HD Ltd

PROPOSED RESIDENTIAL DEVELOPMENT

CRAIG Y PARCAU, BRIDGEND

TRANSPORT STRATEGIC APPRAISAL

19-00637/TSA/02/D

OCTOBER 2020

CORUN
Transport and Highway Engineering

DOCUMENT SIGNATURE AND MODIFICATION SHEET

Project Details

Project Title:	Island Farm, Bridgend		
Job Number:	19-00637	**Document No:**	TSA/02/D
Client:	HD Ltd		
-	**Name**	**Signature**	**Date**
Prepared by	Joseph Cassinelli		October 2020
Checked and Approved for Issue by	Matthew Anderson		October 2020

Modification Details

Rev	Date	Description	Checked By
-	Dec' 2019	Original development schedule	JC/MA
A	Apr' 2020	Revised development schedule	JC/MA
B	May 2020	Incorporated Council comments	JC/MA
C	June 2020	Revised development schedule	JC/MA
D	October 2020	Report updated	MA/JC

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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 development at Craig Y Parcau, Bridgend.

1.1.2 The site is situated to on the southwest periphery of Bridgend and is situated near a major development site known as Island Farm which has outline planning consent for a number of sports facilities including a major stadium, tennis centre and office space (P/08/1114/OUT). The Island Farm site is subject to a revised development schedule, which is also being promoted through the Local Development Plan.

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 the adjacent consented Island Farm development site.

1.2.4 The adjacent Island Farm 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 adjacent consented site (Island Farm) allowed for the potential development impact of this development to be assessed against known highway mitigation works associated with the consented Island Farm scheme.

1.2.6 In transport planning terms, the consented schemes at Island Farm 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 consider the impact of this proposed development on the consented scheme highway mitigation, 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 a relatively small number of additional traffic movements on the highway network, and as such the potential highway mitigation will be minimal.

1.3 Development Proposal

1.3.1 The masterplan shows that the site is able to deliver 115 houses (35dph), with access off the A48 (Broadlands roundabout).

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.

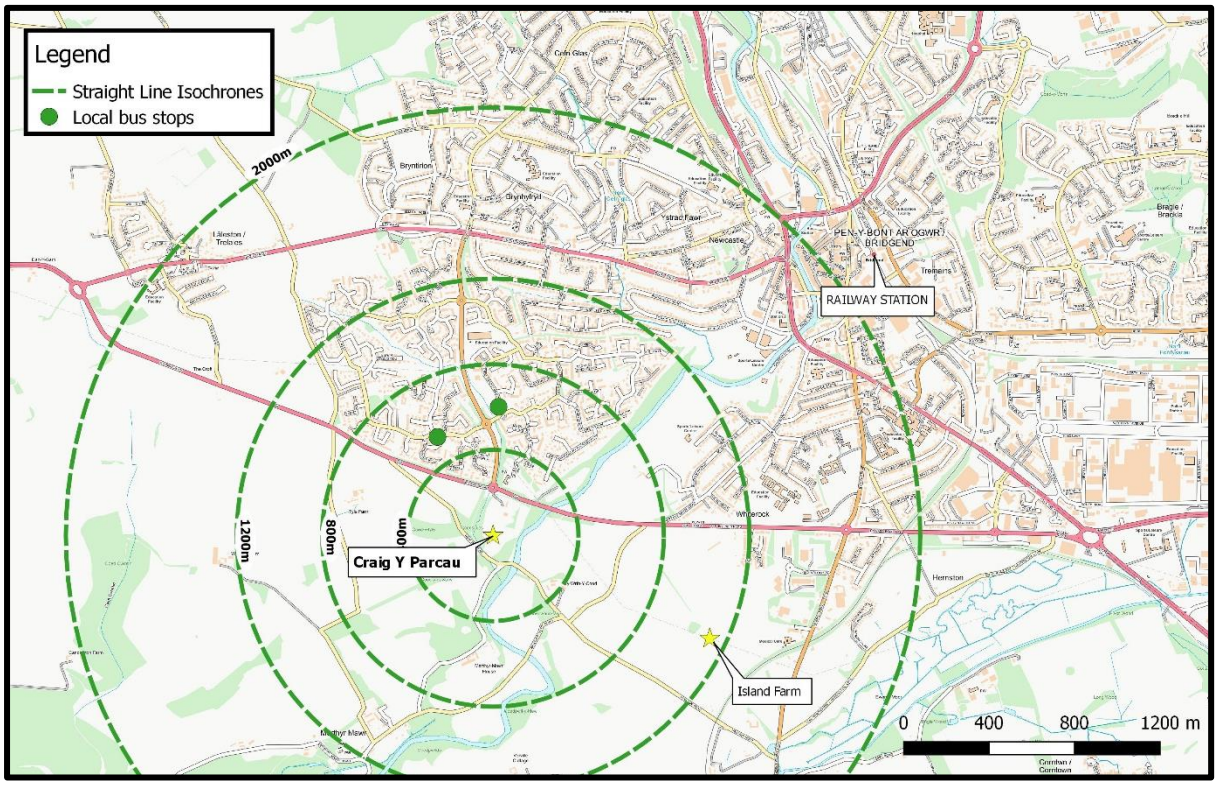
2 EXISTING CONDITIONS

2.1 Site Summary

2.1.1 The site is located to the south of Broadlands and would be accessed via a fourth arm of the A48/B4622 roundabout.

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

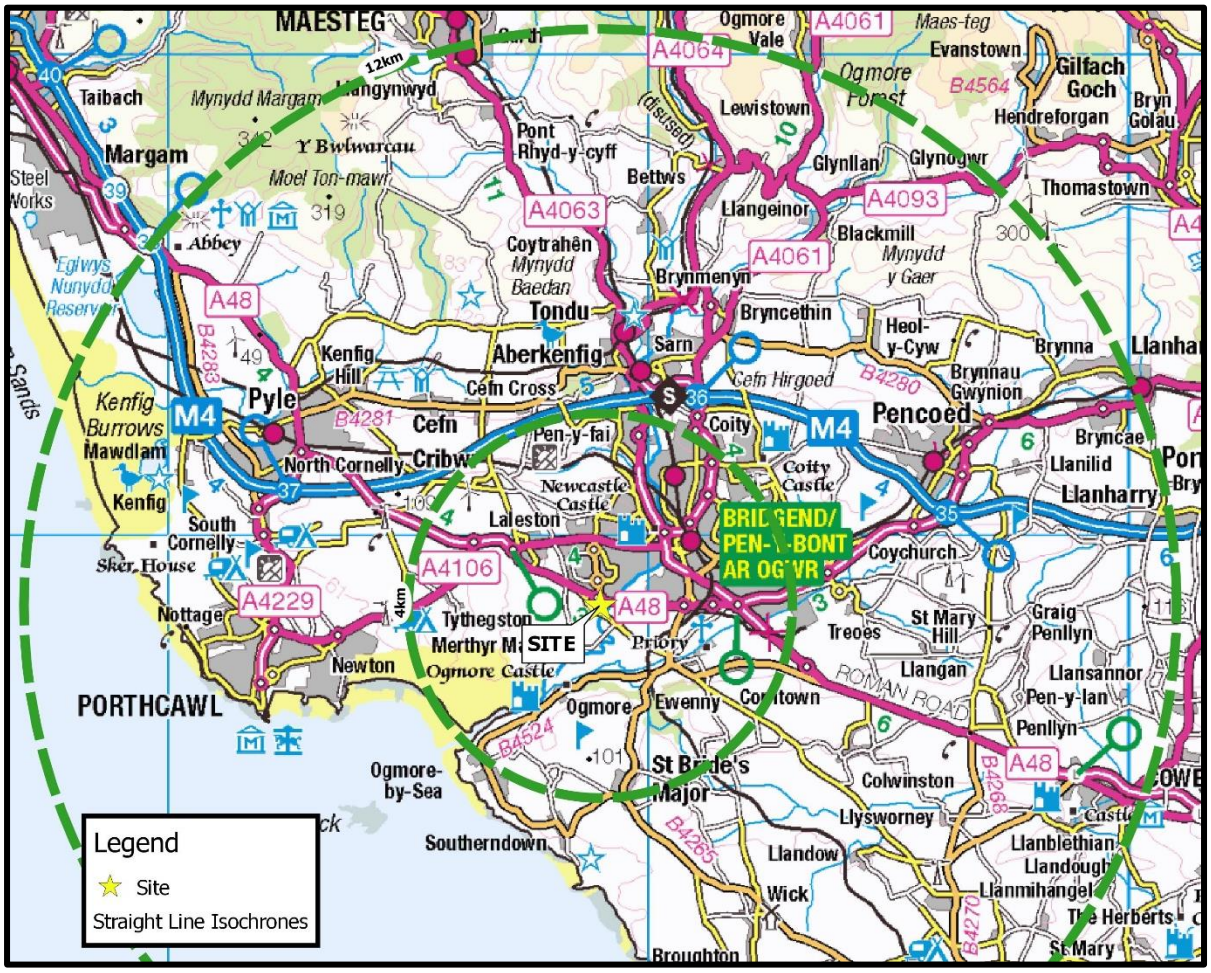
Figure 2.1: Site in Local Context with Distance Isochrones



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 In the immediate vicinity of the site, footways are present on both sides of the A48 with a shared pedestrian/cycle path, 3.0m in width, on the northern side for approximately 350m. The footway provided on the southern side of the A48 provides access to a Puffin crossing circa (135m west of the Ewenny Road Roundabout) which in turn provides access to the wider pedestrian infrastructure towards Bridgend.

2.3.2 Existing footway provision also links the site to Broadlands via the 3.0m wide shared footway/cycleway, where there is a primary school and a local retail centre.

2.3.3 On the A48, footways are limited to the southern side until the Puffin Crossing located circa 135m west of the Ewenny Road Roundabout.

2.3.4 The site also benefits from public footpaths which link the site to the town centre via Newbridge Fields.

2.3.5 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.

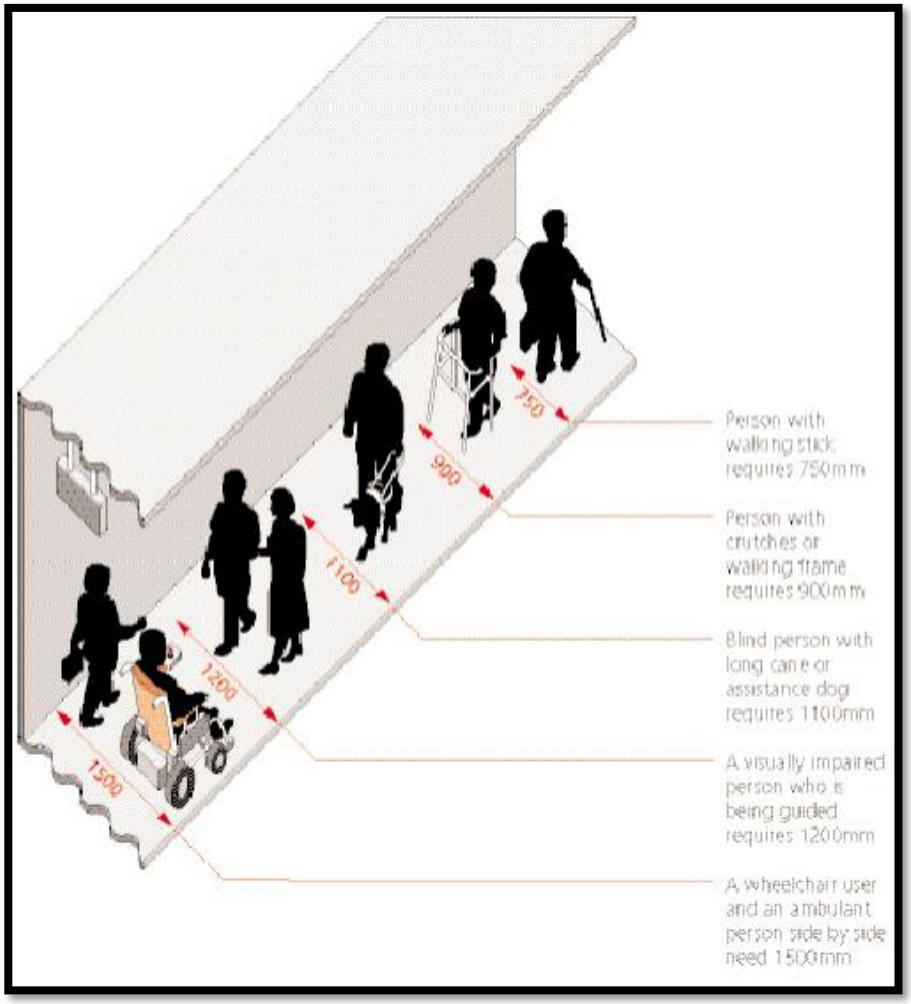
2.3.6 In Paragraph 4.7.3 Active Travel Wales Design Guidance (2014) states that:

> *'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.'

2.3.7 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)



2.3.8 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

2.3.9 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.

2.3.10 **Figure 2.1** demonstrates that the site is within walking distance of many trip attractor/generators in the locality. Bridgend town centre is within 2km of the site.

2.3.11 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 either on-carriageway or via traffic-free routes.

2.4.2 National Cycle Network (NCN) Routes 88 and 885 can be found to the southeast and northeast 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 10 minutes, Merthyr Mawr Road in 7 minutes or via traffic-free local cycle routes through Broadlands which link the site to Newbridge Fields and the town centre. As such travel from the proposed development site by cycle to and from the town centre 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 wider 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 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 The nearest bus stop to the site is located approximately 450m to the north (see **Figure 2.1**). The stop benefits from a bus flag and shelter with timetable information provided. Whilst above the recommended 400m threshold, the additional distance is minor and unlikely to form a barrier to bus travel for the vast majority of users. Even so, new shelters, complete with 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 Bridgend bus station also provides numerous services are available linking the site with destinations further afield, including Cardiff and Swansea.

2.5.5 The site is therefore concluded to be favourably located to help encourage travel by bus but would require improvements to suitably cater for future residents. This will be considered as part of a future planning application within a detailed Transport Assessment

Rail

2.5.6 The nearest railway station is found in Bridgend town centre, approximately 2.4km walking distance from the site, which is within acceptable walking distance and represents an approximate walking time of 30 minutes, based on an average walking speed of 4.8km/hr.

2.5.7 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.

2.5.8 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.

2.5.9 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.

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

2.5.11 However, improvements to active travel routes between the site and the railway station are recommended to remove any existing barriers to sustainable travel.

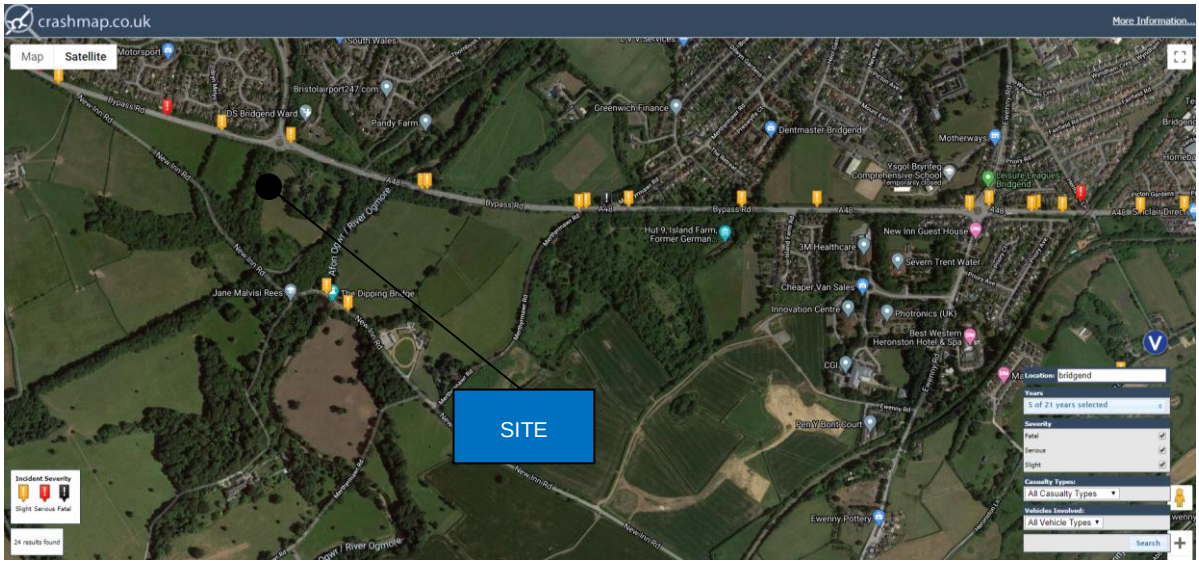
2.6 Local Highway Safety

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 proposed site access on the A48.

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.

2.6.6 The proposed access 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:

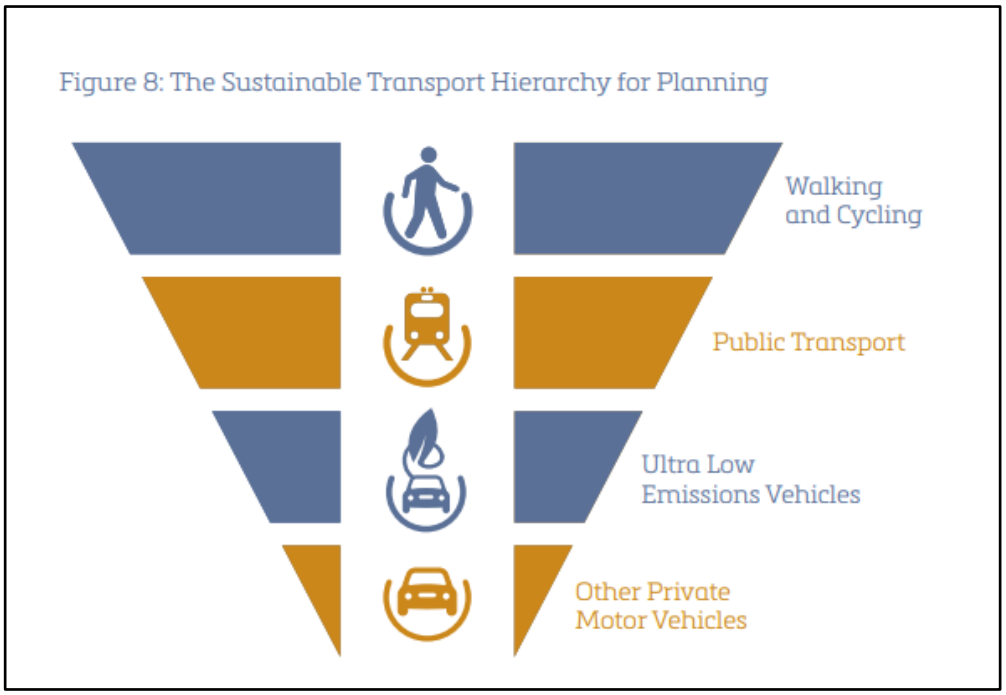
• are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;

• 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 development of the site for residential use will be fully compliant with transport planning policy at local and national level.

4 DEVELOPMENT PROPOSAL

4.1 Introduction

4.1.1 The site is able to deliver 115 houses (35dph), with access off the A48.

4.1.2 An indicative site masterplan is provided herein as **Appendix A**.

4.1.3 The site is situated to the northwest of Island Farm which has outline planning consent for a number of sports facilities including a major stadium, tennis centre and office space (P/08/1114/OUT). The Island Farm site is subject to a revised development schedule, which is also being promoted through the Local Development Plan and would further enhance the sustainable credentials of the Craig Y Parcau site.

4.2 Access

Vehicular Access

4.2.1 Access to the site will be via the existing southern arm off Broadlands Roundabout, which will be upgraded to accommodate the development traffic. Previous capacity analysis of the junction, as part of the existing Island Farm planning permission, indicates that nil detriment or better can be readily achieved within adopted highway land.

Pedestrian and Cycle Access

4.2.2 Pedestrian and cycle access will be enhanced in line with the requirement of Active Travel (Wales) Act 2013.

4.2.3 The extent of these improvements will be developed in close consultation with the local highway authority as part of the planning process and 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

4.2.4 Bus travel will be enhanced as part of the proposal. At this early stage, it is envisaged that any service improvements would be linked to the nearby Island Farm site. 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 at all new or relocated bus stops.

4.2.5 The extent of these improvements will again develop in close consultation with the local highway authority as part of the planning process.

4.2.6 The proposal will also investigate the introduction of secure cycle parking at Bridgend train station.

4.3 Parking

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

4.4 Servicing

4.4.1 The site layout will be designed to ensure that a large refuse collection vehicle and all emergency services 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 B**.

5.2 Proposed Residential (115 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.

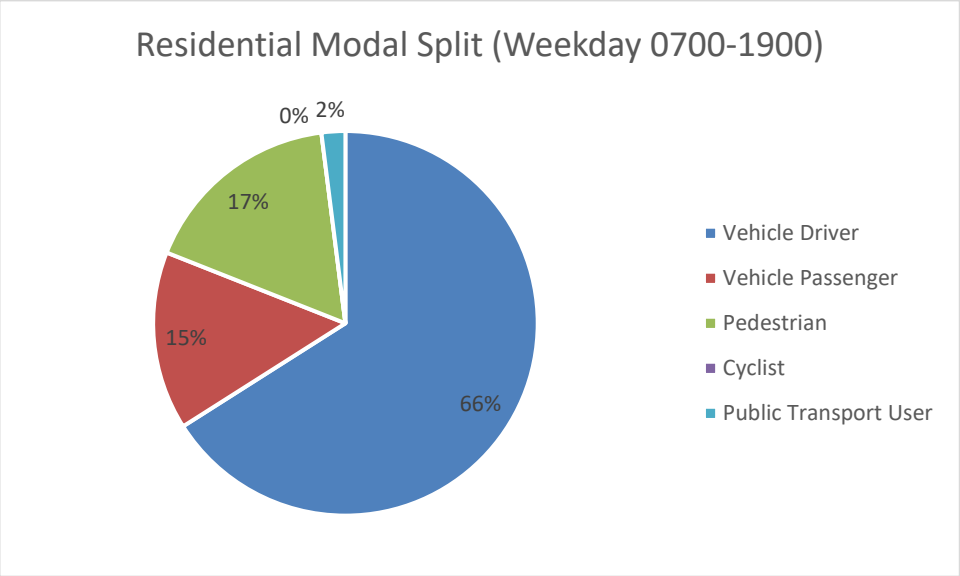
Table 5.1: Trip Generation (Total People) – 115 Residential Units

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	9	66	75
PM Peak 1700 – 1800	0.475	0.475	0.95	55	55	109
12-Hour (0700-1900)	3.45	4.05	7.5	397	466	863

5.2.5 **Table 5.1** demonstrates that a residential development of this scale is estimated to generate approximately 75 and 109 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 863 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 to ensure a robust approach. 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) –115 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	9	37	46
PM Peak 1700 – 1800	0.425	0.175	0.6	49	20	69
12-Hour (0700-1900)	2.425	2.5	4.925	279	288	566

5.2.10 As shown, a residential development of this scale is estimated to generate approximately 46 and 69 two-way vehicular trips in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between 0700-1900 there are anticipated to be 566 vehicular trips.

5.2.11 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.

5.2.12 However, in comparison to the consented Island Farm scheme, which demonstrated suitable highway mitigation solutions, the forecast site traffic volumes are relatively low and would not be difficult to offset as part of a detailed Transport Assessment at the planning application stage.

6 IMPACT ON HIGHWAY NETWORK

6.1 Introduction

6.1.1 The nearby consented Island Farm 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 change 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 Island Farm 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.

6.2.2 The consented Island Farm scheme reviewed three mitigation options, as follows:

1. Option 1 - Alterations to entry arm geometry to provide 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.

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

6.2.4 Along with the development of the Island Farm site, the impact of the Craig Y Parcau site will be assessed in detail as part of the Transport Assessment.

6.3 Additional Off-site Junction Impact

6.3.1 ATC data has been obtained from Bridgend CBC for the A48 near the site access, one either side of the Broadlands Roundabout. The ATCs were undertaken in February 2019.

6.3.2 The ATC to the east showed an AM peak hour two-way traffic flow of 1613 vehicles and PM peak hour two-way traffic flow of 2016 vehicles (5-day average).

6.3.3 The ATC to the west showed an AM peak hour two-way traffic flow of 1159 vehicles and PM peak hour two-way traffic flow of 1387 vehicles (5-day average).

6.3.4 If it is assumed that 20% of development traffic will travel north through Broadlands and that the remaining traffic is distributed in line with the observed ATC flows (AM + PM combined), there would be 47% travelling to/from the town centre and 33% travelling to/from the A48 west.

6.3.5 This equates to an additional 15 development trips on the A48 West in the AM peak hour and 23 trips in the PM peak hour, which represents 1.3% and 1.7% respectively; a negligible increase.

6.3.6 Furthermore, the above distributions equate to an additional 22 development trips on the A48 East in the AM peak hour and 32 trips in the PM peak hour, which represents 1.4% and 1.6% respectively; again, a negligible increase.

6.3.7 Based on the above, vehicle capacity improvements are likely to be limited to Broadlands Roundabout.

6.3.8 Full ATC data is provided herein as **Appendix C**.

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.

7.3 Travel Plan

7.3.1 At the planning application stage, a comprehensive Travel Plan will be required to reduce dependency on private vehicle travel demand amongst residents. This will be achieved by providing innovative and effective initiatives and measures to encourage sustainable travel choices.

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, TRICS data has been explored (**Chart 5.1** applies) to provide a reference point of current modal split data for similar developments and to assist in providing an appropriate interim target.

7.3.4 The TRICS data indicated that 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%).

7.3.5 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%.

7.3.6 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:

- *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.*

7.3.7 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.

7.3.8 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.

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;
- Discussions with local bus operators to create new or divert existing services past the site.

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.

8 SUMMARY AND CONCLUSION

8.1 Summary

8.1.1 This Transport Strategic Appraisal (TSA) 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 development at Craig Y Parcau, Bridgend.

8.1.2 The site is situated to on the southwest periphery of Bridgend and is situated near a major development site known as Island Farm which has outline planning consent for a number of sports facilities including a major stadium, tennis centre and office space (P/08/1114/OUT). The Island Farm site is subject to a revised development schedule, which is also being promoted through the Local Development Plan.

8.1.3 The site is able to deliver 115 houses (35dph), with access off the A48 (Broadlands roundabout).

8.1.4 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.

8.1.5 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.

8.1.6 The adjacent Island Farm site benefits from outline consent for a large-scale sports development and detailed consent for a tennis centre.

8.1.7 This existing transport assessment work and planning history on the adjacent consented site (Island Farm) allowed for the potential development impact of this development to be assessed against known highway mitigation works associated with the consented Island Farm scheme.

8.1.8 It is therefore considered sufficiently robust to consider the impact of this proposed development on the consented scheme highway mitigation, to determine the likely development impact on the surrounding highway network.

8.1.9 A residential development of this scale is estimated to generate approximately 46 and 69 two-way vehicular trips in the traditional peak hours of 0800-0900 and 1700-1800 respectively. Between 0700-1900 there are anticipated to be 566 vehicular trips.

8.1.10 The forecast site traffic volumes are relatively low and would not be difficult to offset as part of a detailed Transport Assessment at the planning application stage.

8.1.11 Based on the assessment undertaken, vehicle capacity improvements are likely to be limited to Broadlands Roundabout only and will involve alterations to the entry arm geometry; these works will provide nil detriment.

8.1.12 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 development proposal will be fully compliant with transport planning policy at local and national level.

8.1.13 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.

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

8.2 Conclusion

8.2.1 There are no obvious highway or transportation reasons why the site could not be developed for residential use.

APPENDIX A

Indicative Site Masterplan

2.5 MASTERPLAN FRAMEWORK

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

The key principles of the development framework are:

1. Utilise existing vehicle access of A48 roundabout
2. Retain central green corridor and utilise for surface water outfall for western part of site
3. Retain existing mature tree planting with opportunity for natural play
4. Creation of development parcels which benefit from outlooking onto mature landscape whilst providing natural surveillance of open space
5. Creation of surface water attenuation at site low points: opportunity for habitat creation
6. Potential to create pedestrian to existing footpath along eastern edge of site

APPENDIX B

TRICS Output

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 undertaking 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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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.*

Parameter summary

Trip rate parameter range selected:	40 - 40 (units:)
Survey date 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 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	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.

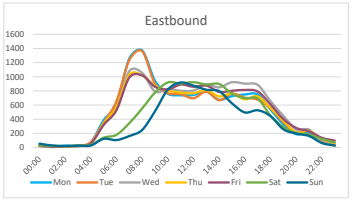
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

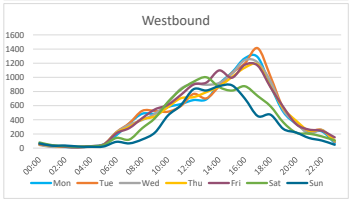
APPENDIX C

ATC Data

Tracsis plc
Traffic and Data Services

Client:	**Bridgend Council**
Project:	**3866-MID A48 Bypass**
Site:	**01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore**
Start Date:	**Wednesday 27 February 2019**
Speed Limit:	**50**
Lat/Long:	51.49541, -3.59227

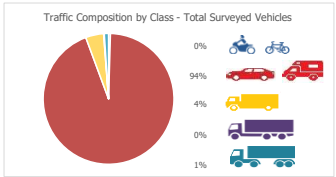




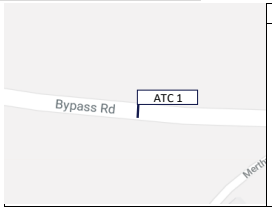
Direction	7-Day Average Speed	7-Day 85th %ile Speed
Eastbound	43.0	48.2
Westbound	44.2	49.5
Combined	43.6	48.8
	mph	mph

50

On a 7-day average		
8.7%	1.4%	0.3%
12.9%	2.2%	0.5%
10.7%	1.8%	0.4%
of vehicles are travelling over posted speed limit (PSL)	of vehicles are traveling 10% +2 over PSL (57mph)	of vehicles are 15mph over PSL (65mph)



Direction	Weekday Average Total Traffic	7-Day Average Traffic	Weekly Traffic Total
Eastbound	12090	11277	78942
Westbound	11378	10575	74028
Combined	23468	21853	152970



Incidents/Observations
No incidents or observations during the survey period

Data annotated with '*' denotes when a given time period has been affected by data loss. For a full breakdown of data loss please refer to Data Summary.

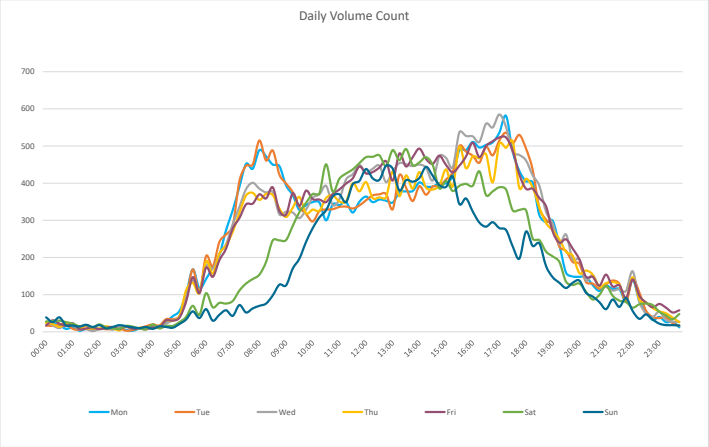
Tracsis will retain all personal data relating to this project, including all video images, for a period of 3 months after receipt of this report and all other data files for one year.
If you would like a copy of the personal data or wish for us to retain for a longer period, please do not hesitate to contact us.

Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore
Start Date: 27/02/2019

Combined

Time	Combined								
	Mon 04-Mar	Tue 05-Mar	Wed 27-Feb	Thu 28-Feb	Fri 01-Mar	Sat 02-Mar	Sun 03-Mar	5 Day Avg	7 Day Avg
00:00	26	17	26	24	17	28	39	22	25
00:15	24	16	17	21	31	29	26	22	23
00:30	18	20	10	13	22	30	39	17	22
00:45	8	21	20	22	16	26	17	17	19
01:00	12	8	17	21	23	22	17	16	17
01:15	3	6	6	11	7	15	14	7	9
01:30	8	17	7	8	9	18	19	10	12
01:45	9	4	2	10	12	12	13	7	9
02:00	8	8	8	9	7	20	18	8	11
02:15	12	7	12	15	11	12	9	11	11
02:30	11	7	6	10	13	9	13	9	10
02:45	11	9	14	4	7	8	18	9	10
03:00	5	3	13	15	14	16	15	10	12
03:15	3	5	8	8	8	14	12	6	8
03:30	9	10	9	11	9	9	10	10	10
03:45	13	15	7	11	7	7	13	11	10
04:00	14	20	11	11	12	20	8	14	14
04:15	14	17	14	14	12	9	15	14	14
04:30	27	34	22	30	31	16	13	29	25
04:45	42	34	31	30	30	16	11	33	28
05:00	56	42	41	42	38	26	21	44	38
05:15	101	88	95	112	81	40	33	95	79
05:30	168	168	138	132	147	70	55	151	125
05:45	117	107	105	104	104	46	37	107	89
06:00	142	204	179	190	173	104	61	178	150
06:15	174	176	169	157	148	66	30	165	131
06:30	207	242	210	211	193	78	46	213	170
06:45	274	262	236	233	224	76	58	246	195
07:00	327	285	290	269	278	83	43	290	225
07:15	390	406	336	320	306	111	72	352	277
07:30	452	447	384	367	343	130	52	399	311
07:45	439	450	401	374	345	142	63	402	316
08:00	489	515	385	355	370	154	70	423	334
08:15	472	461	375	371	359	188	76	408	329
08:30	450	488	376	368	389	246	98	414	345
08:45	446	423	316	332	325	246	127	368	316
09:00	394	399	323	309	315	247	125	348	302
09:15	368	376	321	334	373	285	170	354	318
09:30	328	336	306	363	339	322	197	334	313
09:45	341	317	329	319	380	347	242	337	325
10:00	349	297	361	329	357	371	279	339	335
10:15	348	325	370	326	356	373	308	345	344
10:30	300	329	393	360	349	451	327	346	358
10:45	343	330	341	367	371	377	364	350	356
11:00	341	336	357	351	383	412	370	354	364
11:15	349	337	410	351	399	426	349	369	374
11:30	321	332	424	400	413	437	397	378	389
11:45	350	340	449	378	445	454	406	392	403
12:00	364	354	428	403	426	470	438	395	412
12:15	349	367	439	360	430	471	413	389	404
12:30	356	370	447	362	442	475	409	395	409
12:45	353	371	403	362	459	446	447	390	406
13:00	348	330	432	431	407	489	439	390	411
13:15	375	422	454	365	480	462	380	419	420
13:30	378	388	451	421	445	492	408	417	426
13:45	379	352	446	385	470	449	404	406	412
14:00	402	392	450	430	493	456	414	433	434
14:15	391	369	442	388	465	470	444	411	424
14:30	391	391	407	383	452	449	420	405	413
14:45	400	392	473	394	474	386	395	427	416
15:00	400	410	468	437	449	406	390	433	423
15:15	419	430	443	391	429	379	418	422	416
15:30	489	500	537	498	447	393	344	494	458
15:45	489	485	527	440	472	398	359	483	453
16:00	511	474	526	472	509	393	324	498	458
16:15	496	455	511	467	470	432	294	480	446
16:30	503	498	560	478	500	368	283	508	456
16:45	510	475	550	402	513	378	295	490	446
17:00	536	515	585	507	523	389	279	533	476
17:15	581	536	551	495	523	383	274	537	478
17:30	485	508	484	513	488	327	230	496	434
17:45	433	530	476	387	423	328	197	450	396
18:00	405	493	461	412	385	327	270	431	393
18:15	402	436	421	388	385	251	231	406	359
18:30	314	333	393	335	360	247	238	347	317
18:45	295	302	323	293	338	216	177	310	278
19:00	299	284	291	273	270	203	147	283	252
19:15	234	229	236	249	240	188	132	238	215
19:30	159	218	262	215	249	135	118	221	194
19:45	149	188	194	205	224	126	132	192	174
20:00	148	183	196	158	195	130	138	176	164
20:15	148	134	138	165	148	108	105	147	135
20:30	126	130	153	154	148	87	95	142	128
20:45	110	116	121	121	124	99	80	118	110
21:00	125	128	121	131	154	124	61	132	121
21:15	115	138	111	134	122	97	87	124	115
21:30	115	129	115	126	125	84	67	122	109
21:45	84	81	110	88	91	80	91	91	89
22:00	140	142	163	147	141	65	56	147	122
22:15	82	106	82	86	97	74	35	91	80
22:30	54	57	49	79	79	76	47	64	63
22:45	32	40	40	64	66	72	33	48	50
23:00	40	37	54	55	75	54	22	52	48
23:15	26	39	32	50	65	44	18	42	39
23:30	27	23	27	38	52	34	18	33	31
23:45	12	16	27	26	58	48	17	28	29
07-19	19351	19407	20335	18542	19852	16932	13749	19497	18310
06-22	21960	22249	23177	21352	22680	18717	15197	22284	20762
06-00	22373	22709	23651	21897	23313	19184	15443	22789	21224
00-00	23092	23392	24290	22585	23981	19702	15928	23468	21853

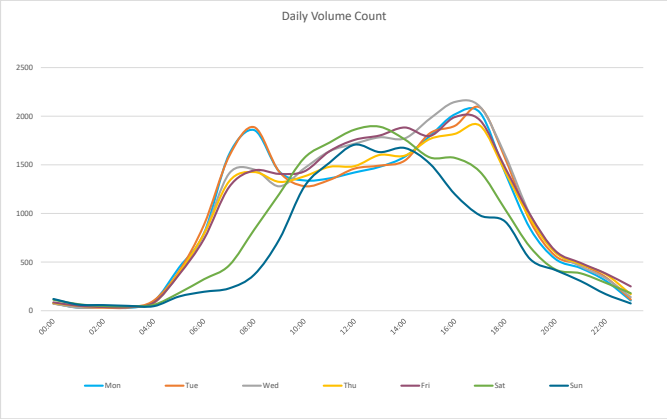


Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore
Start Date: 27/02/2019

Combined

Time	Combined								
	Mon 04-Mar	Tue 05-Mar	Wed 27-Feb	Thu 28-Feb	Fri 01-Mar	Sat 02-Mar	Sun 03-Mar	5 Day Avg	7 Day Avg
00:00	76	74	73	80	86	113	121	78	89
01:00	32	35	32	50	51	67	63	40	47
02:00	42	31	40	38	38	49	58	38	42
03:00	30	33	37	45	38	46	50	37	40
04:00	97	105	78	85	85	61	47	90	80
05:00	442	405	379	390	370	182	146	397	331
06:00	797	884	794	791	738	324	195	801	646
07:00	1608	1588	1411	1330	1272	466	230	1442	1129
08:00	1857	1887	1452	1426	1443	834	371	1613	1324
09:00	1431	1428	1279	1325	1407	1201	734	1374	1258
10:00	1340	1281	1465	1382	1433	1572	1278	1380	1393
11:00	1361	1345	1640	1490	1640	1729	1522	1493	1531
12:00	1422	1462	1717	1487	1757	1862	1707	1569	1631
13:00	1480	1492	1783	1602	1802	1892	1631	1632	1669
14:00	1584	1544	1772	1595	1884	1761	1673	1676	1688
15:00	1797	1825	1975	1766	1797	1576	1511	1832	1750
16:00	2020	1902	2147	1819	1992	1571	1196	1976	1807
17:00	2035	2089	2096	1902	1957	1427	980	2016	1784
18:00	1416	1564	1598	1428	1468	1041	916	1495	1347
19:00	841	919	983	942	983	652	529	934	836
20:00	532	563	608	598	615	424	418	583	537
21:00	439	476	457	479	492	385	306	469	433
22:00	308	345	334	376	383	287	171	349	315
23:00	105	115	140	169	250	180	75	156	148
07-19	19351	19407	20335	18542	19852	16932	13749	19497	18310
06-22	21960	22249	23177	21352	22680	18717	15197	22284	20762
06-00	22373	22709	23651	21897	23313	19184	15443	22789	21224
00-00	23092	23392	24290	22585	23981	19702	15928	23468	21853



Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore
Start Date: 27/02/2019

7 Day Avg | Combined

		Combined Classes											
7 Day Avg	Total	1	2	3	4	5	6	7	8	9	10	11	12
00:00	25	0	23	0	1	0	0	0	0	0	0	0	0
00:15	23	0	21	0	1	0	0	0	0	0	0	0	0
00:30	22	0	20	0	1	0	0	0	0	0	0	0	0
00:45	19	0	16	0	1	0	0	0	0	0	0	0	0
01:00	17	0	15	0	2	0	0	0	0	0	0	0	0
01:15	9	0	8	0	1	0	0	0	0	0	0	0	0
01:30	12	0	9	0	1	0	0	0	0	1	0	0	0
01:45	9	0	7	0	0	0	0	0	0	1	0	0	0
02:00	11	0	9	0	1	0	0	0	0	0	0	0	0
02:15	11	0	9	0	1	0	0	0	0	0	1	0	0
02:30	10	0	8	0	1	0	0	0	0	0	0	0	0
02:45	10	0	9	0	1	0	0	0	0	0	0	0	0
03:00	12	0	11	0	0	0	0	0	0	0	0	0	0
03:15	8	0	7	0	0	0	0	0	0	0	0	0	0
03:30	10	0	8	0	1	0	0	0	0	0	0	0	0
03:45	10	0	10	0	1	0	0	0	0	0	0	0	0
04:00	14	0	12	0	1	0	0	0	0	0	0	0	0
04:15	14	0	12	0	1	0	0	0	0	0	0	0	0
04:30	25	0	23	0	1	0	0	0	0	0	0	0	0
04:45	28	0	23	0	4	0	0	0	0	0	0	0	0
05:00	38	0	35	0	2	0	0	0	0	0	0	0	0
05:15	79	1	75	0	3	0	0	0	0	0	0	0	0
05:30	125	1	120	0	4	0	0	0	0	0	0	0	0
05:45	89	1	80	0	6	0	0	0	0	0	0	0	0
06:00	150	1	141	0	6	0	0	0	2	1	0	0	0
06:15	131	2	117	0	8	0	1	0	1	1	0	0	0
06:30	170	1	157	0	10	0	1	0	0	0	0	0	0
06:45	195	1	179	1	12	1	1	0	0	0	0	0	0
07:00	225	2	202	1	16	1	1	0	0	2	1	0	0
07:15	277	1	254	1	18	1	1	0	0	1	1	0	0
07:30	311	2	282	2	21	1	1	0	0	0	1	0	0
07:45	316	1	287	2	22	1	1	0	1	1	1	0	0
08:00	334	1	305	5	19	1	2	0	0	0	1	0	0
08:15	329	1	300	3	19	1	3	0	0	0	1	0	0
08:30	345	1	313	3	24	1	2	0	0	1	1	0	0
08:45	316	2	282	3	23	1	2	0	1	1	1	0	0
09:00	302	2	269	2	23	0	3	0	1	1	1	0	0
09:15	318	1	291	1	18	2	3	0	0	0	2	0	0
09:30	313	2	280	2	20	1	4	0	1	0	1	0	0
09:45	325	0	295	2	22	1	2	0	1	0	1	0	0
10:00	335	0	306	1	21	0	3	0	1	1	1	0	0
10:15	344	2	311	3	22	0	3	0	1	0	1	0	0
10:30	358	3	330	2	17	1	3	0	1	0	1	0	0
10:45	356	2	325	2	21	1	2	0	1	0	1	0	0
11:00	364	1	334	2	20	2	4	0	0	1	1	0	0
11:15	374	1	345	2	21	1	1	0	0	1	2	0	0
11:30	389	2	359	3	21	1	1	0	1	1	1	0	0
11:45	403	1	376	3	17	1	3	0	1	0	1	0	0
12:00	412	1	383	4	20	1	1	0	1	0	1	0	0
12:15	404	2	377	3	18	1	1	0	1	0	1	0	0
12:30	409	2	383	2	16	1	2	0	1	0	2	0	0
12:45	406	3	378	3	18	0	2	0	1	0	1	0	0
13:00	411	2	380	2	20	1	2	0	1	0	1	0	0
13:15	420	3	388	2	18	2	4	0	1	0	1	0	0
13:30	426	2	396	4	18	1	2	0	1	0	1	0	0
13:45	412	1	386	2	18	1	2	0	1	0	1	0	0
14:00	434	2	404	3	18	1	3	1	1	0	1	0	0
14:15	424	3	394	4	19	1	1	0	1	0	1	0	0
14:30	413	3	381	2	23	0	2	0	1	1	1	0	0
14:45	416	2	384	4	20	0	2	0	1	1	1	0	0
15:00	423	3	391	2	22	0	2	0	1	0	2	0	0
15:15	416	2	386	3	20	0	2	0	0	0	1	0	0
15:30	458	3	429	2	19	0	2	0	1	1	1	0	0
15:45	453	2	426	3	19	0	1	0	0	0	1	0	1
16:00	458	3	431	4	18	0	1	0	0	1	1	0	0
16:15	446	3	422	3	16	0	1	0	0	0	1	0	0
16:30	456	2	434	3	15	0	1	0	0	1	0	0	0
16:45	446	2	425	2	14	0	1	0	0	0	0	0	0
17:00	476	1	458	4	12	0	1	0	0	0	1	0	0
17:15	478	2	458	4	11	0	1	0	0	0	0	0	0
17:30	434	2	413	3	13	0	1	0	0	0	1	0	0
17:45	396	2	381	1	11	0	0	0	0	0	1	0	0
18:00	393	1	380	2	9	0	0	0	0	0	1	0	0
18:15	359	0	349	1	8	0	0	0	0	0	0	0	0
18:30	317	1	308	1	6	0	0	0	0	0	1	0	0
18:45	278	1	266	1	8	0	0	0	0	1	0	0	0
19:00	252	1	243	2	5	0	0	0	0	1	0	0	0
19:15	215	0	207	0	7	0	1	0	0	0	0	0	0
19:30	194	1	189	0	3	0	0	0	0	0	0	0	0
19:45	174	1	169	1	3	0	1	0	0	0	0	0	0
20:00	164	1	160	0	3	0	0	0	0	0	0	0	0
20:15	135	0	132	0	2	0	0	0	0	0	0	0	0
20:30	128	1	123	0	3	0	0	0	0	0	0	0	0
20:45	110	0	107	0	2	0	0	0	0	0	0	0	0
21:00	121	0	117	0	3	0	0	0	0	0	0	0	0
21:15	115	0	111	0	2	0	0	0	0	1	0	0	0
21:30	109	1	104	0	2	0	0	0	0	1	0	0	0
21:45	89	0	86	0	2	0	0	0	0	1	0	0	0
22:00	122	0	119	1	2	0	0	0	0	0	0	0	0
22:15	80	0	77	0	1	1	0	0	0	0	0	0	0
22:30	63	0	60	0	1	0	0	0	0	1	1	0	0
22:45	50	0	48	0	1	0	0	0	0	0	0	0	0
23:00	48	0	45	0	2	0	0	0	0	1	1	0	0
23:15	39	0	37	0	1	0	0	0	0	0	0	0	0
23:30	31	0	29	0	1	0	0	0	0	1	0	0	0
23:45	29	0	27	0	1	0	0	0	0	1	0	0	0
07-19	18310	84	17036	117	851	32	84	6	28	22	41	2	7
06-22	20762	94	19378	124	924	34	89	7	31	29	44	2	7
06-00	21224	96	19818	125	934	35	89	7	32	33	48	2	7
00-00	21853	100	20391	126	970	36	90	7	35	39	51	2	7

ARX Classification Scheme

Class No.	No. Axles	Axle Groups	Description	Aggregate	Vehicle Example
1	2	1 or 2	Very Short - Bicycle or Motorcycle	Light	
2	2	1 or 2	Short - Car, 4WD or Light Van		
3	3/4/5	3	Short Towing - Trailer, Caravan etc.		
4	2	2	2-Axle Truck or Bus	Medium	
5	3	2	3-Axle Truck or Bus		
6	>3	2	4-Axle Truck		
7	3	3	3-Axle Articulated Vehicle or Rigid Vehicle & Trailer	Heavy	
8	4	>2	4-Axle Articulated Vehicle or Rigid Vehicle & Trailer		
9	5	>2	5-Axle Articulated Vehicle or Rigid Vehicle & Trailer		
10	>=6	>2	6 (or more) Axle Articulated Vehicle or Rigid Vehicle & Trailer		
11	>6	4	B-Double or Heavy Truck & Trailer		
12	>6	>=5	Double or Triple Heavy Truck & 2 (or more) Trailers		

Tracsis plc
Traffic and Data Services

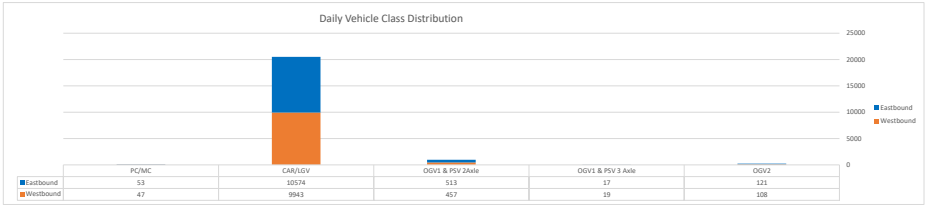
Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore
Start Date: 27/02/2019

Eastbound						
Day	PC/MC	CAR/LGV	OGV1 & PSV 2Axle	OGV1 & PSV 3 Axle	OGV2	Total
Monday	49	11159	633	31	159	12031
Tuesday	36	11085	649	25	160	11955
Wednesday	102	11702	645	14	129	12592
Thursday	38	10818	594	16	144	11610
Friday	65	11428	574	25	169	12261
Saturday	63	9739	286	4	56	10148
Sunday	19	8084	208	1	33	8345
5day	58	11238	619	22	152	12090
7day	53	10574	513	17	121	11277

Westbound						
Day	PC/MC	CAR/LGV	OGV1 & PSV 2Axle	OGV1 & PSV 3 Axle	OGV2	Total
Monday	41	10314	529	36	141	11061
Tuesday	31	10605	607	23	171	11437
Wednesday	96	10930	543	12	117	11698
Thursday	34	10286	522	23	110	10975
Friday	68	10901	581	25	145	11720
Saturday	42	9194	263	10	45	9554
Sunday	19	7373	157	4	30	7583
5day	54	10607	556	24	137	11378
7day	47	9943	457	19	108	10575

Combined						
Day	PC/MC	CAR/LGV	OGV1 & PSV 2Axle	OGV1 & PSV 3 Axle	OGV2	Total
Monday	90	21473	1162	67	300	23092
Tuesday	67	21690	1256	48	331	23392
Wednesday	198	22632	1188	26	246	24290
Thursday	72	21104	1116	39	254	22585
Friday	133	22329	1155	50	314	23981
Saturday	105	18933	549	14	101	19702
Sunday	38	15457	365	5	63	15928
5day	112	21846	1175	46	289	23468
7day	100	20517	970	36	230	21853

7day



Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore
Start Date: 27/02/2019

7 Day Avg | Combined

7 Day Avg Time	Total		0-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95-100	100+	50 +PSL	50 %	57 ACPO	57 %	65 DFT	65 %	Avg	85th	95th
00:00	89		0	0	0	0	0	0	3	13	28	22	11	6	3	1	1	1	0	0	0	0	45	50.9%	16	18.5%	6	7.1%	51.7	59.1	68.3
01:00	47		0	0	0	0	0	1	2	8	12	12	6	3	2	1	1	0	0	0	0	0	25	52.7%	10	21.5%	4	9.1%	51.6	60.3	70.4
02:00	42		0	0	0	0	0	0	2	7	11	9	8	3	1	1	0	0	0	0	0	0	22	51.7%	9	21.6%	2	5.7%	51.5	59.2	66.3
03:00	40		0	0	0	0	0	0	2	5	13	9	5	2	2	1	0	0	0	0	0	0	19	47.7%	7	16.5%	3	6.5%	50.9	57.9	65.6
04:00	80		0	0	0	0	0	1	3	12	26	19	11	4	2	1	1	0	0	0	0	0	38	48.0%	12	15.6%	3	4.1%	50.7	57.3	64.7
05:00	331		0	0	0	0	0	1	15	75	123	74	25	10	4	2	0	1	1	0	0	0	116	35.2%	29	8.7%	9	2.6%	48.8	54.3	60.9
06:00	646		0	0	1	0	0	4	26	153	256	140	42	15	6	2	1	0	0	0	0	0	205	31.8%	44	6.8%	10	1.5%	48.2	53.3	58.7
07:00	1129		1	3	9	9	17	44	203	406	296	104	29	7	2	0	0	0	0	0	0	0	141	12.5%	21	1.9%	2	0.2%	43.3	49.3	53.4
08:00	1324		5	17	31	42	48	103	242	404	310	96	17	7	1	0	0	0	0	0	0	0	122	9.2%	15	1.2%	2	0.1%	40.8	48.3	51.9
09:00	1258		0	0	1	3	11	45	220	497	370	93	14	2	1	0	0	0	0	0	0	0	111	8.8%	9	0.7%	1	0.1%	43.5	48.4	51.6
10:00	1393		0	0	8	4	5	55	275	593	363	73	12	3	0	0	0	0	0	0	0	0	88	6.3%	8	0.6%	0	0.0%	42.9	47.6	50.8
11:00	1531		0	1	2	5	9	53	334	674	369	69	11	2	1	0	0	0	0	0	0	0	83	5.4%	8	0.5%	1	0.1%	42.6	47.2	50.3
12:00	1631		0	0	1	5	4	43	353	731	398	80	12	3	1	0	0	0	0	0	0	0	95	5.8%	9	0.6%	1	0.1%	42.9	47.4	50.5
13:00	1669		0	0	2	6	13	46	367	724	415	84	10	1	1	0	0	0	0	0	0	0	96	5.8%	6	0.4%	1	0.1%	42.8	47.4	50.4
14:00	1688		0	0	1	1	11	64	374	727	402	84	17	4	1	0	0	0	0	0	0	0	107	6.3%	13	0.8%	2	0.1%	42.8	47.5	50.6
15:00	1750		0	0	1	2	3	39	393	767	439	89	14	2	1	0	0	0	0	0	0	0	106	6.1%	9	0.5%	1	0.1%	43.0	47.5	50.5
16:00	1807		0	1	1	1	7	63	405	784	435	96	13	2	0	0	0	0	0	0	0	0	111	6.1%	9	0.5%	1	0.0%	42.8	47.4	50.6
17:00	1784		0	2	2	3	8	93	458	686	417	95	14	4	1	0	0	0	0	0	0	0	115	6.4%	11	0.6%	2	0.1%	42.4	47.5	50.8
18:00	1347		0	0	0	1	6	34	297	550	342	93	19	3	1	1	0	0	0	0	0	0	117	8.7%	13	0.9%	2	0.1%	43.3	48.3	51.8
19:00	836		0	0	0	0	0	7	85	297	292	115	29	7	2	1	0	0	0	0	0	0	153	18.3%	24	2.9%	3	0.3%	45.9	50.7	54.9
20:00	537		0	0	0	0	0	2	35	148	217	90	30	10	2	1	1	0	0	0	0	0	135	25.1%	29	5.5%	5	0.9%	47.3	52.3	57.4
21:00	433		0	0	0	0	0	2	31	117	162	81	26	8	3	1	1	0	0	0	0	0	121	27.9%	27	6.2%	6	1.5%	47.5	52.9	58.0
22:00	315		0	0	0	0	0	1	18	71	113	71	24	11	4	1	1	0	0	0	0	0	112	35.7%	29	9.1%	7	2.1%	48.7	54.5	60.8
23:00	148		0	0	0	0	0	1	9	26	51	31	14	9	3	2	0	0	0	0	0	0	60	40.8%	24	16.2%	6	4.2%	50.0	57.5	64.4
07-19	18310		6	24	59	83	142	681	3921	7542	4556	1056	183	41	9	3	2	0	0	0	0	1	1293	7.1%	131	0.7%	16	0.1%	42.8	47.7	51.0
06-22	20762		6	24	60	83	143	697	4097	8257	5483	1481	310	81	23	8	5	1	1	0	0	1	1907	9.2%	255	1.2%	39	0.2%	43.3	48.4	52.0
06-00	21224		6	24	60	83	143	699	4124	8354	5647	1582	348	102	29	11	6	2	2	0	0	1	2079	9.8%	308	1.4%	52	0.2%	43.4	48.4	52.2
00-00	21853		6	24	60	83	144	702	4149	8474	5860	1727	414	130	43	18	10	4	3	1	1	1	2345	10.7%	391	1.8%	79	0.4%	43.6	48.8	52.8

Abbreviations	
PSL	Posted Speed Limit
ACPO	Association of Chief Police Officers (Used to display the speed limit the police will generally enforce, 110% of PSL +2mph)
DFT	Department for Transport (Used to display a speed statistic used by the government looking at vehicles travelling over 15mph above the PSL)

Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 Bypass, Merthyr Mawr Rd/River Ogmore
Start Date: 27/02/2019

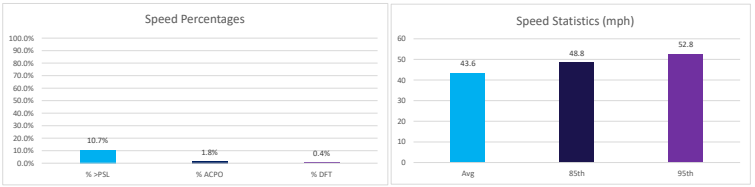
Eastbound						
Day	Avg	85th	95th	% >PSL	% >ACPO	%>DFT
Monday	42	47.8	51.6	7.7%	1.2%	0.2%
Tuesday	42.3	48	51.3	7.8%	0.9%	0.2%
Wednesday	43.4	48.2	51.9	8.5%	1.2%	0.3%
Thursday	43.1	47.9	51.6	7.8%	1.2%	0.3%
Friday	43.4	48.2	51.7	8.4%	1.4%	0.3%
Saturday	43.4	48.4	52.7	9.9%	1.7%	0.3%
Sunday	43.9	48.9	53.5	11.7%	2.3%	0.5%
5day	42.8	48	51.7	8.1%	1.2%	0.2%
7day	43	48.2	52	8.7%	1.4%	0.3%

Westbound						
Day	Avg	85th	95th	% >PSL	% >ACPO	%>DFT
Monday	43.9	49.1	53	12.1%	1.9%	0.4%
Tuesday	44	49.3	53.1	12.3%	1.8%	0.2%
Wednesday	44.1	49.7	54	13.7%	2.3%	0.4%
Thursday	44.3	49.6	53.5	13.2%	2.3%	0.4%
Friday	44.5	49.6	53.9	13.5%	2.5%	0.5%
Saturday	44.1	49.4	53.6	12.6%	2.2%	0.6%
Sunday	44.5	49.4	54.1	13.3%	2.7%	0.8%
5day	44.2	49.5	53.5	12.9%	2.2%	0.4%
7day	44.2	49.5	53.6	12.9%	2.2%	0.5%

Combined						
Day	Avg	85th	95th	% >PSL	% >ACPO	%>DFT
Monday	42.9	48.4	52.3	9.8%	1.5%	0.3%
Tuesday	43.1	48.7	52.3	10.0%	1.4%	0.2%
Wednesday	43.7	48.9	52.9	11.0%	1.8%	0.3%
Thursday	43.7	48.8	52.8	10.4%	1.7%	0.3%
Friday	43.9	48.9	52.9	10.9%	1.9%	0.4%
Saturday	43.7	48.9	53.1	11.2%	2.0%	0.5%
Sunday	44.2	49.2	53.8	12.4%	2.4%	0.6%
5day	43.5	48.7	52.6	10.4%	1.7%	0.3%
7day	43.6	48.8	52.8	10.7%	1.8%	0.4%

Combined

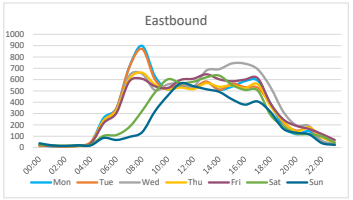
7day

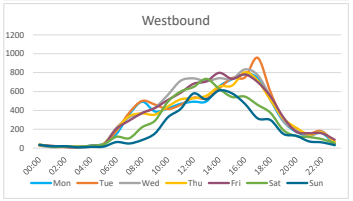


Abbreviations	
PSL	Posted Speed Limit
ACPO	Association of Chief Police Officers (Used to display the speed limit the police will generally enforce, 110% of PSL +2mph)
DFT	Department for Transport (Used to display a speed statistic used by the government looking at vehicles travelling over 15mph above the PSL)

Tracsis plc
Traffic and Data Services

Client:	**Bridgend Council**
Project:	**3866-MID A48 Bypass**
Site:	**01 - A48 New Inn Road Junction/Broadlands Roundabout**
Start Date:	**Wednesday 27 February 2019**
Speed Limit:	**50**
Lat/Long:	51.4972, -3.6038



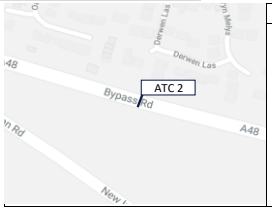


Direction	7-Day Average Speed	7-Day 85th %ile Speed
Eastbound	43.4	48.6
Westbound	39.4	44.3
Combined	41.4	47.0
	mph	mph

50

On a 7-day average		
10.0%	1.5%	0.2%
2.8%	0.4%	0.1%
6.4%	1.0%	0.1%
of vehicles are travelling over posted speed limit (PSL)	of vehicles are traveling 10% +2 over PSL (57mph)	of vehicles are 15mph over PSL (65mph)

Direction	Weekday Average Total Traffic	7-Day Average Traffic	Weekly Traffic Total
Eastbound	8319	7676	53730
Westbound	8094	7426	51983
Combined	16413	15102	105713



Incidents/Observations
No incidents or observations during the survey period

Data annotated with '*' denotes when a given time period has been affected by data loss. For a full breakdown of data loss please refer to Data Summary.

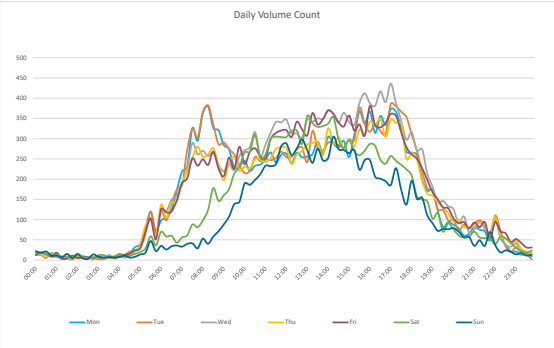
Tracsis will retain all personal data relating to this project, including all video images, for a period of 3 months after receipt of this report and all other data files for one year.
If you would like a copy of the personal data or wish for us to retain for a longer period, please do not hesitate to contact us.

Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 -A48 New Inn Road Junction/Broadlands Roundabout
Start Date: 27/02/2019

Combined

	Combined								
Time	Mon 04-Mar	Tue 05-Mar	Wed 27-Feb	Thu 28-Feb	Fri 01-Mar	Sat 02-Mar	Sun 03-Mar	5 Day Avg	7 Day Avg
00:00	17	14	18	15	12	18	22	15	17
00:15	12	12	13	14	19	18	18	14	15
00:30	13	12	5	10	15	15	21	11	13
00:45	8	13	18	13	9	13	11	12	12
01:00	9	7	11	16	18	13	11	12	12
01:15	3	7	3	6	4	9	7	5	6
01:30	8	9	4	7	4	7	15	6	8
01:45	6	6	1	5	11	6	5	6	6
02:00	7	5	8	7	5	16	14	6	9
02:15	7	5	10	10	8	7	4	8	7
02:30	7	4	4	6	7	6	3	6	5
02:45	5	5	8	1	4	5	14	5	6
03:00	4	2	7	7	9	12	8	6	7
03:15	2	3	3	6	6	12	6	4	5
03:30	12	8	6	11	9	6	7	9	8
03:45	5	9	8	8	4	6	7	7	7
04:00	11	15	10	10	9	14	7	11	11
04:15	10	13	6	7	13	8	11	10	10
04:30	17	21	10	13	16	11	6	15	13
04:45	32	22	22	24	24	15	8	25	21
05:00	39	30	33	36	29	20	14	33	29
05:15	78	64	73	85	70	28	18	74	59
05:30	119	120	99	99	103	59	47	108	92
05:45	72	66	59	62	51	36	22	62	53
06:00	98	121	125	137	126	70	35	121	102
06:15	104	98	121	104	118	58	26	109	90
06:30	124	140	149	142	120	60	34	135	110
06:45	171	174	159	145	147	43	36	159	125
07:00	219	185	187	193	190	56	33	195	152
07:15	231	272	225	220	202	61	40	230	179
07:30	326	325	289	253	251	88	41	289	225
07:45	295	303	261	280	233	81	29	274	212
08:00	363	367	270	255	249	98	53	301	236
08:15	380	382	257	261	235	124	40	303	240
08:30	326	335	265	277	268	178	58	294	244
08:45	321	286	235	235	226	146	71	261	217
09:00	284	291	219	197	207	160	88	240	207
09:15	274	274	238	238	253	175	107	255	223
09:30	228	261	222	255	226	213	138	238	220
09:45	231	234	257	221	280	230	144	245	228
10:00	245	215	271	231	237	266	189	240	236
10:15	220	220	279	226	267	268	186	242	238
10:30	233	255	316	250	276	298	198	266	262
10:45	236	244	256	247	256	251	212	248	243
11:00	249	249	285	242	252	261	233	255	253
11:15	266	247	315	252	299	300	232	276	273
11:30	241	252	341	275	314	305	237	285	281
11:45	260	268	340	278	329	304	261	293	292
12:00	263	254	347	277	321	304	288	292	293
12:15	239	256	314	237	304	319	259	270	275
12:30	265	274	313	261	342	320	276	291	293
12:45	254	278	303	269	323	287	298	285	287
13:00	256	242	348	285	308	356	271	288	295
13:15	262	319	342	289	363	338	240	315	308
13:30	293	276	350	292	335	329	275	309	307
13:45	262	271	349	258	348	331	246	298	295
14:00	305	290	369	326	370	337	252	332	321
14:15	287	291	361	287	361	353	305	317	321
14:30	279	284	339	303	340	298	274	309	302
14:45	294	278	364	275	330	277	272	308	299
15:00	254	298	341	296	357	297	264	309	301
15:15	309	296	334	280	320	269	272	308	297
15:30	367	377	388	323	335	259	223	358	325
15:45	337	336	412	312	307	270	247	341	317
16:00	367	317	387	342	381	287	247	359	333
16:15	314	336	381	334	332	282	206	339	312
16:30	356	319	417	349	328	248	201	354	317
16:45	334	310	390	304	339	238	195	335	301
17:00	373	386	436	347	361	257	185	381	335
17:15	366	380	387	339	356	245	227	366	329
17:30	325	366	344	339	315	235	173	338	300
17:45	268	353	297	250	279	224	137	289	258
18:00	265	310	316	266	261	209	196	284	260
18:15	260	270	270	249	250	157	151	260	230
18:30	199	220	274	195	227	149	154	223	203
18:45	171	177	213	164	198	145	110	185	168
19:00	173	172	181	159	167	102	91	170	149
19:15	122	125	143	143	150	116	72	137	124
19:30	82	124	146	130	130	70	77	122	108
19:45	94	98	133	116	128	91	76	114	105
20:00	87	98	126	95	103	76	79	102	95
20:15	78	74	91	100	91	61	70	87	81
20:30	61	87	108	82	94	56	86	78	78
20:45	65	79	68	81	78	58	57	74	69
21:00	82	90	76	83	93	70	35	85	76
21:15	75	98	95	92	81	56	49	88	78
21:30	71	86	78	89	94	54	35	84	72
21:45	49	51	69	60	53	54	69	56	58
22:00	102	110	105	106	94	39	37	103	85
22:15	54	72	57	57	71	58	19	62	55
22:30	39	33	38	54	66	53	24	46	44
22:45	21	21	33	40	45	43	20	32	32
23:00	21	31	41	48	52	30	14	39	34
23:15	13	19	14	27	42	23	17	23	22
23:30	15	14	20	21	31	18	11	20	19
23:45	9	2	15	18	31	24	13	15	16
07-19	13552	13829	15014	12934	14032	11494	9054	13872	12844
06-22	15088	15544	16882	14692	15805	12589	9951	15602	14364
06-00	15362	15846	17205	15063	16237	12877	10106	15943	14671
00-00	15865	16318	17644	15541	16696	13237	10412	16413	15102

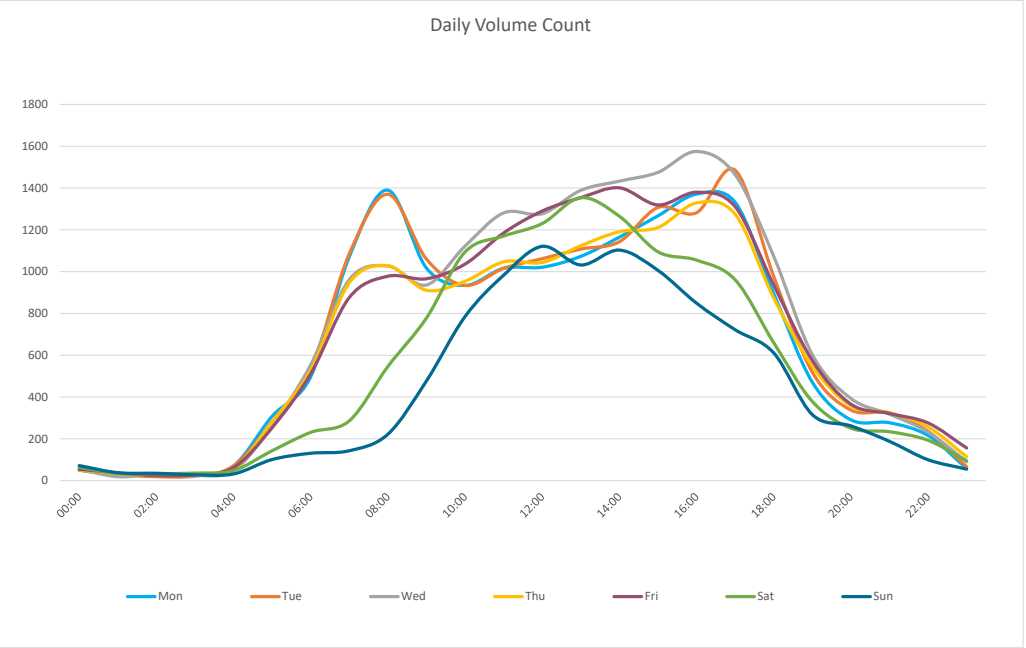


Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 - A48 New Inn Road Junction/Broadlands Roundabout
Start Date: 27/02/2019

Combined

Time	Combined								
	Mon 04-Mar	Tue 05-Mar	Wed 27-Feb	Thu 28-Feb	Fri 01-Mar	Sat 02-Mar	Sun 03-Mar	5 Day Avg	7 Day Avg
00:00	50	51	54	52	55	64	72	52	57
01:00	26	29	19	34	37	35	38	29	31
02:00	26	19	30	24	24	34	35	25	27
03:00	23	22	24	32	28	36	28	26	28
04:00	70	71	48	54	62	48	32	61	55
05:00	308	280	264	282	253	143	101	277	233
06:00	497	533	554	528	511	231	131	525	426
07:00	1071	1085	962	946	876	286	143	988	767
08:00	1390	1370	1027	1028	978	546	222	1159	937
09:00	1017	1060	936	911	966	778	477	978	878
10:00	934	934	1122	954	1036	1094	785	996	980
11:00	1016	1016	1281	1047	1185	1170	983	1109	1100
12:00	1021	1062	1277	1044	1290	1230	1121	1139	1149
13:00	1073	1108	1389	1124	1354	1354	1032	1210	1205
14:00	1165	1143	1433	1191	1401	1265	1103	1267	1243
15:00	1267	1307	1475	1211	1319	1095	1006	1316	1240
16:00	1371	1282	1575	1329	1380	1055	849	1387	1263
17:00	1332	1485	1464	1275	1311	961	722	1373	1221
18:00	895	977	1073	874	936	660	611	951	861
19:00	471	519	603	548	575	379	316	543	487
20:00	291	338	393	358	366	251	262	349	323
21:00	277	325	318	324	321	234	188	313	284
22:00	216	236	233	257	276	193	100	244	216
23:00	58	66	90	114	156	95	55	97	91
07-19	13552	13829	15014	12934	14032	11494	9054	13872	12844
06-22	15088	15544	16882	14692	15805	12589	9951	15602	14364
06-00	15362	15846	17205	15063	16237	12877	10106	15943	14671
00-00	15865	16318	17644	15541	16696	13237	10412	16413	15102



Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 - A48 New Inn Road Junction/Broadlands Roundabout
Start Date: 27/02/2019

7 Day Avg | Combined

		Combined Classes											
	Total	1	2	3	4	5	6	7	8	9	10	11	12
7 Day Avg													
00:00	17	0	15	0	1	1	0	0	0	0	0	0	0
00:15	15	0	14	0	0	0	0	0	0	0	0	0	0
00:30	13	0	12	0	0	0	0	0	0	0	0	0	0
00:45	12	0	10	0	1	0	0	0	0	0	0	0	0
01:00	12	0	11	0	0	0	0	0	0	0	0	0	0
01:15	6	0	5	0	0	0	0	0	0	0	0	0	0
01:30	8	0	6	0	1	0	0	0	0	1	0	0	0
01:45	6	0	4	0	0	0	0	0	0	1	0	0	0
02:00	9	0	7	0	1	0	0	0	0	0	0	0	0
02:15	7	0	6	0	1	0	0	0	0	0	0	0	0
02:30	5	0	4	0	0	0	0	0	0	0	0	0	0
02:45	6	0	5	0	0	0	0	0	0	0	0	0	0
03:00	7	0	6	0	0	0	0	0	0	0	0	0	0
03:15	5	0	4	0	0	0	0	0	0	0	0	0	0
03:30	8	0	7	0	1	0	0	0	0	0	0	0	0
03:45	7	0	6	0	0	0	0	0	0	0	0	0	0
04:00	11	0	10	0	1	0	0	0	0	0	0	0	0
04:15	10	0	9	0	0	0	0	0	0	0	0	0	0
04:30	13	0	12	0	1	0	0	0	0	0	0	0	0
04:45	21	0	17	0	3	0	0	0	0	0	0	0	0
05:00	29	0	27	0	1	0	0	0	0	0	0	0	0
05:15	59	0	56	0	2	0	0	0	0	0	0	0	0
05:30	92	1	87	0	4	0	0	0	0	0	0	0	0
05:45	53	0	45	0	6	0	0	0	0	0	0	0	0
06:00	102	1	95	0	4	1	0	0	0	0	0	0	0
06:15	90	1	80	1	4	1	1	0	0	1	0	0	0
06:30	110	0	101	0	7	0	1	0	0	1	0	0	0
06:45	125	0	113	0	9	1	1	0	0	0	0	0	0
07:00	152	1	133	0	12	1	2	0	0	1	0	0	0
07:15	179	1	160	1	13	2	1	0	0	1	1	0	0
07:30	225	1	202	1	15	2	2	0	0	0	1	0	0
07:45	212	0	191	1	14	2	1	0	1	1	1	0	0
08:00	236	1	214	1	15	2	2	0	0	0	1	0	0
08:15	240	1	217	2	13	2	3	0	0	1	1	0	0
08:30	244	1	221	2	15	2	2	0	0	0	1	0	0
08:45	217	1	191	1	18	2	2	0	1	1	1	0	0
09:00	207	1	181	1	17	2	2	0	1	2	1	0	0
09:15	223	1	200	1	15	2	3	0	0	0	1	0	0
09:30	220	1	192	2	18	1	3	0	1	1	1	0	0
09:45	228	1	204	2	16	1	2	0	1	0	1	0	0
10:00	236	1	212	2	16	1	3	0	1	0	1	0	0
10:15	238	2	212	2	16	1	3	0	1	0	1	0	0
10:30	262	3	238	2	14	2	2	0	0	1	1	0	0
10:45	243	1	219	2	14	2	2	0	1	1	1	0	0
11:00	253	1	229	1	14	2	3	0	1	0	1	0	0
11:15	273	1	248	2	15	2	1	0	0	1	2	0	0
11:30	281	1	255	2	16	2	1	0	1	0	1	0	0
11:45	293	1	272	1	13	2	2	0	1	1	1	0	0
12:00	293	1	271	3	13	1	2	0	0	0	1	0	0
12:15	275	1	255	2	13	1	1	0	0	1	1	0	0
12:30	293	2	272	2	12	1	2	0	1	0	1	0	0
12:45	287	3	266	1	14	1	2	0	0	0	1	0	0
13:00	295	1	271	2	15	2	2	0	1	1	1	0	0
13:15	308	3	279	2	15	1	3	0	1	0	1	0	0
13:30	307	2	282	3	15	1	2	0	0	0	1	0	0
13:45	295	1	273	2	13	1	2	0	0	0	1	0	0
14:00	321	2	298	3	12	1	2	0	1	1	1	0	0
14:15	321	2	296	3	14	1	1	0	1	1	0	0	0
14:30	302	2	277	2	17	1	1	0	0	0	1	0	0
14:45	299	2	273	2	17	1	1	0	1	1	2	0	0
15:00	301	2	276	2	17	1	1	0	0	0	1	0	0
15:15	297	2	275	1	14	1	1	0	0	1	1	0	0
15:30	325	2	300	2	14	1	2	0	1	0	1	0	0
15:45	317	2	296	4	12	1	1	0	0	1	1	0	1
16:00	333	2	315	2	11	0	1	0	1	0	0	0	0
16:15	312	1	293	2	11	2	1	0	0	0	1	0	0
16:30	317	2	300	3	9	1	1	0	0	1	0	0	0
16:45	301	2	286	2	10	1	0	0	0	0	0	0	0
17:00	335	1	318	3	9	2	1	0	0	1	0	0	0
17:15	329	2	313	2	8	2	1	0	0	0	0	0	0
17:30	300	2	284	2	9	1	0	0	0	0	1	0	0
17:45	258	2	247	1	7	1	0	0	0	0	0	0	0
18:00	260	1	251	2	6	1	0	0	0	0	0	0	0
18:15	230	1	220	2	6	1	0	0	0	0	0	0	0
18:30	203	1	195	0	4	1	0	0	0	0	0	0	0
18:45	168	0	162	1	4	1	0	0	0	0	0	0	0
19:00	149	0	145	1	2	0	0	0	0	0	0	0	0
19:15	124	0	118	0	4	1	1	0	0	0	0	0	0
19:30	108	1	106	0	1	0	0	0	0	0	0	0	0
19:45	105	0	101	0	2	1	0	0	0	0	0	0	0
20:00	95	0	92	1	1	1	0	0	0	0	0	0	0
20:15	81	0	78	0	1	0	0	0	0	0	0	0	0
20:30	78	1	75	0	1	0	0	0	0	0	0	0	0
20:45	69	0	68	0	1	0	0	0	0	0	0	0	0
21:00	76	0	73	0	1	1	0	0	0	0	0	0	0
21:15	78	0	74	0	2	0	0	0	0	0	1	0	0
21:30	72	1	70	0	1	0	0	0	0	0	0	0	0
21:45	58	0	55	0	1	1	0	0	0	1	0	0	0
22:00	85	0	83	0	1	0	0	0	0	0	0	0	0
22:15	55	0	54	0	0	0	0	0	0	0	0	0	0
22:30	44	0	41	0	1	0	0	0	0	1	0	0	0
22:45	32	0	31	0	0	0	0	0	0	0	0	0	0
23:00	34	0	32	0	1	1	0	0	0	0	1	0	0
23:15	22	0	21	0	1	0	0	0	0	0	0	0	0
23:30	19	0	16	0	1	0	0	0	0	1	1	0	0
23:45	16	0	14	0	1	0	0	0	0	1	0	0	0
07-19	12844	70	11831	88	624	63	72	6	21	23	39	2	5
06-22	14364	77	13276	92	666	72	76	6	21	28	43	2	6
06-00	14671	78	13568	92	671	74	77	6	22	31	45	2	6
00-00	15102	82	13953	92	697	77	77	6	24	36	49	2	6

ARX Classification Scheme

Class No.	No. Axles	Axle Groups	Description	Aggregate	Vehicle Example
1	2	1 or 2	Very Short - Bicycle or Motorcycle	Light	
2	2	1 or 2	Short - Car, 4WD or Light Van		
3	3/4/5	3	Short Towing - Trailer, Caravan etc.		
4	2	2	2-Axle Truck or Bus	Medium	
5	3	2	3-Axle Truck or Bus		
6	>3	2	4-Axle Truck		
7	3	3	3-Axle Articulated Vehicle or Rigid Vehicle & Trailer	Heavy	
8	4	>2	4-Axle Articulated Vehicle or Rigid Vehicle & Trailer		
9	5	>2	5-Axle Articulated Vehicle or Rigid Vehicle & Trailer		
10	>=6	>2	6 (or more) Axle Articulated Vehicle or Rigid Vehicle & Trailer		
11	>6	4	B-Double or Heavy Truck & Trailer		
12	>6	>=5	Double or Triple Heavy Truck & 2 (or more) Trailers		

Tracsis plc
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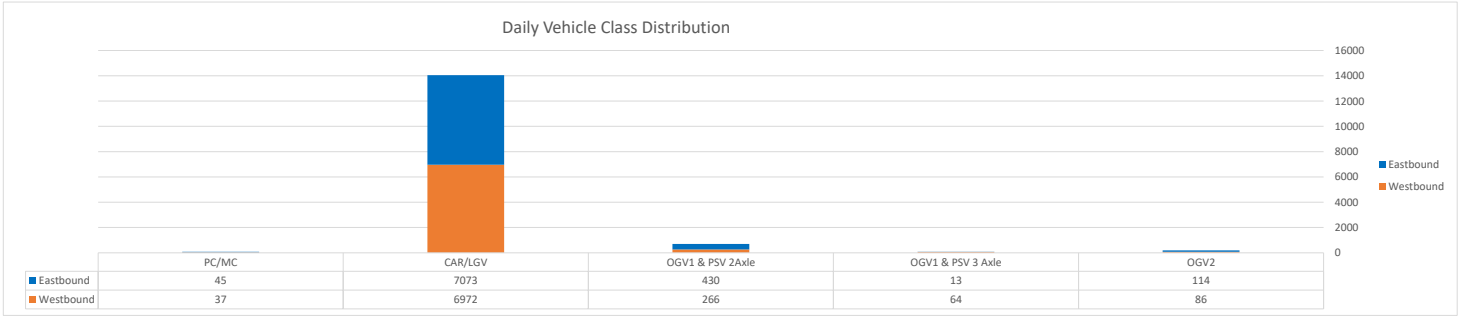
Start Date: 27/02/2019

Eastbound						
Day	PC/MC	CAR/LGV	OGV1 & PSV 2Axle	OGV1 & PSV 3 Axle	OGV2	Total
Monday	32	7517	525	18	166	8258
Tuesday	28	7458	528	19	156	8189
Wednesday	95	8202	561	14	122	8994
Thursday	35	7163	501	16	127	7842
Friday	54	7565	513	22	159	8313
Saturday	60	6414	221	4	45	6744
Sunday	12	5193	164	1	20	5390
5day	49	7581	526	18	146	8319
7day	45	7073	430	13	114	7676

Westbound						
Day	PC/MC	CAR/LGV	OGV1 & PSV 2Axle	OGV1 & PSV 3 Axle	OGV2	Total
Monday	26	7072	274	110	125	7607
Tuesday	26	7542	336	92	133	8129
Wednesday	80	8043	360	72	95	8650
Thursday	23	7237	300	68	71	7699
Friday	47	7802	362	54	118	8383
Saturday	45	6229	156	25	38	6493
Sunday	12	4881	77	27	25	5022
5day	40	7539	326	79	108	8094
7day	37	6972	266	64	86	7426

Combined						
Day	PC/MC	CAR/LGV	OGV1 & PSV 2Axle	OGV1 & PSV 3 Axle	OGV2	Total
Monday	58	14589	799	128	291	15865
Tuesday	54	15000	864	111	289	16318
Wednesday	175	16245	921	86	217	17644
Thursday	58	14400	801	84	198	15541
Friday	101	15367	875	76	277	16696
Saturday	105	12643	377	29	83	13237
Sunday	24	10074	241	28	45	10412
5day	89	15120	852	97	254	16413
7day	82	14045	697	77	200	15102

7day



Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 - A48 New Inn Road Junction/Broadlands Roundabout
Start Date: 27/02/2019

7 Day Avg | Combined

																						50		57		65				
7 Day Avg Time	Total	0-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95-100	100+	>PSL	%	ACPO	%	DFT	%	Avg	85th	95th
00:00	57	0	0	0	0	1	3	8	17	12	8	2	3	1	1	0	0	0	0	0	0	14	25.1%	6	9.8%	1	2.3%	45.5	53.6	62.3
01:00	31	0	0	0	0	1	1	4	8	9	5	2	1	0	0	0	0	0	0	0	0	8	25.2%	2	6.0%	0	1.4%	45.8	53.4	58.6
02:00	27	0	0	0	0	1	1	3	8	7	5	2	1	0	0	0	0	0	0	0	0	8	29.7%	2	8.3%	0	1.6%	46.2	54.0	60.6
03:00	28	0	0	0	0	1	1	3	7	7	6	2	1	0	0	0	0	0	0	0	0	9	31.6%	2	7.8%	0	0.0%	46.7	54.1	59.6
04:00	55	0	0	0	0	0	2	7	14	15	11	5	1	0	0	0	0	0	0	0	0	17	30.4%	4	7.8%	0	0.3%	46.3	53.6	58.5
05:00	233	0	0	0	0	2	3	22	60	78	43	18	5	2	0	0	0	0	0	0	0	68	29.2%	16	6.9%	3	1.3%	47.2	53.2	58.6
06:00	426	0	0	0	1	4	13	54	123	137	64	21	7	1	0	0	0	0	0	0	0	94	21.9%	18	4.2%	1	0.3%	45.6	51.8	56.0
07:00	767	0	0	2	5	9	37	143	297	199	56	14	3	1	0	0	0	0	0	0	0	75	9.7%	11	1.5%	1	0.1%	43.2	48.7	52.4
08:00	937	2	10	7	16	35	80	230	321	177	42	12	2	1	0	0	0	0	0	0	0	57	6.1%	9	0.9%	1	0.1%	40.6	46.9	50.8
09:00	878	0	0	1	6	27	68	233	328	166	41	7	1	1	0	0	0	0	0	0	0	49	5.6%	4	0.5%	1	0.1%	41.3	46.9	50.3
10:00	980	0	2	1	5	20	95	294	352	169	34	6	2	1	0	0	0	0	0	0	0	42	4.3%	5	0.5%	1	0.1%	40.9	46.3	49.6
11:00	1100	0	0	0	8	19	105	354	399	182	28	3	1	0	0	0	0	0	0	0	0	33	3.0%	3	0.2%	0	0.0%	40.7	45.8	48.8
12:00	1149	0	3	7	7	26	121	342	421	181	34	5	1	0	0	0	0	0	0	0	0	41	3.6%	3	0.3%	1	0.1%	40.5	46.0	49.1
13:00	1205	0	0	0	7	27	121	410	420	177	36	5	1	0	0	0	0	0	0	0	0	41	3.4%	4	0.3%	0	0.0%	40.4	45.7	49.0
14:00	1243	0	0	0	8	29	125	400	459	183	31	7	1	0	0	0	0	0	0	0	0	39	3.1%	4	0.3%	0	0.0%	40.5	45.5	48.9
15:00	1240	0	0	2	5	19	113	409	453	194	37	6	2	0	0	0	0	0	0	0	0	45	3.6%	5	0.4%	0	0.0%	40.8	45.9	49.2
16:00	1263	0	0	3	5	16	110	398	472	205	42	8	1	1	0	0	0	0	0	0	0	52	4.1%	5	0.4%	1	0.1%	41.0	46.0	49.3
17:00	1221	4	6	3	6	26	107	394	445	182	39	8	2	0	0	0	0	0	0	0	0	49	4.0%	5	0.4%	1	0.0%	40.5	45.8	49.3
18:00	861	0	0	1	3	10	61	265	337	140	35	7	2	1	0	0	0	0	0	0	0	44	5.2%	6	0.7%	1	0.1%	41.4	46.3	50.1
19:00	487	0	0	0	1	4	23	118	188	107	33	10	2	1	0	0	0	0	0	0	0	46	9.5%	9	1.9%	1	0.3%	42.9	48.3	52.4
20:00	323	0	0	0	0	3	15	64	119	80	31	7	2	1	0	0	0	0	0	0	0	41	12.7%	5	1.7%	1	0.3%	43.6	49.3	53.5
21:00	284	0	0	0	0	3	10	51	101	75	30	9	2	1	1	0	0	0	0	0	0	43	15.1%	8	2.9%	2	0.7%	44.2	50.1	54.6
22:00	216	0	0	0	0	3	10	36	80	52	23	7	2	1	0	0	0	0	0	0	0	33	15.4%	7	3.2%	1	0.7%	44.2	50.2	55.2
23:00	91	0	0	0	1	2	5	15	25	23	12	5	1	1	0	0	0	0	0	0	0	19	21.3%	5	5.0%	1	1.1%	44.5	51.8	57.1
07-19	12844	6	22	29	80	263	1142	3873	4704	2155	454	87	20	6	2	1	0	0	0	0	0	568	4.4%	64	0.5%	9	0.1%	40.9	46.2	49.7
06-22	14364	6	22	29	83	277	1203	4162	5236	2553	612	134	33	10	3	1	0	0	0	0	0	792	5.5%	105	0.7%	15	0.1%	41.2	46.7	50.3
06-00	14671	6	22	29	84	282	1218	4213	5341	2628	647	146	37	11	4	2	0	0	0	0	0	845	5.8%	116	0.8%	17	0.1%	41.3	46.7	50.4
00-00	15102	6	22	29	84	287	1229	4262	5456	2756	724	176	49	14	5	2	1	0	0	0	0	969	6.4%	148	1.0%	23	0.1%	41.4	47.0	50.9

Abbreviations	
PSL	Posted Speed Limit
ACPO	Association of Chief Police Officers (Used to display the speed limit the police will generally enforce, 110% of PSL +2mph)
DFT	Department for Transport (Used to display a speed statistic used by the government looking at vehicles travelling over 15mph above the PSL)

Tracsis plc
Traffic and Data Services

Client: Bridgend Council
Project: 3866-MID A48 Bypass
Site: 01 - A48 New Inn Road Junction/Broadlands Roundabout
Start Date: 27/02/2019

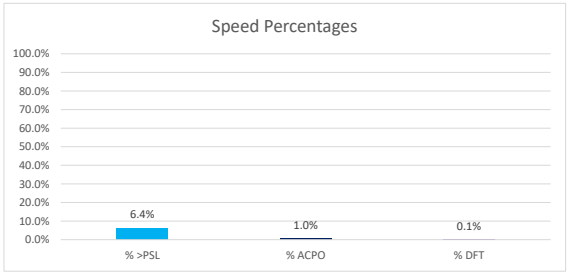
Eastbound						
Day	Avg	85th	95th	% >PSL	% >ACPO	%>DFT
Monday	42.7	48.7	52.3	10.3%	1.3%	0.1%
Tuesday	43.1	48.2	51.8	8.8%	1.0%	0.1%
Wednesday	43.3	48.2	52	8.8%	1.3%	0.3%
Thursday	43.3	48.3	52	8.9%	1.2%	0.2%
Friday	43.6	48.5	52.4	9.7%	1.6%	0.2%
Saturday	43.9	49.1	53.3	11.3%	2.0%	0.3%
Sunday	44.3	49.5	53.9	13.2%	2.4%	0.3%
5day	43.2	48.4	52.1	9.3%	1.3%	0.2%
7day	43.4	48.6	52.4	10.0%	1.5%	0.2%

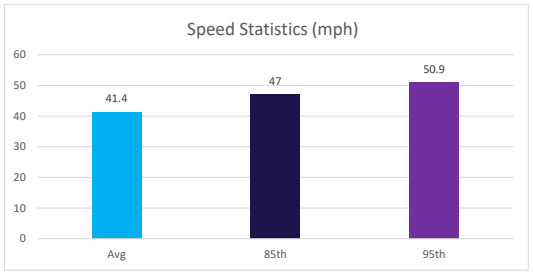
Westbound						
Day	Avg	85th	95th	% >PSL	% >ACPO	%>DFT
Monday	39.3	44	47.3	2.3%	0.3%	0.0%
Tuesday	38.9	43.9	47.2	2.0%	0.2%	0.0%
Wednesday	39.7	44.7	48.5	3.3%	0.6%	0.2%
Thursday	39.3	44.1	47.6	2.4%	0.4%	0.1%
Friday	39.6	44.4	48.1	2.7%	0.5%	0.1%
Saturday	39.5	44.5	48.7	3.7%	0.8%	0.2%
Sunday	39.8	44.6	48.5	3.2%	0.4%	0.1%
5day	39.4	44.3	47.8	2.5%	0.4%	0.1%
7day	39.4	44.3	48	2.8%	0.4%	0.1%

Combined						
Day	Avg	85th	95th	% >PSL	% >ACPO	%>DFT
Monday	41.1	46.9	50.9	6.5%	0.8%	0.1%
Tuesday	41	46.6	50.3	5.4%	0.6%	0.0%
Wednesday	41.5	46.8	50.7	6.1%	1.0%	0.2%
Thursday	41.3	46.6	50.4	5.7%	0.8%	0.1%
Friday	41.6	47	50.8	6.2%	1.0%	0.1%
Saturday	41.7	47.4	51.7	7.6%	1.4%	0.3%
Sunday	42.1	47.7	51.9	8.4%	1.5%	0.2%
5day	41.3	46.8	50.6	6.0%	0.9%	0.1%
7day	41.4	47	50.9	6.4%	1.0%	0.1%

Combined

7day





Abbreviations	
PSL	Posted Speed Limit
ACPO	Association of Chief Police Officers (Used to display the speed limit the police will generally enforce, 110% of PSL +2mph)
DFT	Department for Transport (Used to display a speed statistic used by the government looking at vehicles travelling over 15mph above the PSL)

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

CORUN
Transport and Highway Engineering

TRANSPORT NOTE

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	1. Extension of existing Broadlands shared pedestrian/cycle route along north of A48 to Ewenny Signalised Roundabout.	Walking & Cycling
	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.	Walking & Cycling
	3. Improved dropped kerb and tactile paving crossings at several junctions along A48 and Ewenny Road to the town centre.	Walking
	4. Improved cycle facilities at Ewenny signalised roundabout (e.g. advanced cycle stop lines).	Cycling
	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.	Walking and Cycling
B	1. It is recommended that the existing 30mph speed limit is extended to improve the pedestrian and cyclist environment and safety.	Walking & Cycling
	2. Footway provision to be improved along Ewenny Road northwards from the existing site access to Ewenny	Walking

	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. 3. Improved dropped kerb and tactile paving crossings at junctions along Ewenny Road. 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.	Walking Walking and Cycling
C	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. 2. There is also potential to provide a new 3.0m shared pedestrian/cycle route along the northern side of the A48. 3. Improved dropped kerb and tactile paving crossings at junctions along the A48. 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. 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.	Walking and Cycling Walking and Cycling Walking Walking and Cycling Walking and Cycling

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.

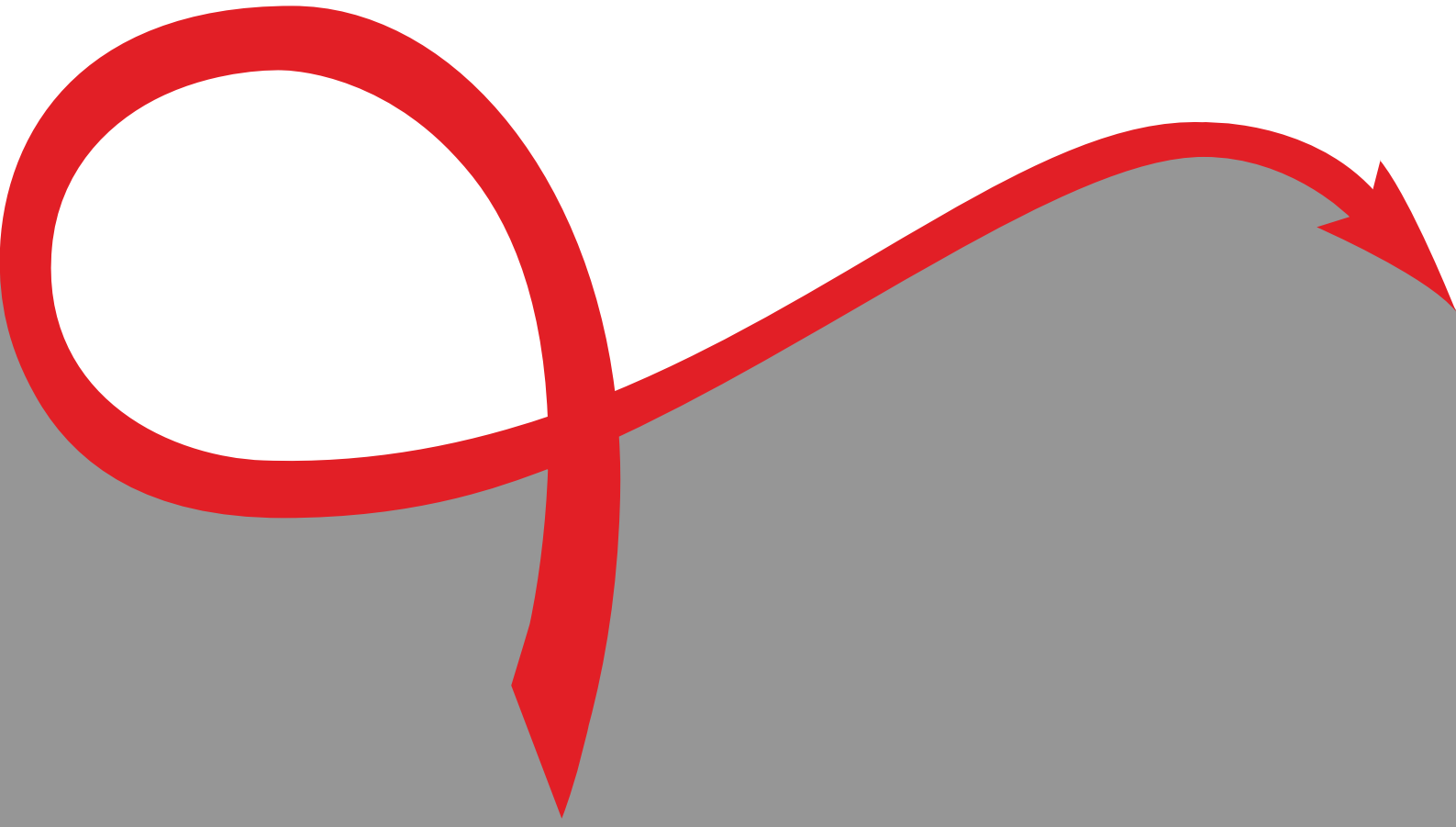
Appendix A

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

Llywodraeth Cymru
Welsh Government

Appendix B

Walking Route Audit Tool



version 1 -
December 2014

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	Examples of 'other' comfort issues include: - 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 Score 0-2 as appropriate			
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).	

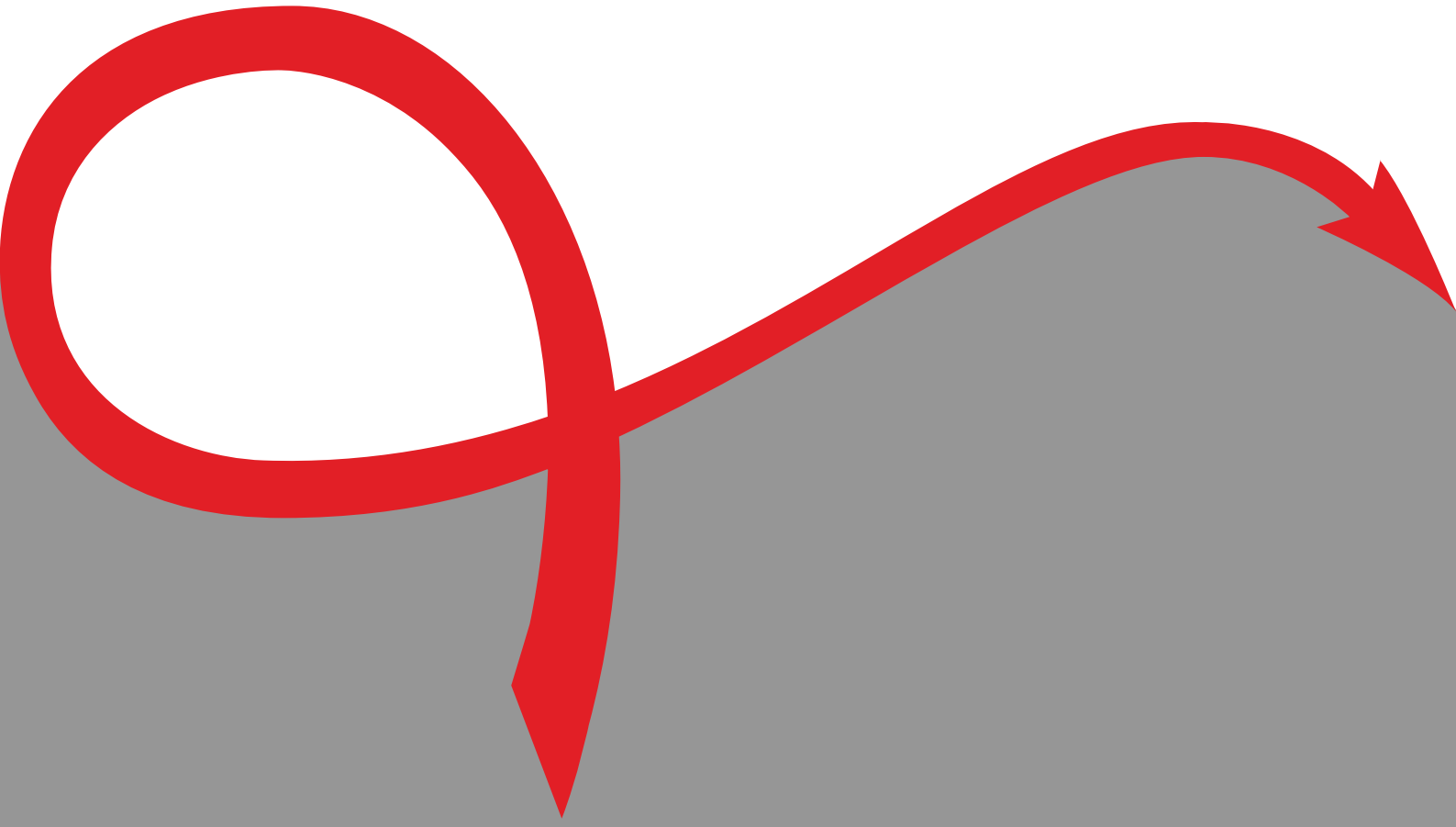
Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
14.DIRECTNESS - impact of controlled crossings on journey time	Crossings are single phase pelican/ puffin or zebra crossings.	Crossings are staggered but do not add significantly to journey time. Unlikely to wait >5s in pedestrian island.	Staggered 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)			

Llywodraeth Cymru
Welsh Government

Appendix C

Cycle Route Audit Tool



version 1 -
December 2014

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
	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 nearside 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.		
Comfort	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 paviours 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		

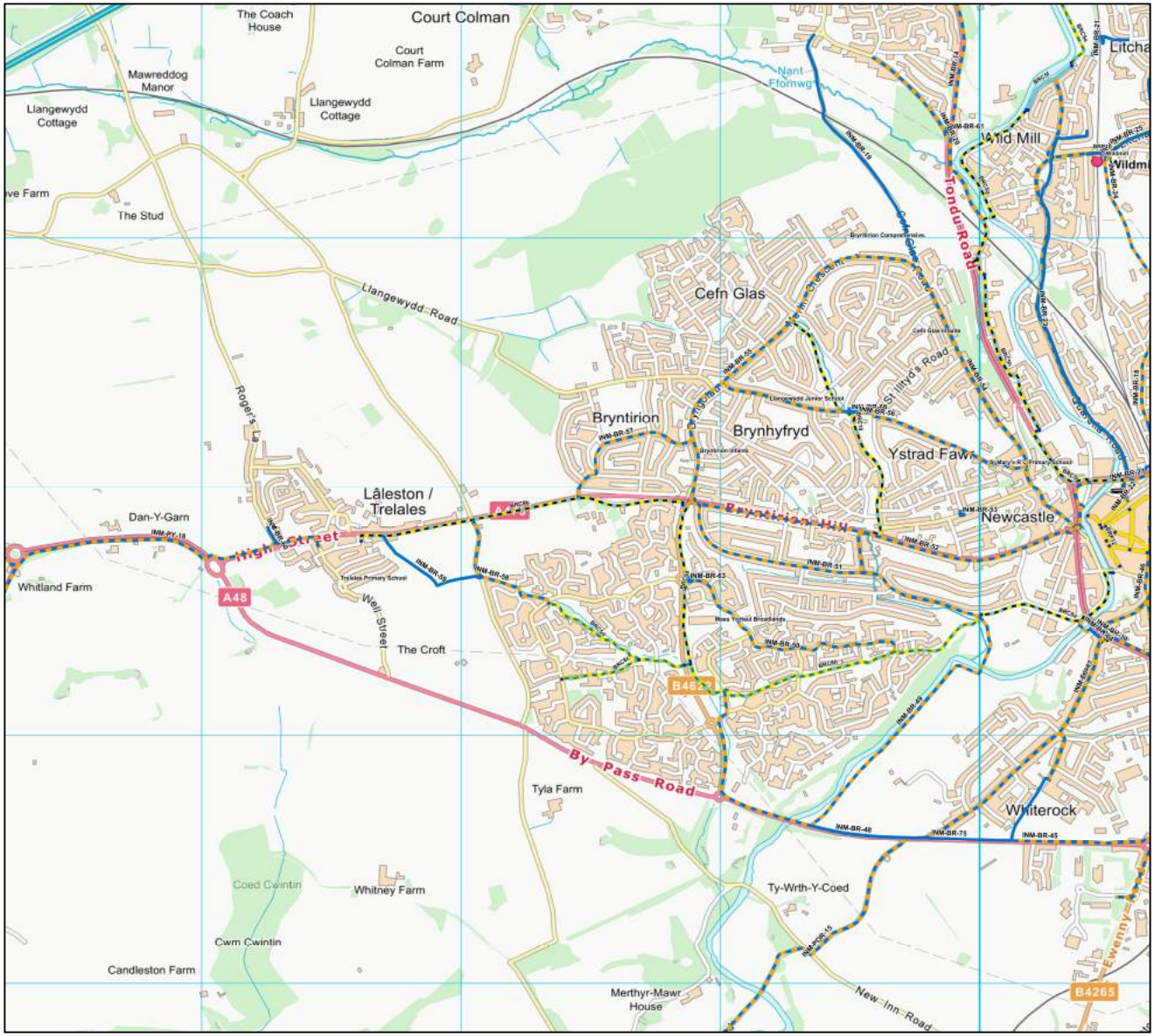
Appendix B

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.

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)
- 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 feicio (ar y ffordd, heb ei gwahanu)
- Cycle lane (on road, segregated) / Lôn feicio (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 / Pwyntiau 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

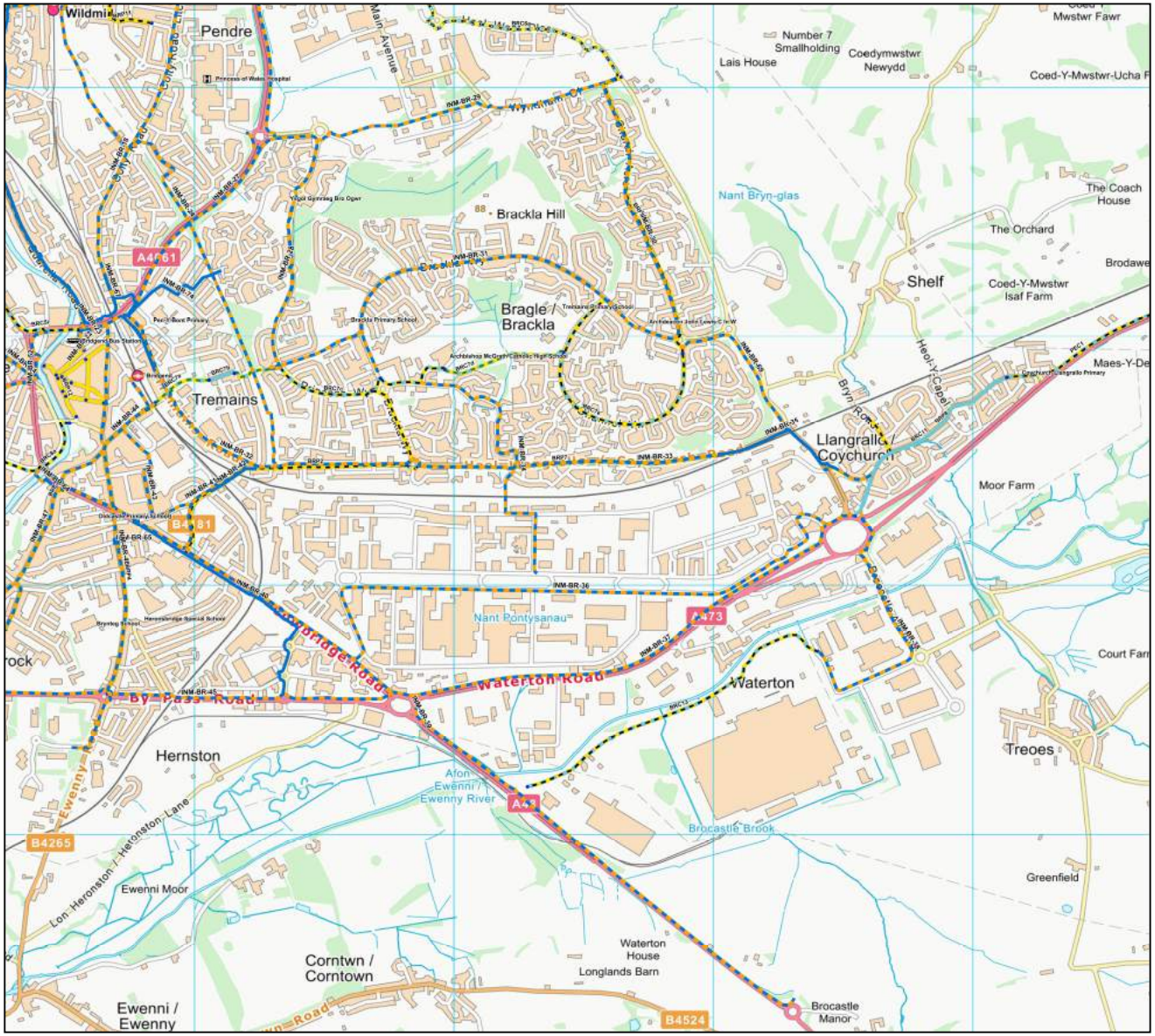
Llywodraeth Cymru
Welsh Government

02 Nov 2017 11:50 AM

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)
- 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 feicio (ar y ffordd, heb ei gwahanu)
- Cycle lane (on road, segregated) / Lôn feicio (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 / Pwyntiau 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

Llywodraeth Cymru
Welsh Government

02 Nov 2017 11:52 AM

Appendix C

Masterplan

When printed correctly, at A2, this line will measure 75mm at full size

- CHECK PRINTED SIZE

When printed correctly, at A2, this line will measure 75mm at full size

HD Ltd

Island Farm, Bridgend

The Estates Office, 25-26 Gold Tops, Newport, NP20 4PG T: 03333 405 500 E: mail@robertslimbrick.com

Craig y Parcau Masterplan Framwework

Date: April 2020

Scale: 1:1000 @ A2

Subject to correct printing. See top left

Dwg No: 9701-Sk10

Roberts Limbrick ARCHITECTS

When printed correctly, at A0, this line will measure 75mm at full size

CHECK PRINTED SIZE

When printed correctly, at A0, this line will measure 75mm at full size

A48

New vehicle / pedestrian / cycle access arrangements. Location to be determined

New tree lined access 'drive'

New cycleway / footpath access link

Existing nature conservation and wildife area retained

Line of overhead cables

Open space areas based around existing landscape features

Hut 9 retained

Relocated Heronsbridge school

1 form entry primary school

Dedicated School Access

Potential for a community hub cafe / retail

Potential for emergency access

Tennis Centre

Tennis centre and emergency access only

Ecological enhancement zone with intergrated wildlife ponds: opportunity for use by primary school

Attenuation

Blue / green infrastructure corridor

Attenuation

Primary route creates loop

Secondary routes

Tertiary routes

Blue / green infrastructure corridor

Foul / surface water pumping station

HD Ltd

Island Farm, Bridgend

Indicative Masterplan Framework

The Estates Office, 25-26 Gold Tops, Newport, NP20 4PG T: 03333 405 500 E: mail@robertslimbrick.com

Date: March 2020

Scale: 1:1250 @ A0

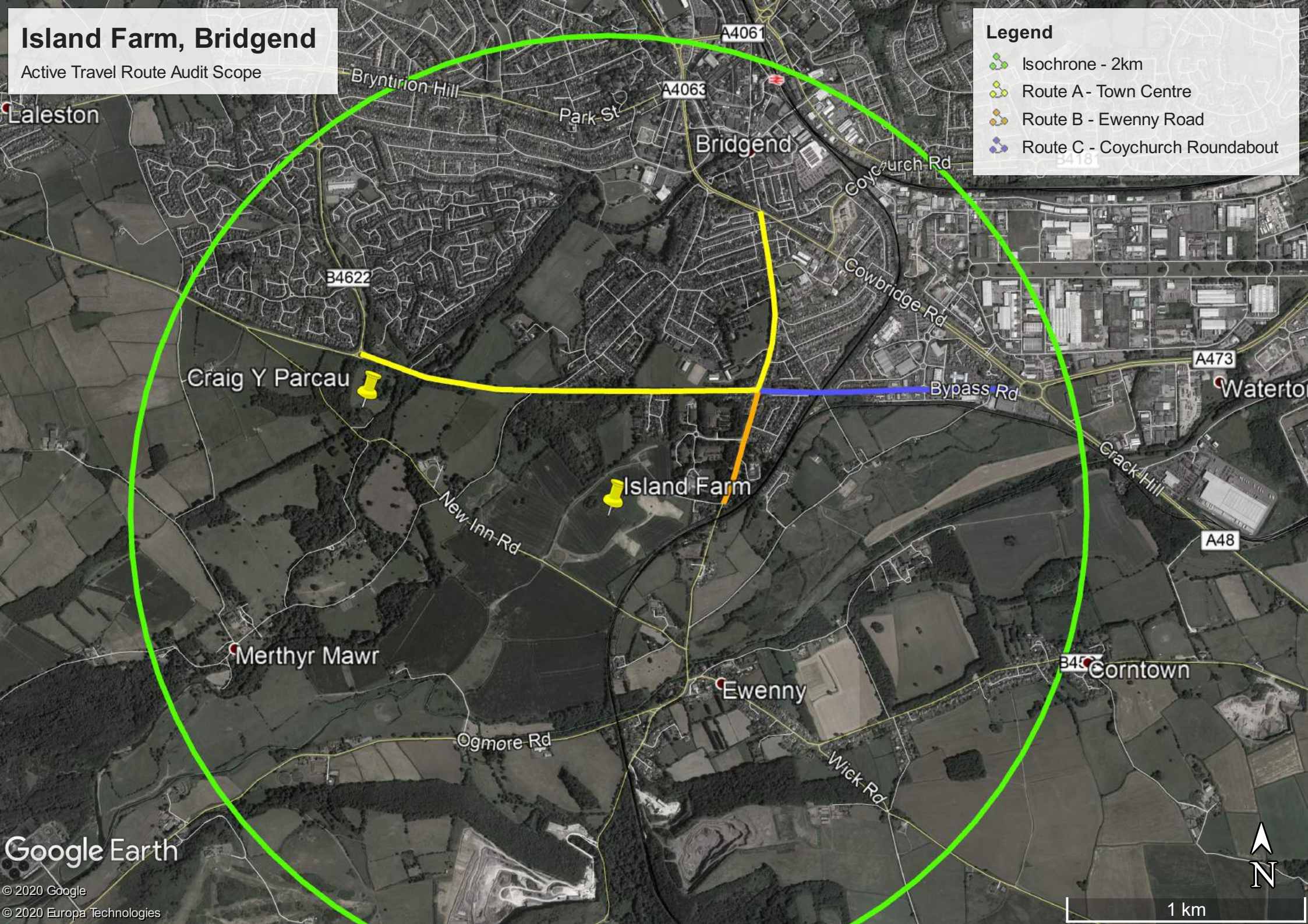
Subject to correct printing. See top left

Dwg No: 9701-SK01C

Roberts Limbrick ARCHITECTS

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
A4061
A4063
Bryntirion Hill
Park St
Laleston
Bridgend
Coychurch Rd
Cowbridge Rd
B4622
Craig Y Parcau
Bypass Rd
A473
Island Farm
New Inn Rd
Crack Hill
A48
Merthyr Mawr
Ewenny
Corntown
Ogmore Rd
Wick Rd
Google Earth
© 2020 Google
© 2020 Europa Technologies
N
1 km

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 corssings 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

CORUN
Transport and Highway Engineering

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 Hernston 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)