24 The residential development at Tidbury Green complies with national, regional and local policy. The site will be a residential led mixed-use site which will provide necessary housing for the Borough as well as providing services on site including a local centre and primary school. The site is located in an accessible location and there will be linkages by all modes between the site and the local community.

6 FORECAST OF MOVEMENT

- 6.1 The development site can deliver up to 1,450 new residential units in Tidbury Green, Solihull. The site could also include a primary school, local centre including community uses and the expansion of the existing rural employment cluster off Wood Lane.
- 6.2 In the context of local transport policy, 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.
- 6.3 As such, a high-level indication of the total people trip demand as a result of delivering houses in this location has been provided. The likely total people trip generation from the site has been derived from the TRICS database.
- 6.4 We will take our lead from planning policy and adopt the approach of prioritising movement in this order:
- Virtual mobility
 - Active travel
 - Shared travel
 - Single occupancy car travel
- 6.5 This assessment leads to a judgement based on our realistic expectation of people movement. It considers historic patterns of movement, current mobility trends, future mobility, and traveller behaviour.
- 6.6 Our judgement about demand is set out in **Appendix A** and it is proposed that this development demand will input into the Council's strategic traffic model.

Highway Assessment

- 6.7 WSP have undertaken a highway assessment of the following junctions in a Transportation Technical Note on behalf of Summix FHS Developments LLP for the 2016 Base scenario:
- Norton Lane/Lowbrook Lane priority-controlled T-junction;
 - Norton Lane/Fulford Hall road priority-controlled crossroads;
 - Norton Lane/Rumbush Lane priority-controlled crossroads; and

- Fulford Hall Road/Rumbush Lane priority-controlled T-junction.

6.8 The junction modelling assessment within the WSP report demonstrated that there are no capacity issues on the local highway network. WSP concluded that there are no immediate capacity issues on the local highway network that a development at Tidbury Green would exacerbate.

The Meaning of the Effects

- 6.9 The results of the junction modelling assessment will be reviewed in the context of NPPF which is the senior policy document.
- 6.10 In facilitating sustainable development and contributing to wider sustainability and health objectives, the development meets the transport requirements of paragraph 91.
- 6.11 In providing the scale of strategic development that provides solutions that support reductions in pollution and congestion, it also satisfies paragraph 103.
- 6.12 At paragraph 109, the transport effects of development are only relevant to the planning balance if the adverse residual cumulative effects are severe or if there is an unacceptable impact on highway safety.
- 6.13 In the context of virtual mobility, active travel and shared travel the effects of the development proposals will be positive. These are the highest priority transport related tests. Therefore, in these respects they cannot be considered 'severe'.
- 6.14 Highway network impacts on car travel is a material matter, but not the highest priority in the context of policy. For instance, there is no expression of policy that sets nil detriment to the highway network as a test, and indeed to do so would be the antithesis of policy.
- 6.15 The Secretary of State endorsed interpretation of NPPF in the context of commuter periods is that it is not the aim of policy to protect the convenience of car commuters.
- 6.16 This is corroborated by the Inspector's report into the Stevenage Local Plan, dated October 2017, where the Inspector reported that increasing highway capacity can encourage the use of cars and other vehicles, and that this in turn discourages a shift to public transport, walking and cycling. The Inspector here goes on to say that the emphasis on designing for,

and encouraging, increased use of the higher capacity and more environmentally and socially sustainable networks, and prioritising investment here, accords with NPPF and is realistic.

- 6.17 The Inspector made the judgement that the forecast general increases in journey times across the network of up to one and a half minutes, more if the modal shift is less, and less if the modal shift is more, is not significant in the context of NPPF.
- 6.18 Therefore, in the context of policy, where there is no empirical measure of pass or fail road capacity, quite large increases in forecast journey times in the commuter peaks can be borne before this becomes significant in the planning context, and carries any weight in the planning balance.
- 6.19 Therefore, the net mobility and transport effect of the proposed development is substantially positive, and this should carry material weight in the planning balance.

7 SUMMARY AND CONCLUSION

Summary

- 7.1 Vectos has been commissioned by Summix FHS Developments LTD to provide transport and highways advice in relation to the promotion of land at Tidbury Green for development as part of the Solihull Local Plan Review.
- 7.2 The site could deliver around 1,450 dwellings along with a primary school, local centre and the expansion of the existing rural employment cluster off Wood Lane. The ethos for the site will be to integrate existing and new communities, creating attractive, sustainable connections between key destinations, including local centres, public transport nodes and schools.
- 7.3 Walking and cycling corridors within the site will link to adjacent development areas and the town centre. These corridors will also provide linkages to existing public transport facilities in the vicinity of the site.
- 7.4 The location is highly suitable for such a development with convenient connections to nearby local facilities and services, with access achievable by active modes of travel as well as by public transport.
- 7.5 In facilitating sustainable development and contributing to wider sustainability and health objectives, the development meets the transport requirements of NPPF. The development also complies with regional and local policy.
- 7.6 The transport effects of the development are not likely to result in adverse residual cumulative effects that are severe or an unacceptable impact on highway safety.
- 7.7 Through various initiatives, a new residential development at Tidbury Green will manage behaviour. It will provide travel education, travel help, and the means and encouragement to travel sustainably.

Conclusion

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

- 7.9 There is good reason to promote this site within the Local Plan, and no good reason to resist this site on transport grounds. The site's location offers travel choice and inclusive mobility for all modes of travel which will aid in promoting social inclusion and sustainable mobility habits from the outset.

APPENDIX A

Trip Generation Methodology

Tidbury Green, Solihull

Trip Generation Methodology

October 2018

N01-CP-Trip Generation Methodology

Introduction

1. On behalf of Summix FHS Developments Ltd, Vectos has been instructed to prepare an evidence base and transport strategy to inform the proposals for a residential-led mixed use development at Tidbury Green, Solihull.
2. The proposals include:
 - 1,450 residential dwellings (Use Class C3);
 - Local Centre (Use Classes A1, A3, A4 and A5);
 - 2FE primary School (Use Class D1); and
 - Expansion of the existing rural employment settlement off Wood Lane.
3. This Technical Note provides a forecast of the likely trip generation, considering trips by journey purpose (education, employment, leisure), the potential for internalisation, considering the proposed primary school, local centre and employment uses, and the likely levels of inbound and outbound commuting from the proposals.

Residential Development

Trip Rates

4. To start, understanding the potential demand from the proposed residential development is to provide a total people trip rate. To achieve this, the TRICS database has been interrogated, selecting the appropriate parameters as below:
 - Residential – Housing Privately Owned;
 - All regions excluding Greater London and Ireland;
 - Edge of Town and Suburban Area – All Zones;
 - Monday – Friday;
 - 01/01/12 – 28/03/17; and
 - 6 – 805 units (average size 80 units).
5. In total, 34 sites fell within these parameters, and produced an average total people trip rate as shown in **Table 1** for the AM and PM peak periods.
6. The full TRICS data is located in **Appendix A**.

Table 1 – Average Total People Trip Rates (per unit)

Time Period	Arrivals	Departures	Totals
08:00 – 09:00	0.192	0.740	0.932
17:00 – 18:00	0.528	0.263	0.791

7. Applying the trip rates in **Table 1** to the proposed residential development of 1,450 dwellings, results in a total people trip demand shown in **Table 2**. Some of this will be contained within the site and local area, and some will be external.

Table 2 – Total People Trip Demand – 1,450 dwellings

Time Period	Arrivals	Departures	Totals
08:00 – 09:00	278	1073	1351
17:00 – 18:00	766	381	1147

8. To understand the mode split of these trips, we first need to understand journey purpose.

Journey Purpose

9. The National Travel Survey, which consists of a face-to-face interviews and a seven day self-completed written travel diary, allows us to understand trips by journey purpose, and the mode split of trips for each purpose.
10. A summary of trips by journey purpose in the AM and PM peak periods is provided in **Table 3**.

Table 3 – National Travel Survey – Trips by Journey Purpose

Start Time	Commuting	Business	Education	Escort education	Shopping	Other personal business and escort	Visiting friends/ entertainment/ sport	Holiday/ Day trip/ Other
0800 - 0859	21%	3%	29%	22%	4%	14%	3%	3%
1700 - 1759	33%	4%	3%	2%	12%	20%	19%	7%

11. **Table 3** demonstrates that trips can be classified into three general journey purposes, commuting, education, and leisure / recreation, with the proportion of trips for each purpose as summarised in **Table 4**.

Table 4 – Trips by Journey Purpose – Commuting, Education, Leisure / Recreation

Start Time	Commuting	Education	Leisure / Recreation
0800 - 0859	24%	51%	25%
1700 - 1759	37%	5%	58%

12. Distributing the total number of trips summarised in **Table 2** by the journey purpose summarised in **Table 3**, results in a breakdown of trips by journey purposes as summarised in **Table 5**.

Table 5 – Total Trips by Journey Purpose

Time Period	Commuting		Education		Leisure / Recreation	
	Arrivals	Departure	Arrivals	Departure	Arrivals	Departure
0800 - 0859	67	260	143	549	69	264
1700 - 1759	283	141	36	18	447	223

Commuting Trips

13. Using the data available from the NTS, a judgement has been made that in the AM peak period 24% of trips are for the purpose of commuting, increasing to 37% of trips in the PM peak period.
14. In order to estimate an appropriate mode split for the external employment trips, the 'Method of Travel to Work' Census data for 2011 for the ward of 'Blythe' has been analysed. The recorded mode split from the Census data is summarised in **Table 6**.
15. We bear in mind that census data only records main mode, and does not give any indication of occasional modes, for instance it does not record whether a person works one day a week from home. As such, this is likely to overestimate car borne proportion and underestimate active travel and working from home.

Table 6 – 'Blythe' ward – Census Data 2011 – Method of Travel to Work

Method of Travel to Work	Percentage
Train	6%
Bus, Minibus or Coach	3%
Taxi	0%
Motorcycle, Scooter or Moped	0%
Driving a Car or Van	80%
Passenger in a Car or Van	4%
Cycling	1%
Walking	4%
Other Method of Travel to Work	1%
Total	100%

16. Applying the mode split in **Table 6** to the employment trips results in a trip demand as summarised in **Table 7**.

Table 7 – Residential Employment Trips

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	4	16	18	9
Bus, minibus or coach	2	8	8	4
Taxi	0	1	1	0
Motorcycle, scooter or moped	0	1	1	1
Driving a car or van	54	209	228	113
Passenger in a car or van	3	11	12	6
Bicycle	1	2	3	1
On foot	3	10	11	5
Other method of travel to work	0	2	2	1
Total	67	260	283	141

17. It should be noted that there will be an element of employment on site which may result in a number of internalised trips, however it is not anticipated that this internalisation will be significant and therefore internalisation of employment trips hasn't been considered at this stage.

Education

18. The NTS data demonstrates that in the AM peak 51% of journeys are undertaken for the purpose of education, reducing to 5% in the PM peak. Of these journeys, approximately 50% relate to primary education, and 50% to secondary education.
19. The nearest primary school to the site is Tidbury Green School and Nursery (less than 1km from site). It is also proposed to provide a two-form entry primary school at the site.
20. The NTS (National Travel Survey) mode split for 5-10 year olds for all distances will be applied as provided in **Table 8**.

Table 8 – NTS Primary Education Mode Split

Mode	Mode Split
Walk	51%
Bicycle	2%
Car / van	41%
Private bus	2%
Local bus	3%
Surface rail	0%
Other transport	2%
All modes	100%

21. The NTS (National Travel Survey) mode split for 11-16 year olds for all distances will be applied as provided in **Table 9**.

Table 9 – NTS Secondary Education Mode Split

Mode	Mode Split
Walk	35%
Bicycle	4%
Car / van	26%
Private bus	13%
Local bus	18%
Surface rail	2%
Other transport	2%
All modes	100%

22. In terms of secondary education, the nearest secondary school to the site is Light Hall School (4.3km from the centre of the site).
23. Solihull's school transport policy states that pupils over 11 years old and live more than 2 miles from the school using the shortest safe walking route to the main pedestrian gates of the school, are eligible for free travel to school.
24. The applied mode split for trips for educational purposes taking into account the judgements made about primary and secondary education, is summarised in **Table 10**. This is a broad approximation, and overestimates car borne proportion, as the tendency is for a higher active travel proportion for the shorter distances that exist in this case.

Table 10 – NTS Primary & Secondary Education Mode Split

Mode	Mode Split
Walk	43%
Bicycle	3%
Car / van	34%
Private bus	7%
Local bus	10%
Surface rail	1%
Other transport	2%
All modes	100%

25. Applying the mode split in **Table 9** to the number of educational trips in **Table 5** results in a multi-modal trip demand for the purpose of educational trips, as summarised in **Table 11**.

Table 11 – Educational Multi-Modal Trip Demand

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Walk	61	236	15	8
Bicycle	4	15	1	0
Car / van	48	185	12	6
Private bus	10	39	3	1
Local bus	15	56	4	2
Surface rail	1	6	0	0
Other transport	3	12	1	0
All modes	143	549	36	18

26. The masterplan proposals include a two-form primary school on site, so the demand for primary education will remain within the site. However, secondary education trips will be travelling off site. The internal and external education purpose trips are shown in **Tables 12** and **13**.

Table 12 – Residential Trips to Education (Internal)

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Walk	36	140	9	5
Bicycle	1	5	0	0
Car / van	29	114	7	4
Private bus	1	5	0	0
Local bus	2	6	0	0
Surface rail	0	0	0	0
Other transport	1	5	0	0
All modes	71	275	18	9

Table 13 – Residential Trips to Education (External)

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Walk	25	97	6	3
Bicycle	3	10	1	0
Car / van	19	71	5	2
Private bus	9	35	2	1
Local bus	13	50	3	2
Surface rail	1	6	0	0
Other transport	2	7	0	0
All modes	71	275	18	9

Leisure / Recreation

27. The NTS data demonstrates that in the AM peak 25% of journeys are undertaken for the purpose of leisure / recreation (shopping, personal business, visiting friends, holiday / day trips etc), increasing to 58% in the PM peak.
28. The proposals include for a Local Centre which could include retail and community facilities, including retail and community facilities and the scale of the development in terms of the number of dwellings, will ensure a number of trips are internalised within the site.
29. For the purpose of assessment, we have made a judgement that 30% of leisure/recreation trips are 'internal' trips which remain within the site and 70% are 'external' trips which travel off site. For the internal trips, we have applied a mode split of 60% on foot/40% Bicycle. For the external trips, we have applied the same mode split to distribute the 'employment' trips, as summarised in **Table 6**.
30. A breakdown of the 'internal' leisure / recreation trips is provided in **Table 14**. A breakdown of the 'external' leisure / recreation trips is provided in **Table 15**.

Table 14 – Mode Split of 'Internal' Trips

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Walk	12	48	80	40
Bicycle	8	32	54	27
All modes	21	79	134	67

Table 15 – Mode Split of 'External' Trips

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	3	12	20	10
Bus, minibus or coach	1	6	9	5
Taxi	0	0	1	0
Motorcycle, scooter or moped	0	1	1	1
Driving a car or van	39	149	252	125
Passenger in a car or van	2	8	13	7
Bicycle	0	2	3	1
On foot	2	7	12	6
Other method of travel to work	0	1	2	1
Total	48	185	313	156

31. The total breakdown of leisure / recreation trips, combining all internal and external trips is provided in **Table 16**.

Table 16 – Total Leisure / Recreation Trips – ‘Internal’ and ‘External’

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	3	12	20	10
Bus, minibus or coach	1	6	9	5
Taxi	0	0	1	0
Motorcycle, scooter or moped	0	1	1	1
Driving a car or van	39	149	252	125
Passenger in a car or van	2	8	13	7
Bicycle	9	33	56	28
On foot	14	54	92	46
Other method of travel to work	0	1	2	1
Total	69	264	447	223

Total Residential Demand

32. The total residential demand, combining all journey purposes (employment, education, leisure/recreation) is summarised in **Table 17**.

Table 17 – Total Residential Demand

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	9	34	38	19
Bus, minibus or coach	28	109	24	12
Taxi	0	1	1	1
Motorcycle, scooter or moped	1	2	3	1
Driving a car or van	93	357	479	239
Passenger in a car or van	53	204	37	18
Bicycle	13	50	60	30
On foot	78	301	118	59
Other method of travel to work	4	15	5	2
Total	278	1073	766	381

33. The breakdown of the total residential demand, in terms of internal and external trips, is summarised in **Table 18** and **Table 19** respectively.

Table 18 – Total Internal Residential Trips

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	0	0	0	0
Bus, minibus or coach	3	11	1	0
Taxi	0	0	0	0
Motorcycle, scooter or moped	0	0	0	0
Driving a car or van	0	0	0	0
Passenger in a car or van	29	114	7	4
Bicycle	10	37	54	27
On foot	49	187	90	45
Other method of travel to work	1	5	0	0
Total	92	354	152	76

Table 19 – Total External Residential Trips

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	9	34	38	19
Bus, minibus or coach	25	98	23	12
Taxi	0	1	1	1
Motorcycle, scooter or moped	1	2	3	1
Driving a car or van	93	357	479	239
Passenger in a car or van	23	90	30	15
Bicycle	4	14	6	3
On foot	29	113	29	14
Other method of travel to work	2	10	4	2
Total	187	719	614	306

Primary School

34. The proposed primary school will be two form entry, and it is expected that it will almost entirely serve the proposed residential development. Therefore, there will be no external student trips to or from the primary school.
35. In terms of staff demand, a judgement has been made that approximately 50 teachers will travel to the primary school in the AM peak period, and travel from the primary school in the PM peak period. As a robust assessment, it has been assumed that there will be 50 arrivals between 08:00 and 09:00 and 50 departures between 17:00 – 18:00 although it should be noted that this is likely to be an overestimate.
36. As a worst case scenario, it has been assumed that all staff trips to the primary school are undertaken by car. The primary school vehicular demand is shown in **Table 20**.

Table 20 – Primary School Teacher Demand

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Driving a Car or Van	50	0	0	50

Local Centre

37. The local centre could include a small-scale retail and community facilities designed to serve the local community, and it is not expected that the local centre will attract any external demand. Indeed, it is forecast that the local centre will internalise a proportion of trips, thus enhancing the sustainability credentials of the proposals.

Total Development Demand

38. A summary of the total external forecast demand, taking into account the residential demand and the primary school demand, and the ancillary nature of the local centre, is summarised in **Table 31**.

Table 31 – Forecast External Total Demand of Proposals

	AM (0800-0900)		PM (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Train	9	34	38	19
Bus, minibus or coach	25	98	23	12
Taxi	0	1	1	1
Motorcycle, scooter or moped	1	2	3	1
Driving a car or van	143	357	479	289
Passenger in a car or van	23	90	30	15
Bicycle	4	14	6	3
On foot	29	113	29	14
Other method of travel to work	2	10	4	2
Total	237	719	614	356

APPENDIX A
TRICS Outputs

Calculation Reference: AUDIT-152302-170905-0929

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	SC SURREY	1 days
	WS WEST SUSSEX	3 days
03	SOUTH WEST	
	DV DEVON	3 days
	SM SOMERSET	1 days
04	EAST ANGLIA	
	NF NORFOLK	3 days
	SF SUFFOLK	2 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	4 days
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	MS MERSEYSIDE	1 days
09	NORTH	
	DH DURHAM	1 days
	TW TYNE & WEAR	1 days
10	WALES	
	PS POWYS	1 days
11	SCOTLAND	
	AG ANGUS	1 days
	FA FALKIRK	2 days
	HI HIGHLAND	1 days

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

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 7 to 805 (units:)
 Range Selected by User: 6 to 805 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 28/03/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	8 days
Tuesday	8 days
Wednesday	8 days
Thursday	8 days
Friday	2 days

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

Selected survey types:

Manual count	34 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	21
Edge of Town	13

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	32
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.

Secondary Filtering selection:

Use Class:

C3	34 days
----	---------

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	10 days
10,001 to 15,000	11 days
15,001 to 20,000	5 days
20,001 to 25,000	4 days
25,001 to 50,000	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	4 days
25,001 to 50,000	5 days
50,001 to 75,000	5 days
75,001 to 100,000	10 days
100,001 to 125,000	3 days
125,001 to 250,000	4 days
250,001 to 500,000	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	13 days
1.1 to 1.5	21 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	4 days
No	30 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	34 days
-----------------	---------

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

LIST OF SITES relevant to selection parameters

1	AG-03-A-01	BUNGALOWS/DET.		ANGUS
		KEPTIE ROAD		
		ARBROATH		
		Suburban Area (PPS6 Out of Centre)		
		Residential Zone		
		Total Number of dwellings:	7	
		Survey date: TUESDAY	22/05/12	Survey Type: MANUAL
2	CH-03-A-08	DETACHED		CHESHIRE
		WHITCHURCH ROAD		
		BOUGHTON HEATH		
		CHESTER		
		Suburban Area (PPS6 Out of Centre)		
		Residential Zone		
		Total Number of dwellings:	11	
		Survey date: TUESDAY	22/05/12	Survey Type: MANUAL
3	CH-03-A-09	TERRACED HOUSES		CHESHIRE
		GREYSTOKE ROAD		
		HURDSFIELD		
		MACCLESFIELD		
		Edge of Town		
		Residential Zone		
		Total Number of dwellings:	24	
		Survey date: MONDAY	24/11/14	Survey Type: MANUAL
4	DH-03-A-01	SEMI DETACHED		DURHAM
		GREENFIELDS ROAD		
		BISHOP AUCKLAND		
		Suburban Area (PPS6 Out of Centre)		
		Residential Zone		
		Total Number of dwellings:	50	
		Survey date: TUESDAY	28/03/17	Survey Type: MANUAL
5	DV-03-A-01	TERRACED HOUSES		DEVON
		BRONSHILL ROAD		
		TORQUAY		
		Suburban Area (PPS6 Out of Centre)		
		Residential Zone		
		Total Number of dwellings:	37	
		Survey date: WEDNESDAY	30/09/15	Survey Type: MANUAL
6	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
7	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

LIST OF SITES relevant to selection parameters (Cont.)

8	FA-03-A-01 MANDELA AVENUE	SEMI -DETACHED/TERRACED	FALKIRK
	FALKIRK Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 37 Survey date: THURSDAY 30/05/13		Survey Type: MANUAL
9	FA-03-A-02 ROSEBANK AVENUE & SPRINGFIELD DRIVE	MIXED HOUSES	FALKIRK
	FALKIRK Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 161 Survey date: WEDNESDAY 29/05/13		Survey Type: MANUAL
10	HC-03-A-18 CANADA WAY	HOUSES & FLATS	HAMPSHIRE
	LIPHOOK Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 62 Survey date: TUESDAY 29/11/16		Survey Type: MANUAL
11	HI-03-A-14 KING BRUDE ROAD SCORGUIE INVERNESS	SEMI -DETACHED & TERRACED	HIGHLAND
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 40 Survey date: WEDNESDAY 23/03/16		Survey Type: MANUAL
12	LN-03-A-03 ROOKERY LANE BOULTHAM LINCOLN	SEMI DETACHED	LINCOLNSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 22 Survey date: TUESDAY 18/09/12		Survey Type: MANUAL
13	MS-03-A-03 BEMPTON ROAD OTTERSPOOL LIVERPOOL	DETACHED	MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 15 Survey date: FRIDAY 21/06/13		Survey Type: MANUAL
14	NE-03-A-02 HANOVER WALK	SEMI DETACHED & DETACHED	NORTH EAST LINCOLNSHIRE
	SCUNTHORPE Edge of Town No Sub Category Total Number of dwellings: 432 Survey date: MONDAY 12/05/14		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	NF-03-A-01	SEMI DET. & BUNGALOWS		NORFOLK
		YARMOUTH ROAD		
		CAISTER-ON-SEA		
		Suburban Area (PPS6 Out of Centre)		
		Residential Zone		
		Total Number of dwellings:	27	
		Survey date: TUESDAY	16/10/12	Survey Type: MANUAL
16	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
17	NF-03-A-03	DETACHED HOUSES		NORFOLK
		HALING WAY		
		THETFORD		
		Edge of Town		
		Residential Zone		
		Total Number of dwellings:	10	
		Survey date: WEDNESDAY	16/09/15	Survey Type: MANUAL
18	NY-03-A-08	TERRACED HOUSES		NORTH YORKSHIRE
		NICHOLAS STREET		
		YORK		
		Suburban Area (PPS6 Out of Centre)		
		Residential Zone		
		Total Number of dwellings:	21	
		Survey date: MONDAY	16/09/13	Survey Type: MANUAL
19	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
20	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
21	NY-03-A-11	PRIVATE HOUSING		NORTH YORKSHIRE
		HORSEFAIR		
		BOROUGHBRIDGE		
		Edge of Town		
		Residential Zone		
		Total Number of dwellings:	23	
		Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

22	PS-03-A-02 GUNROG ROAD	DETACHED/SEMI-DETACHED	POWYS
	WELSHPOOL Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 28 Survey date: MONDAY 11/05/15		
23	SC-03-A-04 HIGH ROAD	DETACHED & TERRACED	SURREY
	BYFLEET Edge of Town Residential Zone Total Number of dwellings: 71 Survey date: THURSDAY 23/01/14		
24	SF-03-A-04 NORMANSTON DRIVE	DETACHED & BUNGALOWS	SUFFOLK
	LOWESTOFT Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 7 Survey date: TUESDAY 23/10/12		
25	SF-03-A-05 VALE LANE	DETACHED HOUSES	SUFFOLK
	BURY ST EDMUNDS Edge of Town Residential Zone Total Number of dwellings: 18 Survey date: WEDNESDAY 09/09/15		
26	SH-03-A-05 SANDCROFT SUTTON HILL TELFORD	SEMI-DETACHED/TERRACED	SHROPSHIRE
	Edge of Town Residential Zone Total Number of dwellings: 54 Survey date: THURSDAY 24/10/13		
27	SH-03-A-06 ELLESMERE ROAD	BUNGALOWS	SHROPSHIRE
	SHREWSBURY Edge of Town Residential Zone Total Number of dwellings: 16 Survey date: THURSDAY 22/05/14		
28	SM-03-A-01 WEMBDON ROAD NORTHFIELD BRIDGWATER	DETACHED & SEMI	SOMERSET
	Edge of Town Residential Zone Total Number of dwellings: 33 Survey date: THURSDAY 24/09/15		

LIST OF SITES relevant to selection parameters (Cont.)

29	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
30	TW-03-A-02	SEMI -DETACHED		TYNE & WEAR
	WEST PARK ROAD			
	GATESHEAD			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		16	
	Survey date: MONDAY		07/10/13	Survey Type: MANUAL
31	WK-03-A-02	BUNGALOWS		WARWICKSHIRE
	NARBERTH WAY			
	POTTERS GREEN			
	COVENTRY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		17	
	Survey date: THURSDAY		17/10/13	Survey Type: MANUAL
32	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
33	WS-03-A-05	TERRACED & FLATS		WEST SUSSEX
	UPPER SHOREHAM ROAD			
	SHOREHAM BY SEA			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		48	
	Survey date: WEDNESDAY		18/04/12	Survey Type: MANUAL
34	WS-03-A-06	MIXED HOUSES		WEST SUSSEX
	ELLIS ROAD			
	S BROADBRIDGE HEATH			
	WEST HORSHAM			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		805	
	Survey date: THURSDAY		02/03/17	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL VEHICLES
 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	34	80	0.072	34	80	0.291	34	80	0.363
08:00 - 09:00	34	80	0.126	34	80	0.378	34	80	0.504
09:00 - 10:00	34	80	0.147	34	80	0.169	34	80	0.316
10:00 - 11:00	34	80	0.126	34	80	0.152	34	80	0.278
11:00 - 12:00	34	80	0.138	34	80	0.146	34	80	0.284
12:00 - 13:00	34	80	0.159	34	80	0.152	34	80	0.311
13:00 - 14:00	34	80	0.150	34	80	0.165	34	80	0.315
14:00 - 15:00	34	80	0.146	34	80	0.181	34	80	0.327
15:00 - 16:00	34	80	0.249	34	80	0.171	34	80	0.420
16:00 - 17:00	34	80	0.265	34	80	0.168	34	80	0.433
17:00 - 18:00	34	80	0.325	34	80	0.156	34	80	0.481
18:00 - 19:00	34	80	0.281	34	80	0.171	34	80	0.452
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.184			2.300			4.484

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. 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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TAXIS

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	34	80	0.002	34	80	0.002	34	80	0.004
08:00 - 09:00	34	80	0.003	34	80	0.003	34	80	0.006
09:00 - 10:00	34	80	0.003	34	80	0.003	34	80	0.006
10:00 - 11:00	34	80	0.003	34	80	0.004	34	80	0.007
11:00 - 12:00	34	80	0.001	34	80	0.001	34	80	0.002
12:00 - 13:00	34	80	0.002	34	80	0.003	34	80	0.005
13:00 - 14:00	34	80	0.002	34	80	0.002	34	80	0.004
14:00 - 15:00	34	80	0.002	34	80	0.001	34	80	0.003
15:00 - 16:00	34	80	0.005	34	80	0.005	34	80	0.010
16:00 - 17:00	34	80	0.003	34	80	0.004	34	80	0.007
17:00 - 18:00	34	80	0.001	34	80	0.001	34	80	0.002
18:00 - 19:00	34	80	0.002	34	80	0.002	34	80	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.029			0.031			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:	7 - 805 (units:)
Survey date date range:	01/01/12 - 28/03/17
Number of weekdays (Monday-Friday):	34
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
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 shown. 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

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	34	80	0.000	34	80	0.000	34	80	0.000
08:00 - 09:00	34	80	0.002	34	80	0.001	34	80	0.003
09:00 - 10:00	34	80	0.003	34	80	0.003	34	80	0.006
10:00 - 11:00	34	80	0.002	34	80	0.002	34	80	0.004
11:00 - 12:00	34	80	0.003	34	80	0.002	34	80	0.005
12:00 - 13:00	34	80	0.000	34	80	0.001	34	80	0.001
13:00 - 14:00	34	80	0.002	34	80	0.001	34	80	0.003
14:00 - 15:00	34	80	0.001	34	80	0.001	34	80	0.002
15:00 - 16:00	34	80	0.001	34	80	0.001	34	80	0.002
16:00 - 17:00	34	80	0.001	34	80	0.001	34	80	0.002
17:00 - 18:00	34	80	0.001	34	80	0.001	34	80	0.002
18:00 - 19:00	34	80	0.000	34	80	0.000	34	80	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.016			0.014			0.030

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. 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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PSVS

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	34	80	0.000	34	80	0.000	34	80	0.000
08:00 - 09:00	34	80	0.001	34	80	0.001	34	80	0.002
09:00 - 10:00	34	80	0.000	34	80	0.000	34	80	0.000
10:00 - 11:00	34	80	0.000	34	80	0.000	34	80	0.000
11:00 - 12:00	34	80	0.001	34	80	0.001	34	80	0.002
12:00 - 13:00	34	80	0.000	34	80	0.000	34	80	0.000
13:00 - 14:00	34	80	0.000	34	80	0.000	34	80	0.000
14:00 - 15:00	34	80	0.000	34	80	0.000	34	80	0.000
15:00 - 16:00	34	80	0.000	34	80	0.000	34	80	0.000
16:00 - 17:00	34	80	0.000	34	80	0.000	34	80	0.000
17:00 - 18:00	34	80	0.000	34	80	0.000	34	80	0.000
18:00 - 19:00	34	80	0.000	34	80	0.000	34	80	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL CYCLISTS
 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	34	80	0.004	34	80	0.013	34	80	0.017
08:00 - 09:00	34	80	0.001	34	80	0.014	34	80	0.015
09:00 - 10:00	34	80	0.001	34	80	0.005	34	80	0.006
10:00 - 11:00	34	80	0.003	34	80	0.006	34	80	0.009
11:00 - 12:00	34	80	0.002	34	80	0.003	34	80	0.005
12:00 - 13:00	34	80	0.004	34	80	0.005	34	80	0.009
13:00 - 14:00	34	80	0.005	34	80	0.004	34	80	0.009
14:00 - 15:00	34	80	0.004	34	80	0.003	34	80	0.007
15:00 - 16:00	34	80	0.011	34	80	0.004	34	80	0.015
16:00 - 17:00	34	80	0.012	34	80	0.008	34	80	0.020
17:00 - 18:00	34	80	0.016	34	80	0.009	34	80	0.025
18:00 - 19:00	34	80	0.008	34	80	0.005	34	80	0.013
19:00 - 20:00	1	7	0.000	1	7	0.000	1	7	0.000
20:00 - 21:00	1	7	0.000	1	7	0.000	1	7	0.000
21:00 - 22:00	1	7	0.000	1	7	0.000	1	7	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.071			0.079			0.150

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

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	34	80	0.089	34	80	0.361	34	80	0.450
08:00 - 09:00	34	80	0.152	34	80	0.562	34	80	0.714
09:00 - 10:00	34	80	0.168	34	80	0.213	34	80	0.381
10:00 - 11:00	34	80	0.151	34	80	0.189	34	80	0.340
11:00 - 12:00	34	80	0.170	34	80	0.185	34	80	0.355
12:00 - 13:00	34	80	0.197	34	80	0.192	34	80	0.389
13:00 - 14:00	34	80	0.189	34	80	0.212	34	80	0.401
14:00 - 15:00	34	80	0.184	34	80	0.235	34	80	0.419
15:00 - 16:00	34	80	0.389	34	80	0.216	34	80	0.605
16:00 - 17:00	34	80	0.372	34	80	0.226	34	80	0.598
17:00 - 18:00	34	80	0.429	34	80	0.212	34	80	0.641
18:00 - 19:00	34	80	0.347	34	80	0.229	34	80	0.576
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.837			3.032			5.869

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL PEDESTRIANS
 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	34	80	0.020	34	80	0.048	34	80	0.068
08:00 - 09:00	34	80	0.038	34	80	0.155	34	80	0.193
09:00 - 10:00	34	80	0.048	34	80	0.055	34	80	0.103
10:00 - 11:00	34	80	0.043	34	80	0.048	34	80	0.091
11:00 - 12:00	34	80	0.038	34	80	0.032	34	80	0.070
12:00 - 13:00	34	80	0.046	34	80	0.033	34	80	0.079
13:00 - 14:00	34	80	0.037	34	80	0.040	34	80	0.077
14:00 - 15:00	34	80	0.045	34	80	0.058	34	80	0.103
15:00 - 16:00	34	80	0.148	34	80	0.068	34	80	0.216
16:00 - 17:00	34	80	0.092	34	80	0.048	34	80	0.140
17:00 - 18:00	34	80	0.072	34	80	0.041	34	80	0.113
18:00 - 19:00	34	80	0.047	34	80	0.036	34	80	0.083
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.674			0.662			1.336

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

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	34	80	0.001	34	80	0.007	34	80	0.008
08:00 - 09:00	34	80	0.000	34	80	0.007	34	80	0.007
09:00 - 10:00	34	80	0.001	34	80	0.007	34	80	0.008
10:00 - 11:00	34	80	0.002	34	80	0.003	34	80	0.005
11:00 - 12:00	34	80	0.002	34	80	0.003	34	80	0.005
12:00 - 13:00	34	80	0.004	34	80	0.004	34	80	0.008
13:00 - 14:00	34	80	0.006	34	80	0.001	34	80	0.007
14:00 - 15:00	34	80	0.004	34	80	0.002	34	80	0.006
15:00 - 16:00	34	80	0.008	34	80	0.003	34	80	0.011
16:00 - 17:00	34	80	0.005	34	80	0.003	34	80	0.008
17:00 - 18:00	34	80	0.009	34	80	0.001	34	80	0.010
18:00 - 19:00	34	80	0.006	34	80	0.000	34	80	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.048			0.041			0.089

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

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	34	80	0.000	34	80	0.005	34	80	0.005
08:00 - 09:00	34	80	0.000	34	80	0.001	34	80	0.001
09:00 - 10:00	34	80	0.000	34	80	0.000	34	80	0.000
10:00 - 11:00	34	80	0.000	34	80	0.000	34	80	0.000
11:00 - 12:00	34	80	0.000	34	80	0.000	34	80	0.000
12:00 - 13:00	34	80	0.000	34	80	0.000	34	80	0.000
13:00 - 14:00	34	80	0.000	34	80	0.000	34	80	0.000
14:00 - 15:00	34	80	0.000	34	80	0.000	34	80	0.000
15:00 - 16:00	34	80	0.000	34	80	0.000	34	80	0.000
16:00 - 17:00	34	80	0.000	34	80	0.000	34	80	0.000
17:00 - 18:00	34	80	0.001	34	80	0.000	34	80	0.001
18:00 - 19:00	34	80	0.002	34	80	0.000	34	80	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.006			0.009

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

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	34	80	0.000	34	80	0.000	34	80	0.000
08:00 - 09:00	34	80	0.000	34	80	0.001	34	80	0.001
09:00 - 10:00	34	80	0.000	34	80	0.000	34	80	0.000
10:00 - 11:00	34	80	0.000	34	80	0.000	34	80	0.000
11:00 - 12:00	34	80	0.000	34	80	0.000	34	80	0.000
12:00 - 13:00	34	80	0.000	34	80	0.000	34	80	0.000
13:00 - 14:00	34	80	0.000	34	80	0.000	34	80	0.000
14:00 - 15:00	34	80	0.000	34	80	0.000	34	80	0.000
15:00 - 16:00	34	80	0.001	34	80	0.000	34	80	0.001
16:00 - 17:00	34	80	0.000	34	80	0.000	34	80	0.000
17:00 - 18:00	34	80	0.000	34	80	0.000	34	80	0.000
18:00 - 19:00	34	80	0.000	34	80	0.000	34	80	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.001			0.002

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

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	34	80	0.001	34	80	0.012	34	80	0.013
08:00 - 09:00	34	80	0.000	34	80	0.009	34	80	0.009
09:00 - 10:00	34	80	0.001	34	80	0.007	34	80	0.008
10:00 - 11:00	34	80	0.002	34	80	0.003	34	80	0.005
11:00 - 12:00	34	80	0.002	34	80	0.003	34	80	0.005
12:00 - 13:00	34	80	0.004	34	80	0.005	34	80	0.009
13:00 - 14:00	34	80	0.006	34	80	0.001	34	80	0.007
14:00 - 15:00	34	80	0.004	34	80	0.003	34	80	0.007
15:00 - 16:00	34	80	0.009	34	80	0.003	34	80	0.012
16:00 - 17:00	34	80	0.006	34	80	0.003	34	80	0.009
17:00 - 18:00	34	80	0.010	34	80	0.001	34	80	0.011
18:00 - 19:00	34	80	0.009	34	80	0.001	34	80	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.054			0.051			0.105

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: 7 - 805 (units:)
 Survey date date range: 01/01/12 - 28/03/17
 Number of weekdays (Monday-Friday): 34
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

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	34	80	0.114	34	80	0.434	34	80	0.548
08:00 - 09:00	34	80	0.192	34	80	0.740	34	80	0.932
09:00 - 10:00	34	80	0.218	34	80	0.281	34	80	0.499
10:00 - 11:00	34	80	0.199	34	80	0.246	34	80	0.445
11:00 - 12:00	34	80	0.213	34	80	0.222	34	80	0.435
12:00 - 13:00	34	80	0.251	34	80	0.236	34	80	0.487
13:00 - 14:00	34	80	0.237	34	80	0.257	34	80	0.494
14:00 - 15:00	34	80	0.237	34	80	0.299	34	80	0.536
15:00 - 16:00	34	80	0.556	34	80	0.290	34	80	0.846
16:00 - 17:00	34	80	0.483	34	80	0.285	34	80	0.768
17:00 - 18:00	34	80	0.528	34	80	0.263	34	80	0.791
18:00 - 19:00	34	80	0.411	34	80	0.270	34	80	0.681
19:00 - 20:00	1	7	0.000	1	7	0.000	1	7	0.000
20:00 - 21:00	1	7	0.000	1	7	0.000	1	7	0.000
21:00 - 22:00	1	7	0.000	1	7	0.000	1	7	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.639			3.823			7.462

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.

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