

Land off Penlan Road, Carmarthen

Transport Statement

29 October 2024

For and on behalf of

Duncan Foster



Project Ref: 2021-611

LvW Highways Ltd
Highway, Traffic & Transport Consultants

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1 INTRODUCTION

- 1.1 LvW Highways Ltd is commissioned by Duncan Foster to provide Highway and Transportation advice and prepare a Transport Statement (TS) in support of a residential development on Land off Penlan Road, Carmarthen.
- 1.2 The site location (OSGR 41133, 220911) and its surrounding area can be seen in **Figure 1**.

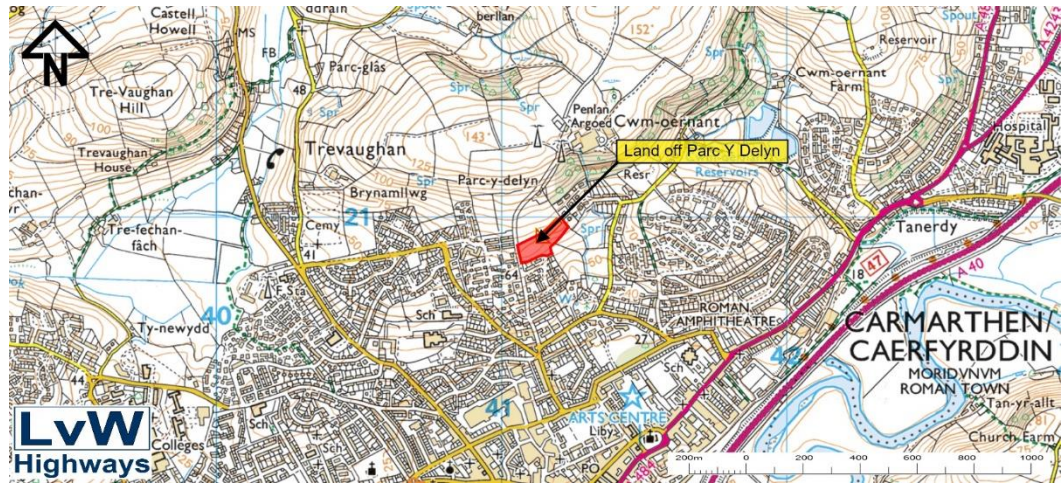


Figure 1: Site Location (OS25k)

Purpose of the report

- 1.3 This report will outline and assess any transport issues in relation to the site. It will consider the traffic generation of the development and potential impact on the surrounding transport network with any required mitigation measures outlined.
- 1.4 The Transport Statement will consider the access arrangements to the site for all modes of travel including walking, cycling, and public transport. This report will also outline and assess any transport issues in relation to the site and quantify whether the road network is suitable to accommodate the predicted impact of the development.
- 1.5 This Transport Statement is produced in accordance with, and in recognition of, local and central government guidance and follows our understanding of the requirements set out in TAN 18: Transport.
- 1.6 LvW Highways Ltd as independent transport planning consultants have prepared this Transport Statement providing what we consider is a fair and unbiased appraisal of the traffic and highways issues arising due to the proposed development and with consideration of other proposed developments in the area.
- 1.7 It finds that there is a good range of facilities within walking and cycling distance to the site and that the site benefits from ready access to good quality, regular and frequent public transport services. The site's proximity to services and its accessibility by sustainable modes of transport provide opportunities for many of the trips generated by users of the development, to be made by sustainable modes of movements.

Report Structure

1.8 The structure of this Transport Statement is as follows:

- Section 2 considers Planning Policy;
- Section 3 describes the site's location, the existing transport network that surrounds and serves it and the vehicle movements generated by the existing use of the site;
- Section 4 describes the proposed development, considers the likely trip generation of the proposed use of the land and considers its impact; and
- Section 5 provides a summary and conclusion.

2 PLANNING POLICY

2.1 The Planning Policy documents relevant to the development in terms of transportation are: -

- Carmarthenshire Local Development Plan (2013),
- Technical Advice Note (TAN) 18: Transport (2007),
- Planning Policy Wales (Edition 11, February 2021),
- Future Wales – the National Plan 2040 (Feb 2021),
- Active Travel (Wales) Act 2013 and
- Wellbeing of Future Generations (Wales) Act 2015.
- Learner Travel Statutory provision and Operational Guidance (June 2014)

Carmarthenshire Local Development Plan (2013)

2.2 **Figure 2** shows an extract from the LDP Proposal Map.

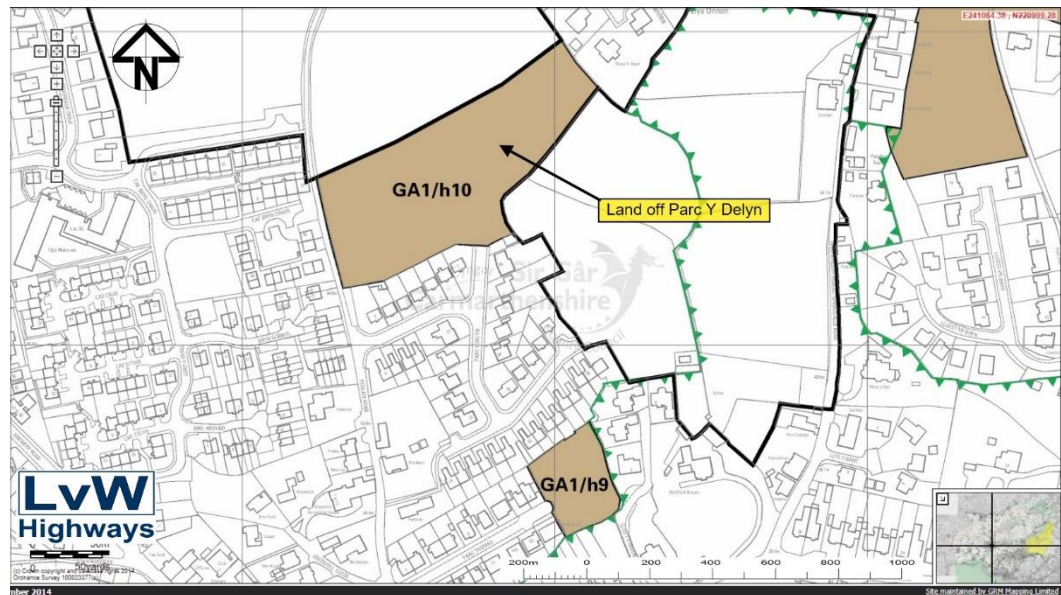


Figure 2: Extract from CCC LDP Proposals Map

2.3 It shows that the proposed development is an allocated site within the Carmarthen settlement boundary. The roughly rectangular shaped land is allocated for housing.

2.4 The LDP has allocated and protected the land as a Growth Area within Carmarthen GA1/h10 Parc Y Delyn. It allocates the site for 35 residential dwellings

Policy TR2 Location of Development – Transport Considerations

2.5 Proposals which have the potential to generate a significant number of trips either as an origin, or as a destination (including residential, employment, retail and leisure) will be expected through design, to maximise accessibility by alternative modes of transport. Improving accessibility is an important objective of the Plan with the location of new developments important in ensuring accessibility can be maximised. The rural nature of the County raises challenges in this regard, but proposals will be expected and encouraged to achieve this.

Policy TR3 Highways in Developments - Design Considerations

- 2.6 Proposals should incorporate facilities encouraging and affording the opportunity to those attending the sites to utilise alternative means of transport. These facilities could include showers, changing facilities and storage. Developers should be able to demonstrate that appropriate levels of access to local services by walking, cycling and public transport for new residents and the wider community are achieved (TAN18: Transport – Para 3.6).

Technical Advice Note (TAN) 18: Transport (2007)

- 2.7 TAN18 promotes housing development at locations with good access by walking and cycling to primary and secondary schools and public transport stops, and by all modes to employment, further and higher education, services, shopping and leisure, or where such access will be provided as part of the scheme.

Planning Policy Wales

- 2.8 Walking, cycling and public transport are prioritised to provide a choice of transport modes and avoid dependence on private vehicles. Well designed and safe active travel routes connect to the wider active travel and public transport network and public transport stations and stops are positively integrated.

Future Wales: The National Plan 2040

- 2.9 A Wales where people live in places where travel is sustainable. All methods of travel will have low environmental impact and low emissions, with increased use of public transport and ultra-low emission vehicles replacing today's petrol and diesel vehicles. Sustainable transport infrastructure will be embedded within development to enable easy and convenient access from one place to another for commuting, business, tourism and leisure purposes. Development will focus on active travel and public transport, allied with a reduced reliance on private vehicles.

The Active Travel (Wales) Act 2013

- 2.10 The Active Travel (Wales) Act 2013 is Welsh Government legislation aimed to support an increase in the level of walking and cycling in Wales, to encourage a shift in travel behaviour to active travel modes, and to facilitate the building of walking and cycling infrastructure.
- 2.11 Active travel is a term used to describe walking and cycling for purposeful journeys to a destination, or in combination with public transport. Whilst walking and cycling are in themselves healthy activities that are to be encouraged, it is when they displace car journeys that they deliver significant benefits for the health and well-being of Wales. Achieving modal shift by displacing private car journeys with walking and cycling and public transport is at the heart of Llwybr Newydd, the Wales Transport Strategy.
- 2.12 The provisions of the act therefore put in place the conditions that will allow many more people whose current mode of travel is the car to switch to more sustainable modes for shorter journeys and facilitate access to public transport as part of longer distance journeys.
- 2.13 The active travel network is designed to serve everyday journeys. These are also known as utility journeys – trips with a purpose rather than purely for leisure. Examples of destinations which can be considered to form an everyday or utility journey include; school or other educational establishments, local shops, employment sites, healthcare facilities, and other destinations people travel to for a purpose.

- 2.14 In the Welsh Government publication “Active Travel Act Guidance July 2021” Table 4.1 provides a guide for network development in relation to reasonable distances that would be travelled by each respective mode. Table 4.1 is not descriptive of all active users and travel distances may be dependent upon a number of factors such as journey purpose, topography or suitability of route. We have presented Table 4.1 in **Figure 3** below.

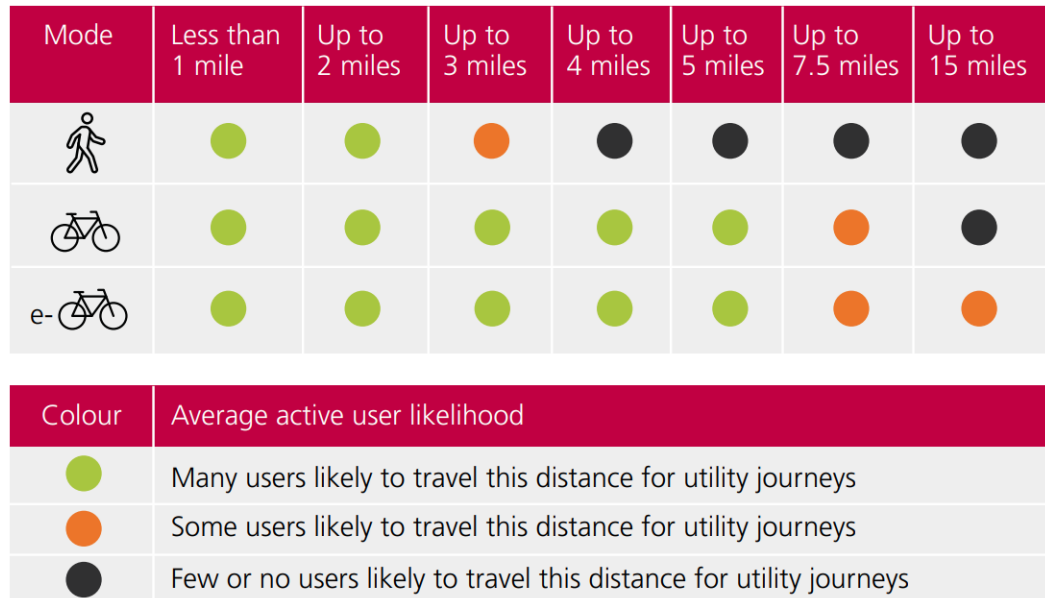


Figure 3: Typical distance range for each mode of active travel

- 2.15 In summary the Welsh Government consider walking a suitable alternative to car journeys for up to 2 miles and cycling up to 5 miles.

Well-being of Future Generations (Wales) Act

- 2.16 The Well-being of Future Generations (Wales) Act is about improving the social, economic, environmental and cultural well-being of Wales.
- 2.17 To make sure we are all working towards the same vision, the act puts in place 7 well-being goals, these are: -

A prosperous Wales

- An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.

A resilient Wales

- A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example, climate change).

A healthier Wales

- A society in which people’s physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.

A more equal Wales

- A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio-economic background and circumstances).

A Wales of cohesive communities

- Attractive, viable, safe and well-connected communities.

A Wales of vibrant culture and thriving Welsh language

- A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.

A globally responsible Wales

- A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

Learner Travel Statutory provision and Operational Guidance (June 2014)

- 2.18 This document places a duty on a local authority to make transport arrangements for learners of compulsory school age in specified circumstances and subject to specified conditions. Learners receiving primary education will be entitled to free transport if they live two miles or more from their nearest suitable maintained school. Distances below these thresholds for the purpose of this document are referred to as '*walking distances*'.
- 2.19 For the purpose of this document 'safe travel' is defined as 'providing appropriate travel arrangements to ensure that as far as reasonably practicable a learner is not placed at risk, whether known or foreseen, which might result in them or other persons sustaining a trauma and or serious physical injury'.
- 2.20 Further information on safe travel with regards to available walking routes is provided in Chapter 1 paragraphs 1.60-1.64 and Chapter 5 of the guidance.
- 2.21 It is recommended that local authorities ensure that appropriate health and safety checks and risk assessments on learner transport are undertaken. The assessment should take into account stress factors; appropriate journey times and **safe travel** arrangements when determining what transport provisions are suitable for learners.
- 2.22 A route is considered to be available if it is safe (as far as reasonably practicable) for a learner without a disability or learning difficulty to walk the route alone or with an accompanying adult if the learner's age and levels of understanding requires this.
- 2.23 If a route is not 'available' and there is no alternative 'available' walking route within the respective distance threshold applicable to the learner's age, the learner cannot be expected to walk to their nearest suitable school, even though the distance from home to school is less than the distance limit that applies to the learner's age.
- 2.24 In such cases the local authority has a duty to provide the learner with free transport to and from their nearest suitable school, but only if the learner is attending their nearest suitable school.

- 2.25 Chapter 5 of the document outlines the legal duty of local authorities to undertake a risk assessment of the walked routes to school. Risk assessments of walked routes enable local authorities to determine whether a route to school is 'available' (safe) to walk.

Planning Policy Summary

- 2.26 The overall aim of Planning Policy is to deliver a planning system which is positive in outlook and enables development, helping to deliver sustainable places that include homes, jobs and infrastructure, whilst providing opportunities to protect and enhance our most important built and natural environments and support the use of the Welsh language.
- 2.27 In terms of Highways and Transportation this is for walking and cycling to be the natural mode of choice for short everyday journeys, or as part of a longer journey in combination with other sustainable modes.
- 2.28 The proposed highway and access road leading to the site is suitable to serve the proposed residential development at the Land off Penlan Road, Carmarthen.
- 2.29 There will not be a potential significant increase in vehicular and pedestrian/vehicle conflicts to the detriment of the safety and free flow of traffic in and around the site.
- 2.30 We will show that the proposed residential dwelling at the Land off Penlan Road, Carmarthen is located in a sustainable location.
- 2.31 The propose residential dwellings are accessible by a range of different transport modes such as Walking, Cycling and Public Transport provision and therefore will not be overly reliant on the use of the private motor vehicle.
- 2.32 The 2 miles walking distance for primary school children and the 3 miles walking distance for senior school children ties up with the "Active Travel Act Guidance July 2021" quoted distances.
- 2.33 Therefore, it can be accepted that if the walking routes are deemed suitable for children, then they can also be considered suitable for adults.

3 EXISTING CONDITIONS

Introduction

- 3.1 This section provides a review of the existing conditions at the site with relation to transport and movements. This includes a review of the site location and access to local facilities and amenities, a study of the existing local highway network and traffic conditions along with a local review of accident data.
- 3.2 The sustainability of the site is considered regarding the provision of alternative modes of transport to the car, including walking, cycling and public transport.

Site Location and Description

- 3.3 Carmarthen is the County town of Carmarthenshire. It is situated on the River Towy 13km north of its estuary in Carmarthen Bay.
- 3.4 The population was 14,185 in 2011, down from 15,854 in 2001, but gauged at 16,100 in 2021.
- 3.5 The proposed residential development site is located north of the town centre between the residential streets of Penlan Road and Sprigfield Road.
- 3.6 The site is roughly rectangular in shape consisting of agricultural land. The northern boundary is the adjacent field. The eastern boundary is the residential estate of Heol-y-Delyn. The southern boundary is split between overgrown shrubs land and the back of the gardens of the dwelling on the north side of Parc-Y-Delyn. The western boundary abuts Penlan Road.
- 3.7 These features can be seen in **Figure 4** (an extract from Google Earth).



Figure 4: Aerial view of residential development site

Active Travel Network

- 3.8 Carmarthenshire County Council Integrated Network Map shows an improvement to the link between Bryn Gorwel and Penlan Road as an Integrated Network Walking route (shown as a blue line, referenced as C38) on **Figure 5**. The blue and orange dashed lines represent Integrated Network Shared Use i.e. walking and cycling routes.

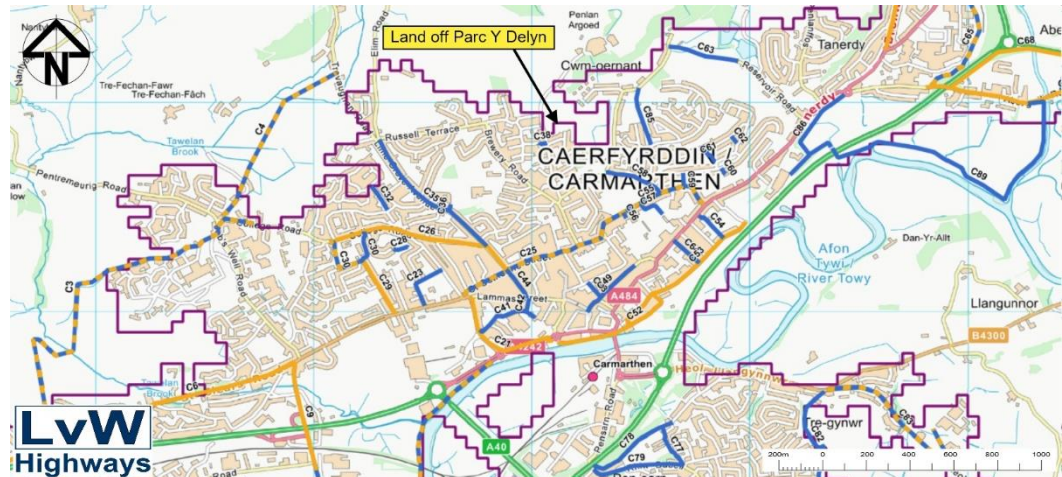


Figure 5: Carmarthenshire Integrated Network Map

Learner Travel Statutory Provision and Operational Guidance (June 2014) - Walking Distances Eligibility

- 3.9 Local Authorities are required to provide free transport for all pupils of compulsory school age (5-16) if their nearest suitable school is:
- Beyond 2 miles / 3.22 kilometres (if below the age of 8); or
 - Beyond 3 miles / 4.83 kilometres (if aged between 8 and 16).
- 3.10 A 400m walking distance to a bus stop and an 800m walking distance to a railway station has been widely adopted by many Highway Authorities. However, the reason why these distances have been selected is not clear. The most recent publication from CIHT (2015) acknowledges that the research is old and more work is required.

Pedestrian Facilities

- 3.11 There are currently no segregated footways along Penlan Road.
- 3.12 There are footways on the streets that lead off Penland Road to the west, i.e. Parc Y Delyn and Parc Thomas. These streets also benefit from an appropriate system of street lighting. The pedestrian footways along Parc Y Delyn and Parc Thomas are provided with a width of 1.8m and are subject to a statutory speed limit of 20mph.
- 3.13 At the junction of Parc Y-Delyn with Wellfield Road, Waterloo Road and Brewery Road, there are continuous segregated footways on Waterloo Road in to Carmarthen Town Centre.
- 3.14 The Welsh Government publication “Active Travel Act Guidance July 2021”, refers to Manual for Streets that considers the width of footways required for pedestrian activity and **Figure 6** shows the width of typical pedestrian users.

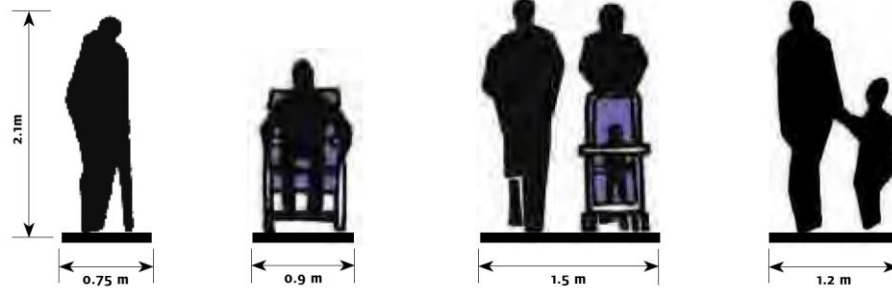


Figure 6: Manual for Street minimum footway widths

3.15

As shown in **Figure 7**, an extract from DfT's 'Inclusive Mobility' document (2002), a footway width of 1.5m is suitable for a wheelchair user and ambulant person side by side.

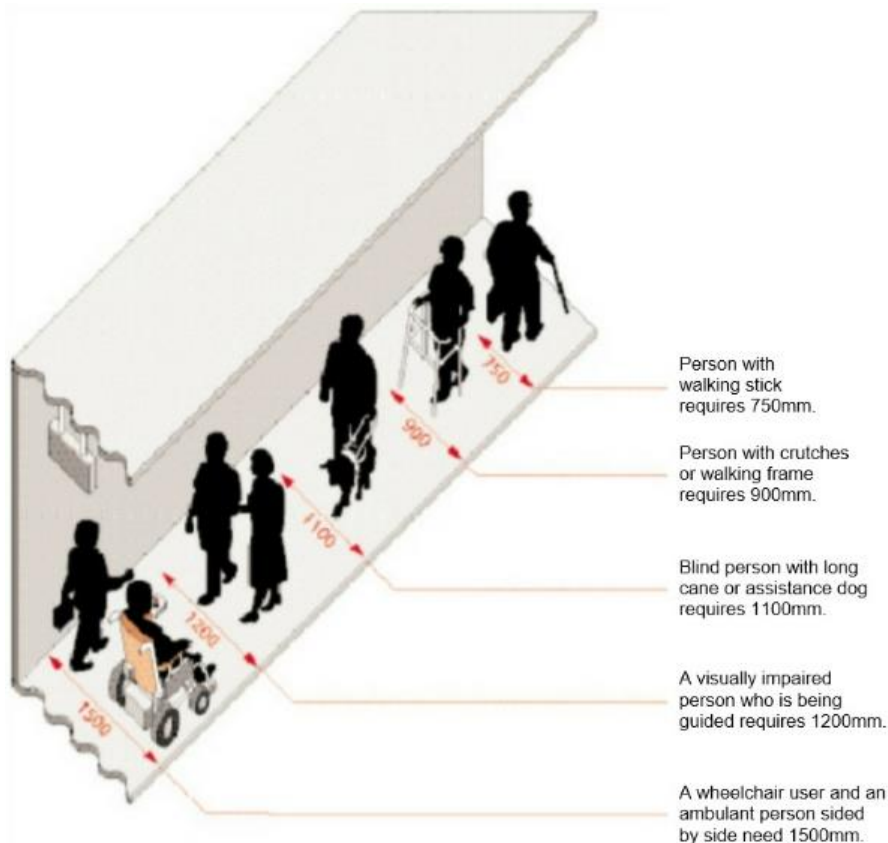


Figure 7: Footway widths (DfT 'Inclusive Mobility' 2002)

3.16

Segregated footways are also present on both sides of the majority of the highways throughout Carmarthen. Although it is noted that there are some minor sections with missing segregated footway provision.

3.17

Figure 8 shows the pedestrian isochrones for 400m (mauve), 1.61km (1 mile dark blue), and 3.22km (2 miles light blue) from the centre of the proposed development site within walking distance of this notional point.

- 3.18 The isochrones for walking shows that Carmarthen is within the statutory walking distances and therefore not eligible for free school transport.

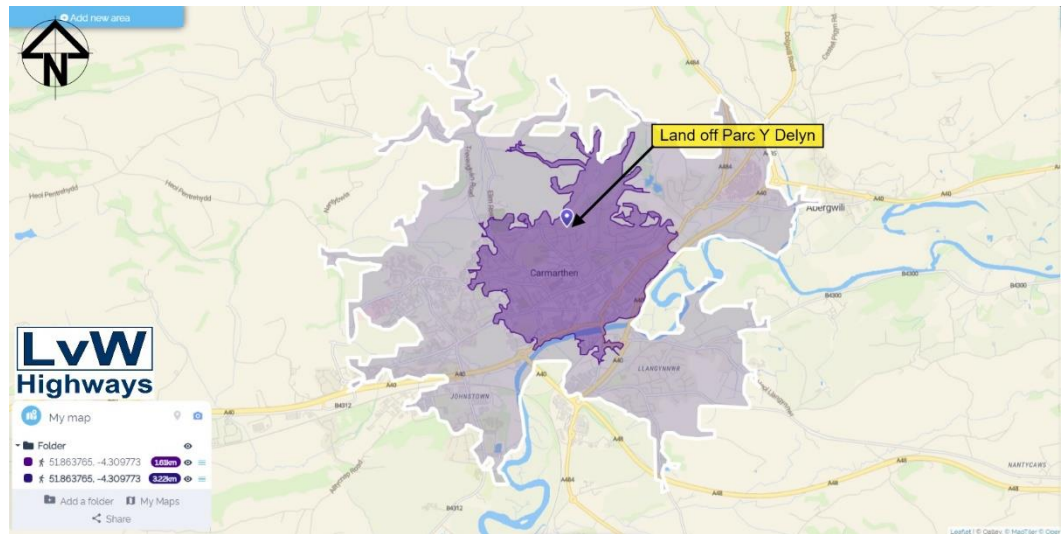


Figure 8: Walking isochrones for 400m, 1610m (1mile) and 3220m (2miles)

- 3.19 People will choose their mode based on their journey purpose, and it is reasonable to conclude that a proportion of journeys undertaken to and from the site will be on foot, particularly given the proximity of key facilities and services.

Public Rights of Way

- 3.20 There are a limited number of public footpaths and bridleways in the vicinity of the site all used predominantly for recreational use but also often used by residents as short cuts to other areas of Carmarthen, as can be seen in **Figure 9**.



Figure 9: Public Right of Way footpaths in relation to the site

- 3.21 On the basis that there is an acceptable level of provision for pedestrians it is reasonable to expect that typical able-bodied people are capable of walking at least 3.22km (2 miles) for day-to-day activities as identified by the Welsh Government in the publication "Active Travel Act Guidance July 2021".
- 3.22 The thrust of sustainability policy is that there will be an increasing propensity for people to use non single car occupancy modes, of which walking is one.

Cycle Facilities

- 3.23 In the vicinity of the development site, and within Carmarthen cyclists are accommodated on the carriageway in line with the guidance contained in The Active Travel Act Guidance, Manual for Streets and Manual for Streets 2 and The Highway Code.

- 3.24 There are only a few dedicated sections of traffic free cycle network within Carmarthen for journeys so most cycle journeys have to take place on carriageway as identified in the Integrated Network Map.
- 3.25 The Institution of Highways and Transportation advises that the mean average length for cycling journeys is approximately 4 km although states that journeys of up to three times these distances are not uncommon for regular commuters.
- 3.26 The Welsh Government suggest that cycling for utility journeys could be undertaken for lengths of up to 8km (5 miles) in the publication “Active Travel Act Guidance July 2021”.
- 3.27 **Figure 10** shows the cycling isochrones for 4 kilometres from the centre of the proposed development site.

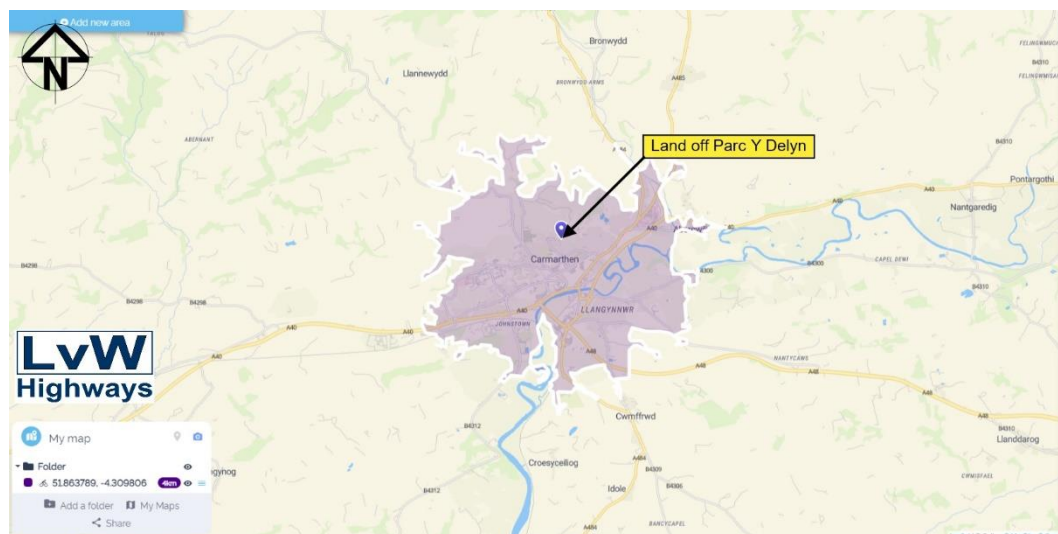


Figure 10: Cycling isochrones 4000m (4km)

- 3.28 The surrounding urban centres of Trevaughan, Abergwilli, Tre-gyner, Pibwrlwyd and Johnstown are all accessible by bike. One of the limiting factors for residents using cycling as a means of transport within town centres the lack of safe and secure cycle parking.

Public Transport

Bus Services

- 3.29 In reviewing the public transport provision in the vicinity of and directly serving the area, it is evident that the site benefits from bus provision.
- 3.30 The nearest bus stops to the site are located on Bryn Gorwel and Waterloo Terrace just south of its junction with Wellfield Road.
- 3.31 These stops are serviced by route 206 (circa 1 bus per 2 hours Mon-Sat) which link the site with Glangwili Hospital and Tre-Vaughan via the bus station.
- 3.32 The bus stops are less than 400 metres walk from the proposed development site.
- 3.33 All the timetables are available online at <https://www.traveline.cymru/>.
- 3.34 It is therefore concluded that the existing bus routes provide opportunities for residents of the development to make both commuting and leisure trips via sustainable modes of travel.

Rail Services

- 3.35 The nearest railway station to the proposed development site is at Carmarthen, 1.5 kilometres from the site which provides further sustainable transport opportunities, particularly for trips further afield.
- 3.36 Carmarthen railway station is on the West Wales Line. The station is operated by Transport for Wales. Great Western Railway also run a service between Carmarthen and London Paddington.
- 3.37 The current station is fully staffed, with the ticket office on platform 1 manned all week. A self-service ticket machine is provided for use and for collecting pre-paid tickets. There are toilets and a waiting room on platform 1 and platform 2 has a shelter and bench seating. Train running information is provided by digital CIS displays, timetable posters and automated announcements. Step-free access is available to both platforms, though platform 2 requires the use of a foot crossing - wheelchair users are advised not to use this without assistance. Station signs are bilingual, in English and Welsh.
- 3.38 To the east, Transport for Wales operate regular services to Swansea, Cardiff Central, Crewe and Manchester Piccadilly. Great Western Railway currently operate one service per day (Mon-Sat, 3 on Sundays) between this station and London Paddington. The majority of local train services west of Carmarthen are timed to connect with the London Paddington services at either Swansea or Cardiff Central.
- 3.39 To the west, Transport for Wales operate services to Pembroke Dock, Milford Haven and Fishguard Harbour. Carmarthen is the eastern terminus for a few of these services.
- 3.40 The British Transport Police maintain a presence at Carmarthen.
- 3.41 Therefore, rail journeys are only considered suitable for long distance travel in connection with bus transport for the majority of commuters and visitors to Carmarthen.

Personal Injury Collision/Accident Data

- 3.42 A review has been undertaken 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 exasperated by the development proposals. Personal Injury Collision (PIC) data has been reviewed from online resources for the road network within the vicinity of the site for the latest five-year period.
- 3.43 This data has been sourced from the National statistics authority and reported on by the Department for transport each year. The information uses data obtained directly from official sources and compiled in an easy-to-use format showing each collision on a map.
- 3.44 An examination of the PIC data indicated that there have been no PICs recorded over the 5-year period review (2019-2023) along Penlan Road, Parc Y Delyn, Parc Thomas, Waterloo Road and Spring field Road as can be seen in **Figure 11**.

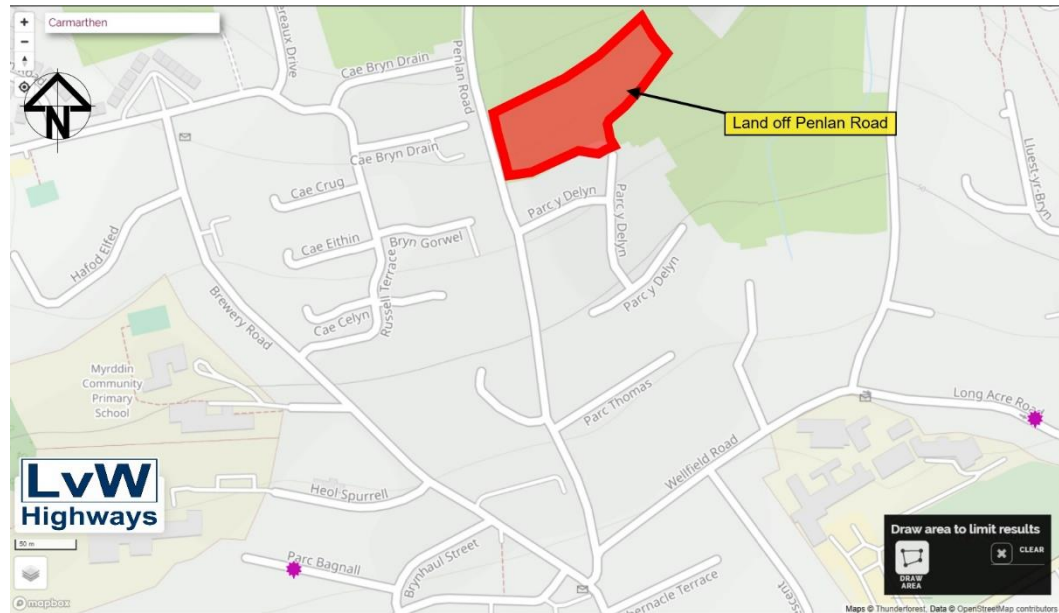


Figure 11: Personal Injury Collisions 2019 to 2023

- 3.45 The personal injury collision data does not therefore appear to identify any significant highway safety issues or concentration of collisions i.e. 'black spot' within the immediate area of the development site to warrant further investigation.
- 3.46 The minor increase in traffic generated by the proposed development (as discussed later on in this report) is highly unlikely to exasperate the existing safety record to a significant level to warrant concern.

Accident Risk - Responsibility of Highway Users

- 3.47 As highlighted in Manual for Streets 2 (para 3.1.7) the use of the public highway is governed by the Highway Code, and "confirms that users must behave reasonably, taking into account other people and local conditions."
- 3.48 The UK Roads Board and Institution of Civil Engineers (ICE) document "Highway Risk and Liability Claims" 2009 (2nd edition) sets out to "provide an overview of the current position on highways liability arising from maintenance and design, including latest philosophy and views on best practice and legislation". This document states that "the use of the Highway is governed by the Highway Code. It may be used in evidence in court cases, and is also a guide to reasonable use."
- 3.49 The duty on the person to observe the Highway Code is set out in Section 38 of the Road Traffic Act 1988 and the key guidance and instruction on how to use the public highway is set out in rule 146 of the Highway Code as follows:

Highway Code Rule 146:

'Adapt your driving to the appropriate type and condition of road you are on. In particular

- *do not treat speed limits as a target. It is often not appropriate or safe to drive at the maximum speed limit*
- *take the road and traffic conditions into account. Be prepared for unexpected or difficult situations, for example, the road being blocked beyond a blind bend. Be prepared to adjust your speed as a precaution*
- *where there are junctions, be prepared for road users emerging*

- *in side roads and country lanes look out for unmarked junctions where nobody has priority*
- *be prepared to stop at traffic control systems, road works, pedestrian crossings or traffic lights as necessary*
- *try to anticipate what pedestrians and cyclists might do. If pedestrians, particularly children, are looking the other way, they may step out into the road without seeing you'*

3.50 As highlighted in paragraph 3.1.9 of Manual for Streets 2, "It is clear that the Highway Code requires drivers to have regard for other road users particularly children. Manual for Streets 2 also provides examples of court rulings on this point, citing *Gorringe v Calderdale* as an example that road users are responsible for their own safety. In that case the House of Lords made the following rulings:

"The overriding imperative is that those who drive on the public highways do so in a manner and at a speed which is safe having regard to such matters as the nature of the road, the weather conditions and the traffic conditions. Drivers are first and foremost themselves responsible for their own safety".

3.51 In summary, therefore, it is a long-established principle that users of the public highway have a responsibility to adapt to the road conditions, which includes the presence of cyclists and pedestrians on the highway. The objective of the Highway Authority is to obtain the maximum benefits for the community, and although the balanced decision-making process should include highway safety and risk to road users it is not to be slavishly tied to risk management.

3.52 The determination of a planning application necessarily requires a balance of all competing constraints and opportunities; which in this case includes the movement of cyclists, pedestrians and vehicles along the local roads.

3.53 It should also be remembered that risk is an inherent factor in any trip, whether by car or any other mode of transport, and subject to the end users taking account of these risks the movement of cyclists and pedestrians should be encouraged.

3.54 If all the roads in the county and country where a pedestrian or cyclist was involved in an accident were considered too dangerous for these activities, then I would suggest that there would be very little walking or cycling taking place and the Welsh Government would have to re-think its objectives on Active Travel.

Penlan Road

3.55 Carmarthenshire Council Highways Officer and the Highway Consultant from Atkins Realis asked for a parking survey, a vehicle volumetric survey and a pedestrian survey of movements on Penlan Road Carmarthen. They would like the surveys to be undertaken over two days on a Friday and Saturday.

3.56 The extent of the parking survey is on the western side of Penlan Road between the area of highway with no double yellow lines and shown on **Figure 12**.

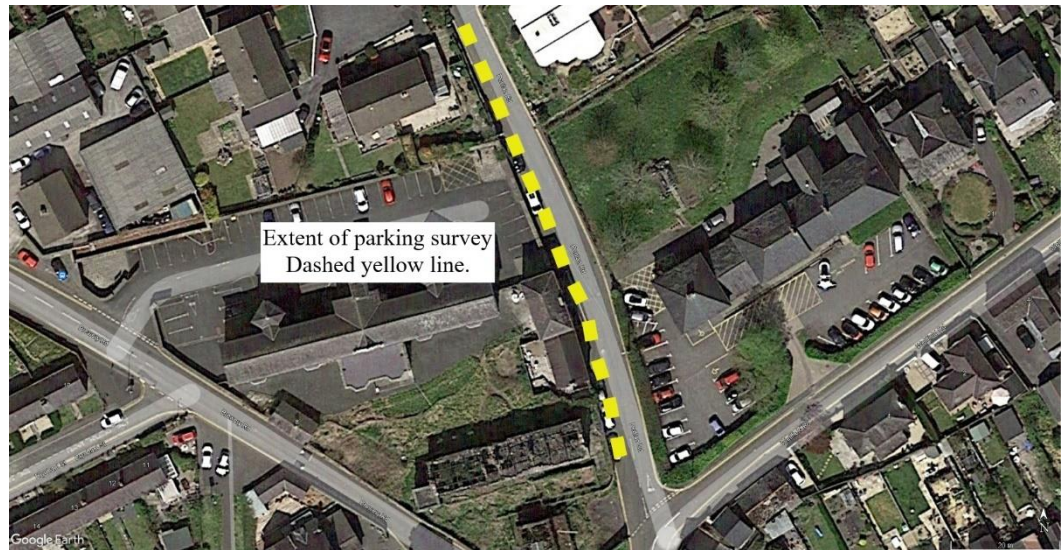


Figure 12: Parking survey location

- 3.57 Concerning the vehicle volumetric and pedestrian survey, this was undertaken at the same place as the parking survey and also at a second location where the footway from Parc y Delyn joins Penlan Road as shown on **Figure 13**.



Figure 13: Volumetric survey location

- 3.58 A specialist survey company were employed to undertake both the parking and volumetric surveys. The surveys were undertaken using video cameras and the results tabulated within a spreadsheet workbook.
- 3.59 The surveys were undertaken on Friday 21st June 2024 and Saturday 22nd June 2024 between 07:00 and 19:00.
- 3.60 The volumetric survey was undertaken at two locations on Penlan Road, Site 1; near its junction with Wellfield Road and Site 2; near the footway leading to Parc-Y-Delyn.
- 3.61 A summary of the results of the survey for the twelve hours between 07:00 and 19:00 on Friday 21st June 2024 are shown in **Table 1**.

Table 1: Summary of movements on Friday

Site	Move	Northbound	Southbound
2	Vehicles	152	152
	Pedestrians	8	19
1	Vehicles	227	236
	Pedestrians	46	58

- 3.62 A summary of the results of the survey for the twelve hours between 07:00 and 19:00 on Saturday 22nd June 2024 are shown in **Table 2**.

Table 2: Summary of movements on Saturday

Site	Move	Northbound	Southbound
2	Vehicles	103	112
	Pedestrians	14	19
1	Vehicles	176	187
	Pedestrians	62	74

- 3.63 The Welsh Government publication 'Learner Travel Statutory Provision and Operational Guidance June 2014' at paragraph 5.9 states; - "Low traffic flow occurs on roads that have a traffic flow below 400 vehicles in a 1-hour period; medium traffic flow occurs on roads with a traffic flow between 400 to 840 vehicles per hour; and heavy traffic flow occurs on roads with a traffic flow of over 840 vehicles per hour."
- 3.64 The results show that Penlan Road (near its junction with Wellfield Road) has 463 two-way vehicle movements over 12 hours, approximately 39 two-way vehicle movements per hour therefore, Penlan Road can be considered a street that is very lightly trafficked.
- 3.65 Penlan Road for the majority of its length is wide enough for a slow-moving vehicle to pass a child and accompanying adult when passing and therefore, consider suitable as a walking route for utility journeys such as to local facilities in Carmarthen and to local schools.
- 3.66 There is also the alternative pedestrian route that links Parc Y Delyn to Penlan Road south of the property known as Bronhaul.

Air Quality Management Area (AQMA)

- 3.67 The location of the site is not within or near a designated Air Quality Management Area (AQMA).

Abnormal Loads

- 3.68 There are no abnormal load uses associated with the current site or expected with the development of the site.

4 PROPOSED DEVELOPMENT

Proposed Scheme

- 4.1 The proposed development is for 20 residential dwellings on Land off Penlan Road, Carmarthen.
- 4.2 It is likely that further discussions on the site layout will take place as part of the detail design process and therefore the plan may slightly change as a result of the planning processes.
- 4.3 The approach taken in developing the layout plan is founded on giving maximum encouragement to walking and cycling to and from the development. The inclusion of a widened highway and new footway on the development side of Penlan Road will play an important role in connecting the development to its surroundings.
- 4.4 The layout design will place an emphasis on the principles of “Manual for Streets” in facilitating a choice of direct and attractive routes for pedestrians and cyclists that are aligned with key desire lines and take advantage of the attractiveness associated with a suburban location.
- 4.5 For the purposes of the assessment, all the residential dwellings will be classified as private properties in order to provide a robust case in terms of ownership of the properties, as houses for rent typically generate a lower volume of vehicle traffic flows.

Highway Improvement Scheme

- 4.6 The highway authority suggested within its response that a highway improvement scheme along Penlan Road developed by ‘Atkins’ at the time of the approved outline consent (W/12397 and W/14334), would be considered a benefit.
- 4.7 This ‘Atkins’ scheme provides a continuous footway along Penlan Road and links with the existing pedestrian ‘cut through’, from the Parc Y Delyn site to Penlan Road, south of the property known as Bronhaul.
- 4.8 The proposed highway improvement scheme will provide an alternative scheme that enhances the pedestrian connections to Cae Bry Drain and Bryn Gorwel on the western side of Penlan Road.
- 4.9 Road widening will be undertaken from the property known as Bronhual all the way north to just beyond Cae Bryn Drain. There will be a short section where this cannot be undertaken near No.7 Parc-Y-Delyn to retain the large tree.
- 4.10 The proposed highway improvements can be seen in the drawings in **Appendix A**. The applicant would welcome the opportunity to work with the LHA to prepare an achievable scheme.
- 4.11 Penlan Road is an adopted highway with no limitations on the volume or size of vehicles allowed to use it. North of the property known as Bronhaul, it is predominantly used by residents of the 40 properties of Parc Y Delyn and Penlan Argoed Farm at the top end of the lane and therefore, it is very lightly trafficked. The addition of 20 dwellings and the associated occasional use of Penlan Road is unlikely to be significant.
- 4.12 Penlan Road is subject to a statutory speed limit of 20mph.
- 4.13 All highway users are subject to the rules, regulations and laws of the Highway Code.

Proposed Public Transport Access

- 4.14 In respect of the site and the level of development, the existing bus services are considered suitable to meet the public transport requirements of the residents of the site and achieve a tangible modal shift.
- 4.15 Bus stops are located on Bryn Gorwel some 200m from the site entrance and on Brewery Road / Waterloo Road within 350 metres of the site entrance. Bus services are provided from these bus stops to Carmarthen Bus Station.

On Site Parking

- 4.16 TAN 18 supplements Planning Policy Wales and states in paragraph 4.6 that *“Maximum car parking standards should be used at regional and local level as a form of demand management.”* and in paragraph 4.7 it requires LHA’s in determining maximum car parking standards for new development, regard should be given to alternative transport modes, economic objectives, public and shared parking arrangements.
- 4.17 Paragraph 4.13 goes on to say *“Where appropriate, the local parking strategy should link parking levels on new development sites with either the existence or introduction of on-street control regimes. Maximum parking standards should not be applied so rigidly that they become minimum standards. Maximum standards should allow developers the discretion to reduce parking levels.”*

Carmarthenshire Parking Standards

- 4.18 Parking at the site will be provided in accordance with the ‘Parking Standards’. Paragraph 1.2 recognises the Welsh Government maximum standards and says: *This means in practice a move from “minimum parking” (where developers were required to provide a minimum number of off road parking spaces) to “maximum parking” (where planning consent will stipulate the maximum number of car parking spaces which can be provided).*
- 4.19 The parking standards guidance is determined by land use and location, with development being located in zones 1 to 6, with zone one being applicable to city centre and the centres of largest towns. The location of the application site is considered to be within the guidance for a development within Zones 2 – 6 as the site lies within Zone 4 – Suburban or Near Urban for parking calculation purposes.
- 4.20 The parking standard for the type and location of the proposed new development is provided in **Table 3**.

Type of Development	Residents	Visitors
a) Residential - Houses	3 spaces per house	1 space per 5 units

Table 3: Parking Standards for private dwellings in Zones 2 to 6

- 4.21 Garages may only be counted as parking spaces if they have internal dimensions that meet disabled access requirements of 6m x 3.6m. All properties with a garage must also have a 6m long driveway which has a width of not less than 3.6m.
- 4.22 Visitor parking must be designed as an integral part of any development where it is required and must take into account the needs of the disabled.
- 4.23 For each individual dwelling the parking requirement are a maximum of 3 spaces.
- 4.24 A 5.0 metres wide access road allows for the visitor parking to be on-carriageway with no separate allocation for visitors.
- 4.25 It is proposed to provide a minimum of two designated car parking space per dwelling and therefore, this does not exceed the maximum of three spaces.

4.26 Provision for secure cycle storage will be provided within each dwelling.

4.27 In accordance with Planning Policy Wales requirements ULEV charge points will be provided at each dwelling. It is intended that this be passive provision in that the underlying infrastructure will be put in place that will allow a charge point to be easily installed at a future date.

Servicing Arrangements

4.28 The widening of Penlan Road and provision of segregated footways ensures that a refuse vehicle and fire tender can arrive and depart freely.

Highway Trips

4.29 This section describes the traffic analysis undertaken to determine the likely effect that the proposed residential development dwellings accessed off Penlan Road may have on the surrounding highway network. The traffic analysis includes the calculation of the number of vehicle trips associated with the development.

4.30 **Predict and Provide** is a demand-led supply methodology used for Transport Planning purposes, it is a reactive methodology. It forecast a most likely mobility future (within sensitivity-tested bound of uncertainty) and provides a means to accommodate projected demand.

4.31 The problem with sticking with the Predict and Provide approach, include: not supporting Net Zero or the increase in work from home provision; under provision of walking and cycling facilities; and the over provision of highway capacity. Its base assumption is that people will maintain past travel behaviour.

4.32 The latest thinking in Transport Planning is Decide and Provide, this is a supply-led demand methodology and considered a proactive approach. The methodology starts with deciding on a preferred accessibility future (and the outcomes that represents to a community) and provide a means to move towards it in a way that accommodates the deep uncertainty ahead.

4.33 **Decide and Provide** allows us to adopt a more positive and integrated transport and land use planning approach; achieve more meaningful implementation of a modal hierarchy that prioritises walking, wheeling and cycling; and better support of the decarbonisation of transport.

4.34 However, there is a deep uncertainty using this methodology such as the changes in consumer behaviour, the increase in the take up of ultra-low emission vehicles, electric and autonomous vehicles, things such as new pandemics and other interruptions and these have to be considered carefully.

4.35 Due to the lack of any formal guidance on the Decide and Provide methodology, we have unfortunately had to revert back to the Predict and Provide method of trip rate calculations.

4.36 As discussed above, it must be acknowledged that not all these vehicle trips will be new to the highway network and that a large majority will already be on the road.

4.37 As required by the TRICS Good Practice Guide we have provided information below on the steps taken to filter the database to arrive at the results, so that the LHA receiving the data can fully understand how the data was obtained in the first place.

4.38 The TRICS output is provided in detail in **Appendix B** and summarised below.

Land use & trip rate selection

4.39 The TRICS selection criteria used are, 03/A – Houses Privately Owned (GDO use class C3); Housing developments where at least 75% of units are privately owned. Of the total number of units, 75% must also be houses (sum of “non-split” terraced, detached, semi-detached, bungalows, etc.), with no more than 25% of the total units being flats. Includes properties that are privately owned and then privately rented. Trip rates are calculated by Site Area, Dwellings, Housing Density, or Total Bedrooms.

4.40 The vehicle trip generation rates for the proposed development have been filtered using the following selection criteria: -

- Calculate multi modal trip rates.
- Regions of the development: Excludes Greater London and Ireland.

Primary Filtering

- No. of units: Maximum of 50.
- Survey days: Monday – Friday, excludes weekend.
- Locations of the development: Suburban Area, Edge of Town; Neighbourhood Centre.

Secondary filtering

- Population within 1 mile: limit to 5,001 to 10,000.
- Population within 5 miles: limit to 50,001 to 75,000.

4.41 **Table 4** shows the average hourly trips during the day as well as the daily flows that the private dwellings could typically have. These are calculated by multiplying the trip rates produced from the TRICS data with the proposed number of private dwellings.

Time Range	Arrivals	Departures	Totals
07:00-08:00	2	6	7
08:00-09:00	4	7	10
09:00-10:00	3	4	7
10:00-11:00	3	3	6
11:00-12:00	4	4	8
12:00-13:00	3	4	8
13:00-14:00	3	3	6
14:00-15:00	3	4	7
15:00-16:00	6	4	10
16:00-17:00	5	4	9
17:00-18:00	6	3	9
18:00-19:00	5	2	7
Daily Trip Rates:	47	48	94

Table 4: Vehicular Trips for 20 private dwellings (Proposed Use)

4.42 This clearly shows that if the residential dwellings were occupied, it is estimated that it could attract and produce 94 vehicle movements a day.

4.43 To visualise how these trips arrive and depart throughout a typical day, the arrivals and departures are plotted on **Chart 1**. It can be seen that a development of private

dwelling will generate two peak periods, one in the morning and the other in the afternoon to evening.

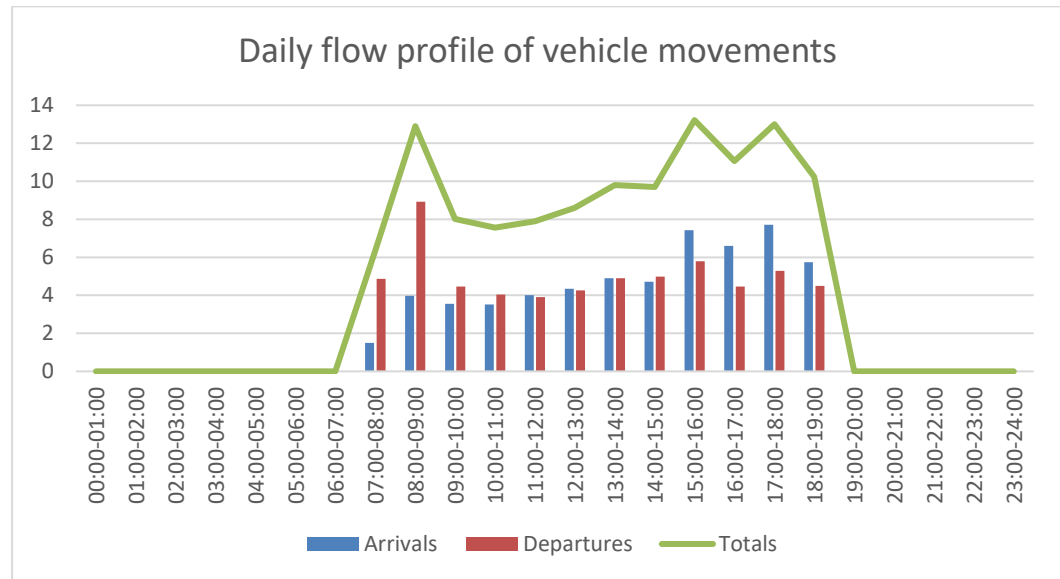


Chart 1: Vehicular Trips for 20 private dwellings (Proposed Use)

- 4.44 The development is likely to be at its busiest during the morning and evening peak hours and the data suggests that 10 vehicle movements will be generated during its busiest hour (08:00-09:00) and 10 vehicles in the evening peak hour (17:00-18:00).
- 4.45 During the AM peak hour (08:00-09:00) it is anticipated that the proposed development could attract 4 vehicle movements (arrivals) and produce 7 vehicle movements (departures). To put this in context, vehicle movements per hour equates to on average, no more than one movement every five minutes. This is not considered to be significant.
- 4.46 During the PM peak hour (17:00-18:00) it is anticipated that the proposed development could attract 6 vehicle movements (arrivals) and produce 3 vehicle movements (departures). To put this in context, vehicle movements per hour equates to on average, no more than one movement every five minutes. This is not considered to be significant.
- 4.47 The TRICS data suggests that, based on typical trip rates for residential, the proposed development has the potential to generate around 48 arrivals and 48 departures per day.

Mode Share

- 4.48 Of the total movements it is anticipated that, 20.3% of the total movements would walk or cycle, 1.4% would use public transport, 41.8% would be single vehicle occupants and the remaining 36.5% would be multi vehicle occupants. This is represented graphically in **Chart 2**.

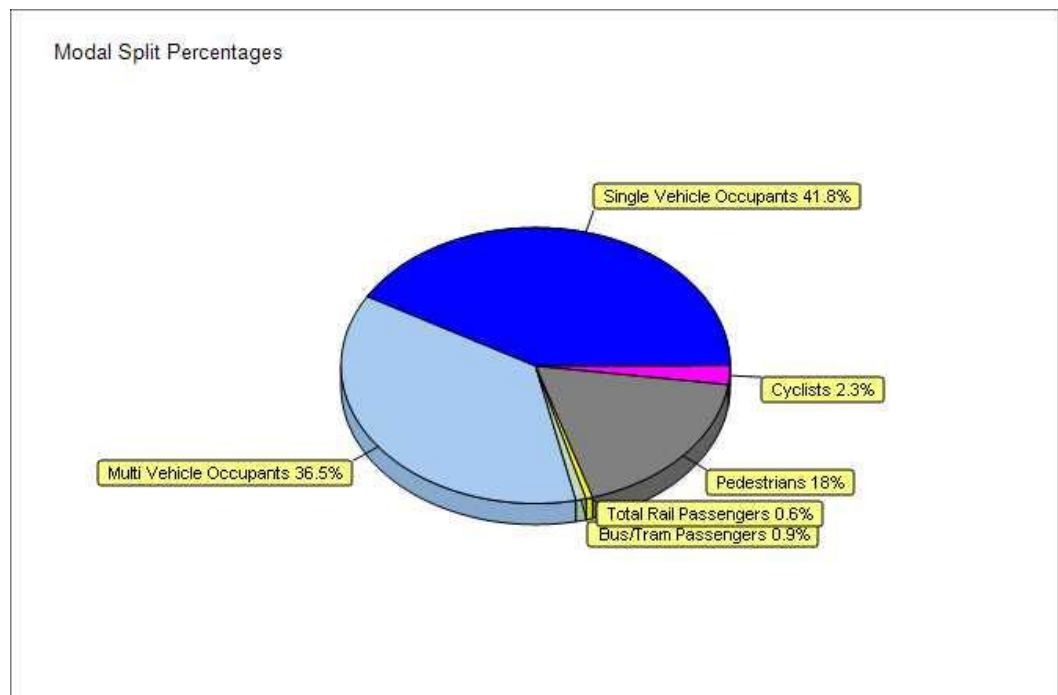


Chart 2: Mode share

4.49

Chart 3 shows the daily flow profile of the calculated pedestrian movements to and from the proposed development.

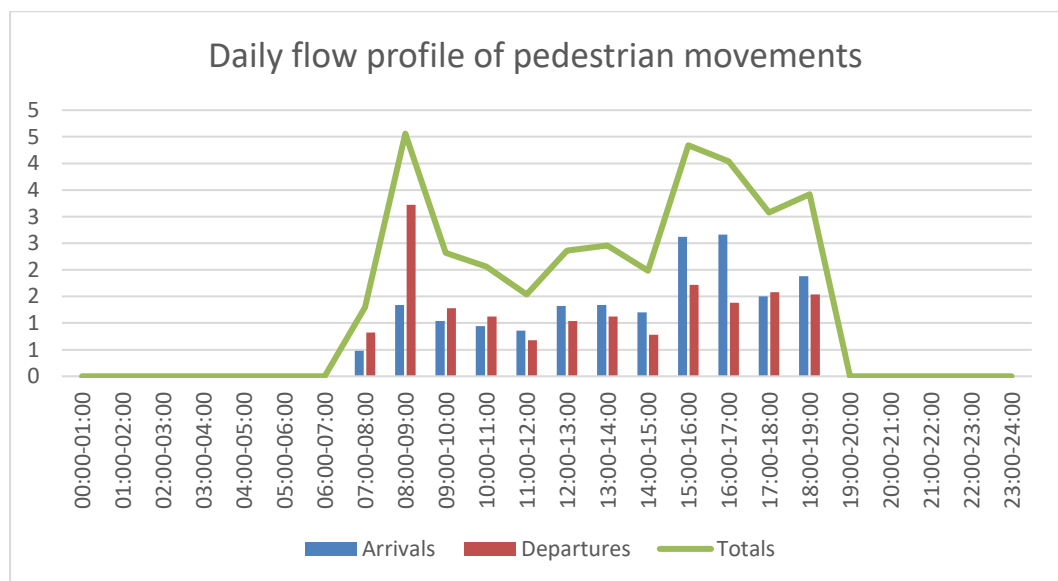


Chart 3: Pedestrian Trips for private dwellings (Proposed Use)

Trip Distribution

4.50

Trip distribution refers to the estimate of origins and destinations of the new generated trips to and from the development site, which needs to be assigned across the highway network. Route assignment concerns the selection of routes between origin and destination.

4.51

Based on the surrounding area and location of the towns and villages, we have estimated that 100% of vehicles will access the site from the south along Penlan Road.

Shared Surface

- 4.52 The term Shared Surface is used to describe streets and spaces (or parts of them) where people and vehicles mix with equal priority and without any segregation from one another.
- 4.53 The Highway Code 'hierarchy of road users' is a concept that places those road users most at risk in the event of a collision at the top of the hierarchy. The hierarchy does not remove the need for everyone to behave responsibly. The road users most likely to be injured in the event of a collision are pedestrians, cyclists, horse riders and motorcyclists, with children, older adults and disabled people being more at risk.
- 4.54 Shared Surfaces will generally only be acceptable in quiet low trafficked street environments i.e. where the volume of motor traffic is below 100 vehicles per hour and where pedestrians will be present.
- 4.55 Concern has been expressed that a narrow highway without a footway is unsafe, this is not true. Although the proposed Penlan Road highway improvement scheme will provide a footway on the east side of Penlan Road from Bronhaul northwards.
- 4.56 Research undertaken for Manual for Streets in that shared surface roads operate safely in low trafficked street environments i.e. where the volume of motor traffic is below 100 vehicles per hour and where pedestrian movements are present (see page 83 of MfS1).

Construction Traffic Management Plan (CTMP)

- 4.57 A CTMP will be produced by the and submitted to the LHA for approval prior to any works undertaken on the highway as part of a S278 agreement. This will include plans showing areas for delivery and storage for plant and materials, parking and facilities for staff, wheel washing facilities for all vehicles and before and after surveys of the highway condition.
- 4.58 As a contractor has not been appointed it is premature to produce a Construction Traffic Management Plan at this stage of the planning process so it is suggested that it is required as a Planning Condition.

Section Conclusion

- 4.59 This section has reviewed the proposed development and the mitigation measures, and it has concluded the following:
- 4.60 **Site Access Scheme and Parking:** A simple T-junction access to the development site is proposed at its connection with Penlan Road and footway/cycle link to Parc Y Delyn. The internal layout will be designed where pedestrians and cyclists will interact with motorised traffic as a hybrid shared surface.
- 4.61 **Pedestrian and Cycle Facilities and Routes:** The development site will provide segregated pedestrian facilities, with footways provided as part of the site access junction connecting the site with the local pedestrian network within Carmarthen. A number of footpaths are located within close proximity to the development that provide recreational routes to other areas of Carmarthenshire.
- 4.62 **Public Transport:** There are several bus stops located within close proximity to the development site providing frequent access to Carmarthen town centre.

5 SUMMARY AND CONCLUSIONS

Introduction

- 5.1 This document has been prepared in support of an application for a residential development of 20 dwellings on Land off Penlan Road, Carmarthen.

Existing Conditions

- 5.2 The site is well located in terms of access to the local road network. The main roads within the study area are Penlan Road, Parc Y Delyn and Waterloo Road.
- 5.3 There are regular local bus services serving the local towns and railway station in Carmarthen that services a range of destinations.

Policy Review

- 5.4 The proposed development meets the objectives of national policy, as set out in the Planning Policy Wales (PPW) and supports the aims of current government planning guidance on the integration of land use planning and transport for a number of reasons, inter-alia:
- it encourages walking through the provision of a new footway along Penlan Road and enhanced connections to Cae Bryn Drain and Bryn Gorwel;
 - a highway improvement scheme, will widen Penlan Road for all users from the property known as Bronhaul, to just beyond Cae Bryn Drain;
 - at the local level, Carmarthenshire Council transport policy aspirations build upon national policy by seeking to reduce reliance on the car and encourage the use of non-car modes of transport.
- 5.5 The development proposals accord with the objectives of the adopted Local Plan in that they seek to promote travel on foot, cycle and by public transport for residents and the provision of sufficient on-site parking spaces.
- 5.6 The proposed development would accord with these policies and would also be integrated into the existing built-up areas, thus enabling its residents and visitors to readily access other facilities.

Accident Data

- 5.7 We have examined the personal injury accident records in detail for the highway links and junctions in the vicinity of the site for the 5 years 2019 to 2023. This information does not identify any major accident problems on the surrounding highway network.
- 5.8 We have established from the recent personal injury accident history that there is not an identified accident problem along the local highway network in the vicinity of the proposed site.
- 5.9 Evidence shows that no serious personal injury accidents were recorded on local road links. As such, the development traffic movements associated with the development proposals should not have a detrimental effect on highway safety.

Proposed Development

- 5.10 The proposed development will comprise a residential development of 20 dwellings accessed via a widened Penlan Road.
- 5.11 Access to these facilities by non-motorised modes will be encouraged through the provision of a footway.

- 5.12 Parking will be provided in accordance with current standards as indicated by Carmarthenshire Council.

Traffic Generation, Distribution and Assignment

- 5.13 It is expected that the proposed development would exhibit higher levels of trips by car than foot, cycle and bus due to its location and the nature of the development.
- 5.14 All vehicles will enter and leave the site via the new driveways, being the shortest distance to the wider highway network.

Impact on the Local Highway Network

- 5.15 During the AM peak hour, it is anticipated that the proposed development could attract 4 vehicle movements (arrivals) and produce 8 vehicle movements (departures).
- 5.16 During the PM peak hour, it is anticipated that the proposed development could attract 8 vehicle movements (arrivals) and produce 4 vehicle movements (departures).
- 5.17 If we add the estimated number of vehicle movements from the development of 58 arrivals and 60 departures (118 two-way) then this would result in 518 two-way vehicle movements in twelve hours an average of 43 two-way movements per hour, still significantly less than the 400 referenced by the Welsh Ministers as a low traffic flow.
- 5.18 It has been concluded that the highway network can satisfactorily accommodate the predicted traffic flows when the development is operational.

Overall Conclusion

- 5.19 This report has investigated the transport implications of the development proposals on Land off Penlan Road, Carmarthen.
- 5.20 It is considered that this development is appropriate and acceptable in traffic and transportation terms. That the traffic movements associated with the development proposals are currently accommodated on the highway network and do not have a detrimental impact on the free flow of traffic due to the existing volumes of traffic using the local highway network.
- 5.21 It is considered that the application site meets planning policy requirements in terms of being in an appropriate location that is safely accessed and that the impacts of the development on the continued operation and safety of the surrounding highway network would be acceptable.
- 5.22 We conclude that, with respect to transport, this development complies with the Welsh Governments development guidance as set out in Planning Policy Wales and is appropriate and acceptable in traffic and transport terms. The Well-being of Future Generations Act put in place four aspects of well-being: economic, social, environmental and cultural and this development assists with meeting these aspects.

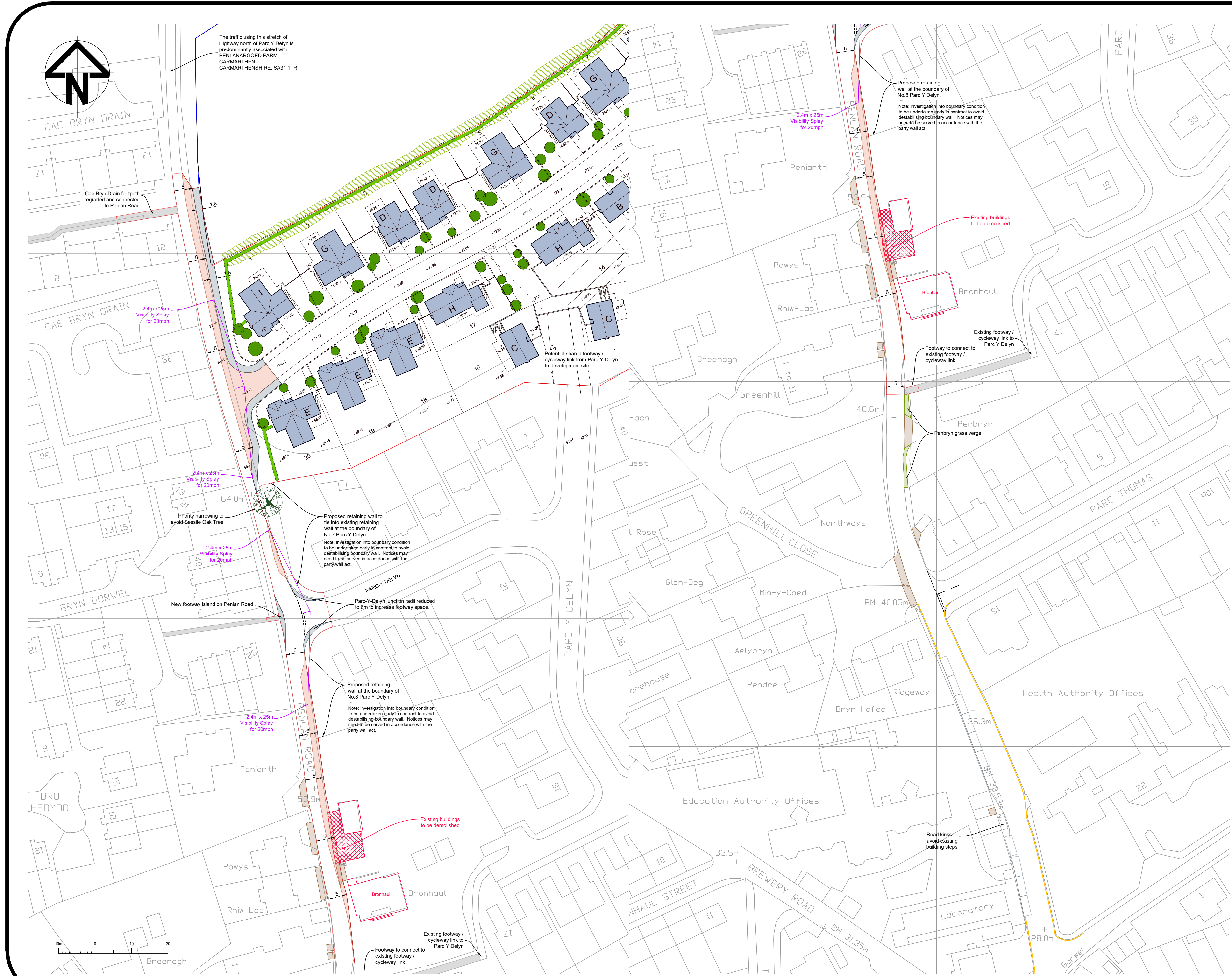
Closure

- 5.23 LvW Highways Ltd has prepared this report with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on interpretation of data collected has been accepted in good faith as being accurate and fair.

- 5.24 This report is for the exclusive use of Duncan Foster no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from LvW Highways Ltd.
- 5.25 LvW Highways Ltd disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of work.

APPENDIX A

Highway Layout Plan



General Notes

1. ALL DIMENSIONS ARE INDICATIVE AND IN METRES UNLESS NOTED OTHERWISE.

2. DO NOT SCALE THIS DRAWING, USE FIGURED DIMENSIONS ONLY.

3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (AOD) BASED ON THE TOPOGRAPHICAL SURVEY DRAWING SUPPLIED BY THE CLIENT.

4. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.

5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

6. THE SPECIFICATION IN ALL ASPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT RESIDENTIAL DESIGN GUIDE AND SPECIFICATION IN FORCE WITHIN THE COUNTY AT THE TIME OF CONSTRUCTION.

7. COPYRIGHT OF THIS DRAWING IS RETAINED BY THE ENGINEER AND IT MUST NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT.

EXISTING DRIVEWAYS OR GARAGES ONTO PENLAN ROAD

CARRIAGEWAY WIDENING ON PENLAN ROAD

NEW FOOTWAY ON PENLAN ROAD

EXISTING/NEW VERGE ON PENLAN ROAD

H Revised Highway Layout 25.10.2024

G Revised Highway Layout 09.06.2023

F Revised Highway Layout 27.04.2023

E Revised Highway Layout 02.02.2023

D Approved Penlan Road widening 'Atkins' scheme 07.12.2022

C Extended survey & revised traffic calming 28.10.2022

B For LHA Comments 30.08.2022

A For Discussion 15.02.2024

No.

Revision/Issue

Date

Drawing Status

S0 - Work in progress

Firm Name and Address

LvW Highways

www.LvWHighways.com

Client

Duncan Foster

Architect

Batcup Architects

Project Name and Address

Land off Penlan Road
Penlan Road
Carmarthen, Carmarthenshire.
Carmarthenshire.

Drawing Title

Proposed Highway
Improvement Works.
General Arrangement

Designed
KvW

Drawn
KvW

Approved
KvW

Scale
1:500@A1L

Date
24.10.2024

Drawing Number
611-LvWH-GEN-PR-DR-CH-701

Rev.
H

APPENDIX B

TRICS Output

Calculation Reference: AUDIT-452201-241029-1043

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HC HAMPSHIRE	1 days
03	SOUTH WEST	
	DC DORSET	2 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	1 days
	SF SUFFOLK	1 days
08	NORTH WEST	
	AC CHESHIRE WEST & CHESTER	2 days

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

Primary 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: No of Dwellings
 Actual Range: 12 to 50 (units:)
 Range Selected by User: 6 to 50 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 27/03/24

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 2 days
 Thursday 3 days
 Friday 4 days

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

Selected survey types:

Manual count 9 days
 Directional ATC Count 0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre) 1
 Edge of Town 4
 Neighbourhood Centre (PPS6 Local Centre) 4

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 4
 Village 4
 No Sub Category 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.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 12 days - Selected
 Servicing vehicles Excluded 24 days - Selected

Secondary Filtering selection:

Use Class:

C3 9 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	3 days
5,001 to 10,000	5 days

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

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	5 days
50,001 to 75,000	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	7 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	8 days
No	1 days

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

PTAL Rating:

No PTAL Present	9 days
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This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	AC-03-A-04	TOWN HOUSES		CESHIRE WEST & CHESTER
	LONDON ROAD			
	NORTHWICH			
	LEFTWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:	24		
	Survey date: THURSDAY	06/06/19	Survey Type: MANUAL	
2	AC-03-A-05	SEMI-DETACHED & TERRACED		CESHIRE WEST & CHESTER
	MEADOW DRIVE			
	NORTHWICH			
	BARNTON			
	Neighbourhood Centre (PPS6 Local Centre)			
	Village			
	Total No of Dwellings:	40		
	Survey date: FRIDAY	30/04/21	Survey Type: MANUAL	
3	CA-03-A-07	MIXED HOUSES		CAMBRIDGESHIRE
	FIELD END			
	NEAR ELY			
	WITCHFORD			
	Neighbourhood Centre (PPS6 Local Centre)			
	Village			
	Total No of Dwellings:	32		
	Survey date: THURSDAY	27/05/21	Survey Type: MANUAL	
4	DC-03-A-09	MIXED HOUSES		DORSET
	A350			
	SHAFTESBURY			
	Edge of Town			
	No Sub Category			
	Total No of Dwellings:	50		
	Survey date: FRIDAY	19/11/21	Survey Type: MANUAL	
5	DC-03-A-10	MIXED HOUSES		DORSET
	ADDISON CLOSE			
	GILLINGHAM			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	26		
	Survey date: WEDNESDAY	09/11/22	Survey Type: MANUAL	
6	ES-03-A-06	MIXED HOUSES		EAST SUSSEX
	BISHOPS LANE			
	RINGMER			
	Neighbourhood Centre (PPS6 Local Centre)			
	Village			
	Total No of Dwellings:	12		
	Survey date: WEDNESDAY	16/06/21	Survey Type: MANUAL	
7	HC-03-A-31	MIXED HOUSES & FLATS		HAMPSHIRE
	KILN ROAD			
	LIPHOOK			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	44		
	Survey date: FRIDAY	07/10/22	Survey Type: MANUAL	
8	NF-03-A-05	MIXED HOUSES		NORFOLK
	HEATH DRIVE			
	HOLT			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	40		
	Survey date: THURSDAY	19/09/19	Survey Type: MANUAL	

LIST OF SITES relevant to selection parameters (Cont.)

9	SF-03-A-06 BURY ROAD KENTFORD	DETACHED & SEMI-DETACHED	SUFFOLK
	Neighbourhood Centre (PPS6 Local Centre) Village		
	Total No of Dwellings:	38	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period
 Total People to Total Vehicles ratio (all time periods and directions): 1.73

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.082	9	34	0.278	9	34	0.360
08:00 - 09:00	9	34	0.186	9	34	0.337	9	34	0.523
09:00 - 10:00	9	34	0.160	9	34	0.199	9	34	0.359
10:00 - 11:00	9	34	0.137	9	34	0.170	9	34	0.307
11:00 - 12:00	9	34	0.216	9	34	0.183	9	34	0.399
12:00 - 13:00	9	34	0.160	9	34	0.219	9	34	0.379
13:00 - 14:00	9	34	0.167	9	34	0.150	9	34	0.317
14:00 - 15:00	9	34	0.154	9	34	0.186	9	34	0.340
15:00 - 16:00	9	34	0.324	9	34	0.199	9	34	0.523
16:00 - 17:00	9	34	0.239	9	34	0.203	9	34	0.442
17:00 - 18:00	9	34	0.304	9	34	0.150	9	34	0.454
18:00 - 19:00	9	34	0.248	9	34	0.124	9	34	0.372
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.377			2.398			4.775

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

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

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Parameter summary

Trip rate parameter range selected:	12 - 50 (units:)
Survey date date range:	01/01/16 - 27/03/24
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.007	9	34	0.003	9	34	0.010
08:00 - 09:00	9	34	0.003	9	34	0.007	9	34	0.010
09:00 - 10:00	9	34	0.000	9	34	0.000	9	34	0.000
10:00 - 11:00	9	34	0.000	9	34	0.000	9	34	0.000
11:00 - 12:00	9	34	0.003	9	34	0.003	9	34	0.006
12:00 - 13:00	9	34	0.000	9	34	0.000	9	34	0.000
13:00 - 14:00	9	34	0.000	9	34	0.000	9	34	0.000
14:00 - 15:00	9	34	0.000	9	34	0.000	9	34	0.000
15:00 - 16:00	9	34	0.000	9	34	0.000	9	34	0.000
16:00 - 17:00	9	34	0.000	9	34	0.000	9	34	0.000
17:00 - 18:00	9	34	0.003	9	34	0.003	9	34	0.006
18:00 - 19:00	9	34	0.000	9	34	0.000	9	34	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.016			0.016			0.032

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.000	9	34	0.000	9	34	0.000
08:00 - 09:00	9	34	0.010	9	34	0.007	9	34	0.017
09:00 - 10:00	9	34	0.013	9	34	0.013	9	34	0.026
10:00 - 11:00	9	34	0.000	9	34	0.000	9	34	0.000
11:00 - 12:00	9	34	0.003	9	34	0.010	9	34	0.013
12:00 - 13:00	9	34	0.000	9	34	0.000	9	34	0.000
13:00 - 14:00	9	34	0.000	9	34	0.000	9	34	0.000
14:00 - 15:00	9	34	0.000	9	34	0.000	9	34	0.000
15:00 - 16:00	9	34	0.000	9	34	0.000	9	34	0.000
16:00 - 17:00	9	34	0.000	9	34	0.000	9	34	0.000
17:00 - 18:00	9	34	0.003	9	34	0.003	9	34	0.006
18:00 - 19:00	9	34	0.000	9	34	0.000	9	34	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.029			0.033			0.062

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 CYCLISTS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.000	9	34	0.010	9	34	0.010
08:00 - 09:00	9	34	0.003	9	34	0.023	9	34	0.026
09:00 - 10:00	9	34	0.000	9	34	0.013	9	34	0.013
10:00 - 11:00	9	34	0.016	9	34	0.016	9	34	0.032
11:00 - 12:00	9	34	0.003	9	34	0.007	9	34	0.010
12:00 - 13:00	9	34	0.010	9	34	0.000	9	34	0.010
13:00 - 14:00	9	34	0.000	9	34	0.003	9	34	0.003
14:00 - 15:00	9	34	0.007	9	34	0.003	9	34	0.010
15:00 - 16:00	9	34	0.013	9	34	0.007	9	34	0.020
16:00 - 17:00	9	34	0.020	9	34	0.003	9	34	0.023
17:00 - 18:00	9	34	0.013	9	34	0.016	9	34	0.029
18:00 - 19:00	9	34	0.007	9	34	0.000	9	34	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.092			0.101			0.193

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.098	9	34	0.356	9	34	0.454
08:00 - 09:00	9	34	0.219	9	34	0.520	9	34	0.739
09:00 - 10:00	9	34	0.190	9	34	0.261	9	34	0.451
10:00 - 11:00	9	34	0.163	9	34	0.242	9	34	0.405
11:00 - 12:00	9	34	0.297	9	34	0.239	9	34	0.536
12:00 - 13:00	9	34	0.219	9	34	0.297	9	34	0.516
13:00 - 14:00	9	34	0.239	9	34	0.199	9	34	0.438
14:00 - 15:00	9	34	0.170	9	34	0.294	9	34	0.464
15:00 - 16:00	9	34	0.493	9	34	0.232	9	34	0.725
16:00 - 17:00	9	34	0.366	9	34	0.301	9	34	0.667
17:00 - 18:00	9	34	0.415	9	34	0.190	9	34	0.605
18:00 - 19:00	9	34	0.301	9	34	0.160	9	34	0.461
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.170			3.291			6.461

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.026	9	34	0.023	9	34	0.049
08:00 - 09:00	9	34	0.078	9	34	0.203	9	34	0.281
09:00 - 10:00	9	34	0.072	9	34	0.039	9	34	0.111
10:00 - 11:00	9	34	0.026	9	34	0.036	9	34	0.062
11:00 - 12:00	9	34	0.020	9	34	0.023	9	34	0.043
12:00 - 13:00	9	34	0.062	9	34	0.056	9	34	0.118
13:00 - 14:00	9	34	0.026	9	34	0.042	9	34	0.068
14:00 - 15:00	9	34	0.042	9	34	0.039	9	34	0.081
15:00 - 16:00	9	34	0.134	9	34	0.101	9	34	0.235
16:00 - 17:00	9	34	0.108	9	34	0.062	9	34	0.170
17:00 - 18:00	9	34	0.069	9	34	0.075	9	34	0.144
18:00 - 19:00	9	34	0.072	9	34	0.049	9	34	0.121
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.735			0.748			1.483

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.000	9	34	0.000	9	34	0.000
08:00 - 09:00	9	34	0.000	9	34	0.010	9	34	0.010
09:00 - 10:00	9	34	0.007	9	34	0.003	9	34	0.010
10:00 - 11:00	9	34	0.000	9	34	0.003	9	34	0.003
11:00 - 12:00	9	34	0.003	9	34	0.000	9	34	0.003
12:00 - 13:00	9	34	0.007	9	34	0.007	9	34	0.014
13:00 - 14:00	9	34	0.007	9	34	0.007	9	34	0.014
14:00 - 15:00	9	34	0.000	9	34	0.000	9	34	0.000
15:00 - 16:00	9	34	0.013	9	34	0.003	9	34	0.016
16:00 - 17:00	9	34	0.003	9	34	0.000	9	34	0.003
17:00 - 18:00	9	34	0.000	9	34	0.000	9	34	0.000
18:00 - 19:00	9	34	0.000	9	34	0.000	9	34	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.040			0.033			0.073

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.000	9	34	0.000	9	34	0.000
08:00 - 09:00	9	34	0.000	9	34	0.010	9	34	0.010
09:00 - 10:00	9	34	0.000	9	34	0.007	9	34	0.007
10:00 - 11:00	9	34	0.000	9	34	0.003	9	34	0.003
11:00 - 12:00	9	34	0.003	9	34	0.000	9	34	0.003
12:00 - 13:00	9	34	0.000	9	34	0.000	9	34	0.000
13:00 - 14:00	9	34	0.000	9	34	0.000	9	34	0.000
14:00 - 15:00	9	34	0.003	9	34	0.000	9	34	0.003
15:00 - 16:00	9	34	0.000	9	34	0.000	9	34	0.000
16:00 - 17:00	9	34	0.007	9	34	0.003	9	34	0.010
17:00 - 18:00	9	34	0.007	9	34	0.000	9	34	0.007
18:00 - 19:00	9	34	0.003	9	34	0.000	9	34	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.023			0.023			0.046

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.000	9	34	0.000	9	34	0.000
08:00 - 09:00	9	34	0.000	9	34	0.020	9	34	0.020
09:00 - 10:00	9	34	0.007	9	34	0.010	9	34	0.017
10:00 - 11:00	9	34	0.000	9	34	0.007	9	34	0.007
11:00 - 12:00	9	34	0.007	9	34	0.000	9	34	0.007
12:00 - 13:00	9	34	0.007	9	34	0.007	9	34	0.014
13:00 - 14:00	9	34	0.007	9	34	0.007	9	34	0.014
14:00 - 15:00	9	34	0.003	9	34	0.000	9	34	0.003
15:00 - 16:00	9	34	0.013	9	34	0.003	9	34	0.016
16:00 - 17:00	9	34	0.010	9	34	0.003	9	34	0.013
17:00 - 18:00	9	34	0.007	9	34	0.000	9	34	0.007
18:00 - 19:00	9	34	0.003	9	34	0.000	9	34	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.064			0.057			0.121

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
 Total People to Total Vehicles ratio (all time periods and directions): 1.73

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.124	9	34	0.389	9	34	0.513
08:00 - 09:00	9	34	0.301	9	34	0.765	9	34	1.066
09:00 - 10:00	9	34	0.268	9	34	0.324	9	34	0.592
10:00 - 11:00	9	34	0.206	9	34	0.301	9	34	0.507
11:00 - 12:00	9	34	0.327	9	34	0.268	9	34	0.595
12:00 - 13:00	9	34	0.297	9	34	0.359	9	34	0.656
13:00 - 14:00	9	34	0.271	9	34	0.252	9	34	0.523
14:00 - 15:00	9	34	0.222	9	34	0.337	9	34	0.559
15:00 - 16:00	9	34	0.654	9	34	0.343	9	34	0.997
16:00 - 17:00	9	34	0.503	9	34	0.369	9	34	0.872
17:00 - 18:00	9	34	0.503	9	34	0.281	9	34	0.784
18:00 - 19:00	9	34	0.382	9	34	0.209	9	34	0.591
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.058			4.197			8.255

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

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

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

MULTI-MODAL CARS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.062	9	34	0.248	9	34	0.310
08:00 - 09:00	9	34	0.141	9	34	0.268	9	34	0.409
09:00 - 10:00	9	34	0.118	9	34	0.154	9	34	0.272
10:00 - 11:00	9	34	0.105	9	34	0.141	9	34	0.246
11:00 - 12:00	9	34	0.147	9	34	0.114	9	34	0.261
12:00 - 13:00	9	34	0.114	9	34	0.173	9	34	0.287
13:00 - 14:00	9	34	0.124	9	34	0.111	9	34	0.235
14:00 - 15:00	9	34	0.131	9	34	0.160	9	34	0.291
15:00 - 16:00	9	34	0.271	9	34	0.157	9	34	0.428
16:00 - 17:00	9	34	0.209	9	34	0.160	9	34	0.369
17:00 - 18:00	9	34	0.265	9	34	0.137	9	34	0.402
18:00 - 19:00	9	34	0.219	9	34	0.118	9	34	0.337
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.906			1.941			3.847

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

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.013	9	34	0.023	9	34	0.036
08:00 - 09:00	9	34	0.033	9	34	0.052	9	34	0.085
09:00 - 10:00	9	34	0.026	9	34	0.033	9	34	0.059
10:00 - 11:00	9	34	0.033	9	34	0.026	9	34	0.059
11:00 - 12:00	9	34	0.056	9	34	0.049	9	34	0.105
12:00 - 13:00	9	34	0.046	9	34	0.042	9	34	0.088
13:00 - 14:00	9	34	0.042	9	34	0.039	9	34	0.081
14:00 - 15:00	9	34	0.016	9	34	0.026	9	34	0.042
15:00 - 16:00	9	34	0.052	9	34	0.042	9	34	0.094
16:00 - 17:00	9	34	0.029	9	34	0.042	9	34	0.071
17:00 - 18:00	9	34	0.029	9	34	0.007	9	34	0.036
18:00 - 19:00	9	34	0.029	9	34	0.007	9	34	0.036
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.404			0.388			0.792

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 MOTOR CYCLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	34	0.000	9	34	0.003	9	34	0.003
08:00 - 09:00	9	34	0.000	9	34	0.003	9	34	0.003
09:00 - 10:00	9	34	0.003	9	34	0.000	9	34	0.003
10:00 - 11:00	9	34	0.000	9	34	0.003	9	34	0.003
11:00 - 12:00	9	34	0.007	9	34	0.007	9	34	0.014
12:00 - 13:00	9	34	0.000	9	34	0.003	9	34	0.003
13:00 - 14:00	9	34	0.000	9	34	0.000	9	34	0.000
14:00 - 15:00	9	34	0.007	9	34	0.000	9	34	0.007
15:00 - 16:00	9	34	0.000	9	34	0.000	9	34	0.000
16:00 - 17:00	9	34	0.000	9	34	0.000	9	34	0.000
17:00 - 18:00	9	34	0.003	9	34	0.000	9	34	0.003
18:00 - 19:00	9	34	0.000	9	34	0.000	9	34	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.020			0.019			0.039

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.