

HD Ltd

**REVISED DEVELOPMENT PROPOSAL
ISLAND FARM, BRIDGEND**

TRANSPORT STRATEGIC APPRAISAL

19-00637/TSA/01/D

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1 INTRODUCTION

1.1 Background & Planning History

- 1.1.1 This Transport Strategic Appraisal (TSA) has been produced by Corun Associates Ltd (Corun) on behalf of HD Ltd, the applicant, to examine the highway and transportation issues associated with a potential revised development schedule at Island Farm, between the A48 and Ewenny Road, Bridgend.
- 1.1.2 The original proposal comprised a number of sports facilities including a major stadium, tennis centre and office space. The original development has outline planning approval (P/08/1114/OUT) and the tennis centre has detailed approval.

1.2 Methodology Used

- 1.2.1 The Covid-19 pandemic imposed restrictions on the collection of new traffic data to support this assessment. Under normal circumstances, new traffic data would have been collected at each of the junctions under test during neutral time periods, as per standard industry practice.
- 1.2.2 Unfortunately, the Covid-19 situation prevented new data from being collected, as there was a significant reduction in baseline traffic flows due to lockdown, travel restrictions and home working.
- 1.2.3 During early Local Highway Authority discussions, a full Transport Assessment was requested to support the proposal. However, the LHA also requested that traffic surveys were collected during neutral periods, as defined by DMRB. The Covid-19 pandemic removed the ability to collect appropriate and reliable survey data and as such this report utilises existing data and previous assessment work undertaken on this site.
- 1.2.4 As described above, the site benefits from outline consent for a large-scale sports development and detailed consent for a tennis centre.
- 1.2.5 This existing transport assessment work and planning history on the site allowed for a trip generation comparison exercise to be undertaken between the consented schemes and the proposed development scenario.
- 1.2.6 In transport planning terms, the consented schemes are considered committed and therefore the traffic associated with them is in theory already on the public highway.
- 1.2.7 It is therefore considered sufficiently robust to compare the likely trip generation between the consented and proposed uses on site, to determine the likely development impact on the surrounding highway network.
- 1.2.8 As discussed later on in this report, the proposed development generates fewer trips during the critical AM and PM peak hours than the consented schemes. The proposed development therefore provides betterment when compared to the previously consented schemes.

1.3 New Development Proposal

- 1.3.1 The masterplan shows that Island Farm can accommodate circa 733 dwellings (40dph), two schools, a commercial/community area to serve the site and a tennis centre.

1.4 Scope

1.4.1 This report will discuss the following key transportation issues arising from the proposals:

- (i) the existing site location and transport infrastructure;
- (ii) analysis of personal injury traffic accident data;
- (iii) the site's compliance with applicable transport policy;
- (iv) the development proposal;
- (v) revised development-generated vehicular traffic; and
- (vi) preliminary review of development impact on the surrounding highway network.

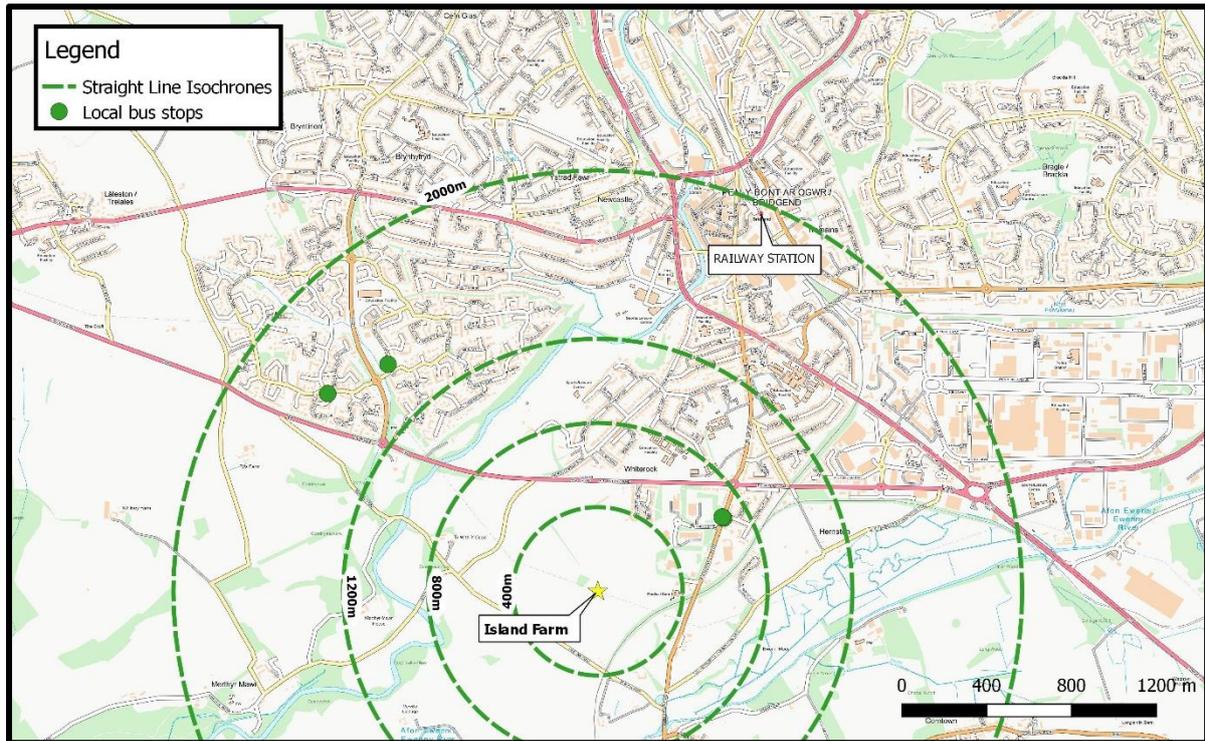
2 EXISTING CONDITIONS

2.1 Site Summary

2.1.1 The site is located to the west of the B4265 (Ewenny Road) and south of the A48.

2.1.2 **Figure 2.1** below illustrates the site in local context with distance isochrones.

Figure 2.1: Site in Local Context with Distance Isochrones



2.2 Local Highway Network

2.2.1 The site is shown in a local context in **Figure 2.1**. The site is also shown in a wider strategic context in **Figure 2.2**.

Figure 2.2: Site in Strategic Context



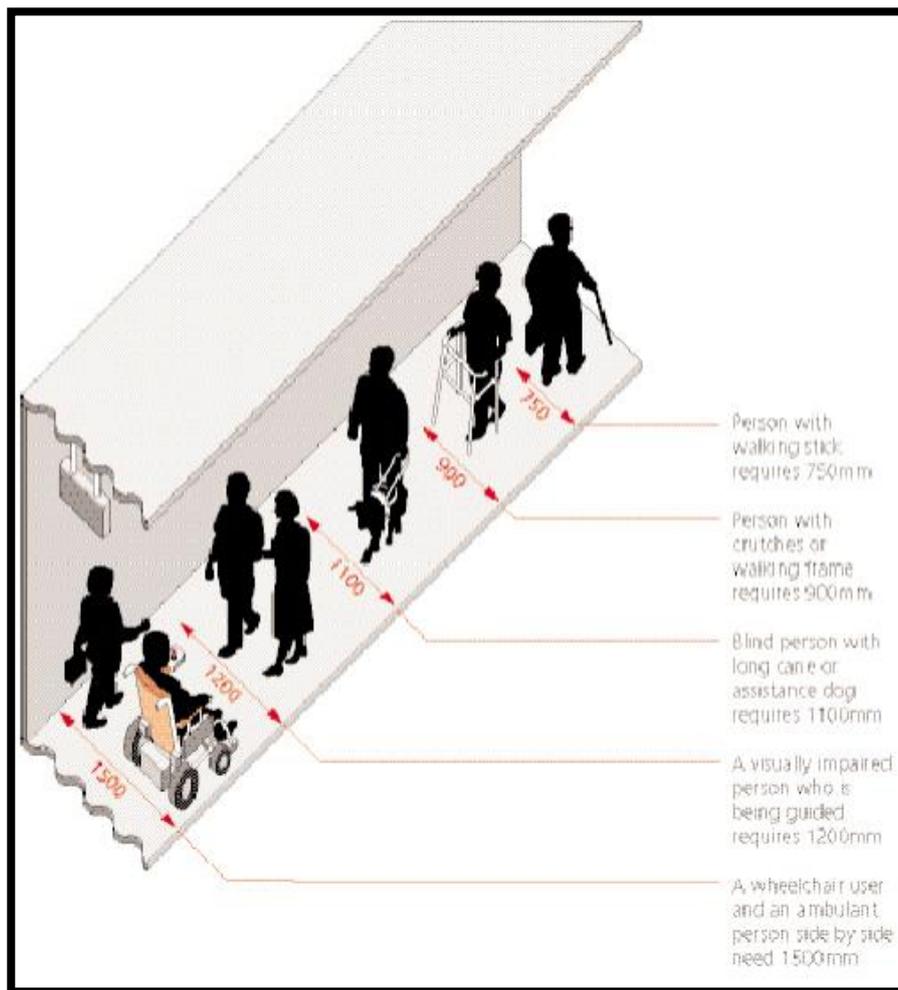
2.3 Pedestrian Facilities

- 2.3.1 Pedestrian infrastructure in the vicinity of the Island Farm site on Ewenny Road is predominately limited to one side (eastern side) with a short section, approximately 30m in length, found on the western side heading south from the site access road junction. The width of both footways is approximately 1.5m to 2.0m.
- 2.3.2 On the A48, footways are limited to the southern side until the Puffin Crossing located circa 135m west of the Ewenny Road Roundabout. Footways from this crossing to the roundabout are on both sides of the carriageway.
- 2.3.3 Active Travel Wales Design Guidance (2014) makes reference to DfT's 'Inclusive Mobility' document (2005) and Manual for Street (2007) when advising of preferred footway widths.
- 2.3.4 In Paragraph 4.7.3 Active Travel Wales Design Guidance (2014) states that:

'Where possible, pedestrian routes should have a clear unobstructed width of 2m, which allows two wheelchair users to pass one other. Where physical constraints make this impossible a clear width of 1.5m should be maintained as this allows a wheelchair user and walking companion to travel side by side. If there is an obstacle that cannot be moved a restricted width around this of 1.2m provides space for a blind or partially sighted person to walk using a long cane, or with a guide dog, or alongside a person providing guidance.'

2.3.5 The aforementioned widths are therefore more than suitable for a variety of users, including a wheelchair user and an ambulant person side by side.

Extract 2.1: Footway widths (DfT 'Inclusive Mobility' 2005)



2.3.6 The Chartered Institution of Highways and Transportation document 'Providing for Journeys on Foot' provides the following suggested acceptable walking distances, as shown in Table 2.1.

Table 2.1: Acceptable Walking Distances (IHT)

	Town Centres (m)	Commuting/School/ Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

- 2.3.7 Pedestrian isochrones are shown in **Figure 2.1** with distance isochrones for 400m, 800m, 1200m and 2000m, which equates to 5, 10, 15 and 25-minute walk times based on an average walking speed of 4.8 km/h.
- 2.3.8 **Figure 2.1** demonstrates that the site is within walking distance of many trip attractors/generators in the locality. Bridgend town centre is within 2km of the site.
- 2.3.9 However, in line with the Active Travel (Wales) Act 2013 and with reference to the Council's integrated transport network strategy, further pedestrian infrastructure enhancements will be required as part of the site development. These will be identified to support a future planning application as part of a detailed Transport Assessment.

2.4 Cycle Facilities

- 2.4.1 Cycling in the immediate vicinity of the site is accommodated on-carriageway, with limited traffic-free route options available.
- 2.4.2 National Cycle Network (NCN) Routes 88 and 885 can be found to the south and north of the development site respectively.
- 2.4.3 LTN1/04 identifies that the mean average length for cycling is 4km (2.4 miles), although journeys of up to three times this distance are not uncommon for regular commuters. As such, a 12km (7.4 mile) cycle distance normally applies. A 4km cycle distance covers most of Bridgend (see **Figure 2.2**).
- 2.4.4 The town centre can be accessed by bicycle along Ewenny Road in approximately seven minutes and, as such, travel from the proposed development site by cycle to and from the town centre and the surrounding residential catchments is most certainly a viable alternative to the private car.
- 2.4.5 However, in line with the Active Travel Wales Act, further cycle infrastructure enhancements will be required as part of the site development. These will be identified to support a future planning application and establish sections where improvements are required as part of a detailed Transport Assessment.

2.5 Public Transport Facilities

Bus

- 2.5.1 The application site is considered to be reasonably well served by public transport.

2.5.2 Guidance relating to the accessibility of development proposals to public transport is provided in the Institution of Highways and Transportation (IHT) document 'Planning for Public Transport in Development' (March 1999). The IHT guidance recommends that:

“new developments should be located so that public transport trips involve a walking distance of less than 400m from the nearest bus stop ...”.

2.5.3 Bus stops can be found on Ewenny Road some 450m from the centre of the site, as shown in **Figure 2.1**. Whilst these stops are just over the recommended 400m, the additional distance is minor and unlikely to form a barrier to bus travel for the vast majority of users. Even so, new bus stops complete with shelter, seating and raised kerbs should be provided to ensure that the entire site is within 400m of serviced bus stops. This would typically form part of the planning application stage.

2.5.4 Service 303 operated by NAT Group runs between Barry and Bridgend Bus Station with an hourly frequency from Monday-Saturday; there is no Sunday service. The approximate journey time from the site to Bridgend bus station is approximately nine minutes.

2.5.5 From Bridgend bus station, numerous services are available linking the site with destinations further afield, including Cardiff and Swansea.

2.5.6 The site is therefore concluded to be favourably located to help encourage travel by bus but requires improvements to suitably cater for the full extent of the development proposals. This will be considered as part of a future planning application within a detailed Transport Assessment

Rail

2.5.7 The nearest railway station is found in Bridgend town centre, approximately 2.0km walking distance from the site, which is within acceptable walking distance and represents an approximate walking time of 25 minutes, based on an average walking speed of 4.8km/hr.

2.5.8 Bridgend railway station is a main line station serving Bridgend. Passenger services are operated by Great Western Railway to and from London Paddington and Swansea, with some services extended to Carmarthen, and by Transport for Wales (TfW) to destinations across Wales.

2.5.9 To the west, (TfW) trains run along the South Wales Main Line and West Wales Line to Swansea and then to Carmarthen, Pembroke Dock, Milford Haven or Fishguard Harbour.

2.5.10 Mainline services to Swansea and London run hourly (with extra services at peak hours), whilst the regional trains to Manchester Piccadilly via Shrewsbury and local trains to Maesteg and over the Vale of Glamorgan Line also run hourly; the Swanline local stopping trains to/from Swansea run every two hours.

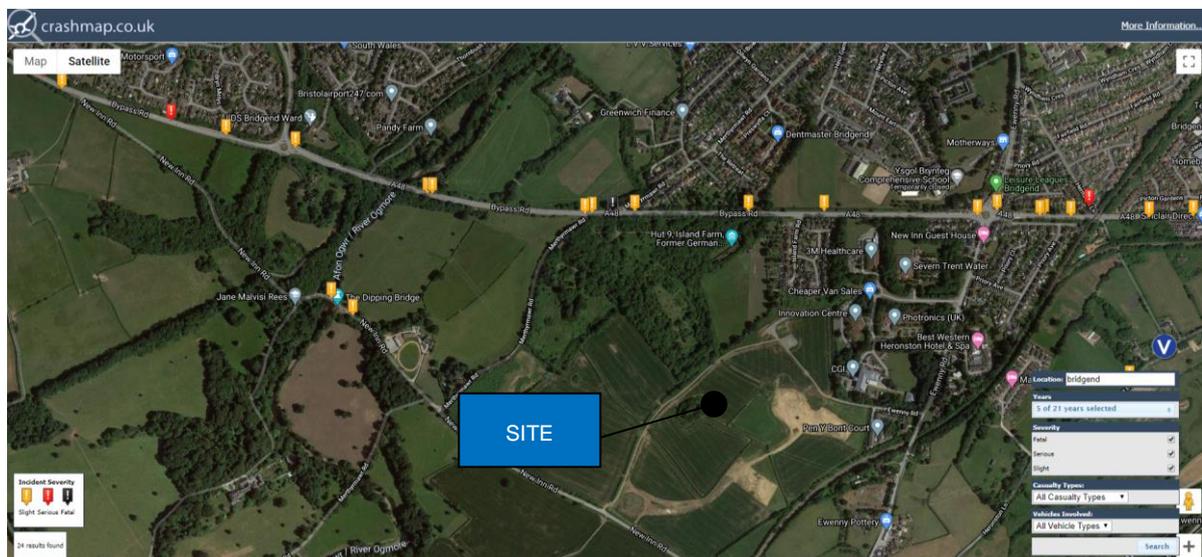
2.5.11 Travel by train, to key destinations i.e. Cardiff and Swansea, offers a viable alternative to private car travel.

2.5.12 Improvements to active travel routes between the site and the railway station are however recommended to remove any existing barriers to sustainable travel and this will form part of detailed highways mitigation scheme as part of the planning application.

2.6 Local Highway Safety

- 2.6.1 A review has been carried out on local highway network safety in order to establish whether there are any current accident clusters or blackspots in the vicinity of the site that may be exacerbated by the development proposal. In this instance, a cluster is identified as a closely defined area of five or more accidents.
- 2.6.2 The website www.crashmap.co.uk has been interrogated to provide a review of accidents in the surrounding area.
- 2.6.3 CrashMap uses data collected by the police about road traffic crashes occurring on British roads where someone has been injured. This data is approved by the National Statistics Authority and reported on by the Department for Transport each year. The website uses data obtained directly from official sources and compiled in an easy to use format showing each incident on a map. Incidents are plotted to within 10 metres of their location and the data includes all incidents up to the end of 2019.

Figure 2.3: PIA Plot Extract



Source: www.crashmap.co.uk - data extracted April 2020

- 2.6.4 It is evident from **Figure 2.3** that there are no accident blackspots at the site access points on the A48, through Technology Drive or Ewenny Road.
- 2.6.5 It is noted that there are four accidents, one of which resulted in a fatality, at the Merthyr Mawr Road/A48 staggered priority junction. The proximity of this cluster warrants further detailed investigation as part of a planning application; safety improvement measures may be required. However, it should be noted that the proposed signal access on the A48 will help curtail vehicular speeds along this section, which will bring highway safety benefits.
- 2.6.6 All existing site access points will benefit from improvements which, along with the new site access on the A48, will be subject to detailed design and road safety audit procedures to ensure highway safety.

3 LOCAL AND NATIONAL PLANNING GUIDANCE

3.1 Overview

3.1.1 With regard to the transportation implications of the proposed development, this assessment examines the development proposal in the context of relevant planning policy guidance at national, regional and local level. The following documents have been reviewed:

- Planning Policy Wales (Edition 10, December 2018);
- Technical Advice Note (Wales) (2007) 18 – Transport;
- Bridgend CBC LDP (Adopted September 2013);
- Bridgend CBC Local Transport Plan 2015-2030 (May 2015).

3.1.2 Consideration is also given to the following legislation, which has an emphasis on sustainable transport provision:

- Active Travel (Wales) Act 2013;
- Well-being of Future Generations (Wales) Act 2015.

3.1.3 Also used as guidance throughout the report are:

- Design Guidance: Active Travel (Wales) Act 2013 (December 2014);
- Planning Policy Wales Technical Advice Note 18: Transport (March 2007);
- Manual for Streets (2007);
- Manual for Streets 2 (2010).

3.2 Policy Objective

3.2.1 The overarching desire at all tiers of planning policy guidance is to influence a modal shift from single occupancy car travel towards more sustainable modes such as walking, cycling, and public transport.

3.2.2 In order to achieve this, it is recognised that development should be located such that the need to travel is reduced, especially by private car, by locating development where there is good access to high quality public transport, walking and cycling provision.

3.3 Planning Policy Wales (December 2018)

3.3.1 Planning Policy Wales (PPW) identifies five ways of working to enhance proposals and ideas and to maximise their contribution to the well-being goals. It is stated that:

‘Good design is about avoiding the creation of car-based developments. It contributes to minimising the need to travel and reliance on the car, whilst maximising opportunities for people to make sustainable and healthy travel choices for their daily journeys. Achieving these objectives requires the selection of sites which can be made easily accessible by sustainable modes as well as incorporating appropriate, safe and sustainable links (including active travel networks) within and between developments using legal agreements where appropriate.

Existing infrastructure must be utilised and maximised, wherever possible. Where new infrastructure is necessary to mitigate transport impacts of a development and to maximise accessibility by sustainable non-car modes, it should be integrated within the development layout and beyond the boundary, as appropriate. This could include works to connect cycle routes within a site to a wider strategic cycling network or provision of bus priority measures on highway corridors serving a new development.'

3.3.2 For placemaking in rural areas, PPW states that:

'For most rural areas the opportunities for reducing car use and increasing walking, cycling and use of public transport are more limited than in urban areas. In rural areas most new development should be located in settlements which have relatively good accessibility by non-car modes when compared to the rural area as a whole. Development in these areas should embrace the national sustainable placemaking outcomes and, where possible, offer good active travel connections to the centres of settlements to reduce the need to travel by car for local journeys.'

3.3.3 Planning Policy Wales confirms that transport plays a key role in promoting a healthier Wales, a more equal Wales, cohesive communities and a globally responsible Wales.

3.3.4 PPW identifies the following active and social trend issues which it aims to address:

'assisting in the delivery of cohesive communities which will meet the needs and are accessible to all members of society, including older people;

tackling inequalities between communities, delivering services and jobs closer to where people live and acknowledging the importance of inclusive communities and the wider environment for good health and well-being;

improve sustainable access to services, cultural opportunities and recreation facilities to support people to adopt healthy, culturally fulfilled lifestyles which will assist in improving health and wellbeing;

reducing reliance on travel by private car, and the adverse impacts of motorised transport on the environment and people's health, by prioritising and increasing active travel and public transport; • ensure our transportation infrastructure is adaptable to future advances in innovation such as the mainstreaming of electric vehicles or possible advent of autonomous or driverless vehicles in the next ten to 15 years'.

3.3.5 PPW identifies the following active and social linkages issues which it aims to address:

'enable sustainable access to housing, employment, shopping, education, health, community, leisure and sports facilities and green infrastructure, maximising opportunities for community development and social welfare;

develop sustainable transportation infrastructure to keep Wales moving and connect people with jobs, housing and leisure. Ensure that the

chosen locations and resulting design of new developments reduces reliance on the private car for daily travel, supports sustainable modes of travel and assists in improving the environment, public health and community life;

require developments to encourage modal shift and be easily accessible by walking, cycling and public transport, by virtue of their location, design and provision of on and off site sustainable transport infrastructure’.

3.3.6 PPW identifies that:

‘The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:

- Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;*
- Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and*
- Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles.’*

3.3.7 Under the sustainable transport category, PPW identifies that:

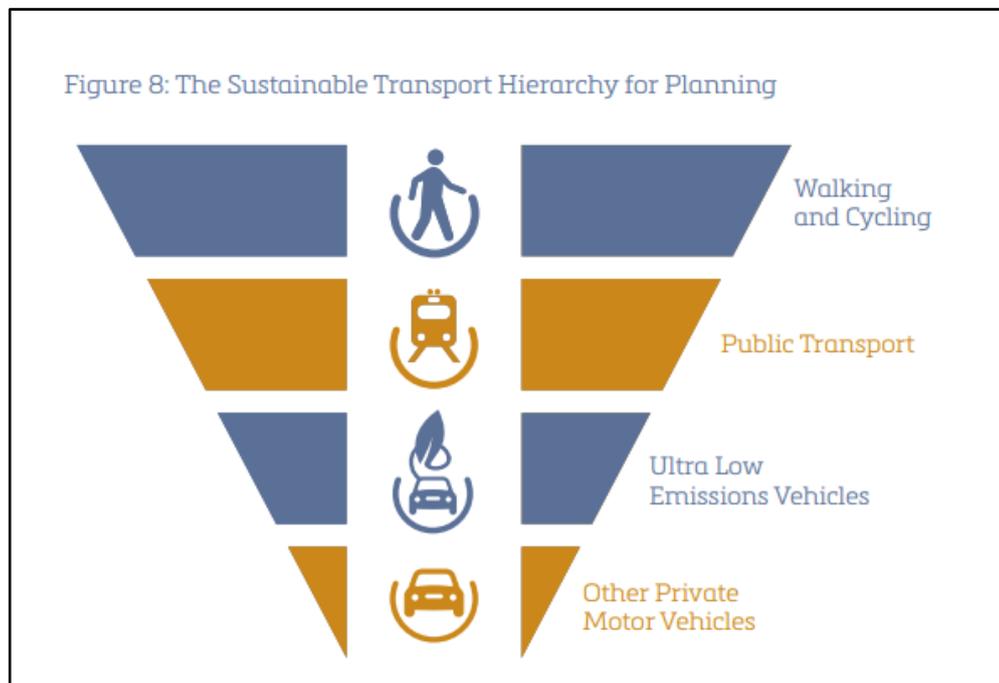
‘The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the Well-being of Future Generations Act.

The planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:

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

Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services.

It is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport ahead of the private motor vehicles. The transport hierarchy recognises that Ultra Low Emission Vehicles also have an important role to play in the decarbonisation of transport, particularly in rural areas with limited public transport services.



The sustainable transport hierarchy should be used to reduce the need to travel, prevent car-dependent developments in unsustainable locations, and support the delivery of schemes located, designed and supported by infrastructure which prioritises access and movement by active and sustainable transport.

The sustainable transport hierarchy must be a key principle in the preparation of development plans, including site allocations, and when considering and determining planning applications.

Different approaches to sustainable transport will be required in different parts of Wales, particularly in rural areas, and new development will need to reflect local circumstances.'

3.3.8 With regards to car parking, PPW confirms the widely accepted notion that:

'Car parking provision is a major influence on how people choose to travel and the pattern of development. Where and how cars are parked can in turn be a major factor in the quality of a place.'

3.3.9 It continues that:

'A design-led approach to the provision of car parking should be taken, which ensures an appropriate level of car parking is integrated in a way which does not dominate the development. Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the

private car and supporting a modal shift to walking, cycling and public transport. Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed. The needs of disabled people must be recognised and adequate parking provided for them.

Planning authorities must require good standards of car parking design, which do not allow vehicles to dominate the street or inconvenience people walking and cycling. Car parking should be overlooked by surrounding properties, to provide natural surveillance.

.... Parking standards should be applied flexibly and allow for the provision of lower levels of parking and the creation of high quality places.'

- 3.3.10 PPW promotes walking and cycling for shorter trips and that cycling be encouraged for short trips and as a substitute for shorter car journeys, or as part of a longer journey when combined with public transport.

3.4 Technical Advice Note (TAN18)

- 3.4.1 Technical Advice Note 18 (TAN 18) promotes the overall integration of transport in the following ways:

- Integration of transport and land use planning;
- Integration between different types of transport; and
- Integration of transport policy with policies for the environment, education, social justice, health, economic development and wealth creation.

- 3.4.2 The integration of land use planning and the development of transport has a key role to play in the promotion of sustainable development. TAN 18 identifies the following ways in which integration can help achieve sustainable environmental outcomes:

- promoting resource and travel efficient settlement patterns;
- ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;
- managing parking provision;
- ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;
- encouraging the location of development near other related uses to encourage multi-purpose trips;
- promoting cycling and walking;
- supporting the provision of high quality, inclusive public transport;
- supporting provision of a reliable and efficient freight network;

- promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;
- encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and
- ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions.

3.5 Bridgend CBC LDP (Adopted September 2013)

3.5.1 The adopted LDP will guide and manage development in the area up to 2021.

3.5.2 The site is partly allocated under policy number SP9(2) Island Farm. The LDP describes the site as follows:

'Island Farm is a prestigious greenfield site in an accessible location along the A48, adjacent to the Bridgend Science Park, 8km from junctions 35, 36 and 37 of the M4 motorway. Part of the site comprises of a former Prisoner of War camp. When developed, new access to the site will be required off the A48.'

In location terms, Island Farm is not specifically linked to Bridgend's current focussed area of growth however it forms a subsequent phase and logical extension to the existing highly successful and prestigious Bridgend Science Park. Furthermore, located as it is in south-west Bridgend it serves an area of recent significant residential development at Broadlands, which lacks any significant employment opportunities and other established communities to the south of Bridgend, where the Science Park is already well integrated, being within walking and cycling distance of the town centre less than 1.5km away which acts as a public transportation hub in terms of rail and bus services.

'Hut 9' of the former Prisoner of War camp is to be retained and is a listed building. Any development would have to take into account known biodiversity interests and the listed building and where necessary incorporate these into design and layout. There would be a requirement for high quality landscaping and architectural design in any development, similar to the adjacent existing Science Park developments. Linked to this will be the protection and enhancement of the existing biodiversity value of the site, ensuring appropriate provision for, and protection of, existing wildlife in the area.'

3.5.3 Policy PLA8 (5) Access to Island Farm Strategic Employment Site, A48, Bridgend states:

'Land at Island Farm, Bridgend is identified as a Strategic Employment Site (SP9(2) refers), which is based on a number of requirements, one of them being that it is highly accessible from the M4 corridor. To provide this effective access, and thereby conform to the requirements of the highway network, the development of the site will require a new junction to be constructed on the A48 at a location which will affect, and have to include junction facilities for, Merthyr Mawr Road (North and South of the A48). Therefore, careful consideration must be given to this development'

to ensure that it introduces mitigation to overcome any adverse effect on the efficiency of the surrounding highway network.'

3.5.4 Key strategic objectives of the LDP, which are applicable to the application site from a transport planning perspective, are:

Strategic Policy SP2: Design and Sustainable Place Making

All development should contribute to creating high quality, attractive, sustainable places which enhance the community in which they are located, whilst having full regard to the natural, historic and built environment by:

- 1) Complying with all relevant national policy and guidance where appropriate;
- 2) Having a design of the highest quality possible, whilst respecting and enhancing local character and distinctiveness and landscape character;
- 3) Being of an appropriate scale, size and prominence;
- 4) Using land efficiently by:
 - (i) being of a density which maximises the development potential of the land whilst respecting that of the surrounding development; and
 - (ii) having a preference for development on previously developed land over greenfield land;
- 5) Providing for an appropriate mix of land uses;
- 6) Having good walking, cycling, public transport and road connections within and outside the site to ensure efficient access;
- 7) Minimising opportunities for crime to be generated or increased;
- 8) Avoiding or minimising noise, air, soil and water pollution;
- 9) Incorporating methods to ensure the site is free from contamination (including invasive species);
- 10) Safeguarding and enhancing biodiversity and green infrastructure;
- 11) Ensuring equality of access by all;
- 12) Ensuring that the viability and amenity of neighbouring uses and their users/occupiers will not be adversely affected;
- 13) Incorporating appropriate arrangements for the disposal of foul sewage, waste and water;
- 14) Make a positive contribution towards tackling the causes of, and adapting to the impacts of Climate Change; and
- 15) Appropriately contributing towards local, physical, social and community infrastructure which is affected by the development.

3.6 Active Travel (Wales) Act 2013

3.6.1 The Active Travel (Wales) Act 2013 aims to:

*'make active travel the most attractive option for most shorter journeys.
Its purpose is to enable more people to undertake active travel, meaning*

more people can enjoy the benefits of active travel. We want to encourage people to leave their cars behind and use active travel where it is suitable for them to do so.

The Act requires local authorities in Wales to produce active travel maps and deliver year on year improvements in active travel routes and facilities. It requires highways authorities in Wales to make enhancements to routes and facilities for pedestrians and cyclists in all new road schemes and to have regard to the needs of walkers and cyclists in a range of other highway authority functions. It also requires the Welsh Ministers and local authorities to promote active travel journeys in exercising their functions under this Act.'

3.7 Conclusion

- 3.7.1 The site is well located to encourage sustainable modes of travel due to its integration with surrounding residential areas and close links to the town centre.
- 3.7.2 The site is also highly accessible by sustainable modes of transport, which will be enhanced as part of the proposal, and it is therefore concluded that the revised development proposal will be fully compliant with transport planning policy at local and national level.

4 DEVELOPMENT PROPOSAL

4.1 Introduction

- 4.1.1 The original proposal comprised a number of sports facilities including a major stadium, tennis centre and office space. The original development has outline planning approval (P/08/1114/OUT) and the tennis centre has detailed approval.
- 4.1.2 An indicative site masterplan is provided herein as **Appendix A**. The revised proposal is discussed in further detail below.

4.2 Residential

- 4.2.1 The site is estimated to be capable of accommodating approximately 733 residential dwellings. For the purposes of a robust assessment, it is assuming in this report that they will be predominantly private houses, which typically have the highest trip rate per unit.

4.3 Education

- 4.3.1 The revised development proposal allows for two schools, discussed in further detail individually below.

Heronsbridge Special School

- 4.3.2 The first is Heronsbridge Special School, which would relocate from the current site nearby to the north. The relocation would allow the school to expand from a current capacity of 245 pupils (188 staff) to 300 pupils (229 staff).
- 4.3.3 School transport vehicle traffic will increase with the expanded on-site school, but the increase in number and type of vehicle will largely be based on the pupils' disability, which cannot be fully accounted for at this stage.
- 4.3.4 The existing school transport vehicle traffic is as follows:
- 25 minibuses (some of which are specially adapted wheelchair vehicles) and 17 taxis.
 - There are currently 204 pupils, although this is subject to increase or decrease by around 10 to 15 pupils.
 - If, for example, the number of pupils were to increase by a further 100 and they were all ambulant and low risk, the Council's school programmes manager has advised that it estimates a requirement for a further 13 minibuses and 9 taxis. Please note, this is an estimate and could increase or decrease by approximately 10% for each type of vehicle, depending on needs etc.
 - In addition to the 25 minibuses and 17 taxis plus the projected increase of 13 minibuses and 9 taxis, the school operates its own school transport using its own school minibuses. The headteacher advised that there would be five vehicles used for the new school.
 - There is a staggered drop-off in the morning but, in the afternoon, all vehicles arrive on site in time for the end of the school day.

One Form Entry School

- 4.3.5 The other school is proposed to be a new one form entry school for up to 255 pupils.
- 4.3.6 Corun were advised by the Council's school programmes manager that approximately 35 staff would be required.
- 4.3.7 There would be a maximum of 210 pupils aged 4-11 and 45 nursery pupils.
- 4.3.8 It is anticipated that the school will predominantly serve the new residential units at the site and the impact of private car travel will be limited by the implementation of a comprehensive Travel Plan to encourage active modes of travel.

4.4 Commercial

- 4.4.1 Whilst the permitted sports village scheme included some 21,000sqm of commercial floorspace, the proposed scheme proposes a far smaller commercial/community area to predominantly serve residents of the development.

4.5 Leisure

- 4.5.1 The leisure element of the revised proposal involves an indoor and outdoor tennis centre. This will be developed by HD Ltd and would come forward through a separate full application in advance of the wider site.

4.6 Access

Vehicular Access

- 4.6.1 Access for the first phase of the tennis centre will be via an upgraded access road and junction layout with Ewenny Road.
- 4.6.2 The proposed junction improvement is contained in **Appendix B**.
- 4.6.3 Access for the remainder of the Island Farm parcel would be as per the original consents, namely via a new signal junction on the A48 and an extension to the existing science park access road via Technology Drive.
- 4.6.4 Further capacity analysis and preliminary design will be provided at the application stage.

Pedestrian and Cycle Access

- 4.6.5 Pedestrian and cycle access will be enhanced in line with the requirement of the Active Travel (Wales) Act 2013.
- 4.6.6 The extent of these improvements will be developed in close consultation with the local highway authority as part of the planning process and the site will be expected to contribute towards the improvement of routes identified in the Bridgend CBC Local Transport Plan 2015-2030 and the Active Travel (Wales) Act 2013 Integrated Network Map.

Public Transport

- 4.6.7 Bus travel will be enhanced as part of the proposal. At this early stage, it is envisaged that the internal layout will be designed to accommodate bus services; operators will be consulted as part of the planning process to establish the most appropriate routes and frequencies. Bus shelters, seating, raised kerbs would be appropriate.
- 4.6.8 The extent of these improvements will again be developed in close consultation with the local highway authority as part of the planning process.
- 4.6.9 The proposal will also investigate the introduction of secure cycle parking at Bridgend Train Station, as well as making such provision available on-site at appropriate locations.

4.7 Parking

- 4.7.1 Parking will need to be provided in line with Bridgend County Borough Council's adopted parking standards.

4.8 Servicing

- 4.8.1 The site layout will be designed to ensure that a large refuse collection vehicle and necessary service vehicles can arrive and depart the site in a forward gear.

5 SITE TRAFFIC

5.1 Introduction

5.1.1 Estimated site traffic flows for the revised development proposal have been forecast using the TRICS database. TRICS is a nationally accepted database providing information relating to the total number of trips generated by various land uses, based on existing trips observed at similar sites throughout the United Kingdom.

5.1.2 From the TRICS database, a trip rate is derived which provides the number of expected trips per unit of measurement (e.g. unit, bay or area). The TRICS good practice guide promotes an 'inclusive' rather than 'exclusive' approach to site selection.

5.1.3 The full TRICS output is included herein as **Appendix C**.

5.2 Proposed Residential (733 units)

5.2.1 Estimated traffic flows for the proposed residential development have been forecast using the TRICS database. TRICS is a nationally accepted database providing information relating to the total number of trips generated by various land uses based on existing traffic surveys at similar sites throughout the United Kingdom.

5.2.2 From the TRICS database, a trip rate is derived which provides the number of expected trips per residential unit by mode of transport.

5.2.3 In order to extract a representative sample of survey sites from the TRICS database, the following parameters were applied:

- All sites in Greater London & Ireland excluded;
- Excludes 'edge of town centre' and 'town centre' sites;
- 67.5% trips using the rank order function for daily trip rates (0700-1900).

5.2.4 **Table 5.1** shows the total person trips associated with the residential element of the site.

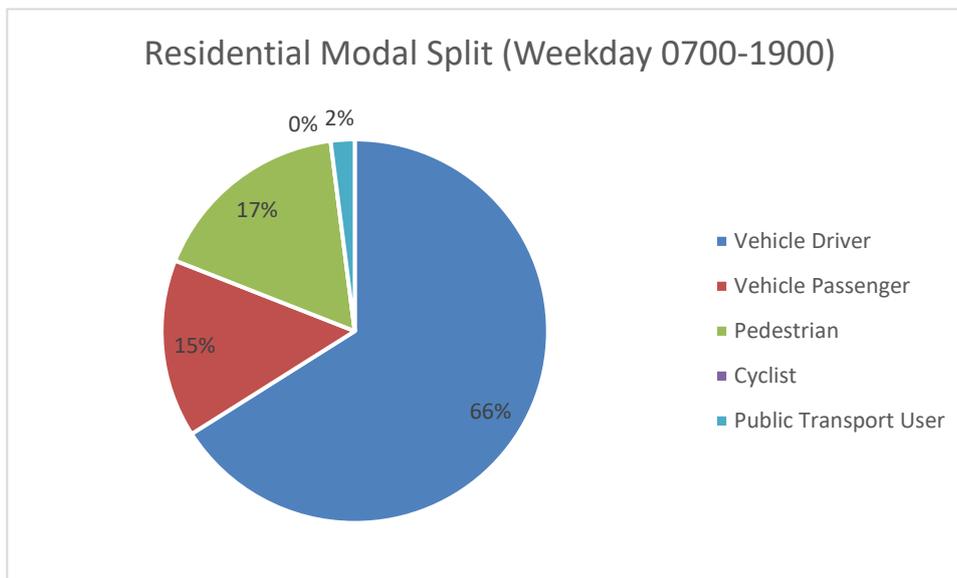
Table 5.1: Trip Generation (Total People) – 733 Residential Units

Time Period	Trip Rate (per unit)			Number of Trips Generated		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM Peak 0800 - 0900	0.075	0.575	0.65	55	421	476
PM Peak 1700 – 1800	0.475	0.475	0.95	348	348	696
12-Hour (0700-1900)	3.45	4.05	7.5	2529	2969	5498

5.2.5 **Table 5.1** demonstrates that a residential development of this scale is estimated to generate approximately 476 and 696 two-way person trips (all modes) in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between 0700-1900 there are anticipated to be 5498 person trips.

5.2.6 **Chart 5.1** shows the typical modal split for a development of this scale and location.

Chart 5.1: Daily Modal Split – Residential



5.2.7 As shown, the total person trips for a development of this nature would typically comprise of approximately 17% pedestrians, 2% public transport users, 0% cyclists. The remaining trips comprise of vehicle driver (66%) and vehicle passenger (15%).

5.2.8 However, it should also be noted that the above proportions are weighted in favour of private car travel, due to the methodology, which uses 67.5% trip rates as per the consented scheme. There is significant scope to influence a higher proportion of sustainable travel amongst prospective residents.

5.2.9 **Table 5.2** shows the vehicular trip generation for the site.

Table 5.2: Trip Generation (Vehicle Trips) – 733 Residential Units

Time Period	Trip Rate (per unit)			Number of Trips Generated		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM Peak 0800 - 0900	0.075	0.325	0.4	55	238	293
PM Peak 1700 – 1800	0.425	0.175	0.6	312	128	440
12-Hour (0700-1900)	2.425	2.5	4.925	1778	1833	3610

5.2.10 As shown, a residential development of this scale is estimated to generate approximately 293 and 440 two-way vehicular trips in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between 0700-1900 there are anticipated to be 3610 vehicular trips.

5.3 School Trip Generation & Modal Split

5.3.1 The multi-modal trip generation forecast for the proposed two schools has also been derived from the TRICS database.

5.3.2 In order to extract a representative sample of survey sites from the TRICS database, the following parameters were applied:

- All sites in Greater London & Ireland excluded;
- Excludes 'edge of town centre' and 'town centre' sites;
- 67.5% trips using the rank order function for daily trip rates (0700-1900).

5.3.3 The TRICS database does not contain data for special schools such as Heronsbridge and whilst Corun have been provided with some data regarding mini-bus and taxi trips, we do not have data for private travel, which can only be determined through a traffic survey.

5.3.4 As such, all school traffic forecasts are based on standard primary schools, which is considered robust and there are likely to be more private vehicular trips in place of contract buses.

5.3.5 **Table 5.3** show the total person trips associated with the primary school element of the site.

Table 5.3: Trip Generation (Total People) – 555 Pupils (Two primary schools)

Time Period	Trip Rate (per unit)			Number of Trips Generated		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM Peak 0800 - 0900	1.558	0.619	2.177	865	344	1208
Development PM Peak 1500 – 1600	0.381	1.082	1.463	211	601	812
Traditional Highway Network PM Peak 1700 – 1800	0	0.02	0.02	0	11	11
12-Hour (0700- 1900)	2.686	2.606	5.292	1491	1446	2937

5.3.6 **Table 5.3** demonstrates that school development of this scale is estimated to generate approximately 1208 and 11 two-way person trips (all modes) in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between the hours of 0700-1900 there are anticipated to be 2937 person trips. The development PM peak (i.e. end of the school day) generates 812 two-way person trips.

5.3.7 The National Travel Survey confirms that the proportion of primary school children walking to school has been broadly similar since 2002. In fact, the level in 2017 (51%) was the same as in 2002. Cycling is low at around 1%.

5.3.8 **Table 5.4** shows the vehicular trip generation for the site, as derived by TRICS.

Table 5.4: Trip Generation (Vehicle Trips) – 555 Pupils (Two primary schools)

Time Period	Trip Rate (per unit)			Number of Trips Generated		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM Peak 0800 - 0900	0.361	0.306	0.667	200	170	370
Development PM Peak 1500 – 1600	0.197	0.218	0.415	109	121	230
Traditional Highway Network PM Peak 1700 – 1800	0	0.02	0.02	0	11	11
12-Hour (0700-1900)	0.966	0.919	1.885	536	510	1046

5.3.9 As shown, the schools are estimated to generate approximately 370 and 11 two-way vehicular trips in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between 0700-1900 there are anticipated to be 1046 vehicular trips. The development PM peak (i.e. end of the school day) generates 230 two-way vehicle trips.

5.3.10 The full TRICS output is included herein as **Appendix C**.

5.4 Proposed Tennis Centre Traffic (Full Scale)

5.4.1 In order to extract a representative yet robust sample of survey sites from the TRICS database contained herein as **Appendix C**, the following parameters were applied:

- All sites in Greater London & Ireland were excluded;
- Average rates used due to small dataset;
- Sites limited to edge of town and suburban areas; and
- To provide a wider search, surveys in database were extended to 1991.

5.4.2 This section of the report focuses on the trip generation during the traditional AM and PM weekday peak hours.

5.4.3 **Table 5.5** shows the vehicular trip forecast for the proposed Tennis Academy development for a typical weekday.

Table 5.5: Proposed vehicular traffic Weekday (based on estimated 21 courts)

Time Period	Trip Rates (per court)			Trips		
	Arr.	Dep.	Total	Arr.	Dep.	Total
Weekday AM peak (0800-0900)	0.361	0.115	0.476	8	2	10
Weekday PM Peak (1700-1800)	1.291	1.013	2.304	27	21	48
12-Hour (0700-1900)	10.944	11.133	22.077	179	139	318

5.4.4 **Table 5.5** shows that the proposed development is predicted to generate just five and 10 and 48 two-way vehicular trips during the typical weekday AM and PM peak hours respectively, and 318 two-way vehicular trips daily (0700-1900).

5.4.5 Modal split data is not available within TRICS due to the limited sample number.

5.4.6 In addition to the above typical daily usage, the original application allowed for a maximum tennis centre capacity of 1500 visitors during occasional exhibition matches. Based on three attendees per car, this equates to 500 arrivals and departures. Whilst this is a substantial number of trips, it is expected that the vast majority of such events would be scheduled to avoid typical weekday peak periods and would not be a regular occurrence.

5.4.7 The above analysis has been based on the scale of the tennis centre with reserved matters approval. It is envisaged that the revised tennis centre proposal (which will come forward separately) will be more modest.

5.5 Proposed Commercial Use

5.5.1 The revised masterplan allows for a commercial hub intended to service the site and local areas. The vast majority of trips will therefore be by active modes of travel and will be internal trips. The impact of this element on the local highway network will therefore be negligible and has not been considered in any further detail.

5.6 Total Revised Development Vehicular Traffic

5.6.1 **Table 5.8** provides the sum of all elements of the revised development proposal.

Table 5.8: Trip Generation (Vehicle Trips) – All Elements

Time Period	Number of Trips Generated		
	Arr.	Dep.	Total
AM Peak 0800 - 0900	263	410	673
PM Peak 1700 – 1800	339	160	499
Daytime (0700-1900)	2493	2482	4974

5.6.2 As shown, the entire revised site proposal is estimated to generate approximately 673 and 499 two-way vehicular trips in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between the hours of 0700-1900 there are anticipated to be 4974 vehicular trips.

5.6.3 It should be noted that the above is not a forecast of the traffic impact on the local highway network, as it does not account for the high proportion of internalised trips between uses. Furthermore, the trip forecast should be treated as a highly robust assessment scenario, due to the high trip rates that have been used (67.5th percentile) to allow a more direct comparison with the original consent.

5.6.4 The impact of the development on the local highway network will be assessed in detail as part of the Transport Assessment that will accompany the scheme at the planning stage.

5.7 Comparison with Consented Scheme Traffic

- 5.7.1 The site benefits from outline consent for a large-scale sports development and detailed consent for a tennis centre, which could be delivered at any time.
- 5.7.2 This existing assessment work and planning history on the site allows for a trip generation comparison exercise to be undertaken between the consented schemes and the proposed development scenario, which will determine the likely development impact on the surrounding highway network.
- 5.7.3 The original consented scheme allowed for the following regular (i.e. non-stadium event) vehicular trips:

Table 5.9: Consented Scheme – Regular (Non-stadium) Vehicular Traffic

Phase	Item	AM		PM	
		Arrival	Departure	Arrival	Departure
Phase 1	Nature	4	3	8	18
	Hut 9	2	1	1	2
Phase 2a	Tennis Club	31	9	36	27
Phase 2b & 2c	Rugby & Football Training pitches	30	0	30	30
Phase 2d	Sports Centre	49	35	101	76
	Sports Centre office/exhibition	15	5	3	12
Phase 2e	Main stadium office/conference	80	24	14	64
Phase 3	Science Park	400	72	59	291
Total		611	149	252	520

- 5.7.4 **Table 5.9** shows that the original consented scheme allows for 760 AM peak hour vehicular trips and 771 PM peak hour vehicular trips. Stadium events are excluded from these figures, and whilst some events could theoretically impact on weekday peak hours, it is considered that such events would be infrequent and would predominantly occur on weekends.
- 5.7.5 **Table 5.10** shows a comparison between the consented and proposed site use during the peak hours.

Table 5.10: Trip Generation (Vehicle Trips) – Consented vs Proposed

Time Period	Consented Scheme			Proposed Scheme			Difference		
	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
AM Peak 0800 - 0900	611	149	760	263	410	673	-348	261	-87
PM Peak 1700 – 1800	252	520	771	339	160	499	87	-360	-272

- 5.7.6 As shown in **Table 5.10**, the revised scheme will result in 87 fewer weekday AM peak hour vehicular trips and 272 fewer weekday PM peak hour vehicular trips than the original consent.

6 IMPACT ON HIGHWAY NETWORK

6.1 Introduction

6.1.1 The consented scheme subjected the following junctions to detailed capacity analysis:

- Broadlands roundabout;
- Ewenny roundabout;
- Ewenny Road / Technology Drive T-Junction;
- Picton Court roundabout;
- Waterton Cross roundabout;
- Coychurch roundabout; and
- Bocam Park roundabout.

6.1.2 The results of the analysis narrowed the area of focus to the following three junctions, all of which were shown to be operating at capacity:

- Broadlands Roundabout
- Ewenny Roundabout
- Picton Court Roundabout

6.1.3 It is crucial to note that since the consented scheme analysis, traffic flows may have changed and will need to be resurveyed as part of a future application, especially given the Covid-19 situation which may result in long lasting changing to traffic patterns. Even so, the following section provides an initial overview of the likely highway network capacity implications of the revised scheme.

6.1.4 It is commonly accepted throughout the UK that many junctions will exceed operating capacity during peak hours but that this is not necessarily a problem with regard to the wider aim towards modal shift. The Transport Assessment for the site will therefore be expected to prioritise improvements to active modes of travel and public transport infrastructure over car travel. However, it is accepted that junction mitigation may be required to improve motor vehicle capacity in some instances.

6.2 Broadlands Roundabout

6.2.1 The Transport Assessment for the consented application showed that without mitigation and with the full consented scheme in place, the B4267 and A48 east approaches were over operating capacity in the assessment year of 2022 during both the weekday AM and PM peak hours. The A48 west approach was within capacity during both AM and PM peak periods, but only marginally so in the AM peak.

6.2.2 The revised development traffic reduces AM flows by 87 vehicles. However, with consideration of background traffic growth, the conclusions are likely to remain broadly similar.

6.2.3 The consented scheme reviewed three mitigation options, as follows:

1. Option 1 - Alterations to entry arm geometry to provide a nil detriment to the junction.
2. Option 2- Introduction of a dedicated left-turn lane from the northern (B4622) approach and entry modifications to the eastern (A48) approach. The acquisition of third party land beyond the existing highway boundary would be required to accommodate the dedicated left-turn lane.
3. Option 3 - Construction of an enlarged roundabout incorporating a dedicated left-turn lane from the northern (B4622) approach. Utilising land in the applicant's control to the south of the A48; an enlarged roundabout could be accommodated which would both mitigate the existing capacity issues and provide additional capacity sufficient to accommodate the committed and proposed developments.

6.2.4 Of the above options, all were able to provide nil detriment or better.

6.2.5 The reduction in site traffic at the junction compared to the consented scheme indicates that Option 1 may yield suitable mitigation which is able to offset the development impact and is considered to be the favoured solution to the development of the site. This will be assessed in detail as part of the Transport Assessment.

6.3 Ewenny Roundabout (Signalised)

6.3.1 The Transport Assessment for the consented application showed that without mitigation and with the full consented scheme in place, the junction was significantly above capacity on numerous approaches.

6.3.2 The revised development traffic, despite the reduction, is unlikely to alter these conclusions and significant mitigation will almost certainly be required.

6.3.3 The consented scheme reviewed three mitigation options, all based on converting the junction to a signalised crossroads arrangement.

6.3.4 All options resulted in a saturated, or near saturated, junction, which may remain so despite the revised development traffic. However, the revised development traffic flows are lower than the consented scheme so are likely to result in an improved outlook. This will be assessed in detail as part of the Transport Assessment.

6.4 Picton Court Roundabout

6.4.1 The original Transport Assessment was unable to establish a mitigation scheme which achieved nil detriment without third party land.

6.4.2 However, increased roundabout entry widths to 7.3 metres and flare lengths to at least 10 metres on the A48 and Picton Court approaches offset much of the development impact. An upgraded roundabout junction is anticipated to be the most likely outcome of a future mitigation proposal.

6.4.3 However, conversion to a signalised crossroad arrangement is also an option which has been shown to operate marginally above capacity but with the benefit of including controlled crossing stages.

6.4.4 As identified in the policy section, pedestrian improvements should be prioritised in accordance with local and national guidance, as well as the Active Travel (Wales) Act 2013 so this will need to be balanced as part of the Transport Assessment.

6.5 A48 Site Access

- 6.5.1 The proposed site access was shown to be sufficient for a +15 design year as part of the consented scheme, albeit with one traffic stream (A48 East to West) approaching capacity in the PM peak hour.
- 6.5.2 The revised development traffic forecasts result in a reduction in AM and PM peak traffic and so the operation of the junction may well be shown in future assessments to be within capacity.
- 6.5.3 However, further traffic counts and analysis will be required to confirm this, due to the effect of changing background traffic since the original assessment.

7 SUSTAINABLE TRAVEL

7.1 Active Travel

- 7.1.1 An Active Travel Assessment has been undertaken by Corun for some of the key routes in the vicinity of the site using the Welsh Government Active Travel (Wales) Act 2013 Design Guidance Walking and Cycling Route Audit Tools (**Appendix D**).
- 7.1.2 The report (reference 19-00637/TN01 – April 2020) identifies a number of deficiencies which the site could help rectify to encourage active modes of travel amongst existing and future highway network users. This will assist with the development of the Council's integrated transport network.

7.2 Public Transport

- 7.2.1 As part of the planning process, the site will be able to deliver new bus stops in line with design and distance criteria and support new or revised bus services to encourage use. This will be undertaken at the planning application stage. Bus stops should be located to ensure that all extremities of the site are within 400m.

7.3 Travel Plan

- 7.3.1 At the planning application stage, a comprehensive Travel Plan will be required to cover all uses at the site to reduce dependency on private vehicle travel demand. This will be achieved by providing innovative and effective initiatives and measures to encourage sustainable travel usage amongst future site users.
- 7.3.2 The Travel Plan will set out the process for the collation of base data and for appropriate modal share targets to be set. Modal share targets are measurable goals that are set to assess whether or not the objectives of the plan are being achieved.
- 7.3.3 Modal share targets are usually set once baseline figures have been established for resident travel patterns. However, as this data is absent at present, the national travel survey data has been explored (**Table 7.1** applies) to provide a reference point of current modal split data for Great Britain (GB), and to assist in providing an appropriate interim target.

Table 7.1 – Great Britain - Trip by purpose and main mode

Purpose	Walk	Bicycle	Car / van driver	Car / van passenger	Motorcycle	Other private transport ¹	Local bus	London Underground	Surface Rail ²	Other public transport ³
Commuting	11%	4%	56%	9%	1%	0%	8%	3%	7%	1%
Business	6%	1%	70%	6%	0%	1%	5%	4%	6%	1%
Education / escort education	38%	1%	22%	24%	0%	2%	10%	0%	1%	1%
Shopping	21%	1%	46%	21%	0%	0%	9%	0%	1%	1%
Other escort	11%	1%	56%	29%	0%	0%	3%	0%	0%	1%
Personal business	20%	1%	43%	24%	0%	1%	7%	1%	1%	2%
Leisure ⁴	14%	2%	38%	34%	0%	1%	5%	1%	2%	2%
Other including just walk	99%	0%	1%	0%	0%	0%	0%	0%	0%	0%
All purposes	22%	2%	42%	22%	0%	1%	7%	1%	2%	1%

Source: National Travel Survey 2015.

¹ Mostly private hire bus (including school buses). ² Surface rail and London Underground. ³ Non-local bus, taxi/minicab and other public transport (air, ferries, light rail and trams). ⁴ Visit friends at home and elsewhere, entertainment, sport, holiday and day trip.

7.3.4 **Table 7.1** demonstrates that car driver trips dominate all trip purpose categories (with the exception of 'other including just walk') with an average share of 42% of all trips. Walking and car passenger trips each represent 22% of the total, followed by public transport (11%) and bicycle (2%).

7.3.5 Reference is also made to the multi-modal trip assessment provided in Chapter 4.

7.3.6 Smarter Choices - Changing the way we travel report (2004) states that basic Travel Plans can expect to achieve a 6-10% reduction in car use whilst Travel Plans with parking management can achieve reductions of up to 20-25%.

7.3.7 Whilst it is difficult to set targets prior to the availability of baseline data, the aforementioned National Travel Survey and TRICS data indicate that the following targets are sufficiently ambitious yet realistic:

Residential

- *At least 20% of daily site trips by foot;*
- *At least 10% of daily site trips by bicycle; and*
- *At least 5% of daily site trips by bus.*

Education

- *At least 50% of daily site trips by foot;*
- *At least 10% of daily site trips by bicycle.*

7.3.8 By achieving the above targets, the site will obtain a higher proportion of sustainable travel trips than similar sites in the TRICS database and would therefore be deemed a success.

- 7.3.9 To help meet the above targets, as well as infrastructure improvements, the following non-exhaustive list of measures will be considered in the Travel Plan (please note that infrastructure improvements, such as improvements to the pedestrian environment will be considered within the Transport Assessment):

General

- Appointment of a Travel Plan Co-ordinator. The role of the TPC involves overseeing the day-to-day operation of the Travel Plan by liaising with staff and managing the initiatives as well as setting, monitoring and reviewing modal share targets.
- A travel notice board located in a prominent location, detailing public transport services in the vicinity of the site. The TPC will ensure that timetables for local bus routes are kept up-to-date at all times. The notice board could also include information on preferred pedestrian and cycle routes within the vicinity of the site as well as details of car sharing websites;
- Promotional events to reward travel to via sustainable modes of transport;
- Dedicated car-share only parking bays.

Public Transport

- Resident 'welcome pack' to promote sustainable travel choices;
- The offer of free or discount travel for a trial period on local bus services to promote familiarity;
- The provision of interest free loans to staff for public transport season tickets;
- Where applicable, car-sharing staff should be offered a 'guaranteed' ride home (e.g. taxi) should their travel arrangement fall through unexpectedly. A guaranteed ride home would give staff reassurance to car share, or use public transport.

Cycling

- Resident 'welcome pack' to promote sustainable travel choices;
- The formation of a Bicycle User Group (BUG) to assist new cyclists by pairing them with more experienced cyclists;
- Convenient and secure cycle parking;
- Cycle training;
- 'Bike Doctor' sessions;
- A cycle discount voucher.

Walking

- Resident 'welcome pack' to promote sustainable travel choices;
- Changing/locker facilities where applicable;
- Route maps;

- Provision of umbrellas/rainproof clothing;
- Personal alarms/self-defence classes.

8 SUMMARY AND CONCLUSION

8.1 Summary

- 8.1.1 This Transport Strategic Appraisal has been produced by Corun Associates Ltd on behalf of HD Ltd, the applicant, to examine the highway and transportation issues associated with a potential revised development schedule at Island Farm, between the A48 and Ewenny Road, Bridgend.
- 8.1.2 The original proposal comprised a number of sports facilities including a major stadium, tennis centre and office space. The original development has outline planning approval (P/08/1114/OUT) and the tennis centre has detailed approval.
- 8.1.3 The masterplan shows that the site can accommodate circa 733 dwellings (40dph), two schools, a commercial/community area to serve the site and a tennis centre.
- 8.1.4 Covid-19 imposed restrictions on the collection of new traffic data to support this assessment; new data could not be collected due to a significant reduction in baseline traffic flows caused by lockdown, travel restrictions and home working.
- 8.1.5 As the site under consideration already benefits from outline consent for a large-scale sports development and detailed consent for a tennis centre, a trip generation comparison exercise was made between the consented schemes and the proposed development scenario.
- 8.1.6 The comparison of vehicular traffic for the consented and proposed schemes has shown that the revised scheme will result in 87 fewer weekday AM peak hour vehicular trips and 271 fewer weekday PM peak hour vehicular trips.
- 8.1.7 The site is highly accessible by sustainable modes of transport, which will be enhanced as part of the proposal. It is therefore concluded that the revised development proposal will be fully compliant with transport planning policy at local and national level.
- 8.1.8 Notwithstanding the existing sustainable credentials, pedestrian and cycle access will be enhanced in line with the requirement of Active Travel (Wales) Act 2013 and Bridgend CBC Local Transport Plan 2015-2030.
- 8.1.9 Parking will need to be provided in line with Bridgend County Borough Council's adopted parking standards.
- 8.1.10 Despite the above, the development will be expected to contribute significantly towards mitigation measures at Broadlands Roundabout, Ewenny Roundabout and Picton Court Roundabout. Due to the time that has elapsed since the consented scheme, new traffic flow counts and capacity analysis will be required to determine the precise mitigation requirements.
- 8.1.11 Subject to further detailed capacity analysis with new neutral traffic data, it is anticipated that the following mitigation works will be needed:
- Broadlands Roundabout - Alterations to entry arm geometry to provide nil detriment;
 - Ewenny Roundabout (signalised) – Conversion to a signalised crossroads arrangement; and

- Picton Court Roundabout – Geometric improvements or signalised crossroads with controlled crossing stages.

8.1.12 A new A48 access will also be constructed to serve the site with a +15 design-year capacity.

8.1.13 The site will also be expected to contribute towards public transport improvements.

8.2 Conclusion

8.2.1 At this stage, there are no obvious highway or transportation reasons why the revised development proposal would not be able to secure planning consent in the near future.

APPENDIX A

Indicative Site Masterplan

2.5 MASTERPLAN FRAMEWORK

The adjacent Masterplan Framework is the result of the sites opportunities and constraints and is reflective of the development concept. As such, the framework is robust and reflects the characteristics and nature of the site. It is bespoke to the site.

The key principles of the development framework are:

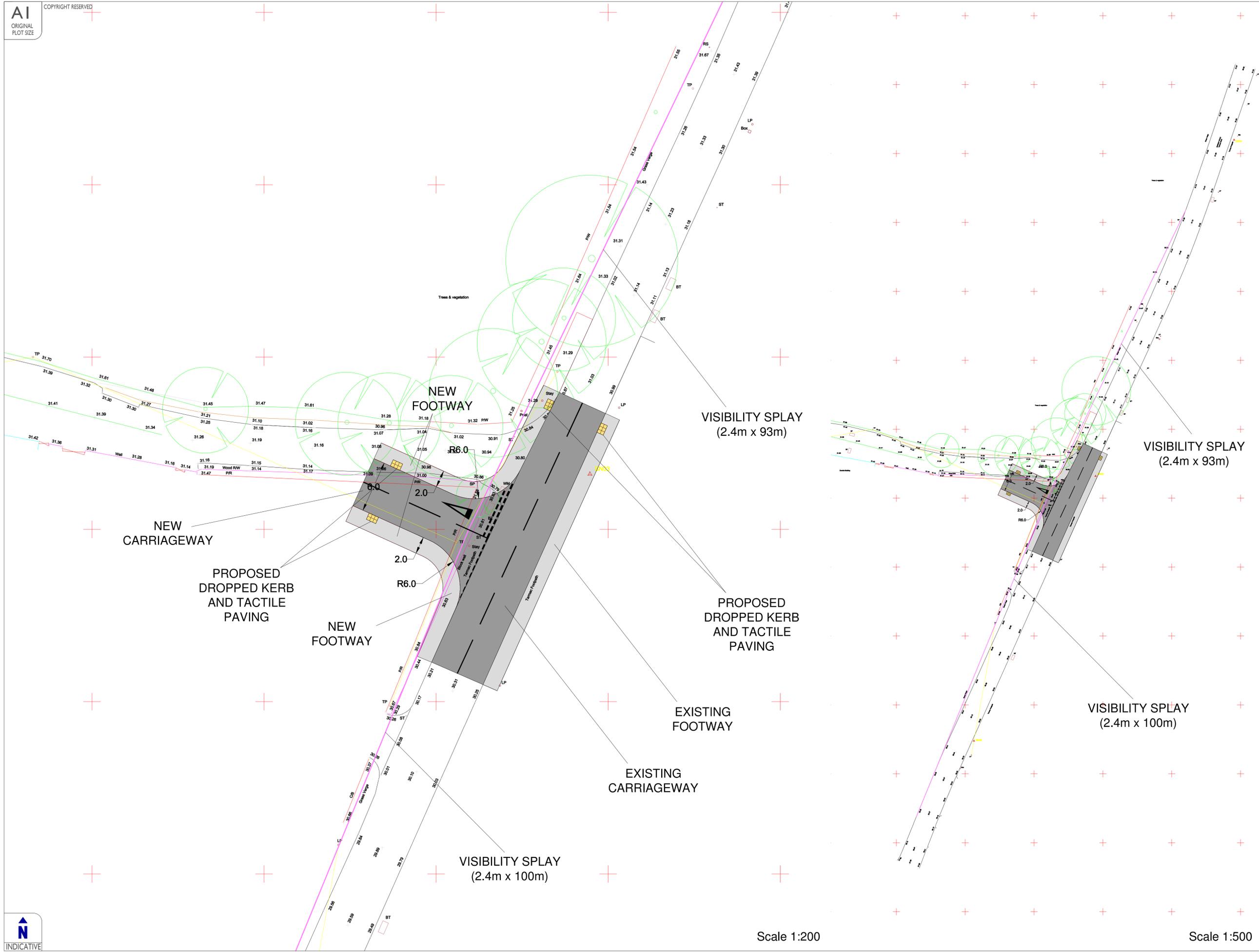
- 1 Primary vehicle access off the A48
- 2 Retention and enhancement of the SINC
- 3 Retention and enhancement of the existing hedgerow network: introduction of swales to create blue infrastructure
- 4 Introduction of attenuation basins linked to new swale network
- 5 New Heronsbridge school site adjacent to existing business park: opportunity for dedicated access through business park
- 6 New tennis centre in location previously approved: Opportunity for dedicated access off Eweny Road to the east
- 7 New community hub located within easy access of proposed schools, tennis centre and existing business park
- 8 New primary school close to site access
- 9 Existing sink hole areas retained as key landscape features within the development



APPENDIX B

Proposed Ewenny Road Junction Improvement

NOTES:
1. All dimensions are in millimeters unless otherwise stated.



Scale 1:200

Scale 1:500

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A	002	Plan Arrangement to Form	JC	JC
Rev	Date	Drawn	Drawn	Checked



CLIENT: HD LTD

PROJECT: ISLAND FARM, BRIDGEND
TENNIS CENTRE
PHASE I

TITLE: PROPOSED ACCESS
ARRANGEMENT
ON TOPOGRAPHICAL
SURVEY

STATUS: PRELIMINARY

SCALE:	DATE:	DRAWN:	CHECKED:
AS	SEPT'19	MA	MA

JOB NO:	DRAWING NO:	REVISION:
19-00637	PL03	A



APPENDIX C

TRICS Output

Calculation Reference: AUDIT-751101-191128-1100

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

05 EAST MIDLANDS
 LN LINCOLNSHIRE 1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 5000 to 5000 (units: sqm)
 Range Selected by User: 975 to 185000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 08/11/18

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

Selected survey days:

Thursday 1 days

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

Selected survey types:

Manual count 1 days
 Directional ATC Count 0 days

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

Selected Locations:

Edge of Town 1

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

Selected Location Sub Categories:

Industrial Zone 1

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

Secondary Filtering selection:

Use Class:

B1 1 days

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

Population within 1 mile:

15,001 to 20,000 1 days

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

Secondary Filtering selection (Cont.):

Population within 5 miles:

125,001 to 250,000

1 days

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

Car ownership within 5 miles:

0.6 to 1.0

1 days

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

Travel Plan:

No

1 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

1 days

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

LIST OF SITES relevant to selection parameters

1 LN-02-B-02 BUSINESS PARK LINCOLNSHIRE
 CARDINAL CLOSE
 LINCOLN

Edge of Town
 Industrial Zone
 Total Gross floor area: 5000 sqm
Survey date: THURSDAY 25/06/15 Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BT-02-B-01	67.5% only
CA-02-B-03	67.5% only
CF-02-B-04	67.5% only
CF-02-B-06	67.5% only
CF-02-B-07	67.5% only
DV-02-B-01	67.5% only
EX-02-B-01	67.5% only
EX-02-B-02	67.5% only
FA-02-B-02	67.5% only
HC-02-B-02	67.5% only
HO-02-B-02	67.5% only
HO-02-B-04	67.5% only
ST-02-B-04	67.5% only
WO-02-B-02	67.5% only

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.540	1	5000	0.140	1	5000	0.680
08:00 - 09:00	1	5000	1.240	1	5000	0.500	1	5000	1.740
09:00 - 10:00	1	5000	0.960	1	5000	0.760	1	5000	1.720
10:00 - 11:00	1	5000	0.660	1	5000	0.620	1	5000	1.280
11:00 - 12:00	1	5000	0.740	1	5000	0.760	1	5000	1.500
12:00 - 13:00	1	5000	0.620	1	5000	0.580	1	5000	1.200
13:00 - 14:00	1	5000	0.680	1	5000	0.660	1	5000	1.340
14:00 - 15:00	1	5000	0.500	1	5000	0.620	1	5000	1.120
15:00 - 16:00	1	5000	0.460	1	5000	0.460	1	5000	0.920
16:00 - 17:00	1	5000	0.440	1	5000	0.900	1	5000	1.340
17:00 - 18:00	1	5000	0.200	1	5000	0.760	1	5000	0.960
18:00 - 19:00	1	5000	0.040	1	5000	0.160	1	5000	0.200
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			7.080			6.920			14.000

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

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

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Parameter summary

Trip rate parameter range selected:	5000 - 5000 (units: sqm)
Survey date date range:	01/01/11 - 08/11/18
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	14

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

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00	1	5000	0.020	1	5000	0.000	1	5000	0.020
09:00 - 10:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
10:00 - 11:00	1	5000	0.020	1	5000	0.020	1	5000	0.040
11:00 - 12:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
12:00 - 13:00	1	5000	0.000	1	5000	0.020	1	5000	0.020
13:00 - 14:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
14:00 - 15:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
15:00 - 16:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
16:00 - 17:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
17:00 - 18:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
18:00 - 19:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.040			0.040			0.080

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.040	1	5000	0.020	1	5000	0.060
08:00 - 09:00	1	5000	0.040	1	5000	0.060	1	5000	0.100
09:00 - 10:00	1	5000	0.120	1	5000	0.080	1	5000	0.200
10:00 - 11:00	1	5000	0.000	1	5000	0.060	1	5000	0.060
11:00 - 12:00	1	5000	0.020	1	5000	0.020	1	5000	0.040
12:00 - 13:00	1	5000	0.040	1	5000	0.040	1	5000	0.080
13:00 - 14:00	1	5000	0.060	1	5000	0.060	1	5000	0.120
14:00 - 15:00	1	5000	0.000	1	5000	0.020	1	5000	0.020
15:00 - 16:00	1	5000	0.100	1	5000	0.080	1	5000	0.180
16:00 - 17:00	1	5000	0.040	1	5000	0.040	1	5000	0.080
17:00 - 18:00	1	5000	0.000	1	5000	0.020	1	5000	0.020
18:00 - 19:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.460			0.500			0.960

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.040	1	5000	0.000	1	5000	0.040
08:00 - 09:00	1	5000	0.120	1	5000	0.000	1	5000	0.120
09:00 - 10:00	1	5000	0.040	1	5000	0.000	1	5000	0.040
10:00 - 11:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
11:00 - 12:00	1	5000	0.020	1	5000	0.020	1	5000	0.040
12:00 - 13:00	1	5000	0.000	1	5000	0.020	1	5000	0.020
13:00 - 14:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
14:00 - 15:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
15:00 - 16:00	1	5000	0.000	1	5000	0.040	1	5000	0.040
16:00 - 17:00	1	5000	0.000	1	5000	0.080	1	5000	0.080
17:00 - 18:00	1	5000	0.000	1	5000	0.060	1	5000	0.060
18:00 - 19:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.220			0.220			0.440

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.580	1	5000	0.160	1	5000	0.740
08:00 - 09:00	1	5000	1.320	1	5000	0.560	1	5000	1.880
09:00 - 10:00	1	5000	1.020	1	5000	0.800	1	5000	1.820
10:00 - 11:00	1	5000	0.720	1	5000	0.660	1	5000	1.380
11:00 - 12:00	1	5000	0.920	1	5000	0.940	1	5000	1.860
12:00 - 13:00	1	5000	0.740	1	5000	0.720	1	5000	1.460
13:00 - 14:00	1	5000	0.820	1	5000	0.740	1	5000	1.560
14:00 - 15:00	1	5000	0.580	1	5000	0.740	1	5000	1.320
15:00 - 16:00	1	5000	0.560	1	5000	0.460	1	5000	1.020
16:00 - 17:00	1	5000	0.480	1	5000	0.940	1	5000	1.420
17:00 - 18:00	1	5000	0.200	1	5000	0.800	1	5000	1.000
18:00 - 19:00	1	5000	0.080	1	5000	0.180	1	5000	0.260
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			8.020			7.700			15.720

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.020	1	5000	0.020	1	5000	0.040
08:00 - 09:00	1	5000	0.160	1	5000	0.040	1	5000	0.200
09:00 - 10:00	1	5000	0.020	1	5000	0.040	1	5000	0.060
10:00 - 11:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
11:00 - 12:00	1	5000	0.020	1	5000	0.080	1	5000	0.100
12:00 - 13:00	1	5000	0.060	1	5000	0.060	1	5000	0.120
13:00 - 14:00	1	5000	0.120	1	5000	0.080	1	5000	0.200
14:00 - 15:00	1	5000	0.040	1	5000	0.040	1	5000	0.080
15:00 - 16:00	1	5000	0.020	1	5000	0.060	1	5000	0.080
16:00 - 17:00	1	5000	0.040	1	5000	0.060	1	5000	0.100
17:00 - 18:00	1	5000	0.020	1	5000	0.040	1	5000	0.060
18:00 - 19:00	1	5000	0.000	1	5000	0.000	1	5000	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.520			0.520			1.040

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.640	1	5000	0.180	1	5000	0.820
08:00 - 09:00	1	5000	1.600	1	5000	0.600	1	5000	2.200
09:00 - 10:00	1	5000	1.080	1	5000	0.840	1	5000	1.920
10:00 - 11:00	1	5000	0.720	1	5000	0.660	1	5000	1.380
11:00 - 12:00	1	5000	0.960	1	5000	1.040	1	5000	2.000
12:00 - 13:00	1	5000	0.800	1	5000	0.800	1	5000	1.600
13:00 - 14:00	1	5000	0.940	1	5000	0.820	1	5000	1.760
14:00 - 15:00	1	5000	0.620	1	5000	0.780	1	5000	1.400
15:00 - 16:00	1	5000	0.580	1	5000	0.560	1	5000	1.140
16:00 - 17:00	1	5000	0.520	1	5000	1.080	1	5000	1.600
17:00 - 18:00	1	5000	0.220	1	5000	0.900	1	5000	1.120
18:00 - 19:00	1	5000	0.080	1	5000	0.180	1	5000	0.260
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			8.760			8.440			17.200

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL CARS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.340	1	5000	0.040	1	5000	0.380
08:00 - 09:00	1	5000	0.860	1	5000	0.080	1	5000	0.940
09:00 - 10:00	1	5000	0.640	1	5000	0.440	1	5000	1.080
10:00 - 11:00	1	5000	0.300	1	5000	0.200	1	5000	0.500
11:00 - 12:00	1	5000	0.300	1	5000	0.380	1	5000	0.680
12:00 - 13:00	1	5000	0.320	1	5000	0.300	1	5000	0.620
13:00 - 14:00	1	5000	0.420	1	5000	0.320	1	5000	0.740
14:00 - 15:00	1	5000	0.200	1	5000	0.340	1	5000	0.540
15:00 - 16:00	1	5000	0.220	1	5000	0.300	1	5000	0.520
16:00 - 17:00	1	5000	0.200	1	5000	0.620	1	5000	0.820
17:00 - 18:00	1	5000	0.140	1	5000	0.560	1	5000	0.700
18:00 - 19:00	1	5000	0.000	1	5000	0.120	1	5000	0.120
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.940			3.700			7.640

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.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

MULTI-MODAL LGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	5000	0.160	1	5000	0.080	1	5000	0.240
08:00 - 09:00	1	5000	0.320	1	5000	0.340	1	5000	0.660
09:00 - 10:00	1	5000	0.160	1	5000	0.240	1	5000	0.400
10:00 - 11:00	1	5000	0.340	1	5000	0.320	1	5000	0.660
11:00 - 12:00	1	5000	0.400	1	5000	0.360	1	5000	0.760
12:00 - 13:00	1	5000	0.260	1	5000	0.220	1	5000	0.480
13:00 - 14:00	1	5000	0.200	1	5000	0.260	1	5000	0.460
14:00 - 15:00	1	5000	0.300	1	5000	0.260	1	5000	0.560
15:00 - 16:00	1	5000	0.140	1	5000	0.080	1	5000	0.220
16:00 - 17:00	1	5000	0.200	1	5000	0.240	1	5000	0.440
17:00 - 18:00	1	5000	0.060	1	5000	0.180	1	5000	0.240
18:00 - 19:00	1	5000	0.040	1	5000	0.040	1	5000	0.080
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.580			2.620			5.200

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.

Calculation Reference: AUDIT-751101-191126-1141

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

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: 40 to 40 (units:)
 Range Selected by User: 6 to 918 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 08/07/19

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:

Wednesday 1 days

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

Selected survey types:

Manual count 1 days
 Directional ATC Count 0 days

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

Selected Locations:

Edge of Town 1

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

Selected Location Sub Categories:

Residential Zone 1

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 1 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:

15,001 to 20,000 1 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*Population within 5 miles:

125,001 to 250,000 1 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*Car ownership within 5 miles:

1.1 to 1.5 1 days

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

Yes 1 days

*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 1 days

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

LIST OF SITES relevant to selection parameters

1 HC-03-A-22 MIXED HOUSES HAMPSHIRE
 BOW LAKE GARDENS
 NEAR EASTLEIGH
 BISHOPSTOKE
 Edge of Town
 Residential Zone
 Total Number of dwellings: 40
 Survey date: WEDNESDAY 31/10/18 Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CA-03-A-04	67.5% only
CA-03-A-05	67.5% only
CH-03-A-08	67.5% only
CH-03-A-09	67.5% only
CH-03-A-10	67.5% only
CH-03-A-11	67.5% only
DC-03-A-08	67.5% only
DH-03-A-01	67.5% only
DH-03-A-02	67.5% only
DH-03-A-03	67.5% only
DS-03-A-02	67.5% only
DV-03-A-01	67.5% only
DV-03-A-02	67.5% only
DV-03-A-03	67.5% only
ES-03-A-03	67.5% only
ES-03-A-04	67.5% only
GM-03-A-10	67.5% only
HC-03-A-20	67.5% only
HC-03-A-21	67.5% only
HF-03-A-03	67.5% only
KC-03-A-03	67.5% only
KC-03-A-04	67.5% only
KC-03-A-05	67.5% only
KC-03-A-06	67.5% only
KC-03-A-07	67.5% only
KC-03-A-08	67.5% only
LE-03-A-02	67.5% only
LN-03-A-03	67.5% only
MS-03-A-03	67.5% only
NE-03-A-02	67.5% only
NF-03-A-01	67.5% only
NF-03-A-02	67.5% only
NF-03-A-03	67.5% only
NY-03-A-06	67.5% only
NY-03-A-08	67.5% only
NY-03-A-09	67.5% only
NY-03-A-10	67.5% only
NY-03-A-11	67.5% only
NY-03-A-13	67.5% only
PS-03-A-02	67.5% only
SC-03-A-04	67.5% only
SF-03-A-04	67.5% only
SF-03-A-05	67.5% only
SF-03-A-06	67.5% only
SF-03-A-07	67.5% only
SH-03-A-05	67.5% only
SH-03-A-06	67.5% only
SM-03-A-01	67.5% only
SM-03-A-02	67.5% only
SM-03-A-03	67.5% only
ST-03-A-07	67.5% only
SY-03-A-01	67.5% only
TW-03-A-02	67.5% only
VG-03-A-01	67.5% only
WK-03-A-01	67.5% only
WK-03-A-02	67.5% only
WL-03-A-02	67.5% only
WM-03-A-04	67.5% only
WS-03-A-07	67.5% only
WS-03-A-08	67.5% only

MANUALLY DESELECTED SITES (Cont.)

Site Ref	Reason for Deselection
WS-03-A-09	67.5% only
WS-03-A-10	67.5% only
WS-03-A-11	67.5% only

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	1	40	0.100	1	40	0.500	1	40	0.600
08:00 - 09:00	1	40	0.075	1	40	0.325	1	40	0.400
09:00 - 10:00	1	40	0.225	1	40	0.200	1	40	0.425
10:00 - 11:00	1	40	0.075	1	40	0.125	1	40	0.200
11:00 - 12:00	1	40	0.125	1	40	0.325	1	40	0.450
12:00 - 13:00	1	40	0.075	1	40	0.100	1	40	0.175
13:00 - 14:00	1	40	0.175	1	40	0.150	1	40	0.325
14:00 - 15:00	1	40	0.125	1	40	0.150	1	40	0.275
15:00 - 16:00	1	40	0.250	1	40	0.200	1	40	0.450
16:00 - 17:00	1	40	0.250	1	40	0.100	1	40	0.350
17:00 - 18:00	1	40	0.425	1	40	0.175	1	40	0.600
18:00 - 19:00	1	40	0.525	1	40	0.150	1	40	0.675
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.425			2.500			4.925

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

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

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Parameter summary

Trip rate parameter range selected:	40 - 40 (units:)
Survey date range:	01/01/11 - 08/07/19
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	7
Surveys manually removed from selection:	63

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 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	1	40	0.000	1	40	0.000	1	40	0.000
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.000	1	40	0.000	1	40	0.000
10:00 - 11:00	1	40	0.000	1	40	0.000	1	40	0.000
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.000	1	40	0.000	1	40	0.000
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.025	1	40	0.025	1	40	0.050
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.025			0.025			0.050

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.

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	1	40	0.025	1	40	0.025	1	40	0.050
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.025	1	40	0.025	1	40	0.050
10:00 - 11:00	1	40	0.000	1	40	0.000	1	40	0.000
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.000	1	40	0.000	1	40	0.000
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.000	1	40	0.000	1	40	0.000
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.050			0.050			0.100

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.

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	1	40	0.025	1	40	0.025	1	40	0.050
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.000	1	40	0.000	1	40	0.000
10:00 - 11:00	1	40	0.000	1	40	0.000	1	40	0.000
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.025	1	40	0.025	1	40	0.050
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.000	1	40	0.000	1	40	0.000
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.050			0.050			0.100

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.

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	1	40	0.075	1	40	0.550	1	40	0.625
08:00 - 09:00	1	40	0.075	1	40	0.500	1	40	0.575
09:00 - 10:00	1	40	0.250	1	40	0.300	1	40	0.550
10:00 - 11:00	1	40	0.075	1	40	0.150	1	40	0.225
11:00 - 12:00	1	40	0.175	1	40	0.375	1	40	0.550
12:00 - 13:00	1	40	0.100	1	40	0.150	1	40	0.250
13:00 - 14:00	1	40	0.200	1	40	0.150	1	40	0.350
14:00 - 15:00	1	40	0.175	1	40	0.175	1	40	0.350
15:00 - 16:00	1	40	0.275	1	40	0.275	1	40	0.550
16:00 - 17:00	1	40	0.275	1	40	0.150	1	40	0.425
17:00 - 18:00	1	40	0.450	1	40	0.200	1	40	0.650
18:00 - 19:00	1	40	0.650	1	40	0.300	1	40	0.950
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.775			3.275			6.050

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.*

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	1	40	0.025	1	40	0.050	1	40	0.075
08:00 - 09:00	1	40	0.000	1	40	0.075	1	40	0.075
09:00 - 10:00	1	40	0.025	1	40	0.050	1	40	0.075
10:00 - 11:00	1	40	0.025	1	40	0.025	1	40	0.050
11:00 - 12:00	1	40	0.025	1	40	0.025	1	40	0.050
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.025	1	40	0.025	1	40	0.050
14:00 - 15:00	1	40	0.050	1	40	0.050	1	40	0.100
15:00 - 16:00	1	40	0.075	1	40	0.000	1	40	0.075
16:00 - 17:00	1	40	0.100	1	40	0.025	1	40	0.125
17:00 - 18:00	1	40	0.000	1	40	0.275	1	40	0.275
18:00 - 19:00	1	40	0.250	1	40	0.075	1	40	0.325
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.600			0.675			1.275

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.

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	1	40	0.000	1	40	0.025	1	40	0.025
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.000	1	40	0.000	1	40	0.000
10:00 - 11:00	1	40	0.000	1	40	0.000	1	40	0.000
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.025	1	40	0.000	1	40	0.025
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.000	1	40	0.000	1	40	0.000
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.025	1	40	0.000	1	40	0.025
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.050			0.025			0.075

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.

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	1	40	0.000	1	40	0.000	1	40	0.000
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.000	1	40	0.000	1	40	0.000
10:00 - 11:00	1	40	0.000	1	40	0.025	1	40	0.025
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.000	1	40	0.000	1	40	0.000
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.000	1	40	0.000	1	40	0.000
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.025			0.025

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.*

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	1	40	0.000	1	40	0.050	1	40	0.050
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.000	1	40	0.000	1	40	0.000
10:00 - 11:00	1	40	0.000	1	40	0.000	1	40	0.000
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.025	1	40	0.000	1	40	0.025
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.000	1	40	0.000	1	40	0.000
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.025			0.050			0.075

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.

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	1	40	0.000	1	40	0.075	1	40	0.075
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.000	1	40	0.000	1	40	0.000
10:00 - 11:00	1	40	0.000	1	40	0.025	1	40	0.025
11:00 - 12:00	1	40	0.000	1	40	0.000	1	40	0.000
12:00 - 13:00	1	40	0.025	1	40	0.000	1	40	0.025
13:00 - 14:00	1	40	0.000	1	40	0.000	1	40	0.000
14:00 - 15:00	1	40	0.000	1	40	0.000	1	40	0.000
15:00 - 16:00	1	40	0.025	1	40	0.000	1	40	0.025
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.025	1	40	0.000	1	40	0.025
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.075			0.100			0.175

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.

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	1	40	0.100	1	40	0.675	1	40	0.775
08:00 - 09:00	1	40	0.075	1	40	0.575	1	40	0.650
09:00 - 10:00	1	40	0.275	1	40	0.350	1	40	0.625
10:00 - 11:00	1	40	0.100	1	40	0.200	1	40	0.300
11:00 - 12:00	1	40	0.200	1	40	0.400	1	40	0.600
12:00 - 13:00	1	40	0.125	1	40	0.150	1	40	0.275
13:00 - 14:00	1	40	0.225	1	40	0.175	1	40	0.400
14:00 - 15:00	1	40	0.225	1	40	0.225	1	40	0.450
15:00 - 16:00	1	40	0.375	1	40	0.275	1	40	0.650
16:00 - 17:00	1	40	0.375	1	40	0.175	1	40	0.550
17:00 - 18:00	1	40	0.475	1	40	0.475	1	40	0.950
18:00 - 19:00	1	40	0.900	1	40	0.375	1	40	1.275
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.450			4.050			7.500

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.

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

MULTI-MODAL CARS

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	1	40	0.025	1	40	0.425	1	40	0.450
08:00 - 09:00	1	40	0.075	1	40	0.325	1	40	0.400
09:00 - 10:00	1	40	0.175	1	40	0.175	1	40	0.350
10:00 - 11:00	1	40	0.075	1	40	0.075	1	40	0.150
11:00 - 12:00	1	40	0.050	1	40	0.250	1	40	0.300
12:00 - 13:00	1	40	0.050	1	40	0.075	1	40	0.125
13:00 - 14:00	1	40	0.100	1	40	0.100	1	40	0.200
14:00 - 15:00	1	40	0.100	1	40	0.100	1	40	0.200
15:00 - 16:00	1	40	0.175	1	40	0.125	1	40	0.300
16:00 - 17:00	1	40	0.250	1	40	0.100	1	40	0.350
17:00 - 18:00	1	40	0.350	1	40	0.125	1	40	0.475
18:00 - 19:00	1	40	0.525	1	40	0.150	1	40	0.675
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.950			2.025			3.975

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.

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

MULTI-MODAL LGVS

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	1	40	0.025	1	40	0.025	1	40	0.050
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.025	1	40	0.000	1	40	0.025
10:00 - 11:00	1	40	0.000	1	40	0.050	1	40	0.050
11:00 - 12:00	1	40	0.075	1	40	0.075	1	40	0.150
12:00 - 13:00	1	40	0.025	1	40	0.025	1	40	0.050
13:00 - 14:00	1	40	0.075	1	40	0.050	1	40	0.125
14:00 - 15:00	1	40	0.025	1	40	0.050	1	40	0.075
15:00 - 16:00	1	40	0.050	1	40	0.050	1	40	0.100
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.050	1	40	0.025	1	40	0.075
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.350			0.350			0.700

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.

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

MULTI-MODAL Servicing 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	1	40	0.050	1	40	0.025	1	40	0.075
08:00 - 09:00	1	40	0.000	1	40	0.000	1	40	0.000
09:00 - 10:00	1	40	0.050	1	40	0.025	1	40	0.075
10:00 - 11:00	1	40	0.000	1	40	0.050	1	40	0.050
11:00 - 12:00	1	40	0.050	1	40	0.050	1	40	0.100
12:00 - 13:00	1	40	0.000	1	40	0.000	1	40	0.000
13:00 - 14:00	1	40	0.075	1	40	0.050	1	40	0.125
14:00 - 15:00	1	40	0.050	1	40	0.075	1	40	0.125
15:00 - 16:00	1	40	0.050	1	40	0.050	1	40	0.100
16:00 - 17:00	1	40	0.000	1	40	0.000	1	40	0.000
17:00 - 18:00	1	40	0.025	1	40	0.025	1	40	0.050
18:00 - 19:00	1	40	0.000	1	40	0.000	1	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.350			0.350			0.700

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.

Calculation Reference: AUDIT-751101-191128-1108

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
 Category : A - PRIMARY
 MULTI-MODAL VEHICLES

Selected regions and areas:

07 YORKSHIRE & NORTH LINCOLNSHIRE
 NE NORTH EAST LINCOLNSHIRE 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 pupils
 Actual Range: 147 to 147 (units:)
 Range Selected by User: 92 to 472 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 15/03/19

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:

Tuesday 1 days

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

Selected survey types:

Manual count 1 days
 Directional ATC Count 0 days

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

Selected Locations:

Edge of Town 1

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

Selected Location Sub Categories:

Residential Zone 1

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:

D1 1 days

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

Population within 1 mile:

1,001 to 5,000 1 days

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

Secondary Filtering selection (Cont.):

Population within 5 miles:

5,001 to 25,000 1 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*Car ownership within 5 miles:

1.1 to 1.5 1 days

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

No 1 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 1 days

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

LIST OF SITES relevant to selection parameters

1 NE-04-A-01 PRIMARY SCHOOL NORTH EAST LINCOLNSHIRE
 SUNNINGDALE ROAD
 SCUNTHORPE

Edge of Town
 Residential Zone

Total Number of pupils: 147

Survey date: TUESDAY

20/05/14

Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
LC-04-A-05	67.5% only
LC-04-A-06	67.5% only
MS-04-A-02	67.5% only
MT-04-A-01	67.5% only
SC-04-A-01	67.5% only
SM-04-A-01	67.5% only

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
 MULTI-MODAL VEHICLES
 Calculation factor: 1 PUPILS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	1	147	0.048	1	147	0.000	1	147	0.048
08:00 - 09:00	1	147	0.361	1	147	0.306	1	147	0.667
09:00 - 10:00	1	147	0.020	1	147	0.014	1	147	0.034
10:00 - 11:00	1	147	0.014	1	147	0.014	1	147	0.028
11:00 - 12:00	1	147	0.061	1	147	0.054	1	147	0.115
12:00 - 13:00	1	147	0.014	1	147	0.020	1	147	0.034
13:00 - 14:00	1	147	0.054	1	147	0.075	1	147	0.129
14:00 - 15:00	1	147	0.054	1	147	0.041	1	147	0.095
15:00 - 16:00	1	147	0.197	1	147	0.218	1	147	0.415
16:00 - 17:00	1	147	0.143	1	147	0.150	1	147	0.293
17:00 - 18:00	1	147	0.000	1	147	0.020	1	147	0.020
18:00 - 19:00	1	147	0.000	1	147	0.007	1	147	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.966			0.919			1.885

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

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

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Parameter summary

Trip rate parameter range selected: 147 - 147 (units:)
 Survey date range: 01/01/11 - 15/03/19
 Number of weekdays (Monday-Friday): 1
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 6

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 04 - EDUCATION/A - PRIMARY

MULTI-MODAL OGVS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	1	147	0.000	1	147	0.000	1	147	0.000
08:00 - 09:00	1	147	0.000	1	147	0.000	1	147	0.000
09:00 - 10:00	1	147	0.000	1	147	0.000	1	147	0.000
10:00 - 11:00	1	147	0.000	1	147	0.000	1	147	0.000
11:00 - 12:00	1	147	0.000	1	147	0.000	1	147	0.000
12:00 - 13:00	1	147	0.000	1	147	0.000	1	147	0.000
13:00 - 14:00	1	147	0.007	1	147	0.007	1	147	0.014
14:00 - 15:00	1	147	0.000	1	147	0.000	1	147	0.000
15:00 - 16:00	1	147	0.000	1	147	0.000	1	147	0.000
16:00 - 17:00	1	147	0.000	1	147	0.000	1	147	0.000
17:00 - 18:00	1	147	0.000	1	147	0.000	1	147	0.000
18:00 - 19:00	1	147	0.000	1	147	0.000	1	147	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

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

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	1	147	0.048	1	147	0.000	1	147	0.048
08:00 - 09:00	1	147	0.660	1	147	0.531	1	147	1.191
09:00 - 10:00	1	147	0.020	1	147	0.014	1	147	0.034
10:00 - 11:00	1	147	0.020	1	147	0.020	1	147	0.040
11:00 - 12:00	1	147	0.075	1	147	0.068	1	147	0.143
12:00 - 13:00	1	147	0.014	1	147	0.020	1	147	0.034
13:00 - 14:00	1	147	0.061	1	147	0.082	1	147	0.143
14:00 - 15:00	1	147	0.068	1	147	0.048	1	147	0.116
15:00 - 16:00	1	147	0.381	1	147	0.361	1	147	0.742
16:00 - 17:00	1	147	0.245	1	147	0.204	1	147	0.449
17:00 - 18:00	1	147	0.000	1	147	0.020	1	147	0.020
18:00 - 19:00	1	147	0.000	1	147	0.007	1	147	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.592			1.375			2.967

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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	1	147	0.000	1	147	0.000	1	147	0.000
08:00 - 09:00	1	147	0.898	1	147	0.088	1	147	0.986
09:00 - 10:00	1	147	0.000	1	147	0.000	1	147	0.000
10:00 - 11:00	1	147	0.000	1	147	0.000	1	147	0.000
11:00 - 12:00	1	147	0.129	1	147	0.197	1	147	0.326
12:00 - 13:00	1	147	0.041	1	147	0.020	1	147	0.061
13:00 - 14:00	1	147	0.000	1	147	0.020	1	147	0.020
14:00 - 15:00	1	147	0.000	1	147	0.000	1	147	0.000
15:00 - 16:00	1	147	0.000	1	147	0.721	1	147	0.721
16:00 - 17:00	1	147	0.027	1	147	0.184	1	147	0.211
17:00 - 18:00	1	147	0.000	1	147	0.000	1	147	0.000
18:00 - 19:00	1	147	0.000	1	147	0.000	1	147	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.095			1.230			2.325

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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	1	147	0.048	1	147	0.000	1	147	0.048
08:00 - 09:00	1	147	1.558	1	147	0.619	1	147	2.177
09:00 - 10:00	1	147	0.020	1	147	0.014	1	147	0.034
10:00 - 11:00	1	147	0.020	1	147	0.020	1	147	0.040
11:00 - 12:00	1	147	0.204	1	147	0.265	1	147	0.469
12:00 - 13:00	1	147	0.054	1	147	0.041	1	147	0.095
13:00 - 14:00	1	147	0.061	1	147	0.102	1	147	0.163
14:00 - 15:00	1	147	0.068	1	147	0.048	1	147	0.116
15:00 - 16:00	1	147	0.381	1	147	1.082	1	147	1.463
16:00 - 17:00	1	147	0.272	1	147	0.388	1	147	0.660
17:00 - 18:00	1	147	0.000	1	147	0.020	1	147	0.020
18:00 - 19:00	1	147	0.000	1	147	0.007	1	147	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.686			2.606			5.292

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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL LGVS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	1	147	0.000	1	147	0.000	1	147	0.000
08:00 - 09:00	1	147	0.000	1	147	0.000	1	147	0.000
09:00 - 10:00	1	147	0.000	1	147	0.000	1	147	0.000
10:00 - 11:00	1	147	0.000	1	147	0.000	1	147	0.000
11:00 - 12:00	1	147	0.000	1	147	0.000	1	147	0.000
12:00 - 13:00	1	147	0.014	1	147	0.014	1	147	0.028
13:00 - 14:00	1	147	0.007	1	147	0.007	1	147	0.014
14:00 - 15:00	1	147	0.014	1	147	0.007	1	147	0.021
15:00 - 16:00	1	147	0.000	1	147	0.007	1	147	0.007
16:00 - 17:00	1	147	0.000	1	147	0.000	1	147	0.000
17:00 - 18:00	1	147	0.000	1	147	0.000	1	147	0.000
18:00 - 19:00	1	147	0.000	1	147	0.000	1	147	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.035			0.035			0.070

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.

Calculation Reference: AUDIT-751101-190829-0812

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : G - TENNIS CLUBS
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	SC SURREY	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
	WO WORCESTERSHIRE	1 days
08	NORTH WEST	
	LC LANCASHIRE	1 days
09	NORTH	
	TV TEES VALLEY	1 days
11	SCOTLAND	
	AD ABERDEEN CITY	1 days
	ER EAST RENFREWSHIRE	2 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 courts
 Actual Range: 6 to 13 (units:)
 Range Selected by User: 4 to 13 (units:)
 Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/95 to 25/10/12

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

Selected survey days:

Tuesday	4 days
Thursday	3 days
Friday	1 days

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

Selected survey types:

Manual count	8 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)	5
Edge of Town	3

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	6
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:

D2 8 days

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

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	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:

75,001 to 100,000	1 days
125,001 to 250,000	5 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	4 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:

Not Known	5 days
No	3 days

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

PTAL Rating:

No PTAL Present	8 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	AD-07-G-01 WESTBURN ROAD ABERDEEN	TENNIS CENTRE	ABERDEEN CITY
	Suburban Area (PPS6 Out of Centre) No Sub Category Total Number of courts: 12 <i>Survey date: TUESDAY 10/05/05</i>		
2	ER-07-G-01 RODDINGHEAD ROAD NEWTON MEARNS WHITECRAIGS	TENNIS CLUB	EAST RENFREWSHIRE
	Edge of Town Residential Zone Total Number of courts: 9 <i>Survey date: TUESDAY 09/10/01</i>		
3	ER-07-G-02 PERCY DRIVE GLASGOW GIFFNOCK	TENNIS CLUB	EAST RENFREWSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of courts: 9 <i>Survey date: THURSDAY 13/06/02</i>		
4	LC-07-G-01 CUERDEN WAY PRESTON BAMBER BRIDGE	TENNIS CLUB	LANCASHIRE
	Edge of Town No Sub Category Total Number of courts: 8 <i>Survey date: TUESDAY 26/09/95</i>		
5	SC-07-G-01 HILLIER ROAD GUILDFORD	TENNIS CLUB	SURREY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of courts: 6 <i>Survey date: TUESDAY 08/07/08</i>		
6	TV-07-G-01 MARTON ROAD MIDDLESBROUGH PRISSICK	TENNIS CLUB	TEES VALLEY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of courts: 13 <i>Survey date: THURSDAY 27/09/01</i>		
7	WK-07-G-01 GUY'S CLIFFE AVENUE LEAMINGTON SPA MILVERTON	TENNIS & SQUASH CLUB	WARWICKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of courts: 12 <i>Survey date: THURSDAY 25/10/12</i>		
8	WO-07-G-01 NORTHWICK CLOSE WORCESTER NORTHWICK	TENNIS CLUB	WORCESTERSHIRE
	Edge of Town Residential Zone Total Number of courts: 10 <i>Survey date: FRIDAY 06/10/00</i>		

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 07 - LEISURE/G - TENNIS CLUBS
VEHICLES

Calculation factor: 1 COURTS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. COURTS	Trip Rate	No. Days	Ave. COURTS	Trip Rate	No. Days	Ave. COURTS	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	4	11	0.116	4	11	0.000	4	11	0.116
08:00 - 09:00	6	10	0.361	6	10	0.115	6	10	0.476
09:00 - 10:00	8	10	0.772	8	10	0.215	8	10	0.987
10:00 - 11:00	8	10	0.570	8	10	0.392	8	10	0.962
11:00 - 12:00	8	10	0.684	8	10	0.582	8	10	1.266
12:00 - 13:00	8	10	0.304	8	10	0.785	8	10	1.089
13:00 - 14:00	8	10	0.608	8	10	0.342	8	10	0.950
14:00 - 15:00	8	10	0.316	8	10	0.367	8	10	0.683
15:00 - 16:00	8	10	0.696	8	10	0.582	8	10	1.278
16:00 - 17:00	8	10	1.190	8	10	0.772	8	10	1.962
17:00 - 18:00	8	10	1.291	8	10	1.013	8	10	2.304
18:00 - 19:00	8	10	1.608	8	10	1.443	8	10	3.051
19:00 - 20:00	7	9	1.182	7	9	1.045	7	9	2.227
20:00 - 21:00	6	9	0.786	6	9	1.482	6	9	2.268
21:00 - 22:00	6	9	0.268	6	9	1.036	6	9	1.304
22:00 - 23:00	3	9	0.192	3	9	0.962	3	9	1.154
23:00 - 24:00									
Total Rates:			10.944			11.133			22.077

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

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

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Parameter summary

Trip rate parameter range selected:	6 - 13 (units:)
Survey date date range:	01/01/95 - 25/10/12
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

APPENDIX D

Active Travel Assessment

Design Guidance: Active Travel (Wales) Act 2013

Active Travel Assessment

Proposed Mixed-Use Development Island Farm & Craig Y Parcau

19-00637/TN01

April 2020

Introduction

This Transport Note ('TN') has been produced by Corun Associates Ltd (Corun) as part of a proposed mixed-use development at Island Farm and Craig Y Parcau, Bridgend (referred to hereon in collectively as the 'site').

The current masterplan shows that Island Farm can accommodate circa 733 dwellings (40dph), two schools, a modest commercial hub to serve the site and a two-phase tennis centre; the first phase tennis centre being a smaller facility accessed off Ewenny Road and the second phase to extend the facility in line with the original consent.

The Craig Y Parc element is able to deliver a further 115 houses (35dph).

The assessment has been produced via a combination of site visits and desktop appraisal. It should be noted that, at the time of writing, the Covid-19 pandemic was having a significant impact on business travel and practices. It is therefore recommended that a revised audit is undertaken at the application stage.

The report provides an assessment of the key walking and cycling routes associated with the site. It is assumed that all internal highway infrastructure will be designed in line with the transport hierarchy, with walking and cycling afforded a high priority and to a standard appropriate for inclusion in the Council's integrated transport network.

Please note that the purpose of the report is to identify deficiencies in the existing off-site highway network, which will offer the opportunity for the development of the site to contribute towards appropriate improvements at the planning stage. However, the report also suggests some of the key improvement measures that can be expected of the site, subject to deliverability and further assessment at the planning application stage.

Existing Active Travel Assessment Methodology

This report provides an assessment of the key routes in the vicinity of the site using the Welsh Government Active Travel (Wales) Act 2013 Design Guidance Walking and Cycling Route Audit Tools (full guidance notes provided herein as **Appendix A**) which provides a comprehensive approach to the above requirement.

The scope of assessment has been derived with consideration of the Council's Integrated Network mapping (**Appendix B**) and the proposed masterplan (**Appendix C**).

An isochrone map (**Appendix D**) divides the scope of assessment into segments A-C.

The walking and cycling audits are referenced as shown in Table 1 and provided in full as **Appendix E**.

Table 1: Existing Route Walking and Cycling Audit Schedule

Route reference	Audit Mode	Route description	Map segment(s)
WRA01E/ CRA01E	Walking/ Cycling	A48 Broadlands Roundabout to Bridgend Town Centre via A48 and B4265 Ewenny Road	A
WRA02E/ CRA02E	Walking/ Cycling	Ewenny Road Site Access to Ewenny Signalised Roundabout	B
WRA03E/ CRA03E	Walking/ Cycling	Ewenny Signalised Roundabout to Picton Court Retail Park via A48	C

In addition to the audits, Google street view and satellite imagery evidence is provided of various aspects of the assessed routes (**Appendix F**).

This report is intended to assist the LHA in the delivery of the integrated transport network and set out the obstacles and opportunities for active modes of travel associated with the mixed-use development of the site. Further route assessments may be required as the masterplan develops and through discussions with the local highway authority.

Potential Active Travel Mitigation

This section reviews the outcomes of the existing network active travel assessment and outlines ways in which the site will be able to enhance walking and cycling infrastructure to the benefit of existing and future active travel users.

Table 2: Potential Walking and Cycling Improvements

Route Segment	Potential mitigation	Beneficial Mode
A	<ol style="list-style-type: none"> 1. Extension of existing Broadlands shared pedestrian/cycle route along north of A48 to Ewenny Signalised Roundabout. 2. Reduced speed limit along A48 to reflect the urbanisation of the area which will create a safer and more attractive environment for pedestrians and cyclists. 3. Improved dropped kerb and tactile paving crossings at several junctions along A48 and Ewenny Road to the town centre. 4. Improved cycle facilities at Ewenny signalised roundabout (e.g. advanced cycle stop lines). 5. To assist with the Council's integrated transport network proposals, the site will play a key role in the delivery of route references INM-BR-49, INM-BR-48, INM-BR-75, INM-POR-15, INM-BR-45, INM-BR-46BRP4 and INM-EBRP3. 	<p>Walking & Cycling</p> <p>Walking & Cycling</p> <p>Walking</p> <p>Cycling</p> <p>Walking and Cycling</p>
B	<ol style="list-style-type: none"> 1. It is recommended that the existing 30mph speed limit is extended to improve the pedestrian and cyclist environment and safety. 2. Footway provision to be improved along Ewenny Road northwards from the existing site access to Ewenny 	<p>Walking & Cycling</p> <p>Walking</p>

	<p>Roundabout. Works are anticipated to comprise a section of new footway on the western side of Ewenny Road and a new crossing (e.g. Puffin) to assist pedestrians to the existing footway provision on the eastern side. Scope of works will be governed by how the masterplan evolves.</p> <p>3. Improved dropped kerb and tactile paving crossings at junctions along Ewenny Road.</p> <p>4. To assist with the Council's integrated transport network proposals, the site will play a key role in the delivery of route reference INM-BR-46BRP4.</p>	<p>Walking</p> <p>Walking and Cycling</p>
C	<p>1. There is potential to upgrade the existing footway on the southern side of the A48 to provide a 3.0m shared pedestrian/cycle route.</p> <p>2. There is also potential to provide a new 3.0m shared pedestrian/cycle route along the northern side of the A48.</p> <p>3. Improved dropped kerb and tactile paving crossings at junctions along the A48.</p> <p>4. Subject to the Transport Assessment at the planning application stage, the Picton Court junction could be converted to traffic signals, which would incorporate Toucan crossings and advanced cycle stop lines as required. Alternatively, a controlled crossing on the A48 could be provided.</p> <p>5. To assist with the Council's integrated transport network proposals, the site will play a key role in the delivery of route reference INM-BR-445.</p>	<p>Walking and Cycling</p> <p>Walking and Cycling</p> <p>Walking</p> <p>Walking and Cycling</p> <p>Walking and Cycling</p>

In addition to the above assessment of links to existing trip attractors/generators, it should be noted that the development of the site will also be required to provide the necessary internal infrastructure to encourage pedestrian and cycle links with due consideration of Active Travel Wales design guidance.

Conclusion

The site is concluded to benefit from many advantages with regards to existing active travel infrastructure. There are also numerous opportunities to enhance links to existing trip attractors/generators which have been identified in this document as being desirable to help maximise the adoption of active modes of travel associated with the development of the site.

Further, more detailed assessment of active travel improvements, to include preliminary design, will be required at the planning application stage.

Appendix A

Welsh Government Active Travel (Wales) Act 2013 Design Guidance Walking and Cycling Route Audit
Tools



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Appendix B

Walking Route Audit Tool



Walking Route Audit Tool – Guidance notes

This tool has been developed to assist local authorities in the auditing of walking routes.

The tool can be used for both existing and proposed routes.

- On existing routes the current conditions should be audited.
- On proposed routes the proposed schemes should be audited.

Scoring

The tool as shown in the table on p.384, requires the auditor to score the route against each of the factors using the following scale:

- 0 for poor provision,
- 1 for provision which is adequate but should be improved if possible
- 2 for good quality provision

Any route which scores less than 28 (out of a potential 40 points, ie a score of 70%) will require further improvement before it is included in the Existing or Integrated Network Maps. This threshold will be kept under review in the light of experience.

Comments

As the scoring is sometimes qualitative the tool also allows the auditor to add comments explaining their score allocation.

For example where a route has scored 1 for Gradient, it may be useful to explain that although there is a steep uphill chapter there is a path which climbs the side of the valley in gentle steps, thereby allowing the cyclist to comfortably use the route.

The addition of text allows the audit scoring to be better understood when reviewed by other stakeholders.

Actions

There is an additional column for Actions. This allows auditors to record any solutions to any of the issues identified on the route e.g. narrowing a junction mouth to reduce speeds or removing redundant street clutter along a chapter of the route to improve its attractiveness.

The assessment relies on an understanding of the route type (ie primary route, secondary route or local route) to be provided for as well as a

full understanding of the existing traffic conditions (i.e. urban or rural, distributor or residential street).

If the route is assessed as suitable in its current condition according to the network requirements and design standards it can be included in the Existing Routes Map.

Table Appendix B - Walking Route Audit Tool

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
1. ATTRACTIVENESS - maintenance	Footways well maintained, with no significant issues noted.	Minor littering. Overgrown vegetation. Street furniture falling into mi-nor disrepair (for example, peeling paint).	Littering and/or dog mess prevalent. Seriously overgrown vegetation, including low branches. Street furniture falling into major disrepair.	
2. ATTRACTIVENESS - fear of crime	No evidence of vandalism with appropriate natural surveillance.	Minor vandalism. Lack of active frontage and natural surveillance (e.g. houses set back or back onto street).	Major or prevalent vandalism. Evidence of criminal/antisocial activity. Route is isolated, not subject to natural surveillance (including where sight lines are inadequate).	
3. ATTRACTIVENESS - traffic noise and pollution	Traffic noise and pollution do not affect the attractiveness	Levels of traffic noise and/or pollution could be improved	Severe traffic pollution and/or severe traffic noise	
4. ATTRACTIVENESS - other	Examples of 'other' attractiveness issues include: - Evidence that lighting is not present, or is deficient; - Temporary features affecting the attractiveness of routes (e.g. refuse sacks). - Excessive use of guardrail or bollards	Score 0-2 as appropriate		

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
5. COMFORT - condition	Footways level and in good condition, with no trip hazards.	Some defects noted, typically isolated (such as trenching or patching) or minor (such as cracked, but level pavers). Defects unlikely to result in trips or difficulty for wheelchairs, prams etc. Some footway crossovers resulting in uneven surface.	- subsided or fretted pavement, or - significant uneven patching or trenching. Large number of footway crossovers resulting in uneven surface.	
6. COMFORT - footway width	Able to accommodate all users without 'give and take' between users or walking on roads. Footway widths generally in excess of 2m.	Footway widths of between approximately 1.5m and 2m. Occasional need for 'give and take' between users and walking on roads.	Footway widths of less than 1.5m (i.e. standard wheelchair width). Limited footway width requires users to 'give and take' frequently, walk on roads and/or results in crowding/delay.	
7. COMFORT - width on staggered crossings/ pedestrian islands/refuges	Able to accommodate all users without 'give and take' between users or walking on roads. Widths generally in excess of 2m to accommodate wheel-chair users.	Widths of between approximately 1.5m and 2m. Occasional need for 'give and take' between users and walking on roads.	Widths of less than 1.5m (i.e. standard wheelchair width). Limited width requires users to 'give and take' frequently, walk on roads and/or results in crowding/delay.	
8. COMFORT - footway parking	No instances of vehicles parking on footways noted. Clearance widths generally in excess of 2m between permanent obstructions.	Clearance widths between approximately 1.5m and 2m. Occasional need for 'give and take' between users and walking on roads due to footway parking. Footway parking causes some deviation from desire lines.	Clearance widths less than 1.5m. Footway parking requires users to 'give and take' frequently, walk on roads and/or results in crowding/delay. Footway parking causes significant deviation from desire lines.	

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
9.COMFORT -gradient	There are no slopes on footway.	Slopes exist but gradients do not exceed 8 per cent (1 in 12).	Gradients exceed 8 per cent (1 in 12).	
10.COMFORT - other	<p>Examples of 'other' comfort issues include:</p> <ul style="list-style-type: none"> - Temporary obstructions restricting clearance width for pedestrians (e.g. driveway gates opened into footway); - Barriers/gates restricting access; and - Bus shelters restricting clearance width. - Poorly drained footways resulting in noticeable ponding issues/slippery surfaces <p>Score 0-2 as appropriate</p>			
11.DIRECTNESS - footway provision	Footways are provided to cater for pedestrian desire lines (e.g. adjacent to road).	Footway provision could be improved to better cater for pedestrian desire lines.	Footways are not provided to cater for pedestrian desire lines.	
12.DIRECTNESS - location of crossings in relation to desire lines	Crossings follow desire lines.	Crossings partially diverting pedestrians away from desire lines.	Crossings deviate significantly from desire lines.	
13.DIRECTNESS - gaps in traffic (where no controlled crossings present or if likely to cross outside of con-trolled crossing)	Crossing of road easy, direct, and comfortable and without delay (< 5s average).	Crossing of road direct, but associated with some delay (up to 15s average).	Crossing of road associated indirect, or associated with significant delay (>15s average).	

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
14. DIRECTNESS - impact of controlled crossings on journey time	Crossings are single phase pelican/puffin or zebra crossings.	Crossings are staggered but do not add significantly to journey time. Unlikely to wait >5s in pedestrian island.	Staggered crossings add significantly to journey time. Likely to wait >10s in pedestrian is-land.	
15. DIRECTNESS - green man time	Green man time is of sufficient length to cross comfortably.	Pedestrians would benefit from extended green man time but current time unlikely to deter users.	Green man time would not give vulnerable users sufficient time to cross comfortably.	
16. DIRECTNESS - other	Examples of 'other' directness issues include: - Routes to/from bus stops not accommodated; - Steps restricting access for all users; - Confusing layout for pedestrians creating severance issues for users. Score 0-2 as appropriate			
17. SAFETY - traffic volume	Traffic volume low, or pedestrians can keep distance from moderate traffic volumes.	Traffic volume moderate and pedestrians in close proximity.	High traffic volume, with pedestrians unable to keep their distance from traffic.	
18. SAFETY - traffic speed	Traffic speeds low, or pedestrians can keep distance from moderate traffic speeds.	Traffic speeds moderate and pedestrians in close proximity.	High traffic speeds, with pedestrians unable to keep their distance from traffic.	

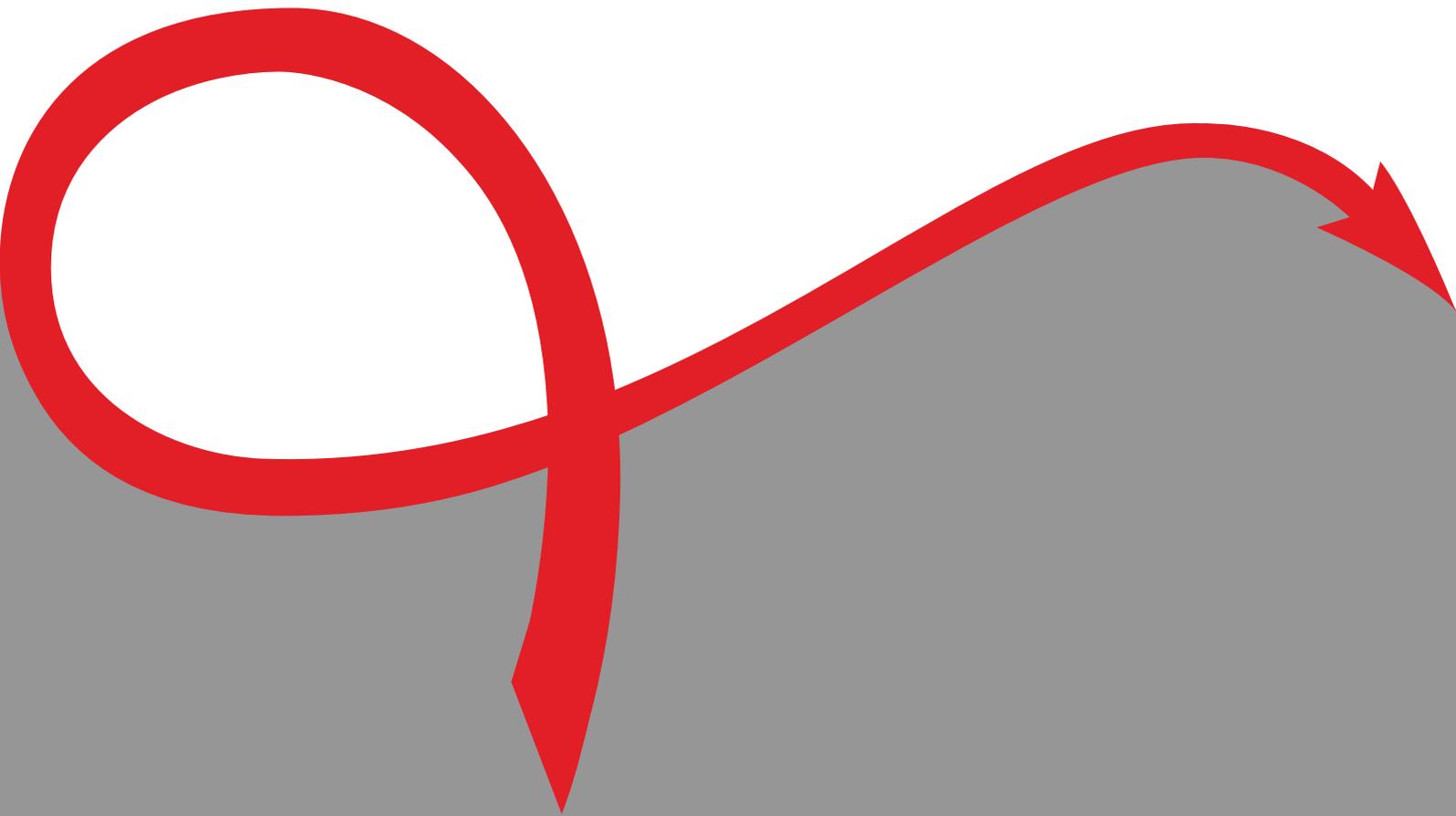
Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
19. SAFETY - visibility	Good visibility for all users.	Visibility could be somewhat improved but unlikely to result in collisions.	Poor visibility, likely to result in collisions.	
20. COHERENCE - dropped kerbs and tactile paving	Adequate dropped kerb and tactile paving provision.	Dropped kerbs and tactile paving provided, albeit not to current standards.	Dropped kerbs and tactile paving absent or incorrect.	
COHERENCE	Signage - Note the presence and quality of route signage (no score is required for this factor)			



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Appendix C

Cycle Route Audit Tool



Cycle Route Audit Tool – Guidance notes

This tool has been developed to assist local authorities in the auditing of routes.

The tool can be used for both existing and proposed routes.

- On existing routes the current conditions should be audited.
- On proposed routes the proposed schemes should be audited.

Scoring

The tool as shown in the table on p.394, requires the auditor to score the route against each of the factors using the following scale:

- 0 for poor provision,
- 1 for provision which is adequate but should be improved if possible
- 2 for good quality provision

Any route which scores less than 35 (out of a potential 50 points, ie a score of 70%) will require further improvement before it is included in the Existing or Integrated Network Maps. This threshold will be kept under review in the light of experience.

Critical factors

Some of the criteria have been given a ‘critical’ rating.

Routes which fail to pass any of the critical factors require further development and should not be included on the Existing or Integrated Network Maps.

Comments

As the scoring is sometimes qualitative the tool also allows the auditor to add comments explaining their score allocation.

For example where a route has scored 1 for Gradient, it may be useful to explain that although there is a steep uphill chapter there is a path which climbs the side of the valley in gentle steps, thereby allowing the cyclist to comfortably use the route.

The addition of text allows the audit scoring to be better understood when reviewed by other stakeholders.

Actions

There is an additional column for Actions. This allows auditors to record any solutions to any of the issues identified on the route e.g. narrowing a junction mouth to reduce speeds or removing redundant street clutter along a chapter of the route to improve its attractiveness.

The assessment relies on an understanding of the route type (ie primary route, secondary route or local route) to be provided for as well as a full understanding of the existing traffic conditions (i.e. urban or rural, distributor or residential street).

If the route is assessed as suitable in its current condition according to the network requirements and design standards it can be included in the Existing Routes Map.

Table Appendix C - Cycling Route Audit Tool

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Cohesion	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	1. Ability to join/leave route safely and easily: consider left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey		
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed - cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	2. Provision for cyclists throughout the whole length of the route		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions		
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	3. Density of routes based on mesh width ie distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000	Route contributes to a network density mesh width 250 - 1000m	Route contributes to a network density mesh width <250m		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as-the-crow-flies' distance as possible.	4. Deviation of route Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2		
	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	5. Stopping and give way frequency		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km		
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	6. Delay at junctions		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (eg bypass at signals)		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	7. Ability to maintain own speed on links		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.		
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	8. Gradient		Route includes sections steeper than the gradients recommended in Figure 4.4	There are no sections of route steeper than the gradients recommended in Figure 4.4	There are no sections of route which steeper than 2%		
Safety	Reduce/ remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph		
			10. Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Avoid high motor traffic volumes where cyclists are sharing the carriageway	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	11. Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour	>10000 AADT, or >5% HGV	5000-10000 AADT and <2-5% HGV	2500-5000 and <2% HGV	0-2500 AADT		
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Table 6.2. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	12. Segregation to reduce risk of collision alongside or from behind	Cyclists sharing carriageway - nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
		A high proportion of collisions involving cyclists occur at junctions. Junctions there-fore need particular attention to reduce the risk of collision. Junction treatments include: Minor/side roads - cyclist priority and/or speed reduction across side roads Major roads - separation of cyclists from motor traffic through junctions.	13. Conflicting movements at junctions		Side road junctions frequent and/ or untreated. Major junctions, conflicting cycle/ motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/ motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.		
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	14. Legible road markings and road layout		Faded, old, unclear, complex road markings/ unclear or unfamiliar road layout	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Comfort	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	15. Conflict with kerbside activity	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (eg cycle lane < 2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity - eg less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.		
	Reduce severity of collisions where they do occur	Wherever possible routes should include "evasion room" (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	16. Evasion room and unnecessary hazards		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.		
	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/gullies, potholes, poor quality carriageway paint (eg from previous cycle lane)	17. Major and minor defects		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
		Pavement or carriageway construction providing smooth and level surface	18.Surface type		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete pavours with frequent joints.	Machine laid smooth and non-slip surface - eg Thin Surfacing, or firm and closely-jointed blocks undisturbed by turning heavy vehicles.		
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	19.Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route		
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	20.Signing		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	21. Lighting		Most or all of route is unlit	Short and infrequent unlit/poorly lit sections	Route is lit to highway standards throughout		
			22. Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length		
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well-used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	23. Impact on pedestrians, Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 4.7)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Level remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A		

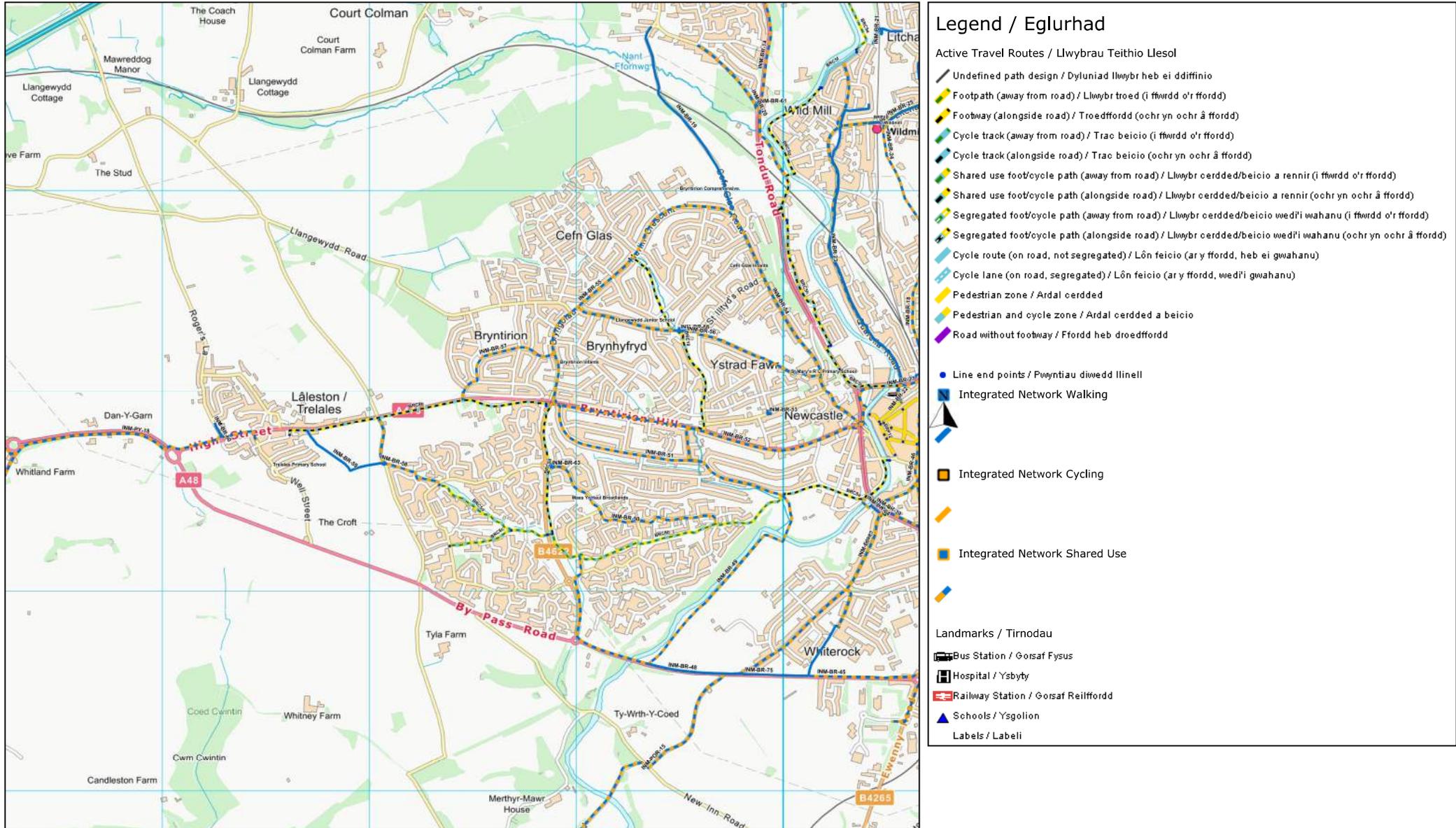
Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Minimise street clutter	Signing required to support scheme layout	24. Signs informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/ or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.		
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on street	25. Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure non-overlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand		
								Audit Score Total	

Appendix B

Bridgend Integrated Network Map (Maps 14 and 15 apply)

Map Rhwydwaith Integredig/Integrated Network Map 14

Produced by the Active Travel web site. Gynhyrchwyd gan y wefan Teithio Llesol.



Legend / Eglurhad

Active Travel Routes / Llwybrau Teithio Llesol

- Undefined path design / Dyluniad llwybr heb ei ddiffinio
- Footpath (away from road) / Llwybr troed (i ffwrdd o'r ffordd)
- Footway (alongside road) / Troedffordd (ochr yn ochr â ffordd)
- Cycle track (away from road) / Trac beicio (i ffwrdd o'r ffordd)
- Cycle track (alongside road) / Trac beicio (ochr yn ochr â ffordd)
- Shared use foot/cycle path (away from road) / Llwybr cerdded/beicio a rennir (i ffwrdd o'r ffordd)
- Shared use foot/cycle path (alongside road) / Llwybr cerdded/beicio a rennir (ochr yn ochr â ffordd)
- Segregated foot/cycle path (away from road) / Llwybr cerdded/beicio wedi'i wahanu (i ffwrdd o'r ffordd)
- Segregated foot/cycle path (alongside road) / Llwybr cerdded/beicio wedi'i wahanu (ochr yn ochr â ffordd)
- Cycle route (on road, not segregated) / Lôn beicio (ar y ffordd, heb ei gwahanu)
- Cycle lane (on road, segregated) / Lôn beicio (ar y ffordd, wedi'i gwahanu)
- Pedestrian zone / Ardal cerdded
- Pedestrian and cycle zone / Ardal cerdded a beicio
- Road without footway / Ffordd heb droedffordd

Line end points / Pwntiau diwedd llinell

- Integrated Network Walking
- Integrated Network Cycling
- Integrated Network Shared Use

Landmarks / Tirnodau

- Bus Station / Gorsaf Fysus
- Hospital / Ysbyty
- Railway Station / Gorsaf Reilffordd
- Schools / Ysgolion
- Labels / Labeli

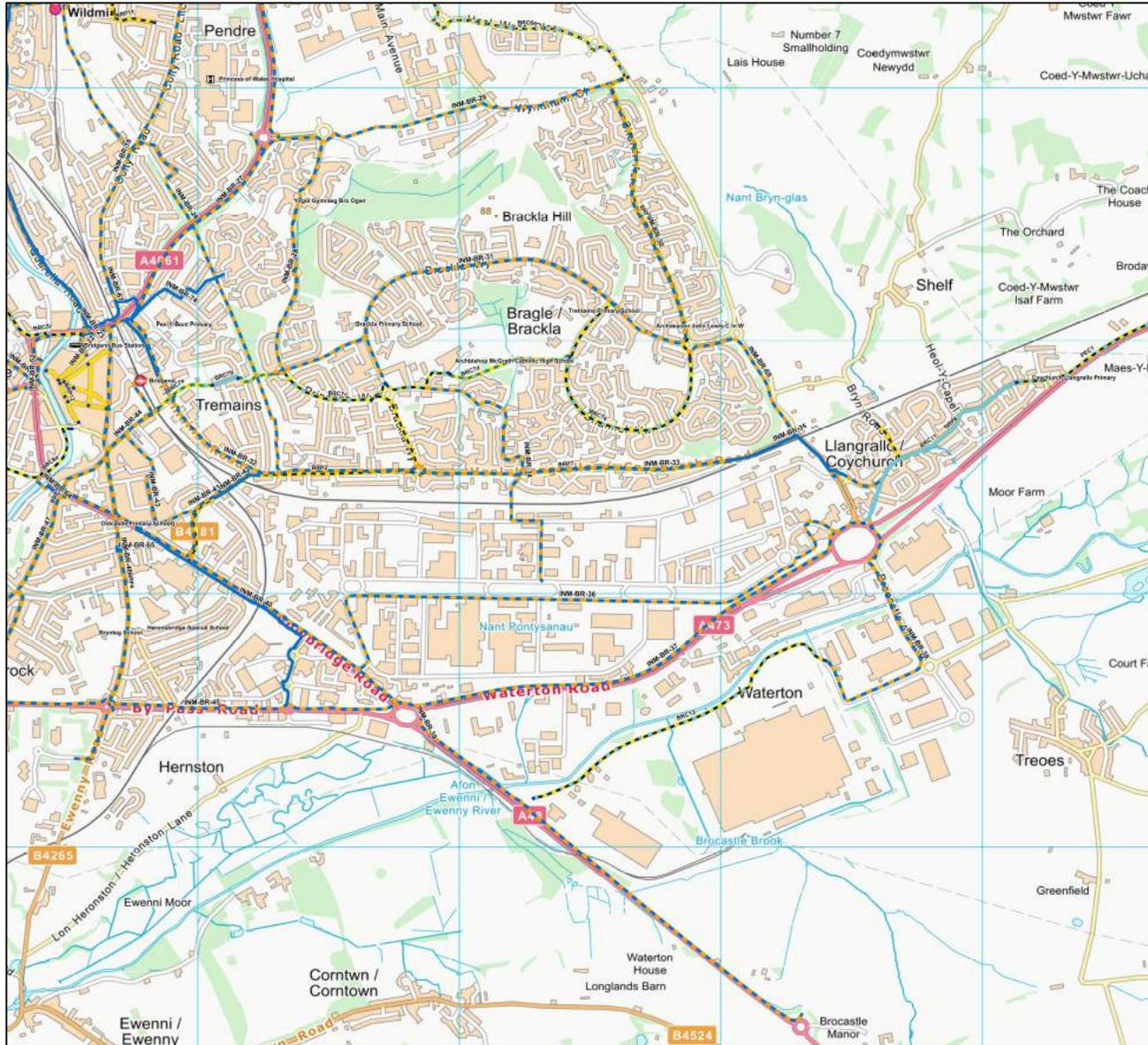
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Map Rhwydwaith Integredig/Integrated Network Map 15

Produced by the Active Travel web site. Gynhyrchwyd gan y wefan Teithio Llesol.

Bridgend County Borough Council
Civic Offices
Angel Street
Bridgend, CF31 4WB



Legend / Eglurhad

Active Travel Routes / Llwybrau Teithio Llesol

- Undefined path design / Dyluniad llwybr heb ei ddiffinio
- Footpath (away from road) / Llwybr troed (i ffwrdd o'r ffordd)
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- Cycle track (alongside road) / Trac beicio (ochr yn ochr â ffordd)
- Shared use foot/cycle path (away from road) / Llwybr cerdded/beicio a rennir (i ffwrdd o'r ffordd)
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- Segregated foot/cycle path (away from road) / Llwybr cerdded/beicio wedi'i wahanu (i ffwrdd o'r ffordd)
- Segregated foot/cycle path (alongside road) / Llwybr cerdded/beicio wedi'i wahanu (ochr yn ochr â ffordd)
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- Cycle lane (on road, segregated) / Lôn beicio (ar y ffordd, wedi'i gwahanu)
- Pedestrian zone / Ardal cerdded
- Pedestrian and cycle zone / Ardal cerdded a beicio
- Road without footway / Ffordd heb droedffordd

Line end points / Pwntiau diwedd llinell

Integrated Network Walking



Integrated Network Cycling



Integrated Network Shared Use



Landmarks / Tirnodau

Bus Station / Gorsaf Fysus

Hospital / Ysbyty

Railway Station / Gorsaf Reilffordd

Schools / Ysgolion

Labels / Labeli

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Appendix C

Masterplan





Appendix D

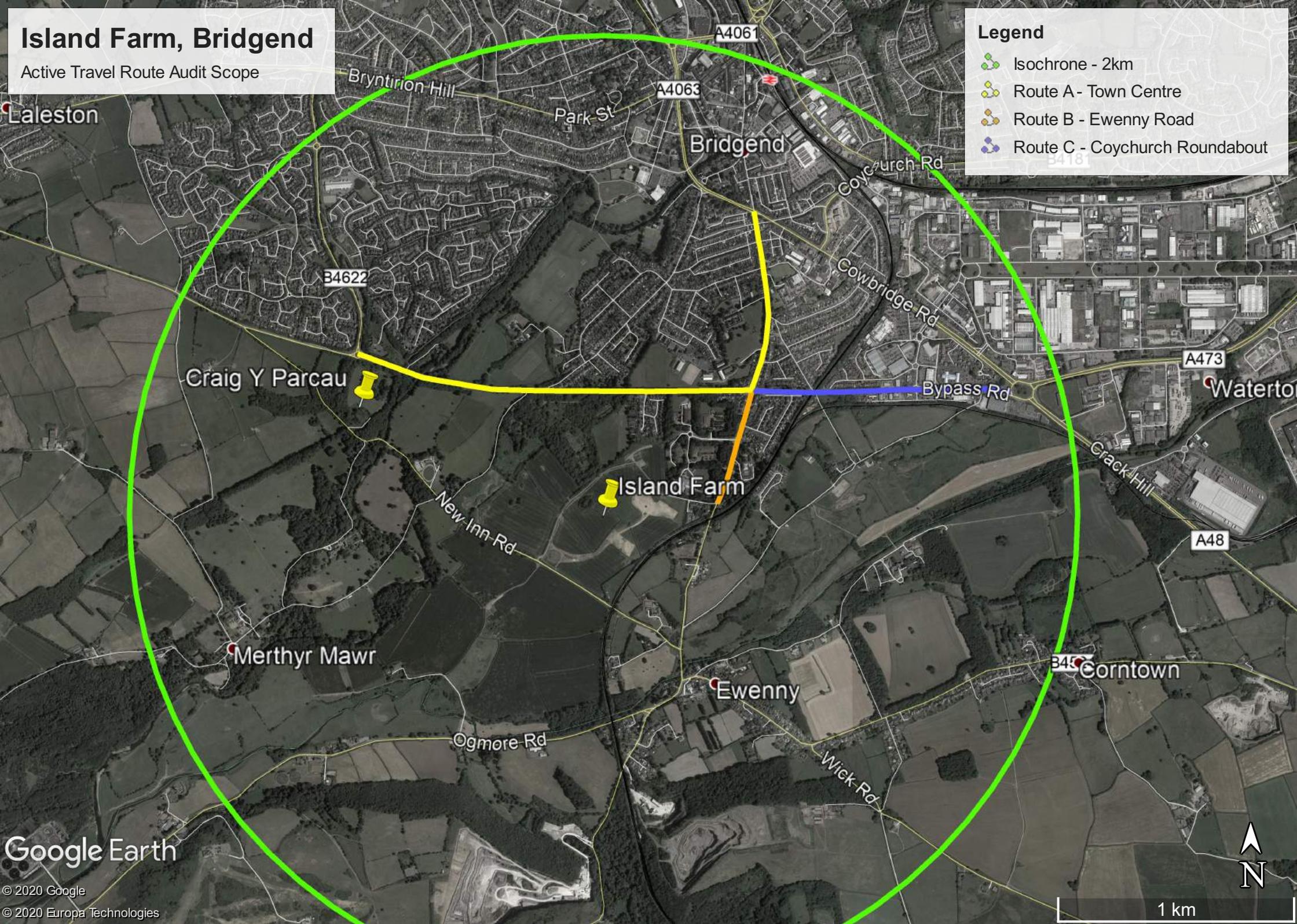
Isochrone Map and Scope of Assessment

Island Farm, Bridgend

Active Travel Route Audit Scope

Legend

-  Isochrone - 2km
-  Route A - Town Centre
-  Route B - Ewenny Road
-  Route C - Coychurch Roundabout



Appendix E

Active Travel Wales Walking and Cycling Audits

Walking Route Audit		
Project Name:	Island Farm	Route Reference: WRA01E - Existing (A48 Site Frontage to Bridgend TC)
Project Reference:	19-00637	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	2	
2. Attractiveness - fear of crime	2	
3. Attractiveness - traffic noise and pollution	0	A Road. Relatively high traffic volume
4. Attractiveness - other	2	Plenty of green space along route
5. Comfort - condition	2	Some minor areas of defects and overgrown verges but generally good condition.
6. Comfort - footway width	1	Generally good width but a combination of an overgrown verge create obstructions
7. Comfort - width on staggered crossings/pedestrian islands/refuges	2	
8. Comfort - footway parking	2	
9. Comfort gradient	1	
10. Comfort - other	2	
11. Directness - footway provision	1	No footway provided on the northern side of the A48 on a section of the route
12. Directness - location of crossings in relation to desire lines	1	Some missing dropped kerb and tactile paving crossings at junctions along route
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	0	See 3
14. Directness - impact of controlled crossings on journey time	1	
15. Directness - green man time	2	
16. Directness - other	1	Missing crossings (e.g. to Railway Station)
17. Safety - traffic volume	0	See 3
18. Safety - traffic speed	1	
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	1	
Final Score:		26

Walking Route Audit		
Project Name:	Island Farm	Route Reference: WRA02E - Existing (Ewenny Rd Access to Ewenny RB)
Project Reference:	19-00637	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	1	
2. Attractiveness - fear of crime	2	
3. Attractiveness - traffic noise and pollution	1	
4. Attractiveness - other	2	Plenty of green space along route
5. Comfort - condition	1	Some minor areas of defects and overgrown verges but generally good condition
6. Comfort - footway width	0	No footway provided on the western side of Ewenny Road for a section of the route, footway provided on the eastern side is narrow at points
7. Comfort - width on staggered crossings/pedestrian islands/refuges	2	
8. Comfort - footway parking	2	
9. Comfort gradient	2	No significant gradient
10. Comfort - other	2	
11. Directness - footway provision	1	
12. Directness - location of crossings in relation to desire lines	1	
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	1	
14. Directness - impact of controlled crossings on journey time	2	
15. Directness - green man time	2	
16. Directness - other	2	
17. Safety - traffic volume	1	
18. Safety - traffic speed	1	
19. Safety - visibility	1	
20. Coherence - dropped kerbs and tactile paving	1	
Final Score:		28

Walking Route Audit		
Project Name:	Island Farm	Route Reference: WRA03E - Existing (A48 Ewenny RB to Waterton RB)
Project Reference:	19-00637	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	1	Verge slightly overgrown on the A48
2. Attractiveness - fear of crime	2	
3. Attractiveness - traffic noise and pollution	1	Part of route is an A Road. Relatively high traffic volume
4. Attractiveness - other	1	Plenty of green space along route
5. Comfort - condition	2	Some minor areas of defects and overgrown verges but generally good condition
6. Comfort - footway width	1	Footways not provided on much of the northern side of A48
7. Comfort - width on staggered crossings/pedestrian islands/refuges	2	
8. Comfort - footway parking	2	
9. Comfort gradient	1	
10. Comfort - other	1	
11. Directness - footway provision	0	Currently no footway provided on much of the northern side of A48
12. Directness - location of crossings in relation to desire lines	1	Some missing dropped kerb and tactile paving crossings at junctions along route
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	1	
14. Directness - impact of controlled crossings on journey time	0	
15. Directness - green man time	0	
16. Directness - other	1	
17. Safety - traffic volume	1	
18. Safety - traffic speed	1	
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	1	
Final Score:		22

Cycling Route Audit		
Project Name:	Island Farm	Route Reference CRA01E - Existing (A48 Site Frontage to Bridgend TC)
Project Reference:	19-00637	Weather: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	1	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	1	Shared cycle/pedestrian traffic free provision on A48
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	0	Deviation factor over 2
Directness - 5. Stopping and give way frequency	2	Very few junctions on route
Directness - 6. Delay at junctions	1	
Directness - 7. Ability to maintain own speed on links	1	
Directness - 8. Gradient	1	Some inclines present
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	1	
Safety - 10. Motor traffic speed on sections of shared carriageway	0	A large section of A48 is 60mph
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	1	
Safety - 12. Segregation to reduce risk of collision alongside or from behind	1	Some off road cycle facilities provided
Safety - 13. Conflicting movements at junctions	1	
Safety - 14. Legible road markings and road layout	1	
Safety - 15. Conflict with kerbside activity	0	No dedicated cycle facilities provided on majority of route
Safety - 16. Evasion room and unnecessary hazards	2	Wide roads provide good amount of evasion room
Comfort - 17. Major and minor defects	2	Road surface is in good condition
Comfort - 18. Surface type	2	Road surface is in good condition
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	1	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	2	Route well-lit
Attractiveness - 22. Isolation	1	
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian comfort guide for	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	2	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	No cycle parking provided on route
Final Score:	27	

Cycling Route Audit		
Project Name:	Island Farm	Route Reference CRA02E - Existing (Ewenny Road Site Access to Ewenny RB)
Project Reference:	19-00637	Weather: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	1	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	0	
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	2	
Directness - 5. Stopping and give way frequency	1	Very few junctions on route but queues from Ewenny Roundabout
Directness - 6. Delay at junctions	1	
Directness - 7. Ability to maintain own speed on links	1	
Directness - 8. Gradient	1	
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	1	40 mph
Safety - 10. Motor traffic speed on sections of shared carriageway	0	
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	1	
Safety - 12. Segregation to reduce risk of collision alongside or from behind	0	
Safety - 13. Conflicting movements at junctions	0	Confusing Roundabout Layout
Safety - 14. Legible road markings and road layout	2	
Safety - 15. Conflict with kerbside activity	0	No dedicated cycle facilities provided
Safety - 16. Evasion room and unnecessary hazards	1	
Comfort - 17. Major and minor defects	2	Road surface is in good condition
Comfort - 18. Surface type	2	Tarmac
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	0	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	2	Route well-lit
Attractiveness - 22. Isolation	1	Route is mostly overlooked
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	2	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	No cycle parking provided on route
Final Score:	24	

Cycling Route Audit		
Project Name:	Island Farm	Route Reference CRA03E - Existing (A48 Ewenny RB to Waterton RB)
Project Reference:	19-00637	Weather: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	0	Ewenny Roundabout layout is confusing
Cohesion - 2. Provision for cyclists throughout the whole length of the route	0	
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	2	
Directness - 5. Stopping and give way frequency	1	
Directness - 6. Delay at junctions	1	
Directness - 7. Ability to maintain own speed on links	2	
Directness - 8. Gradient	1	
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	1	
Safety - 10. Motor traffic speed on sections of shared carriageway	0	
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	0	Major A road
Safety - 12. Segregation to reduce risk of collision alongside or from behind	0	
Safety - 13. Conflicting movements at junctions	1	
Safety - 14. Legible road markings and road layout	2	
Safety - 15. Conflict with kerbside activity	0	No dedicated cycle facilities provided
Safety - 16. Evasion room and unnecessary hazards	2	Wide roads provide good amount of evasion room
Comfort - 17. Major and minor defects	2	Road surface is in good condition
Comfort - 18. Surface type	2	Road surface in good condition
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	0	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	2	Route well-lit
Attractiveness - 22. Isolation	1	
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	1	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	No cycle parking provided on route
Final Score:	24	

Appendix F

Route Audit Images

Design Guidance: Active Travel (Wales) Act 2013

Walking & Cycling Audit – Photographic Survey

Island Farm, Bridgend

19-00637/PS01

April 2020

ROUTE A – A48 Site Frontage to Bridgend TC



Image 1 – Shared Cycle Path, dropped kerbs and tactile paving crossings at Broadlands Roundabout facing east along A48 (© Google Streetview 08/16)



Image 2 – National speed limit without a barrier could intimidate cyclist/pedestrian (© Google Streetview 08/16)



Image 3 – Off-road cycle route ends and pedestrians are required to cross to continue eastwards along the A48. No crossing facility. Obstructive parking. (© Google Streetview 08/16)



Image 4 – No dropped kerbs and tactile paving. (© Google Streetview 08/16)



Image 5 – No dropped kerbs and tactile paving crossing. (© Google Streetview 08/16)



Image 6 – No footway on the northern side of A48. (© Google Streetview 08/16)



Image 7 – A48 speed limit reduced to 40mph into Bridgend. (© Google Streetview 08/16)



Image 8 – A48 Puffin Crossing near Ewenny Roundabout. (© Google Streetview 08/16)



Image 8 – No advanced cycle stop lines on Ewenny Roundabout. (© Google Streetview 08/16)



Image 9 – 30mph speed limit on Ewenny Road north of roundabout towards the town centre. Dropper kerbs, tactile paving and refuge island crossing. (© Google Streetview 05/18)



Image 10 – Pedestrian refuge island crossing with tactile paving and dropped kerbs. (© Google Streetview 05/18)



Image 11 – Tactile paving missing from school bell mouth. (© Google Streetview 05/18)



Image 12 – Pedestrian crossing with tactile paving, dropped kerbs, reduced crossing width and protective bollards. (© Google Streetview 05/18)



Image 13 – Pedestrian crossing with tactile paving, dropped kerbs and refuge island. (© Google Streetview 05/18)



Image 14 – Ysgol Brynteg junction tactile paving in poor condition. (© Google Streetview 05/18)



Image 15 – Advanced cycle stop line at Ewenny Rod/A473 traffic signals (all arms). Lining fading. Pedestrian crossing phases incorporated in the signals (north, west and south arms). (© Google Streetview 05/18)

ROUTE B – B4265 Ewenny Road – Site to Ewenny Roundabout



Image 16 –Footway missing on western side of Ewenny Road. Street lighting present. 40mph speed limit until approx. 120 north of potential Ewenny Road access junction. (© Google Streetview 05/18)



Image 17 –30mph speed limit towards Ewenny Roundabout. (© Google Streetview 05/18)



Image 18 –Dropped kerbs and pedestrian refuge island at Technology Drive. Tactile paving absent. (© Google Streetview 05/18)



Image 19 – Tactile paving and dropped kerbs absent from eastern access. Footway on eastern side is sub-standard (too narrow) (© Google Streetview 05/18)



Image 20 – Tactile paving absent from Priory Avenue junction. Footway of an acceptable width commences on western side of Ewenny Road (© Google Streetview 05/18)



Image 21 – No advanced cycle stop lines at signalised roundabout. Dropper kerbs, tactile paving and refuge island crossings on southern, western and northern arms. Puffin crossing incorporated into signals on eastern arm. (© Google Streetview 05/18)

ROUTE C – A48 Ewenny Roundabout to Waterton Roundabout



Image 22 – Street lighting present. Footway narrows on southern side of A48. There is potential scope for widening to create a shared pedestrian/cycle route (© Google Streetview 05/18)



Image 23 – Attractive, but narrow footway on northern side of A48 connecting to Hemston Lane. There is potential scope for widening to create a shared pedestrian/cycle route (© Google Streetview 05/18)



Image 24 – Missing dropped kerbs and tactile paving at Hernston Lane junction (© Google Streetview 05/18)



Image 25 – Missing footway on northern side of A48 and sections of narrowed footways on southern side of A48 between Hernston Lane and Picton Roundabout (© Google Streetview 05/18)



Image 26 – Pedestrian refuge islands with tactile paving and dropped kerbs on north, east and west arms of Picton Court Roundabout. Missing tactile paving on southern arm (© Google Satellite 6/25/2018)