



Gwellyn Avenue, Kinmel Bay

Transport Assessment

For Kenyon Planning

Date *2 February 2024*

Doc ref *27816-HYD-XX-XX-RP-TP-5001-P02*

Document control sheet

Issued by	Hydrock Consultants Limited Northern Assurance Buildings 9-21 Princess Street Albert Square Manchester M2 4DN United Kingdom	T +44 (0)161 804 5550 E manchestercentral@hydrock.com hydrock.com
Client	Kenyon Planning	
Project name	Gwellyn Avenue, Kinmel Bay	
Title	Transport Assessment	
Doc ref	27816-HYD-XX-XX-RP-TP-5001-P02	
Project number	27816	
Status	S4	
Date	02/02/2024	

Document production record		
Issue number	P02	Name
Prepared by	Syed Rahi BSc (Hons), MSc	
Checked by	Christopher Peachey BA (Hons)	
Approved by	Neil Bayliss-Rowe BSc (Hons)	

Document revision record			
Issue number	Status	Date	Revision details
P01	S3	01/06/2023	Suitable For Comment and Review
P02	S4	02/02/2024	Suitable For Stage Approval - Final

Hydrock Consultants Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

Contents

1.	INTRODUCTION.....	1
1.1	Overview.....	1
1.2	Scope of Assessment.....	1
1.3	General.....	1
1.4	Structure of Report.....	2
2.	EXISTING CONDITIONS.....	3
2.1	Site Location.....	3
2.2	Highway Network.....	3
2.3	St Asaph Avenue.....	3
2.4	Gwellyn Avenue.....	4
2.5	Accident Analysis.....	5
3.	TRANSPORT POLICY CONTEXT.....	7
3.1	Policy Overview.....	7
3.2	Technical Advice Note 18: Transport (TAN18).....	7
3.3	Manual for Streets [MfS].....	7
3.4	Other National Policies / Guidelines Reviewed.....	8
3.5	Conway Council - Emerging Local Development Plan (2018 - 2033).....	8
3.6	Conwy Local Development Plan 2007 - 2022 - Adopted 2013.....	9
3.7	Parking Standards (2007 - 2022).....	10
3.8	LDP2 Sustainability Scoring Matrix.....	11
3.9	Summary.....	11
4.	SUSTAINABLE ACCESSIBILITY.....	12
4.1	Access on Foot.....	12
4.2	Access by Bicycle.....	14
4.3	Access by Bus.....	16
4.4	Access by Rail.....	17
4.5	Accessibility by Public Transport.....	18
4.6	Conclusions.....	18
5.	PROPOSED DEVELOPMENT.....	19
5.1	Introduction.....	19
5.2	Schedule of Accommodation.....	20
5.3	Proposed Site Access Arrangements.....	20
5.4	Visibility Splay.....	20
5.5	Vehicle Tracking.....	20
5.6	Servicing Vehicles.....	21

5.7	<i>Parking Provision</i>	21
6.	TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT	24
6.1	<i>Introduction</i>	24
6.2	<i>Trip Generation</i>	24
6.3	<i>Trip Distribution</i>	25
6.4	<i>Summary</i>	25
7.	FUTURE BASELINE TRAFFIC CONDITIONS	26
7.1	<i>Introduction</i>	26
7.3	<i>Traffic Growth</i>	26
8.	Junction Capacity Assessment	27
8.1	<i>Introduction</i>	27
8.2	<i>Priority Junction Assessment</i>	27
8.3	<i>Summary</i>	28
9.	SUMMARY AND CONCLUSION	29
9.1	<i>Summary</i>	29
9.2	<i>Conclusion</i>	29

Tables

Table 2.1: Study Area Accident Record Summary	6
Table 3.1: User Hierarchy (taken from Table 3.2 of MfS, March 2007)	8
Table 3.2: Acceptable Walking Distances	8
Table 3.3 Zone 6 Parking Standards	10
Table 4.1: Bus Timetable Summary	17
Table 5.1: Schedule of Accommodation	20
Table 6.1: Vehicle Trip Rates - Proposed C3 Residential Land Use	24
Table 6.2: Total Vehicle Trip Generation - Proposed C3 Residential Land Use	24
Table 7.1: TEMPRO Traffic Growth Factors (Conwy 005)	26
Table 8.1 PICADY - Gwellyn Avenue / St Asaph Avenue	28

Figures

Figure 1.1: Site Location	2
Figure 2.1: Local Highway Network	3
Figure 2.2: St Asaph Avenue	4
Figure 2.3: Gwellyn Avenue	4
Figure 2.4: Study Area Accident Record	5
Figure 4.1: Kinmel Bay Active Travel Map	13
Figure 4.2: 2km Walking Catchment	14
Figure 4.3: 5-mile Cycling Catchment	15
Figure 4.4: Bus Stop Map	16
Figure 4.5: 60-minute Public Transport Catchment	18
Figure 5.1: Proposed Site Layout Plan	19
Figure 5.2 Site Sustainability Scoring Matrix	23

Appendices

- Appendix A Scoping Discussions*
- Appendix B Kinmel Bay Active Travel Map*
- Appendix C Sustainable Accessibility*
- Appendix D Proposed Site Layout*
- Appendix E Visibility Splay*
- Appendix F Swept Path - Large Car*
- Appendix G Swept Path - Large Refuse Vehicle*
- Appendix H TRICS Output*
- Appendix I Raw Traffic Count Data*
- Appendix J PICADY Assessment*

1. INTRODUCTION

1.1 Overview

- 1.1.1 Hydrock have been instructed by Kenyon Planning to prepare a Transport Assessment (TA) to support the proposed residential development at Gwellyn Avenue, Kinmel Bay.
- 1.1.2 The proposed development comprises the erection of 85 residential dwellings (76 houses and 9 apartments) with associated parking and landscaping, open space/recreation area, equipped Childrens play area and provision of a convenience store with access from St. Asaph Avenue.
- 1.1.3 The development is located on a parcel of land currently occupied by a mixture of land uses, approximately 1.5km to the south of Kinmel Bay Village Centre.
- 1.1.4 This TA will consider the impact of the proposed development on the local highway network.

1.2 Scope of Assessment

- 1.2.1 Hydrock issued a scoping note to Conwy County Borough Council [CCBC] Highway Officers on 24th April 2023 to agree the scope of assessments in principle, and to obtain additional information relating to the site or the surrounding highway network. The scoping response is presented in **Appendix A**.

1.3 General

- 1.3.1 The development is located off Gwellyn Avenue, approximately 1.5km to the south of Kinmel Bay Village Centre. The site is bounded by a mixture of residential, commercial and agriculture land uses, with the River Gele forming the southern boundary of the site.
- 1.3.2 The site location is illustrated in **Figure 1.1** below.

Figure 1:1: Site Location



Source: GoogleMaps©

1.4 Structure of Report

- 1.4.1 This TA has been developed in accordance with the now superseded DfT document "Guidance on Transport Assessment" [GoTA] (2007) and gives due regard to the NPPG "Transport Evidence in Plan Making" document. It sets out the transport matters relating to the development site and provides details of the development proposals, including an assessment of the predicted traffic flows, the corresponding impact on the surrounding highway network and matters associated with accessibility and connectivity.
- 1.4.2 The report seeks to conclude that the proposed development can be accommodated and that it can be suitably accessed on foot, by cycle and by local public transport services.
- 1.4.3 This report comprises nine sections, including this introduction:
- » **Section 2** examines the site location, existing conditions, and accident analysis;
 - » **Section 3** summarises the national and regional transport policies;
 - » **Section 4** presents the accessibility of the site;
 - » **Section 5** discusses the development proposals;
 - » **Section 6** estimates the number of vehicle trips generated by the development
 - » **Section 7** describes the future baseline traffic conditions on the local highway network
 - » **Section 8** presents capacity assessments of the proposed development vehicle trips upon the network; and
 - » **Section 9** sets out the summary and conclusions.

2. EXISTING CONDITIONS

2.1 Site Location

2.1.1 The development site is situated off Gwellyn Avenue, approximately 1.5km to the south of Kinmel Bay Village Centre. The site is bound by Gwellyn Avenue to the north, and St Asaph Avenue to the west.

2.2 Highway Network

2.2.1 The site location is illustrated in contrast to the surrounding local highway network in **Figure 2.1** below.

Figure 2.1: Local Highway Network



Source: GoogleMaps ©

2.3 St Asaph Avenue

2.3.1 St Asaph Avenue is a single carriageway road situated to the west of the site. The road travels in a northerly direction to Kinmel Bay and in a southerly direction to Bodelwyddan Village. St. Asaph Avenue is approximately 6.5m wide and is subject to a 30mph speed restriction.

2.3.2 Shared pedestrian/cycle footways measuring circa 2.5m that are in good condition are provided on both sides of the carriageway, with street lighting and dropped kerbs. Signalised pedestrian crossing facilities are present at the St Asaph Avenue/Foryd Road Junction.

2.3.3 **Figure 2.2** below shows St Asaph Avenue from a northbound direction.

Figure 2:2: St Asaph Avenue



Source: Google Images © - Accessed 20/04/22

2.4 Gwellyn Avenue

- 2.4.1 Gwellyn Avenue is a single carriageway road extending from St Asaph Avenue and connecting to Tanrallt Avenue. The road is circa 5m wide and is subject to a 30-mph speed restriction. Gwellyn Avenue is situated to the north of the site and serves the surrounding residential dwellings
- 2.4.2 Footways measuring circa 1.5m and 2.5m that are in good condition are provided on the northern and southern side of the carriageway, with street lighting and dropped kerbs
- 2.4.3 **Figure 2.3** below shows St. Asaph Avenue from a westbound direction.

Figure 2:3: Gwellyn Avenue



Source: Google Images © - Accessed 20/04/22

2.5 Accident Analysis

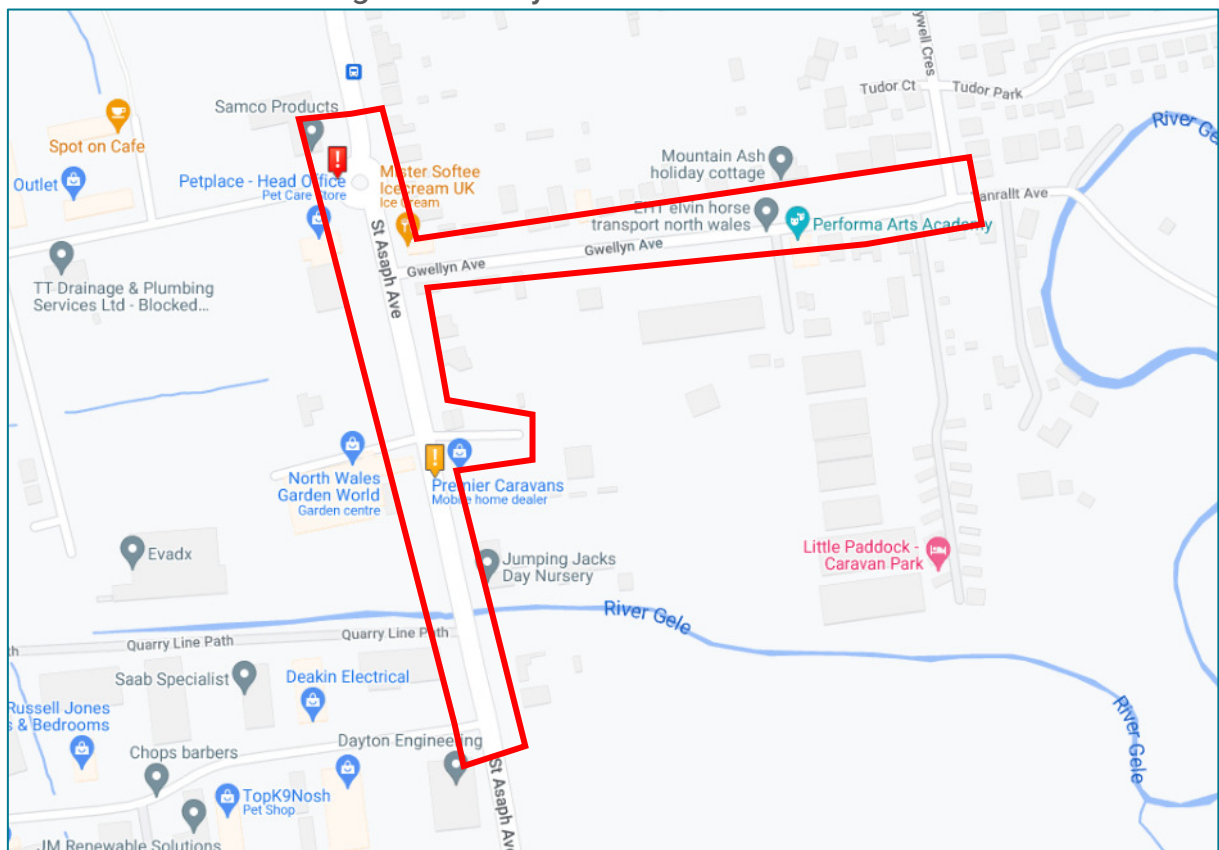
2.5.1 The DfT document "Guidance on Transport Assessment" states that:

"Critical locations on the road network with poor accident records should be identified. This is to determine if the proposed development will exacerbate existing problems or, if proposed, whether highway mitigation works or traffic management measures will help to alleviate the problems"

2.5.2 A review of the Personal-Injury Accidents (PIAs) recorded within the surrounding local highway network has been undertaken using the most recently available five-year data (1st January 2018 - 31st December 2022) available from Crashmap.co.uk.

2.5.3 **Figure 2.4** below illustrates the recorded findings

Figure 2.4: Study Area Accident Record



Source: Crashmap.co.uk©

2.5.4 **Table 2.1** below summarises the accident record and severity over the last five years in more detail.

Table 2.1: Study Area Accident Record Summary

Year/Severity	Slight	Serious	Fatal	Total
2018	-	1	-	1
2019	-	-	-	-
2020	-	-	-	-
2021	-	-	-	-
2022	1	-	-	1
Total	1	1	-	2

2.5.5 Of the 2 accidents recorded within the five-year period, 1 resulted in slight injuries, and 1 resulted in serious injury.

2.5.6 Whilst all accidents are unfortunate, it is Hydrock's view that given the nature of the road network and subsequently traffic flows, the collisions can be attributed to random fluctuations, with circumstantial factors and weather conditions likely to have been the main causes.

2.5.7 Therefore, Hydrock consider the accident history is not a result of existing layout design issues, and concludes that there are no underlying accident concerns within the study area.

3. TRANSPORT POLICY CONTEXT

3.1 Policy Overview

3.1.1 In line with local and national policy, this section outlines the potential travel demand for all modes with regards to the proposed development, against the existing transport provision within the area.

3.2 Technical Advice Note 18: Transport (TAN18)

3.2.1 The Planning Policy Wales Technical Advice Note, released the TAN18 document in March 2007. The advice note is intended as a supplementary document to be read in conjunction with Planning policy Wales (2018) and offers advice on all transport related matters, including Transport Assessments, when they are required and what they should contain, which is intended to assist stakeholders in determining whether an assessment may be required. If an assessment is required, the level and scope of that assessment is then outlined within the document.

3.2.2 The advice reflects current Government policy, promoting a shift from the 'predict and provide' approach to transport planning to one more focused on sustainability. The document focuses on encouraging environmental sustainability, managing the existing network and mitigating the residual impacts of traffic from the development proposals.

3.2.3 The document contains further advice and design guidelines relating to the planning of transport infrastructure, development of transport systems and promotion of walking and cycling as sustainable modes.

3.3 Manual for Streets [MfS]

3.3.1 Manual for Streets (March 2007 and Sept 2010) supersedes Places Streets & Movement and Design Bulletin 32. Manual for Streets should now be used where 85th percentile monitored traffic speeds are less than 37mph.

3.3.2 The Manual deals with first principles in respect of what a street is for. It outlines five principal functions, namely:

- » Place;
- » Movement;
- » Access;
- » Parking; and
- » Drainage and utilities.

3.3.3 A sense of place encompasses a number of characteristics, namely, local distinctiveness, visual quality and human interaction. Of the five functions, place and movement are the most important in determining the character of streets and should be considered together, as opposed to in isolation.

3.3.4 In new developments, Manual for Streets highlights that locations with a relatively high place function would be those where people are likely to gather and interact with each other, such as the town centre.

3.3.5 In section 3 of MfS – the design process highlights that the design of a scheme should follow the user hierarchy shown in **Table 3.1:**

Table 3.1: User Hierarchy (taken from Table 3.2 of MfS, March 2007)

Consider First	Pedestrian
	Cyclist
	Public Transport Users
	Specialist service vehicle (e.g. emergency service, waste etc.)
	Other Motor Vehicles
Consider Last	

3.4 Other National Policies / Guidelines Reviewed

3.4.1 Various walking distances are quoted in the Chartered Institution of Highways and Transportation's (CIHT's) "Guidelines for Providing for Journeys on Foot". **Table 3.2** (taken from Table 3.2 of the document) sets out the acceptable walking distances in various contexts:

Table 3.2: Acceptable Walking Distances

Criteria	Town Centre (m)	School / Commuters (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

3.5 Conway Council - Emerging Local Development Plan (2018 - 2033)

- 3.5.1 Conwy are now preparing a Replacement Local Development Plan (RLDP) to cover the period 2018 - 2033. The Council undertook consultation on the Replacement Local Development Plan (RLDP) 'Preferred Strategy' between 29th July and 20th September 2019.
- 3.5.2 The Council have produced a Preferred Strategy document for the Conwy RLDP. The document sets out the Council's vision, the issues and objectives.
- 3.5.3 The overarching vision is that by 2033 Conwy will offer greater opportunities to live, work and visit. A good quality of life will be offered to all to support the diversity of Conwy's people and places. A renewed focus on placemaking and regeneration led initiatives will ensure that high quality and well-designed development supports the creation of healthier and more vibrant places and reflects Conwy's position within the regional North Wales Growth Deal.

3.5.4 The objectives set out in the Preferred Strategy document are as follows:

1. Sustainable Placemaking in Conwy
2. Healthy and Social Place in Conwy
3. Prosperous Places in Conwy
4. Natural and Cultural Places in Conwy

3.6 Conwy Local Development Plan 2007 - 2022 - Adopted 2013

3.6.1 The Council adopted a local development Plan (LDP) in 2013. It sets out the key challenges facing Conwy, identifies the Vision, Objectives and the Spatial Strategy for development in the area over the period from 2007 to 2022. The LDP will be used by the Council to guide and control development providing the basis by which planning applications will be determined

3.6.2 The vision for Conway is:

"By 2022, the communities of Conwy will be more sustainable, offer a higher quality of life and be supported by a more balanced age structure"

3.6.3 Transport related policies are presented below:

Strategic Policy STR/1 - Sustainable Transport, Development, and Accessibility

3.6.4 Development will be located so as to minimise the need to travel. Convenient access via footways, cycle infrastructure and public transport should exist or be provided where appropriate, thereby encouraging the use of these modes of travel for local journeys and reducing the need to travel by private car and improving the accessibility of services to those with poor availability of transport.

3.6.5 The Council will endeavour to improve accessibility and seek to change travel behaviour. This will be achieved by working with partners to:

- » Promote walking and cycling throughout the Plan Area as part of an integral and highly sustainable means of transport in line with Policy DP/4 – 'Development Criteria'. The design and construction of walking and cycling facilities and infrastructure will be improved to make walking and cycling more attractive, direct and safe.;
- » Safeguard land to promote accessible communities that encourage integrated sustainable modes of travel in line with Policies STR/5 – 'Integrated Sustainable Transport System' and STR/6 – 'Railfreight'. The Council will further improve public transport and promote sustainable modes and improvements to public transport services. Improvements to rail stations and bus stations will be sought to assist as interchanges between modes and promote sustainable travel behaviour

Policy STR/3 - Mitigating Travel Impact

3.6.6 New developments will be required to mitigate the undesirable effects of travel such as; noise, pollution, impact on amenity and health and other environmental impacts;

3.6.7 Where a proposed development is likely to have significant transport, social or environmental implications, the Council will require developers to submit a Transport Assessment and a Travel Plan with the planning application. A Road Safety Audit may also be required;

- 3.6.8 Where the proposed development is considered to have significant transport implications on a wider area, financial contributions will be required towards improvements in transport infrastructure, in particular to support public transport, cycling and walking;
- 3.6.9 The Council may also require developers to submit a Transport Statement for other development proposals where there is need to understand the traffic impact of the proposal.

Policy STR/4 - Non-Motorised Travel

- 3.6.10 The Council will support increased levels of non-motorised travel, including cycle use and walking, by ensuring that travel generating developments are located and designed to facilitate and encourage short distance trips between home, work, schools and colleges, other suitable destinations and for leisure. Apart from minimising the distance between trip origins and destinations, development proposals should ensure:
 - » That adequate safe and secure cycle parking is provided in accordance with the standards in Policy STR/2;
 - » That detailed designs and layouts encourage cycle use and walking

3.7 Parking Standards (2007 - 2022)

- 3.7.1 Parking standards are contained within the Local Development Plan 2 document adopted February 2014. With regards to land use classification C3 Residential, **Table 3.3** suggests the parking standards for vehicles, bicycle parking, and motorcycle parking.
- 3.7.2 Kinmel Bay is classified to be in Parking Zone 5

"Zone 5 – Countryside. Areas, including small villages, with a few local facilities within walking distance. Motorised travel is required for most journeys, although there is some local employment. Public transport services less than hourly and then only to one local centre. There is no shortage of land for parking provision within the site but the adjacent highway system offers limited opportunities to park cars."

Table 3.3 Zone 6 Parking Standards

Use	Vehicle (Car)		Cycle Parking Provision		Motorcycle Parking Provision
	Residents	Visitors	Long Stay	Short Stay	
Houses	1 space per bedroom (maximum requirement 3 spaces)	1 space per 5 units			5% of provision for car parking - All classes of development
Apartments	1 space per bedroom (maximum requirement 3 spaces)		1 stand per 5 bedrooms	No requirements	

3.8 LDP2 Sustainability Scoring Matrix

3.8.1 Appendix 6 of the LDP2 Parking Standards Document details a sustainability scoring matrix which provides the opportunity to reduce parking requirements subject to a site's connectivity to sustainable modes of travel. This scoring matrix will be discussed in more detail within Chapter 5.

3.9 Summary

3.9.1 The above policy review summarises both local and national transport policies relevant to the proposed development site. As such it sets out the context in which the proposed development needs to be compliant.

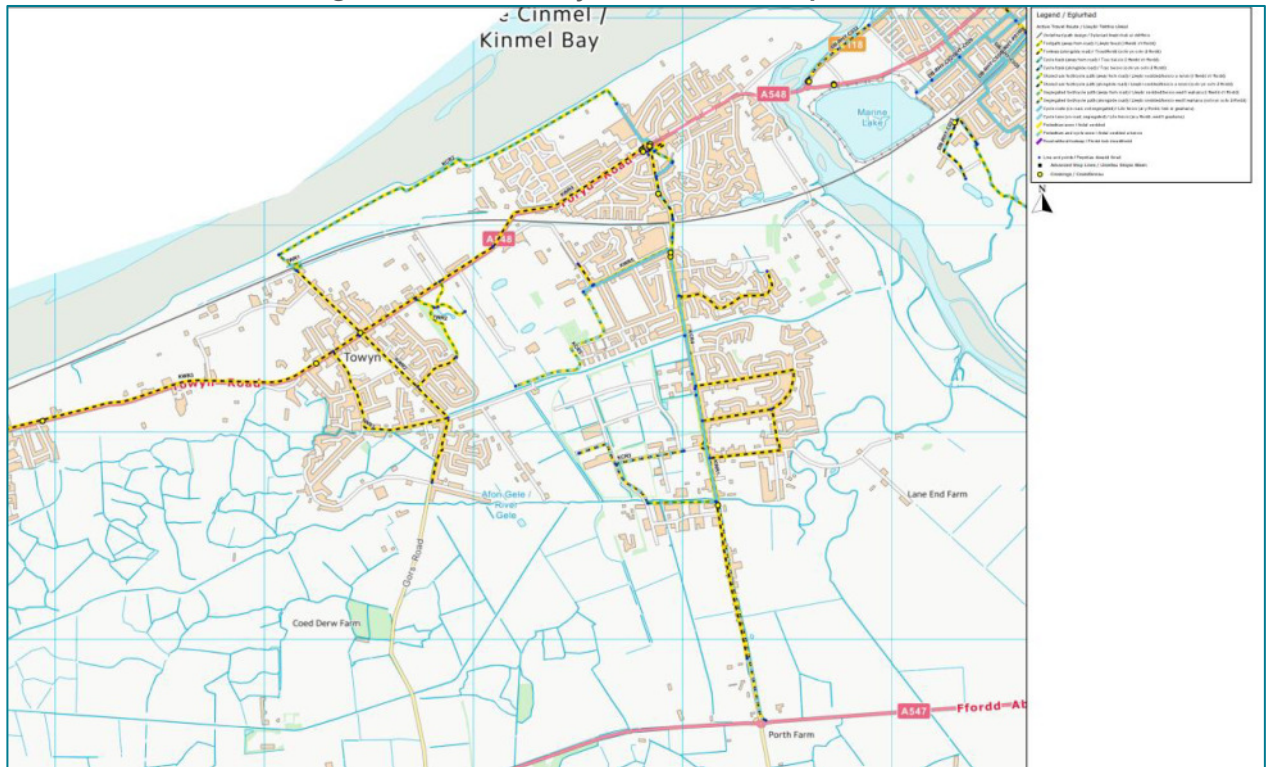
3.9.2 Access on foot, cycle and public transport is discussed in the following section of this report.

4. SUSTAINABLE ACCESSIBILITY

4.1 Access on Foot

- 4.1.1 Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly those under 2 miles.
- 4.1.2 Within the Active Travel Act Design Guidance (ATADG) it is stated within paragraph 4.1.4 that 'walking as a mode of travel predominates for journeys of less than two miles'. This equates to walking distances of up to 3.2km.
- 4.1.3 Within DfT - TA91/05 Provision for Non-Motorised Users, paragraph 2.2 states that 2 miles is 'a distance that could easily be walked by the majority of people'. Paragraph 2.3 also continues by stating that 'Walking is used to access a wide variety of destinations including... places of work, normally within a range of up to 2 miles' (3.2km). This is consistent with the Welsh Government ATADG guidance.
- 4.1.4 Paragraph 2.3 of TA91/05 Provision for Non-Motorised Users states that 'Walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles' (3.2km).
- 4.1.5 Paragraph 2.2 of TA91/05 states that 2 miles is 'a distance that could easily be walked by the majority of people' and (at paragraph 2.3) that 'Walking and rambling can also be undertaken as a leisure activity, often over longer distances'
- 4.1.6 In relation to shorter trips in particular, the CIHT publication Planning for Walking (section 2.1) states that "across Britain about 80% of journeys shorter than 1 mile are made wholly on foot."
- 4.1.7 The active travel map for Kinmel Bay in relation to the proposed development site is presented in **Figure 4.1** below. A copy of the full plan is provided within **Appendix B**.

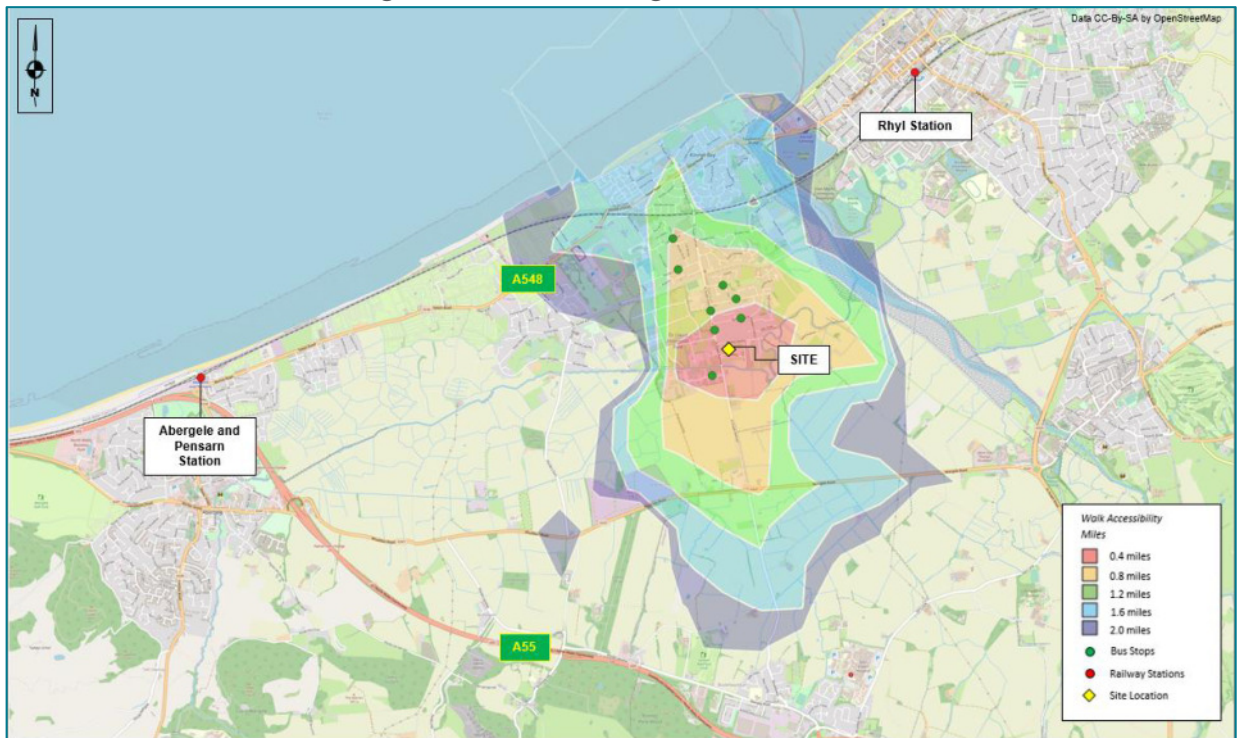
Figure 4:1: Kinmel Bay Active Travel Map



Source: Conway Council

- 4.1.8 The location of development is within reach of the public transport network, this is particularly important in terms of encouraging travel by this mode and supporting the viability of public transport services.
- 4.1.9 The local highway network aids pedestrian movement through the provision of footways in excess of 2.5m wide along St Asaph Avenue, and 1.5m and 2.5m wide along Gwellyn Avenue. Regularly spaced street lighting and dropped kerbs are present.
- 4.1.10 **Figure 4.2** below provides an extract of the indicative walk catchment plan for the site using GIS software - Basemap's Visography (TRACC) program which provides sustainable travel mapping. A copy of the full plan is provided within **Appendix C**.

Figure 4:2: 2km Walking Catchment



Source: CC-BY-SA by OpenStreetMap©

- 4.1.11 As demonstrated in **Figure 4.2**, there are a number of bus stops located within the catchment area which is considered within reasonable walking distance. The closest pair of bus stops is located on St. Asaph Avenue, approximately 0.2miles (250m) to the north of the site.
- 4.1.12 The following list indicates some of the local amenities/facilities within proximity to the access:
- » Jumping Jack Day Nursery - approximately 0.04 (71m) miles from the site;
 - » Tony Doyle's Quality Meat Butcher - approximately 0.3 miles (500m) from the site;
 - » Morfa Leisure Centre - approximately 0.9 miles (1.5km) from the site;
 - » Ysgol Maes Own Primary School = approximately 0.9 miles (1.5km) from the site;
 - » Asda Rhyl Superstore - approximately 1.1 miles (1.8km) from the site; and
 - » Towyn Park - approximately 1.5 miles (2.5km) from the site;
- 4.1.13 In summary, the site is accessible on foot, which will reduce the requirement for residents to make short car journeys.

4.2 Access by Bicycle

- 4.2.1 It is widely recognised that cycling can act as a substitute for short car journeys, particularly those up to 5km in length. With regard to cycling, TA91/05 states (paragraph 2.11) that 'Cycling is used for accessing a variety of different destinations, including educational facilities shops and places of work, up to a range of around 5 miles. Cycling is also undertaken as a leisure activity, often over much longer distances.' At paragraph 2.9,

TA91/05 states that 5 miles (8km) is a distance 'that could easily be cycled by the majority of people'.

- 4.2.2 This is consistent with the statement in LTNO2/08 Cycle Infrastructure Design (paragraph 1.5.1) that 'for commuter journeys, a trip distance of over five miles is not uncommon', and that 'Novice and occasional leisure cyclists will cycle longer distances where the cycle ride is the primary purpose of their journey.'
- 4.2.3 A round trip on a waymarked leisure route could easily involve distances of 20 to 30 miles. Experienced cyclists will often be prepared to cycle longer distances for whatever journey purpose.'
- 4.2.4 The general topography of Kinmel Bay is reasonably flat which should assist in encouraging employees and visitors of the proposed development to travel by cycle. The local highway network is generally conducive to encourage cycling through relatively wide carriageways.
- 4.2.5 There are a number of national, regional and local cycle routes in close proximity to the site. The main national cycle routes are briefly described below:
- » National Cycle Network Route 5 is a long-distance route that connects Reading and Holyhead via Oxford, Stratford-upon-Avon, Bromsgrove, Birmingham, Stoke-on-Trent, Chester, Colwyn Bay and Bangor.
 - » National Cycle Network Route 84 will connect Rhyl to Oswestry via the Vale of Clwyd and the Llangollen Canal when complete.
- 4.2.6 **Figure 4.3** below provides an extract of the indicative cycle catchment plan for the site using GIS software - Basemap's Visography (TRACC) program which provides sustainable travel mapping. A copy of the full plan is provided within **Appendix C**.

Figure 4.3: 5-mile Cycling Catchment



Source: CC-BY-SA by OpenStreetMap©

- 4.2.7 The figure demonstrates that a number of local areas including Colwyn, Rhyl, Abergele, and St. Asaph are accessible within a 5km cycle. Additionally, the availability of dedicated cycling routes and favourable conditions provide opportunities for travel further afield using linked trips.
- 4.2.8 Cycling could therefore be a viable mode of transport for residents and employees commuting to and from the site.
- ### 4.3 Access by Bus
- 4.3.1 There are a number of bus stops within 0.8 miles of the site, which provides services to key destinations such as Bodelwyddan and Rhyl.
- 4.3.2 The closest bus stops to the site are located on St Asaph Avenue approximately 0.2miles (250m) to the north of the site. The stop serves Bus Services No. 45 and 46 which runs from Bodelwyddan to Rhyll and vice versa.
- 4.3.3 A map illustrating the location of the bus stops is provided in **Figure 4.4**, whilst the frequency of the service is summarised in **Table 4.1**. For simplicity and to avoid double counting, the frequencies are taken at the nearest available stop for each service. The AM and PM peak for the Weekday are 08:00-09:00 and 17:00- 18:00. On Saturday the peak is 12:00-13:00.

Figure 4:4: Bus Stop Map



Source: OpenStreetMap©

Table 4.1: Bus Timetable Summary

Service Number	Route	Monday - Friday					Saturday			
		First	AM Peak	PM Peak	Last	Per Day	First	Peak	Last	Per Day
45	Bodelwyddan (Glan Clwyd Hospital) - Rhyl (Rhyl Railway Station)	08:50	1	-	14:05	4	08:50	1	16:35	7
	Rhyl (Rhyl Railway Station) - Bodelwyddan (Glan Clwyd Hospital)	09:40	-	-	14:22	4	09:40	1	16:10	6
46	Bodelwyddan (Glan Clwyd Hospital) - Rhyl (Rhyl Railway Station)	10:05	-	1	17:30	2	10:05	-	-	1
	Rhyl (Rhyl Railway Station) - Bodelwyddan (Glan Clwyd Hospital)	13:25	-	1	17:05	2	13:25	-	17:05	2
Totals		-	1	2	-	12	-	2	-	16

Source: traveline.info

4.3.4 **Table 4.1** above shows that the site benefits from 12 buses passing the site in the weekday and 16 on the weekend, which offer regular and convenient opportunities for residents to travel to neighbouring areas.

4.3.5 It is therefore concluded that the site benefits from access by bus, offering an alternative mode of transport to single occupancy car journeys. Access by Rail.

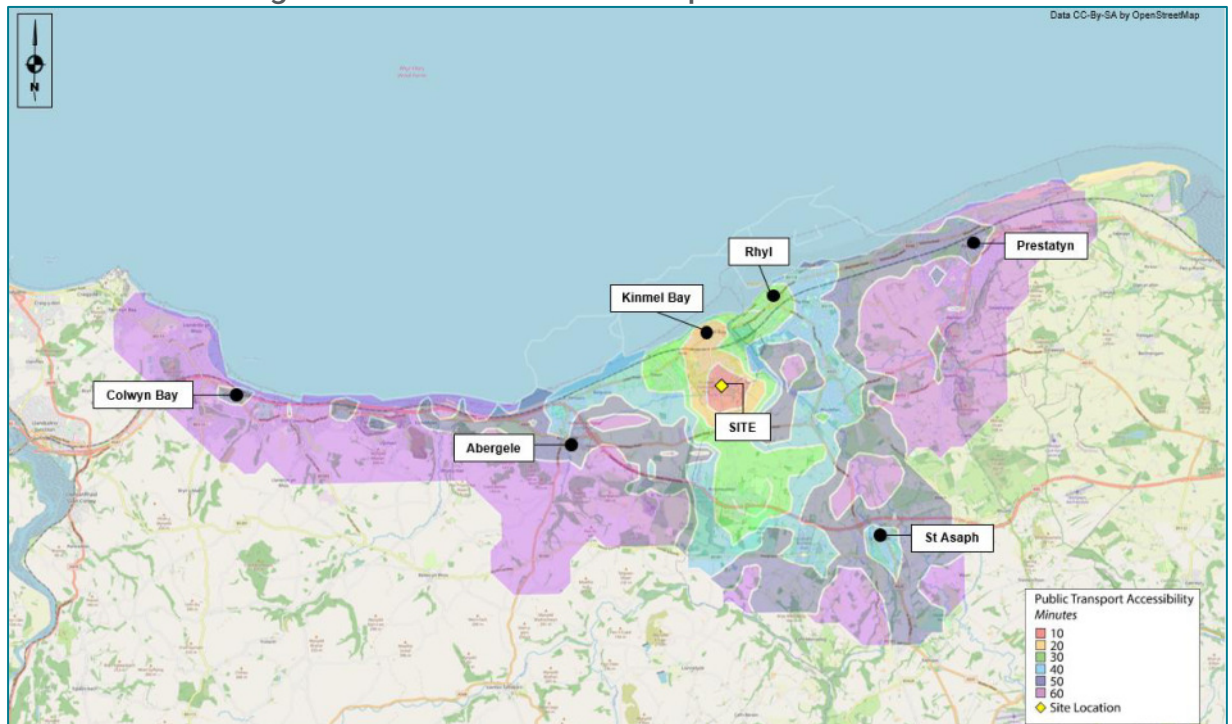
4.4 Access by Rail

4.4.1 The closest station Rhyl Train Station located approximately 4.2km to the north east of the site. Avanti West Coast and Transport for Wales operate at the station. Transport for Wales provide hourly services to and from Manchester, Holyhead, Chester and Llandudno. Avanti West Coast provide frequent services to and from Holyhead and Birmingham.

4.5 Accessibility by Public Transport

- 4.5.1 A calculation has been undertaken, using GIS software - Basemap's Visography (TRACC) program, to illustrate the distance that can be travelled within 60 minutes by public transport to and from the proposed development site. The time includes the walk to the bus stops and demonstrates that key areas such as Colwyn, Rhyl, Abergele, St. Asaph, and Prestatyn are all within a 60-minute public transport journey.
- 4.5.2 **Figure 4.5** below provides an extract of the public transport 60-minute catchment area. A copy of the full plan is provided within Figure 3 of **Appendix C**.

Figure 4.5: 60-minute Public Transport Catchment



Source: CC-BY-SA by OpenStreetMap

4.6 Conclusions

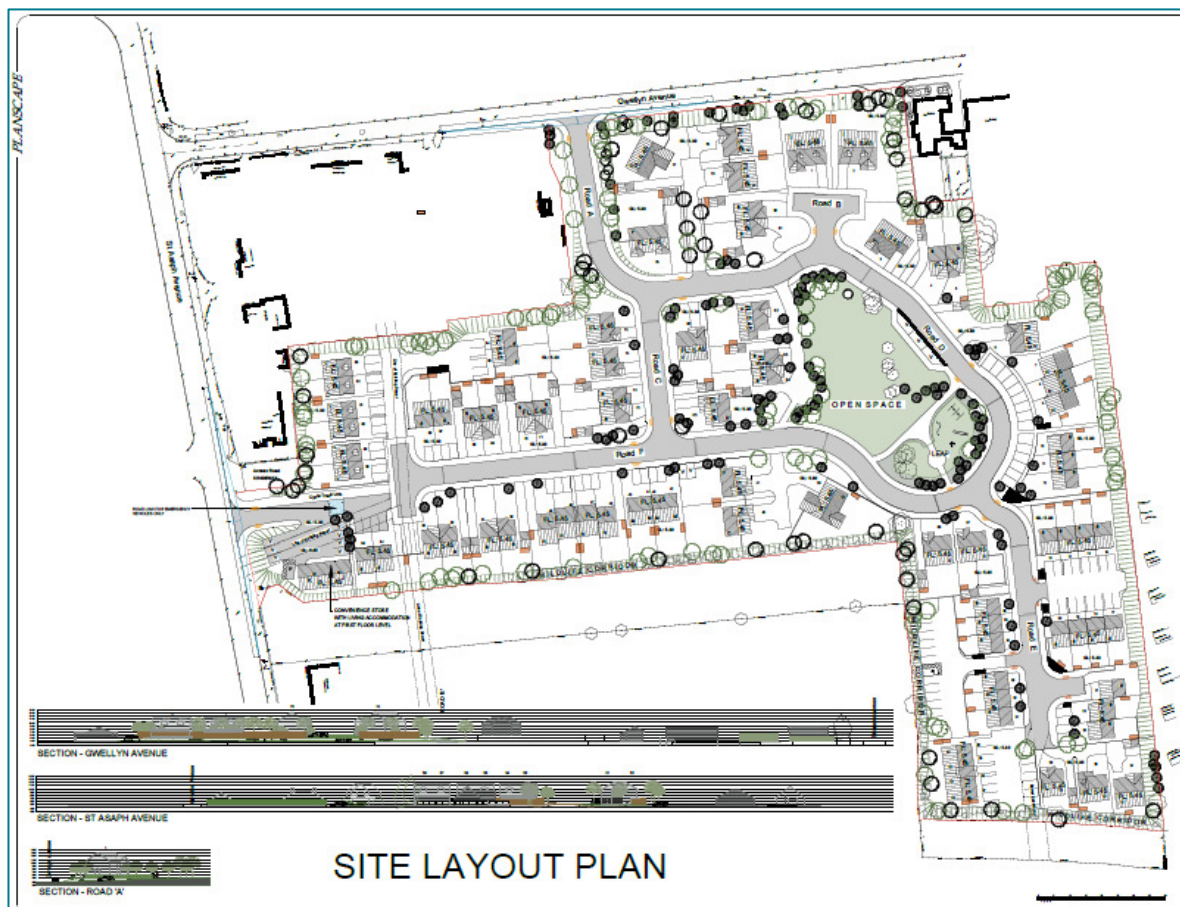
- 4.6.1 The site is accessible through walking, cycling and public transport, and prospective residents to the proposed site will have a good range of sustainable travel choices.
- 4.6.2 In summary, the proposed development site is located in an accessible location and is well located to make use of the existing public transport links and pedestrian / cycle route surrounding the site.

5. PROPOSED DEVELOPMENT

5.1 Introduction

- 5.1.1 The proposed development comprises the erection of 85 residential dwellings with associated parking and landscaping, open space/recreation area, equipped Childrens play area and provision of a convenience store with access from St. Asaph Avenue.
- 5.1.2 The proposed dwellings comprise of 76 houses and 9 apartments.
- 5.1.3 The proposed site layout is illustrated in **Figure 5.1** below with a copy of the full plan located at **Appendix D**.

Figure 5.1: Proposed Site Layout Plan



Source: Planscape Architectural Design Consultant

5.2 Schedule of Accommodation

5.2.1 The following schedule of accommodation proposed at the site for Class C3 Residential Land use is shown in **Table 5.1** below. The residential housing are provided in the form of 27 terraced properties, 28 semi-detached properties and 21 detached properties.

Table 5.1: Schedule of Accommodation

Proposed Residential Properties	
1 Bed Apartment	5 no.
2 Bed Apartment	4 no.
2 Bed House	36 no.
3 Bed House	26 no.
4 Bed House	14 no.
Total	85

5.3 Proposed Site Access Arrangements

Vehicular Access

5.3.1 The site will be accessible via proposed access roads off Gwellyn Avenue and St Asaph Avenue.

Pedestrian and Cycle Access

5.3.2 Pedestrian and cycle access will be taken from the same proposed access roads as the vehicular entry point, off Gwellyn Avenue and St Asaph Avenue.

5.3.3 A cycle track link is proposed off St Asaph Avenue providing connections to the site's internal road.

5.4 Visibility Splay

5.4.1 A visibility assessment of the existing vehicular access / egress arrangement has been undertaken and is summarised below:

5.4.2 The access arrangements are presented within **Appendix E**. The drawing illustrates the primary and secondary access can accommodate a 43m visibility splay with a setback of 'x' distance of 2.4m

5.5 Vehicle Tracking

5.5.1 A swept path analysis has been undertaken with a large car to demonstrate that the proposed arrangement is suitable and turning manoeuvres can be performed safely. A copy of the swept path analysis drawing is contained in **Appendix F**.

5.6 Servicing Vehicles

- 5.6.1 It is envisaged that the waste servicing of the site will take place with a refuse vehicle entering the site via the proposed access road off Gwellyn Avenue.
- 5.6.2 Given the scale of development, the frequency of a refuse vehicles utilising the site is expected to be modest.
- 5.6.3 A swept path manoeuvre of a large refuse vehicle has been undertaken to demonstrate that the refuse vehicle can safely enter the site, manoeuvre within, and exit the site in a forward gear.
- 5.6.4 The swept path manoeuvres of a large refuse vehicle are presented in **Appendix G**.

5.7 Parking Provision

Vehicle

- 5.7.1 The proposed development provides a total of 208 parking spaces which includes 190 residential parking spaces, 15 visitor parking spaces including shopping parking and 3 accessible parking spaces.

Bicycle

- 5.7.2 The proposed development provides 14 cycle parking spaces.
- 5.7.3 Furthermore, cycle storage with secure parking will be provided in the curtilage of each dwelling.

5.7.4 *Sustainability Scoring Matrix*

- 5.7.5 Appendix 6 of the LDP2 Parking Standards Document details a sustainability scoring matrix which provides the opportunity to reduce parking requirements subject to a site's connectivity to sustainable modes of travel.
- 5.7.6 Sustainability points will be awarded to developments that meet the criteria below for their proximity, in terms of walking distance to local facilities, public transport, cycle routes and the frequency of local public transport. Award of these sustainability points will result in a reduction in parking requirement as detailed Figure below:

Sustainability Criteria	Maximum Walking Distance	Single Sustainability Points
<u>Local Facilities</u>		
Local facilities include a foodstore, post office, health facility, school etc. Access to two of these within the same walking distance will score single points, whereas access to more than two of these will double the points score.	200m	3 pts
	400m	2 pts
	800m	1 pt
<u>Public Transport</u>		
Access to bus stop or railway station	300m	3 pts
	400m	2 pts
	800m	1 pt
<u>Cycle Route</u>		
	200m	1 pt
<u>Frequency of Public Transport</u>		
Bus or rail service within 800m walking distance which operates consistently between 7am and 7 pm. Deduct one point for service which does not extend to these times.	5 minutes	3 pts
	20 minutes	2 pts
	30 minutes	1 pt

Thus the sustainability points score for a dwelling within 400m of a school and a post office (1 X 2pts = 2pts), within 300m of a bus stop (3pts) and having a service frequency of every 15 minutes but only between 8am and 6 pm (2 pts – 1pt = 1 pt) would score a total of 6 pts.

5.7.7 Reduction in parking provision

Sustainability Points	Parking Reduction (Per dwelling)	Sustainability Points	Parking Reduction
<u>Residential Developments</u>		<u>All Other Developments</u> (other than shops and retail warehouses)	
10 pts 7 pts	2 spaces 1 space	10 pts 7 pts 5 pts	30% 20% 10%

Other than for Zone 1 City Centre locations, the reductions in parking requirement for residential units shall not result in less than one parking space remaining and for all other developments the reduction shall not be applied unless an acceptable travel plan is also submitted. Regard will be given to the potential effect of any overspill parking.

5.7.8 Based on the above it has been calculated that the sites sustainability points score is 7 points as demonstrated in **Figure 5.2** below. **As a result, a reduction in 1 parking space per dwelling is achievable.**

Figure 5:2 Site Sustainability Scoring Matrix

Sustainability Criteria	Distance (m)	Points Achieved
<u>Local facilities</u>		
Tony Doyle's Quality Meat Butcher	500m	1 point
Jumping Jacks Day Nursery	71m	3 points
<u>Public Transport</u>		
Bus Stop (St Asaph Avenue)	250m	3 points
<u>Cycle Route</u>		
		TBC
<u>Frequency of Public Transport</u>		
Frequency of public transport is more than 30 minutes operating at inconsistent hours		
Total		7 points

6. TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

6.1 Introduction

6.1.1 This section of the report considers the trip generation levels associated with the proposed development and the impact it will have on the local highway network. Under the proposed application, the site comprises a residential development of 78 dwellings.

6.2 Trip Generation

6.2.1 The Trip Rate Information Computer System (TRICS) version 7.10.1 has been used to derive the predicted vehicle trip generation for the proposed C3 Residential land use, for the weekday morning and evening peak hours. The TRICS database is an industry accepted tool for predicting the likely number of trips from a proposed development by comparing the site with existing developments of a similar size and characteristic within the UK. The database was interrogated to determine the trip rates for the weekday morning and evening peaks.

6.2.2 In order to obtain appropriate trip rates, sites within Greater London and the Republic of Ireland have been omitted from the calculation. The results of this TRICS interrogation are shown in **Table 6.1** and **6.2**, whilst the TRICS outputs for the proposed Class C3 Residential Land use are presented in **Appendix H**.

Table 6.1: Vehicle Trip Rates - Proposed C3 Residential Land Use

C3 Residential	Weekday AM (08:00 - 09:00) Peak		Weekday PM (17:00 - 18:00) Peak	
	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rates	0.119	0.396	0.366	0.184

The above vehicle trip rates in **Table 6.1** have been applied to determine the traffic generation associated with the proposed use. The resultant traffic generation is presented in **Table 6.2**

Table 6.2: Total Vehicle Trip Generation - Proposed C3 Residential Land Use

C3 Residential	Weekday AM (08:00 - 09:00) Peak			Weekday PM (17:00 - 18:00) Peak		
	Arrivals	Departures	2-Way	Arrivals	Departures	2-Way
Trip Generation	9	29	38	27	14	41

6.2.3 As presented in **Table 6.2** above that the development is expected to generate the following two-way vehicle trips:

- » **38** in the morning peak; and
- » **41** in the evening peak;

6.3 Trip Distribution

6.3.1 The trip distribution for the proposed development has been derived from the Manual Classified Counts (MCC) surveys undertaken in May 2023. The trip distribution is presented in the appended Traffic Figures.

6.4 Summary

6.4.1 In summary, the forecast increase in two-way trips of 38 in the AM peak period and 41 in the PM peak period are not considered to have a detrimental impact upon the local highway network.

7. FUTURE BASELINE TRAFFIC CONDITIONS

7.1 Introduction

7.1.1 This chapter describes the future baseline traffic conditions on the local highway network in relation to traffic growth.

7.1.2 As agreed with CCBC, the MCC counts relevant to the proposed development were undertaken at the following location:

- » Gwellyn Avenue / St Asaph Avenue

7.2 The raw count data is included within **Appendix I** for reference.

7.3 Traffic Growth

7.3.1 As discussed with CCBC, Hydrock have used the following traffic growth assessment years as part of our assessment:

- » A base / application year scenario (2023);
- » Future year 2028 (+5 years from application year) + Committed Development; and
- » Future year 2028+ proposed development.

7.3.2 TEMPRO v7.2 has been used to calculate background traffic growth from the base / application year of 2023, through to the design build out future year of 2028 for the Conwy 005. The growth factors generated by TEMPRO are summarised in **Table 7.1** below.

Table 7.1: TEMPRO Traffic Growth Factors (Conwy 005)

Period	Weekday AM Peak	Weekday PM Peak
2023 - 2028	1.0372	1.0363

Source: TEMPRO

7.3.3 The above growth factors have been applied to the surveyed AM and PM peak hours from the 2023 base traffic flows to obtain the future growthed surveyed traffic flows (2028), as shown in the Traffic Flow Figures located at the end of this report.

8. Junction Capacity Assessment

8.1 Introduction

8.1.1 This section considers the potential impacts of the development on the local highway network with the aim of establishing whether the development traffic is likely to have a detrimental impact on its operation.

8.2 Priority Junction Assessment

8.2.1 The junction assessments presented in the following sections have been undertaken using the industry standard software package Junctions 9 (PICADY module). An hourly flow profile has been applied for the selected AM and PM peak hours and the modelling results presented in terms of Ratio of Flow to Capacity [RFC] and vehicle queue lengths.

8.2.2 RFC values between 0.00 & 0.85 mean that junctions are operating 'within' capacity. RFC values between 0.85 – 0.90 are operating 'within theoretical' capacity. Both are generally accepted as representing stable and acceptable operating conditions for traffic passing through a junction. Values between 0.90 & 1.0 represent a junction that is 'approaching' capacity resulting in variable operation (i.e. possible queues building up at the junction during the period under consideration, and increases in vehicular delay moving through the junction). RFC values in excess of 1.0 represent overloaded conditions (i.e. congestion).

8.2.3 The Gwellyn Avenue / St Asaph Avenue junction has been modelled in the following scenarios:

- » Base 2023;
- » Base 2028; and
- » Base 2028 + Development Traffic.

8.2.4 The full PICADY results are presented in **Appendix J** with the assessment scenarios presented in **Table 8.1**.

Table 8.1 PICADY - Gwellyn Avenue / St Asaph Avenue

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (Secs)	RFC	Queue (PCU)	Delay (Secs)	RFC
Base 2023						
Site Access	0	6.64	0.09	0	8.3	0.08
Right Into Site Access	0	4.65	0.02	0	4.87	0.15
Base 2028						
Site Access	0	6.66	0.10	0	8.39	0.08
Right Into Site Access	0	4.	0.02	0	4.85	0.16
Base 2028 + Development						
Site Access	0	7.13	0.15	0	8.80	0.11
Right Into Site Access	0	4.67	0.04	0	5.13	0.23

8.2.5 PICADY results above show that the junction operates well within capacity in both the AM and PM peak periods in all scenarios and therefore there is no traffic impact that would be considered severe.

8.3 Summary

8.3.1 Based on the PICADY capacity assessments, it is evident that the addition of the proposed development traffic would not have a detrimental impact on the operation of the Gwellyn Avenue / St Asaph Avenue junction.

8.3.2 Based on the evidence above it is clear that the vehicle impacts associated with the proposed development at all junctions assessed are not severe and are concluded to result in minimal change to the future with development situation.

8.3.3 As such, it is Hydrock's view that the development impact on the local network is immaterial, and does not require further consideration.

8.3.4 Therefore, having regard to all of the above, the proposed development will not have a severe impact on the operation of the local highway network.

9. SUMMARY AND CONCLUSION

9.1 Summary

- 9.1.1 Hydrock have been instructed by Kenyon Planning to prepare a Transport Assessment (TA) to support the proposed residential development at Gwellyn Avenue, Kinmel Bay.
- 9.1.2 The proposed development comprises the erection of 85 residential dwellings (76 houses and 9 apartments) with associated parking and landscaping, open space/recreation area, equipped Childrens play area and provision of a convenience store with access from St. Asaph Avenue.
- 9.1.3 The development is located off Gwellyn Avenue, approximately 1.5km to the south of Kinmel Bay Village Centre. The site is bounded by a mixture of residential, commercial and agriculture land uses, with the River Gele forming the southern boundary of the site.
- 9.1.4 The junction capacity assessments indicate that there will be no detrimental impact on the operation of the Gwellyn Avenue / St Asaph Avenue junction. The vehicle impacts associated with the proposed development at all junctions assessed are not severe and are concluded to result in minimal change to the future with development situation
- 9.1.5 NPPF (December 2023 - paragraph 115) states that:
- » "Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."
- 9.1.6 The traffic impact assessment shows that the proposed development would not have a "severe" impact on the local highway network.

9.2 Conclusion

- 9.2.1 Having undertaken a comprehensive analysis of the development site and after reviewing planning policies, it has been demonstrated by this TA that the proposed development accords with highway access design recommendations and sustainable values and hence there is no basis for highway and transportation objections to the proposals.
- 9.2.2 There are no highways or transport related reasons upon which a refusal of the planning application for the proposals would be justified

Appendices

Appendix A Scoping Discussions

Neil Bayliss-Rowe

From: Neil Bayliss-Rowe
Sent: 12 May 2023 16:54
To: John Rowlands; Paul Smith
Cc: Sam Denby
Subject: RE: [Hydrock: 27816-TMBI] Pre-application Highways Advice - Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

Afternoon John,

No problem at all.

I had a very useful Teams call with your colleague Paul Smith on Wednesday.

Please see a summary of our discussion below.

NBR – Neil Bayliss-Rowe, Hydrock

PS – Paul Smith, Conwy County Council [CCC]

Active Travel:

- PS highlighted the proposed wider CCC Active Travel improvements in the locality of the site and requested that a 3m shared cycle / pedestrian route is provided to link the site to St Asaph Avenue. This should act as the spine of the development.
- **PS to provide plans of proposed active travel routes in the locality of the site.**

Layout & Design

- Speed cushions not preferable – ideally highway layout will be self-enforcing in terms of a 20mph speed limit. PS indicated that the current layout appears to achieve this.
- Visibility splays onto St Asaph Avenue and Gwellyn Avenue should be based on 30mph speed limits (20mph speed limits will be introduced at some stage but not implemented as of yet).
- Tactile paving and dropped crossing required at all junctions.
- Shared surfaces will not be adopted.
- Adopted materials should be standard black top surfacing.

Parking:

- No objection to courtyard parking subject to swept path assessments and parking bays adhering to 2.6m x 4.8m as detailed in CCC's LDP2 document.
- General parking standards are 1 space per bedroom up to a maximum of 3 spaces.
- Opportunity to reduce parking provision based on Sustainability Scoring Matrix – ideally agree the scoring as part of pre-plan process.
- Visitor parking provision will be required.
- EV Parking – no set EV policy – however ducting should be provided for each dwelling as a minimum.
- Cycle Parking - each dwelling should include provision for cycle parking storage – this can be via a garage or designated internal storage area.

Servicing

- Fire Tender should be used for swept path purposes.
- **Could you also please confirm the largest refuse vehicle type that should be used for tracking purposes.**

Traffic Assessment

- PS confirmed that junction assessments will only be required at the junction of St Asaph Avenue / Gwellyn Avenue.

- Can you please confirm any committed developments we need to include as part of our assessment?

Please let me know if you have any amendments to the above.

Many thanks,

Neil

Neil Bayliss-Rowe BSc (Hons)

Associate | Transportation

Mobile: 07833864751

Email: neilbayliss-rowe@hydrock.com

Make flexibility work: Hydrock promotes flexible working; if you get an email from me outside normal hours it is because I am sending it at a time convenient to me. I do not expect you to read or reply until normal office hours.

[Subscribe for more: climate adaptation, the Building Safety Act, net zero data centres and beyond...](#)



Hydrock

Northern Assurance Buildings, 9-21 Princess Street, Albert Square, Manchester, M2 4DN

Mob:07833 864 751

Hydrock.com | [Follow us on LinkedIn](#)

Nine consecutive years in the '100 Best Large Companies to Work For' listing.

Hydrock Consultants Limited, company number 3118932 registered in England and Wales at Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF. Disclaimer: The information in this e-mail is confidential and may be read, copied or used only by the intended recipients. If you are not the intended recipient you are hereby notified that any perusal, use, distribution, copying or disclosure is strictly prohibited. If you have received this e-mail in error please advise us immediately by return e-mail to bristol@hydrock.com and delete the e-mail document without making a copy. Whilst every effort has been made to ensure this email is virus free, no responsibility is accepted for loss or damage arising from viruses or changes made to this message after it was sent.

From: John Rowlands <john.rowlands@conwy.gov.uk>

Sent: 11 May 2023 10:05

To: Neil Bayliss-Rowe <NeilBayliss-Rowe@hydrock.com>

Subject: RE: [Hydrock: 27816-TMBI] Pre-application Highways Advice - Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

CAUTION: This email originated from outside of Hydrock. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Neil,

Sorry for the delay, I have been off on leave and playing catch-up at the moment.

The scope you sent over was ok and we wouldn't request any additional scope of works. If you want a quick Teams meeting to discuss I am happy to do so.

Thanks,

John

John A P Rowlands BEng(Hons)

Peiriannydd Traffic ac Trafnidiaeth / Traffic and Transportation Engineer

Yr Amgylchedd, Ffyrdd a Chyfleusterau / Environment, Roads & Facilities

Cyngor Bwrdeistref Sirol CONWY County Borough Council

Tel. 01492576073 / 07734777314

www.conwy.gov.uk

From: Neil Bayliss-Rowe <NeilBayliss-Rowe@hydrock.com>

Sent: 09 May 2023 10:31

To: Dylan Jones <dylan.jones@conwy.gov.uk>

Cc: Sam Denby <SamDenby@hydrock.com>; John Rowlands <john.rowlands@conwy.gov.uk>

Subject: RE: [Hydrock: 27816-TMBI] Pre-application Highways Advice - Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

Morning Dylan,

I've tried John on his mobile / office number a few times.

In John's absence - would it be possible to please provide a response to the scoping request below or give me a quick call on 07833864751 to discuss.

We're at a critical stage in the project and are hoping to commission traffic counts asap.

Many thanks,

Neil

Neil Bayliss-Rowe *BSc (Hons)*

Associate | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess Street, Albert Square, Manchester, M2 4DN

Mobile: 07833864751

Email: neilbayliss-rowe@hydrock.com

From: Neil Bayliss-Rowe

Sent: 05 May 2023 10:20

To: John A P Rowlands (john.rowlands@conwy.gov.uk) <john.rowlands@conwy.gov.uk>

Cc: Sam Denby <SamDenby@hydrock.com>; dylan.jones@conwy.gov.uk

Subject: RE: [Hydrock: 27816-TMBI] Pre-application Highways Advice - Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

Morning John,

Would it be possible to please advise on the below.

Please give me a call if you have any queries.

Many thanks,

Neil

Neil Bayliss-Rowe *BSc (Hons)*

Associate | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess Street, Albert Square, Manchester, M2 4DN

Mobile: 07833864751

Email: neilbayliss-rowe@hydrock.com

From: Neil Bayliss-Rowe
Sent: 02 May 2023 09:45
To: John A P Rowlands (john.rowlands@conwy.gov.uk) <john.rowlands@conwy.gov.uk>
Cc: Sam Denby <SamDenby@hydrock.com>
Subject: RE: [Hydrock: 27816-TMBI] Pre-application Highways Advice - Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

Morning John,

I'm following up on the below scoping email.

Please let me know if you have any queries.

Many thanks,

Neil

Neil Bayliss-Rowe *BSc (Hons)*
Associate | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess Street, Albert Square, Manchester, M2 4DN

Mobile: 07833864751

Email: neilbayliss-rowe@hydrock.com

From: Neil Bayliss-Rowe
Sent: 24 April 2023 14:03
To: John A P Rowlands (john.rowlands@conwy.gov.uk) <john.rowlands@conwy.gov.uk>
Cc: Sam Denby <SamDenby@hydrock.com>
Subject: FW: [Hydrock: 27816-TMBI] Pre-application Highways Advice - Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

Afternoon John,

I hope you're well.

Hydrock are looking to engage in pre-application highways scoping advice regarding the preparation of a Transport Assessment [TA] relating to proposals for a residential / retail development in Kinmel Bay.

This email is looking to confirm the highways scope of assessment.

The development is located on a parcel of land currently occupied by multiple uses, approximately 1.5km to the south of Kinmel Bay Village Centre. The site is bounded by a mix of residential, commercial and agriculture land uses, with the River Gele forming the southern boundary of the site. Please see **Figure 1** below for the site location reference:

Figure 1: Site location



Development Proposals

The proposed development comprises the erection of circa 74 residential dwellings with associated parking and landscaping accessed via Gwellyn Avenue. A convenience store, including first floor flat and 2 bed bungalow is also proposed via a separate access from St Asaph Avenue. Please see attached an indicative work in progress layout for reference.

Assessments

This email is looking to confirm the scope of assessment required to satisfy highways related matters. Based on the information given above, we anticipate the following documents to be required to support the planning application.

Transport Assessment [TA]

- Comment on the background / history of the site;
- Provide a description of the existing conditions;
- Consider the national and local transport-related policy documentation;
- Consider any committed developments in the area - **Can you please confirm any committed developments we need to include?;**
- Review the parking provision against the latest standards, inc Electric Vehicle provision;
- Undertake accident analysis of the local highway network;
- Undertake an assessment of the accessibility of the site by sustainable modes, to include an assessment of the pedestrian, cycling, bus and rail facilities surrounding the site.

Trip Rates and Trip Generation

- Provide details of the development proposals and undertake a trip generation analysis. Based on the previous site uses and any extant / lawfully permitted and proposed land use (s), we will derive the trip generations associated with the site during the weekday morning / evening peak hours. The peak hours we are anticipating are as follows:
 - 08:00-09:00;
 - 17:00-18:00.
- There are a number of existing land uses in operation at the site which generate vehicle trip movements. However, in order to undertake a robust assessment of the developments potential impact on the surrounding highway network we have assumed that all trips associated with the site are new trips.

Table 1 below presents the proposed total vehicle trip rates and resultant AM and PM Trip Generation:

Total Vehicle Trips	Morning Peak (08:00 - 09:00)			Evening Peak (17:00 - 18:00)		
	In	Out	Total	In	Out	Total
Trip Rate	0.119	0.396	0.515	0.366	0.184	0.55
Trips (74 dwellings)	9	29	38	27	14	41

*TRICS Output Attached

Can you please confirm that the above trip rates and resultant trip generation is acceptable in principle and this approach is accepted by the LHA?

Junction Capacity Assessments

Based on our preliminary review, we anticipate that the following junctions are likely to be required to be assessed:

- Gwellyn Avenue / St Asalp Avenue;
- St Asalp Avenue / Tir Llwyd Enterprise Park.
- Can you please confirm whether the above is acceptable and whether you require any additional junctions to be assessed? Further to this, please can you confirm if you have any existing traffic data to assess the existing conditions at the required junctions, or whether new traffic surveys are required?
- Develop any site access drawings to illustrate the design of the access junction(s), including undertaking swept paths of service vehicles and visibility splays;
- Produce a comprehensive Transport Assessment report detailing the findings of the above. Given the quantum of dwellings associated with the development, we have assumed that a Travel Plan is not deemed necessary in this instance, please can you confirm that this is acceptable?

Many thanks for your assistance in this matter and should you wish to discuss please do not hesitate to contact myself directly.

Kind regards,

Neil

Neil Bayliss-Rowe BSc (Hons)

Associate | Transportation

Mobile: 07833864751

Email: neilbayliss-rowe@hydrock.com

Make flexibility work: Hydrock promotes flexible working; if you get an email from me outside normal hours it is because I am sending it at a time convenient to me. I do not expect you to read or reply until normal office hours.

[Subscribe for more: climate adaptation, the Building Safety Act, net zero data centres and beyond...](#)



Hydrock

Northern Assurance Buildings, 9-21 Princess Street, Albert Square, Manchester, M2 4DN

Mob:07833 864 751

Hydrock.com | [Follow us on LinkedIn](#)

Nine consecutive years in the '100 Best Large Companies to Work For' listing.

Hydrock Consultants Limited, company number 3118932 registered in England and Wales at Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF. Disclaimer: The information in this e-mail is confidential and may be read, copied or used only by the intended recipients. If you are not the intended recipient you are hereby notified that any perusal, use, distribution, copying or disclosure is strictly prohibited. If you have received this e-mail in error please advise us immediately by return e-mail to bristol@hydrock.com and delete the e-mail document without making a copy. Whilst every effort has been made to ensure this email is virus free, no responsibility is accepted for loss or damage arising from viruses or changes made to this message after it was sent.

Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg fel ei gilydd. Ni fydd gohebiaeth yn yr un iaith na'r llall yn arwain at unrhyw oedi.

Mae'r neges e-bost hon ac unrhyw ymgysylltiadau yn gyfrinachol, ac wedi eu bwriadu ar gyfer yr un sy'n cael ei h/enwi yn unig. Gallent gynnwys gwybodaeth freintiedig. Ar gyfer yr amodau llawn ynglŷn â chynnwys a defnyddio'r neges e-bost hon ac unrhyw atodiadau, gweler www.conwy.gov.uk/ebost_ymwadiad

We welcome correspondence in both Welsh and English. We will respond to correspondence in either language without delay.

This email and any attachments are confidential and intended for the named recipient only. The content may contain privileged information. For full conditions in relation to content and use of this e-mail message and any attachments, please refer to www.conwy.gov.uk/email_disclaimer

Appendix B Kinmel Bay Active Travel Map

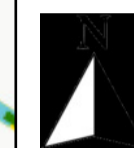


Legend / Eglurhad

Active Travel Route / Lliwybr Teithio Llesol

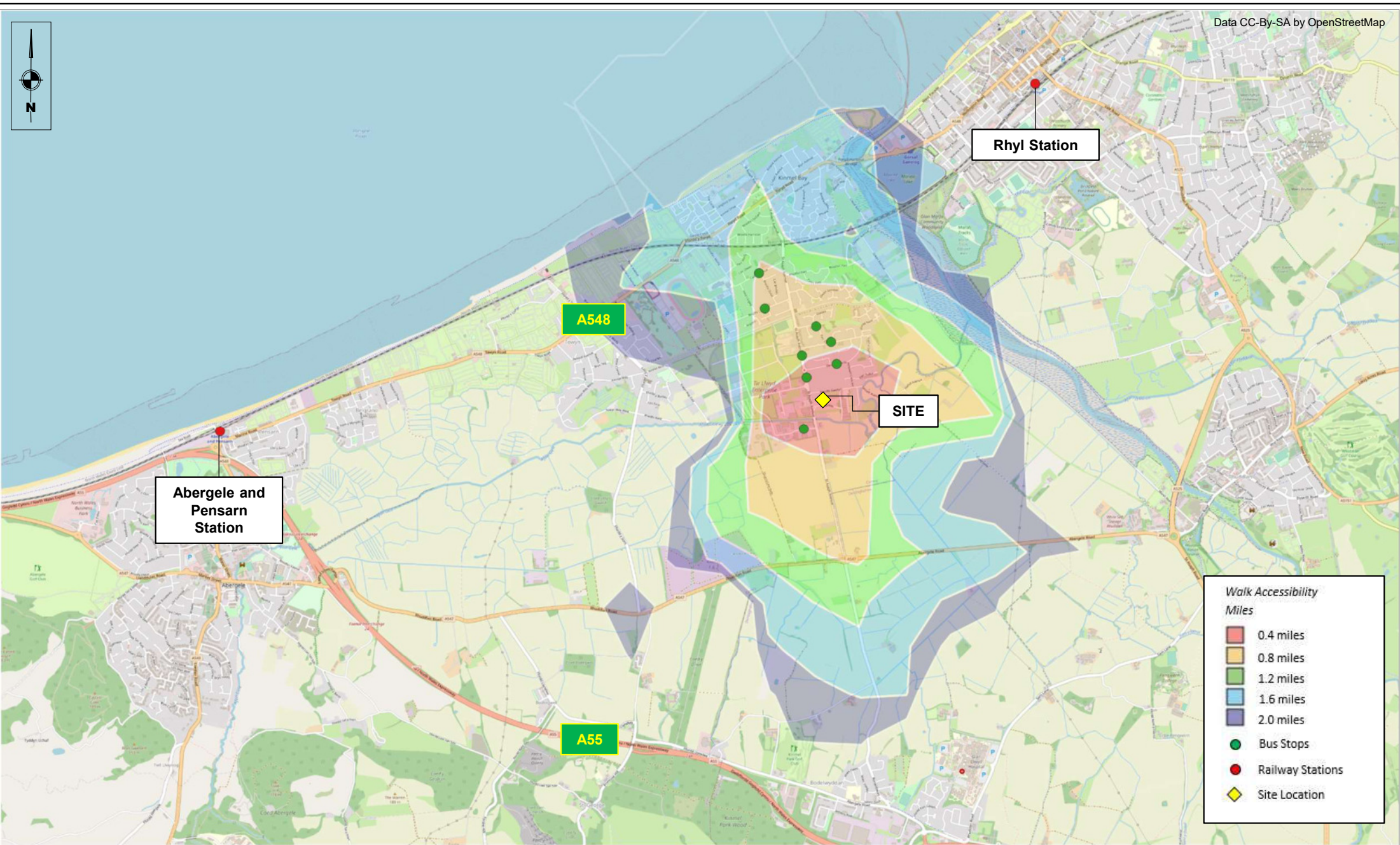
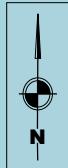
- Undefined path design / Dyluniad lliwybr heb ei ddiffinio
- Footpath (away from road) / Lliwybr troed (i ffwrdd o'r ffordd)
- Footway (alongside road) / Troedffordd (ochr yn ochr â ffordd)
- Cycle track (away from road) / Trac beicio (i ffwrdd o'r ffordd)
- Cycle track (alongside road) / Trac beicio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

- Line end points / Pwyntiau dmedd llinell
- Advanced Stop Lines / Llinellau Stopio Blaen
- Crossings / Croesfannau



© Crown Copyright and database right 2014. Ordnance Survey 100021874. Welsh Government. © Hawtiraent a hawliau cronfa ddata'r Goron 2014. Rhif Tnydded yr Arolwg Ordnans 100021874. Whilst the Welsh Government have made every effort to ensure that the information on this website is accurate and up-to-date, the Welsh Government takes no responsibility for any incorrect information. The data is compiled from Public Rights of Way, Ordnance Survey ITN, Ordnance Survey ITN Urban Path and aerial photography derived data supplemented by field survey. The online map is provided for guidance only and is not a legal record. Er bod Llywodraeth Cymru wedi gwneud pob ymdrech i sicrhau bod y wybodaeth ar y wefan hon yn gywir ac yn gyfredol, mae Llywodraeth Cymru yn cymryd unrhyw gyfrifoldeb am unrhyw wybodaeth anghywir. Lluniwyd y data o hawliau tramwy cyhoeddus, RHTI yr AO, Lliwybrau Trefol RHTI yr AO a data sy'n deillio o ffotograffau o'r awyr wedi'i ategu gan arolwg maes. Yn y map ar-lein yn darparu canllaw yn unig ac nid yw cofnod cyfreithiol.

Appendix C Sustainable Accessibility



Project Title	27816 – Gwellyn Avenue, Kinmel Bay
---------------	------------------------------------

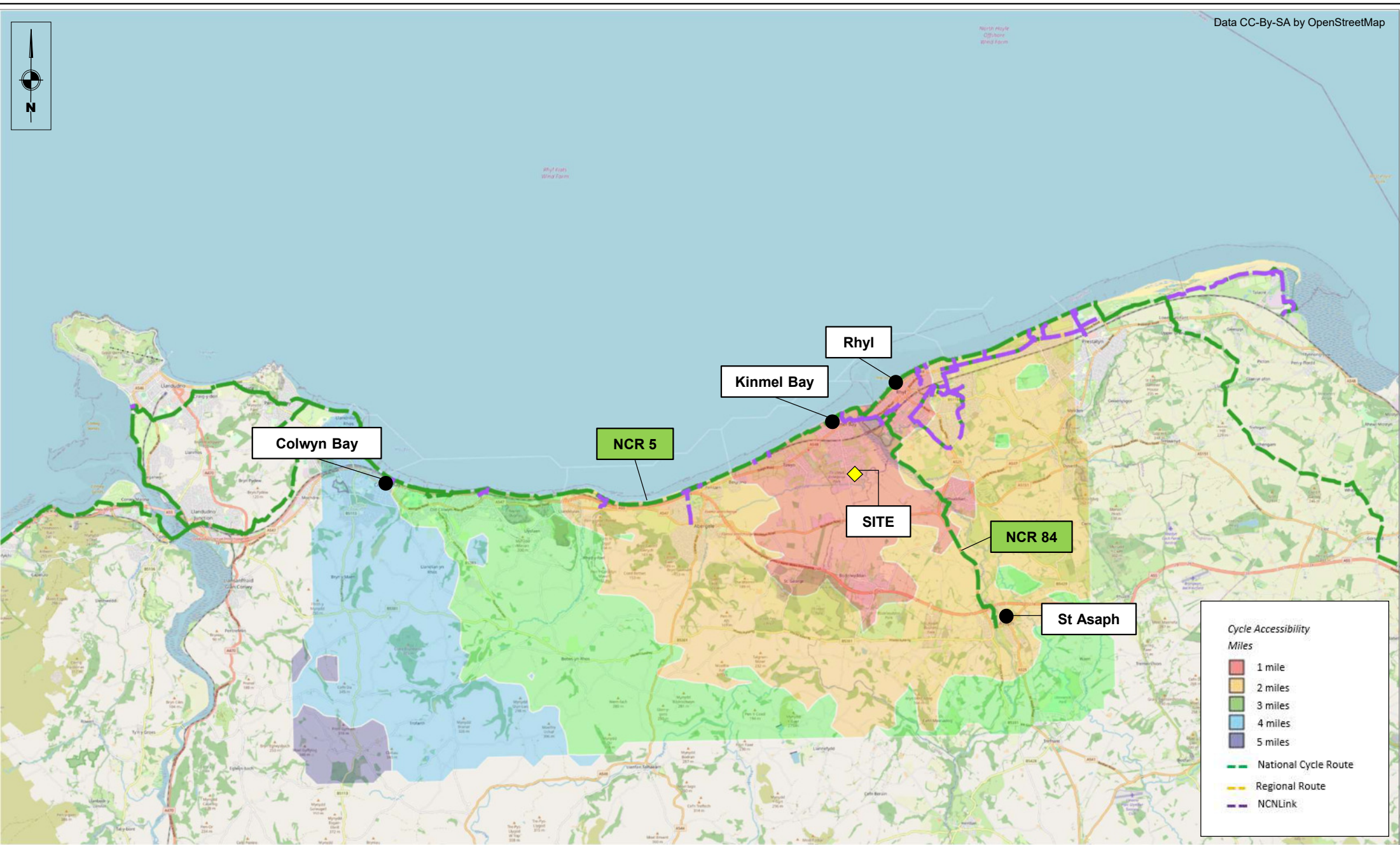
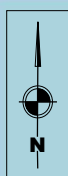
Drawing Title	Accessibility: 2 Miles Walking Catchment
---------------	--

Job Number	27816
Date	03.05.2022
Scale	NTS

By	SR
Checked	NBR
Status	-

Rev	Description	Date	By
-	-	-	-
-	-	-	-
-	-	-	-

Drawing No.	APPENDIX C
Figure	1



Cycle Accessibility Miles

- 1 mile
- 2 miles
- 3 miles
- 4 miles
- 5 miles
- National Cycle Route
- Regional Route
- NCNLink



Project Title
27816 – Gwellyn Avenue,
Kinmel Bay

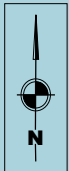
Drawing Title
Accessibility: 5 Mile Cycling
Catchment

Job Number	27816	By	SR
Date	03.05.2022	Checked	NBR
Scale	NTS	Status	-

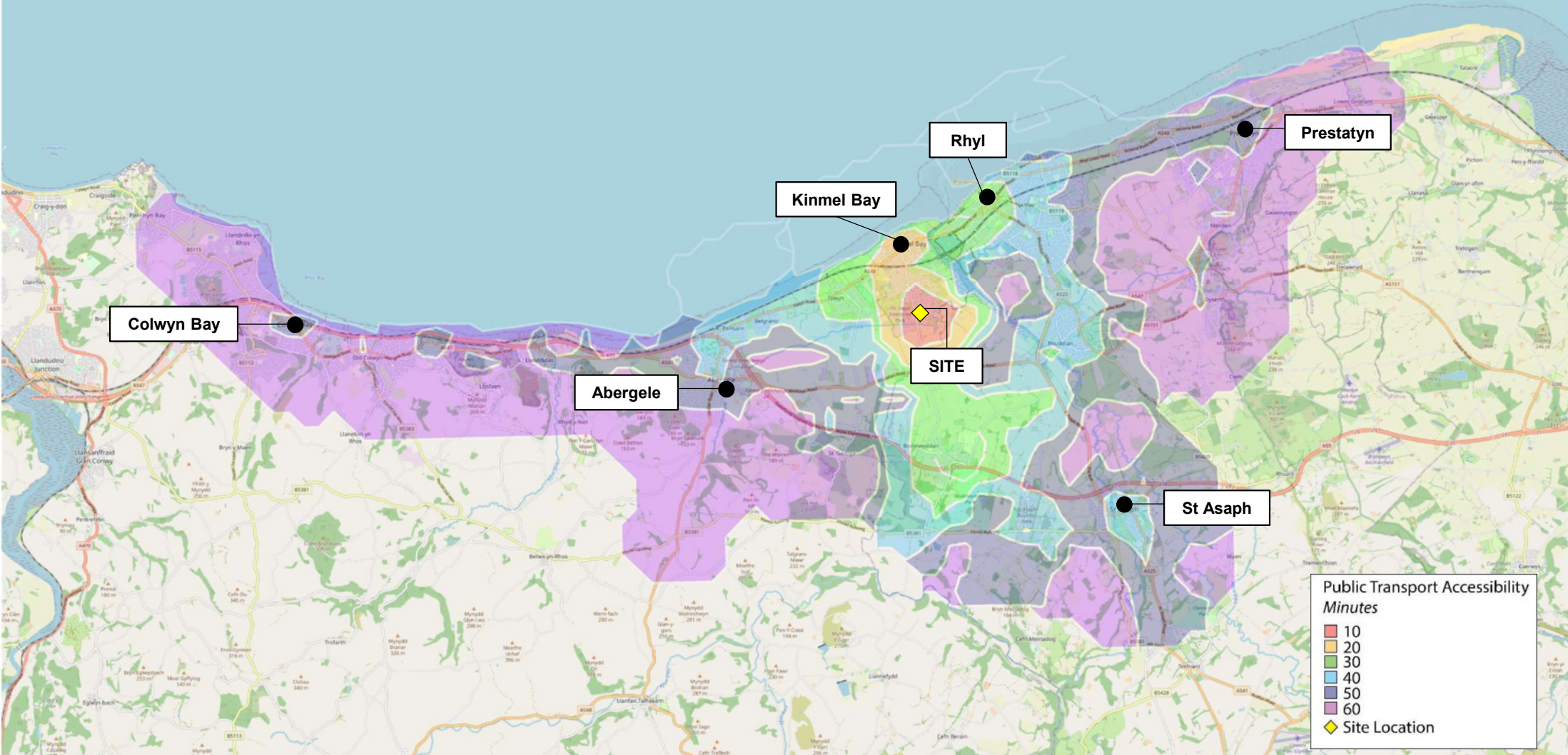
Rev	Description	Date	By
-	-	-	-
-	-	-	-
-	-	-	-

Drawing No.
APPENDIX C

Figure
2



Rhyl Flats
Wind Farm

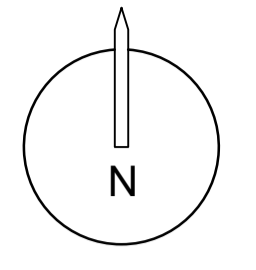


Public Transport Accessibility Minutes

- 10
- 20
- 30
- 40
- 50
- 60
- Site Location

	Project Title	Drawing Title	Job Number	By	Rev	Description	Date	By	Drawing No.
	27816 – Gwellyn Avenue, Kinmel Bay	Accessibility: 60minute Public Transport Catchment	27816	SR	-	-	-	-	APPENDIX C
			Date	Checked	-	-	-	-	
			Scale	Status	-	-	-	-	Figure 3

Appendix D Proposed Site Layout



A	4 Bedroom (house)	2
B	3 Bedroom (house)	16
C	4 Bedroom (house)	9
D	3 Bedroom (house)	4
E	2 Bedroom (house)	26
F	4 Bedroom (house)	1
G	4 Bedroom (house)	2
H	3 Bedroom (house)	1
I	3 Bed (dormer bungalow)	2
J	1 Bed (first floor flat)	1
K	Convenience Store	1
L	2 Bed (dormer bungalow) (semi-detached)	6
M	1 Bedroom (Apartment)	4
N	3 Bedroom (terrace)	7
O	2 Bedroom (Apartment)	4

Dwellings	85
Convenience Store	1
Total	86

- Refuse bin collection area
- Visitor parking
- Bicycle Store

- REVISIONS:**
- A. 23/02/2023
Plots 1 and 2 - House type changed to be dormer type bungalows.
Dwelling on Plot 53 omitted.
Convenience Store with living accommodation at first floor level shown on Plots 51 and 53.
Access Road on to St Asaph Avenue added.
Access Road off Gwellyn Avenue omitted.
Local Equipped Area for Play (LEAP) added to Open Space Area.
 - B. 28/02/2023
Dwelling type to Plots 53-58 changed.
Emergency vehicle road link added.
 - C. 12/06/2023
Turning head to Road 'E' enlarged.
Tactile paving & drop kerb crossings added.
Visibility splays indicated.
Visitor parking bays added.
Bicycle storage added to each property.
Refuse bin collection points added.
Dwelling parking to properties 41-46 amended.
Parking bay dimensions amended.
 - D. 03/10/2023
House Types 'N' and 'O' introduced.
House density increased.
Holding pond omitted.
 - E. 09/10/2023
House type mix amended.
House density amended to suit revised site area.
 - F. 18/10/2023
House type 'N' changed to 3 bed terrace.
 - G. 06/11/2023
Amended car parking.

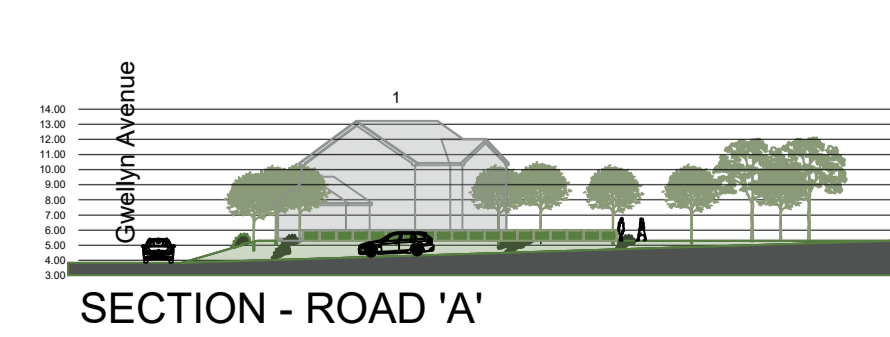
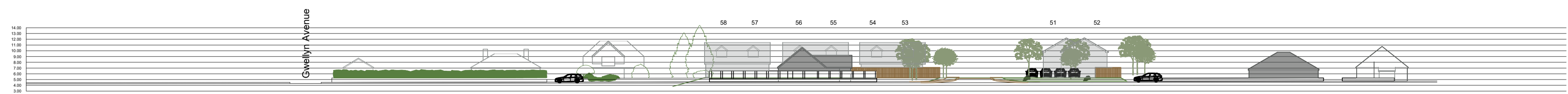
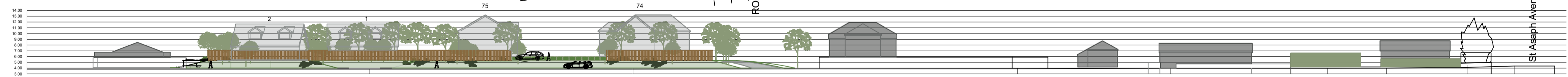
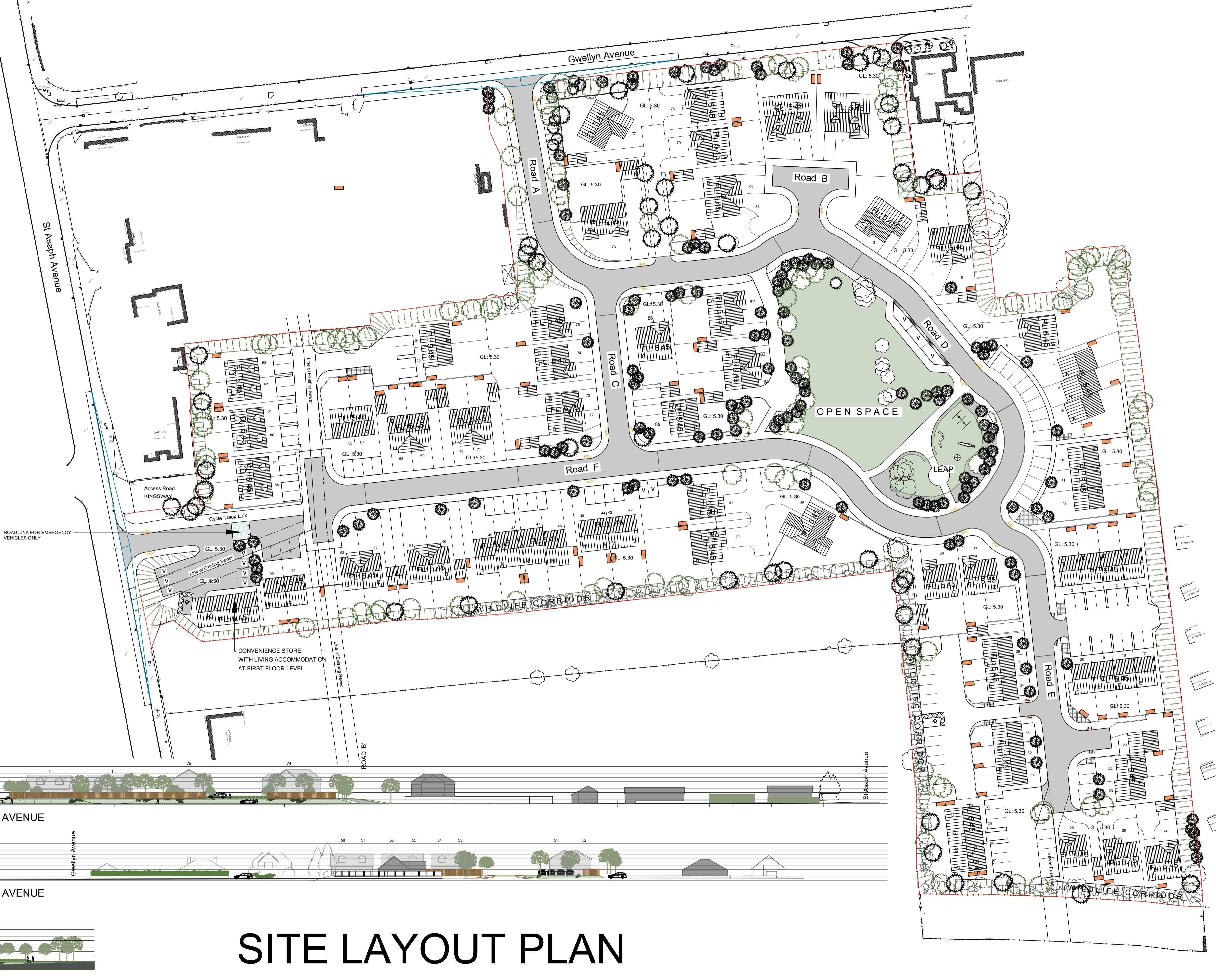


Date: R. D. Proffit
 Job Description: Proposed Residential Development

Location: Land Off Gwellyn Avenue, Kinmel Bay

Scale: 1:500 Date: 27 June 2022

Drawing Number: P.1533 / 2 Revision: G



SITE LAYOUT PLAN

Appendix E Visibility Splay



KEY PLAN	VISIBILITY SPLAYS
----------	-------------------

NOTES

NOTES (CONTINUED)

- 1) THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY AND NOT FOR CONSTRUCTION
- 2) THE CONTENT OF THIS DRAWING WILL REQUIRE FURTHER WORK SUCH AS A ROAD SAFETY AUDIT AND DETAILED DESIGN
- 3) THIS DRAWING IS BASED ON 3RD PARTY SURVEY INFORMATION

VISIBILITY SPLAYS DRAWN BASED ON SSD FOR 30MPH DESIGN SPEED ACCORDING TO MFS STANDARDS.

REVISIONS (CONTINUED)

REVISIONS						
PO1	FIRST ISSUE					
SR		02/02/24	NBR	02/02/24	SD	02/02/24
REV	REVNOTES					
	DRAWNBY	DATE-D	CHKBY	DATE-C	APPBY	DATE-A

Hydrock

CLIENT
KENYON PLANNING

PROJECT
GWELLYN AVENUE, KINMEL BAY

TITLE VISIBILITY SPLAY	
HYDROCK PROJECT NO. 27816-TMBI	SCALE @ A3 1:500
STATUS DESCRIPTION SUITABLE FOR STAGE APPROVAL	STATUS S4
DRAWING NO. 27816-HYD-XX-XX-DR-TP-1001	REVISION P01

Appendix F Swept Path - Large Car



KEY PLAN

- VEHICLE BODY IN FORWARD GEAR
- VEHICLE BODY IN REVERSE GEAR
- VEHICLE CHASSIS IN FORWARD GEAR
- VEHICLE CHASSIS IN REVERSE GEAR

NOTES

Large Car (2006)
 Overall Length 5.079m
 Overall Width 1.872m
 Overall Body Height 1.525m
 Min Body Ground Clearance 0.310m
 Max Track Width 1.831m
 Lock to lock time 4.00s
 Kerb to Kerb Turning Radius 5.900m

NOTES (CONTINUED)

- 1) THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY AND NOT FOR CONSTRUCTION
- 2) THE CONTENT OF THIS DRAWING WILL REQUIRE FURTHER WORK SUCH AS A ROAD SAFETY AUDIT AND DETAILED DESIGN
- 3) THIS DRAWING IS BASED ON 3RD PARTY SURVEY INFORMATION

REVISIONS (CONTINUED)

REVISIONS

PO2	FIRST ISSUE	HT	06.11.23	NBR	06.11.23	NBR	06.11.23
PO1	FIRST ISSUE	HT	03.11.23	NBR	03.11.23	NBR	03.11.23
REV	REVNOTES	DATE-D	CHKBY	DATE-C	APPBY	DATE-A	

Hydrock

CLIENT
KENYON PLANNING

PROJECT
GWELLYN AVENUE, KINMEL BAY

TITLE
VISIBILITY SPLAY

HIDROCK PROJECT NO. 27816-TMBI	SCALE @ A3 1:500
STATUS DESCRIPTION SUITABLE FOR STAGE APPROVAL	STATUS S4
DRAWING NO. 27816-HYD-XX-XX-DR-TP-1002	REVISION PO2

Appendix G Swept Path - Large Refuse Vehicle



KEY PLAN

	VEHICLE BODY IN FORWARD GEAR
	VEHICLE BODY IN REVERSE GEAR
	VEHICLE CHASSIS IN FORWARD GEAR
	VEHICLE CHASSIS IN REVERSE GEAR

NOTES

Large Refuse Vehicle (3 axle)

Overall Length	9.860m
Overall Width	2.450m
Overall Body Height	3.814m
Min Body Ground Clearance	0.365m
Track Width	2.450m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.500m

NOTES (CONTINUED)

- 1) THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY AND NOT FOR CONSTRUCTION
- 2) THE CONTENT OF THIS DRAWING WILL REQUIRE FURTHER WORK SUCH AS A ROAD SAFETY AUDIT AND DETAILED DESIGN
- 3) THIS DRAWING IS BASED ON 3RD PARTY SURVEY INFORMATION

REVISIONS (CONTINUED)

REV	DATE	BY	DATE	APP	DATE
PO2	HT	06.11.23	NBR	06.11.23	NBR
PO1	HT	03.11.23	NBR	03.11.23	NBR

REVISIONS

REV	DATE	BY	DATE	APP	DATE
PO2	HT	06.11.23	NBR	06.11.23	NBR
PO1	HT	03.11.23	NBR	03.11.23	NBR

Hydrock

CLIENT
KENYON PLANNING

PROJECT
GWELLYN AVENUE, KINMEL BAY

TITLE
SWEEP PATH ANALYSIS - LARGE 3-AXLE REFUSE

HYDROCK PROJECT NO. 27816-TMBI	SCALE @ A3 1:500
STATUS DESCRIPTION SUITABLE FOR STAGE APPROVAL	STATUS S4
DRAWING NO. 27816-HYD-XX-XX-DR-TP-1003	REVISION PO2

Appendix H TRICS Output

Calculation Reference: AUDIT-540501-230424-0406

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	KC KENT	2 days
03	SOUTH WEST	
	DV DEVON	2 days
	SD SWINDON	1 days
	TB TORBAY	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
	PB PETERBOROUGH	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
08	NORTH WEST	
	AC CHESHIRE WEST & CHESTER	1 days
09	NORTH	
	DH DURHAM	1 days
10	WALES	
	PS POWYS	1 days
11	SCOTLAND	
	HI HIGHLAND	1 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: 10 to 363 (units:)
 Range Selected by User: 5 to 4334 (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: 01/01/15 to 09/11/22

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

Selected survey days:

Monday	3 days
Tuesday	3 days
Wednesday	5 days
Thursday	3 days
Friday	1 days

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

Selected survey types:

Manual count	15 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:

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 15

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 6 days - Selected
 Servicing vehicles Excluded 15 days - Selected

Secondary Filtering selection:

Use Class:

C3 15 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

Population within 1 mile:

5,001 to 10,000 6 days
 10,001 to 15,000 2 days
 15,001 to 20,000 3 days
 20,001 to 25,000 2 days
 25,001 to 50,000 2 days

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

Population within 5 miles:

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

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

Car ownership within 5 miles:

0.6 to 1.0 4 days
 1.1 to 1.5 11 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 2 days
 No 13 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 15 days

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

LIST OF SITES relevant to selection parameters

1	AC-03-A-04 TOWN HOUSES LONDON ROAD NORTHWICH LEFTWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 24 Survey date: THURSDAY 06/06/19	CHESHIRE WEST & CHESTER Survey Type: MANUAL DURHAM
2	DH-03-A-01 SEMI DETACHED GREENFIELDS ROAD BISHOP AUCKLAND Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 50 Survey date: TUESDAY 28/03/17	Survey Type: MANUAL DEVON
3	DV-03-A-02 HOUSES & BUNGALOWS MILLHEAD ROAD HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 Survey date: FRIDAY 25/09/15	Survey Type: MANUAL DEVON
4	DV-03-A-03 TERRACED & SEMI DETACHED LOWER BRAND LANE HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 70 Survey date: MONDAY 28/09/15	Survey Type: MANUAL DEVON
5	HC-03-A-23 HOUSES & FLATS CANADA WAY LIPHOOK Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 62 Survey date: TUESDAY 19/11/19	Survey Type: MANUAL HAMPSHIRE
6	HI-03-A-14 SEMI-DETACHED & TERRACED KING BRUDE ROAD INVERNESS SCORGUIE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 40 Survey date: WEDNESDAY 23/03/16	Survey Type: MANUAL HIGHLAND
7	KC-03-A-03 MIXED HOUSES & FLATS HYTHE ROAD ASHFORD WILLESBOROUGH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51 Survey date: THURSDAY 14/07/16	Survey Type: MANUAL KENT

LIST OF SITES relevant to selection parameters (Cont.)

8	KC-03-A-06 MARGATE ROAD HERNE BAY	MIXED HOUSES & FLATS		KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 363 Survey date: WEDNESDAY 27/09/17			
9	NF-03-A-51 CITY ROAD NORWICH LAKENHAM	SEMI -DETACHED		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 34 Survey date: TUESDAY 13/09/22			
10	NY-03-A-13 CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 10 Survey date: WEDNESDAY 10/05/17			
11	PB-03-A-04 EASTFIELD ROAD PETERBOROUGH	DETACHED HOUSES		PETERBOROUGH
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 28 Survey date: MONDAY 17/10/16			
12	PS-03-A-02 GUNROG ROAD WELSHPOOL	DETACHED/ SEMI -DETACHED		POWYS
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 28 Survey date: MONDAY 11/05/15			
13	SD-03-A-01 HEADLANDS GROVE SWINDON	SEMI DETACHED		SWINDON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 27 Survey date: THURSDAY 22/09/16			
14	TB-03-A-01 BRONSHILL ROAD TORQUAY	TERRACED HOUSES		TORBAY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 Survey date: WEDNESDAY 30/09/15			
15	WK-03-A-03 BRESE AVENUE WARWICK GUYS CLIFFE	DETACHED HOUSES		WARWICKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 23 Survey date: WEDNESDAY 25/09/19			

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

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
SF-03-A-09	24/06/21	covid

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	64	0.065	15	64	0.291	15	64	0.356
08:00 - 09:00	15	64	0.119	15	64	0.396	15	64	0.515
09:00 - 10:00	15	64	0.164	15	64	0.162	15	64	0.326
10:00 - 11:00	15	64	0.129	15	64	0.188	15	64	0.317
11:00 - 12:00	15	64	0.138	15	64	0.152	15	64	0.290
12:00 - 13:00	15	64	0.193	15	64	0.170	15	64	0.363
13:00 - 14:00	15	64	0.177	15	64	0.170	15	64	0.347
14:00 - 15:00	15	64	0.164	15	64	0.194	15	64	0.358
15:00 - 16:00	15	64	0.264	15	64	0.183	15	64	0.447
16:00 - 17:00	15	64	0.318	15	64	0.174	15	64	0.492
17:00 - 18:00	15	64	0.366	15	64	0.184	15	64	0.550
18:00 - 19:00	15	64	0.278	15	64	0.192	15	64	0.470
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.375			2.456			4.831

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected: 10 - 363 (units:)
 Survey date range: 01/01/15 - 09/11/22
 Number of weekdays (Monday-Friday): 16
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 6
 Surveys manually removed from selection: 0

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

Appendix I Raw Traffic Count Data



TOTAL TRAFFIC
SURVEYS LTD
DATA COLLECTION

Job Title: Kinmel Bay, Nr Rhyl

Job Number: TTS-1549-May

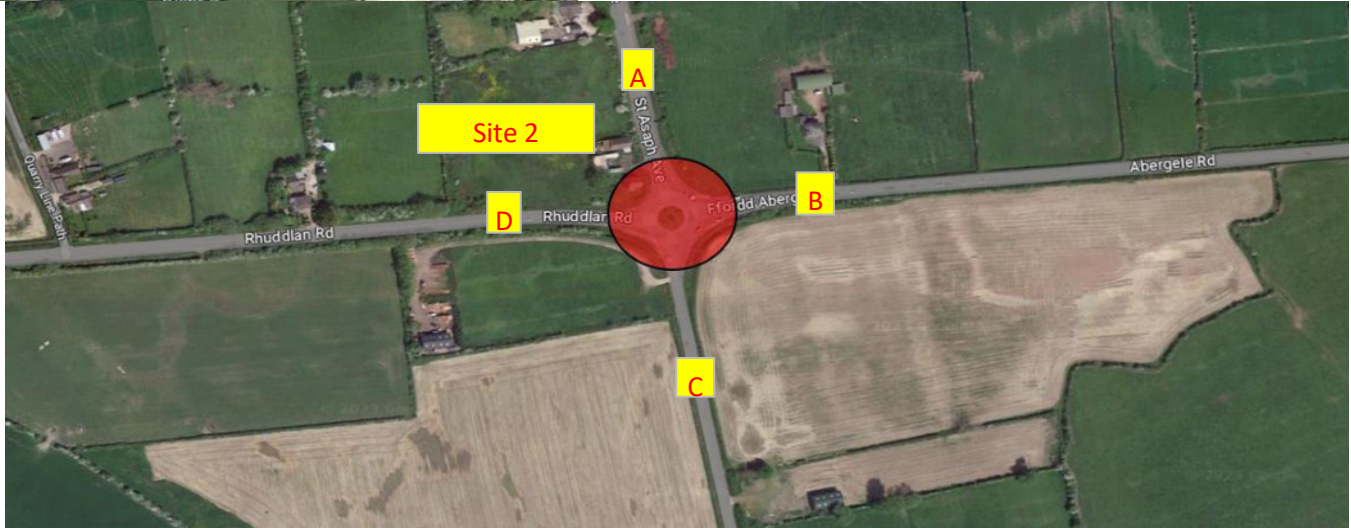
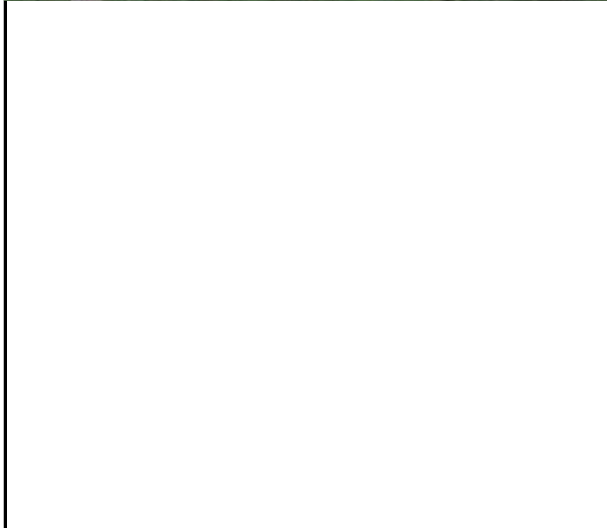
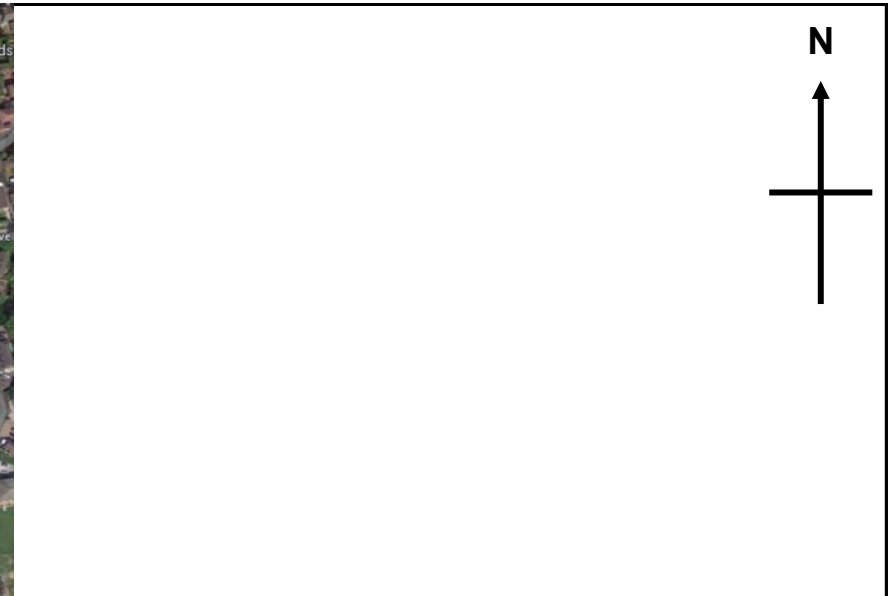
Client: Hydrock

Survey Date: Tuesday 23 May 2023

Survey Period: 0700-1030 & 1530-1900

Survey Type: Manual Classified Turning Counts

Comments: There were no incidents likely to affect the outcome of the surveys. Weather - Dry



TOTAL TRAFFIC
SURVEYS LTD
DATA COLLECTION

SITE / LOCATION:	Kinmel Bay, Nr Rhyl	JOB NO:	TTS-1549-May	DWG NO:	1549-001	DRAWN:	SES
SURVEY DATE:	Tuesday 23rd May 2023	DWG TITLE:		Location Plan and Observed Movements			
SURVEY TIMES:	0700-1030 & 1530-1900	JOB TITLE:		Kinmel Bay, Nr Rhyl			



Site: 1

Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	A - B							TOT	A - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	0	0	0	0	0	0	0	0	37	21	1	0	0	317
07:15	0	0	0	1	0	0	0	1	0	0	56	15	2	0	0	337
07:30	0	0	0	0	0	0	0	0	2	0	70	25	2	0	1	351
07:45	0	0	0	0	0	0	0	0	0	1	77	25	4	1	0	401
H/TOT	0	0	0	1	0	0	0	1	2	1	240	86	9	1	1	1406
08:00	0	0	0	0	0	0	0	0	0	2	91	19	7	4	1	360
08:15	0	0	2	0	0	0	0	2	0	0	80	14	4	0	2	403
08:30	0	0	2	0	0	0	0	2	0	0	96	12	3	2	1	304
08:45	0	0	1	0	0	0	0	1	0	0	77	20	3	3	0	284
H/TOT	0	0	5	0	0	0	0	5	0	2	344	65	17	9	4	1351
09:00	0	0	1	1	0	0	0	2	0	0	39	45	4	0	0	339
09:15	0	0	0	2	0	0	0	2	0	0	47	38	6	1	0	272
09:30	0	0	1	0	0	0	0	1	0	0	48	25	3	0	0	231
09:45	0	0	0	1	0	0	0	1	0	1	55	16	3	3	1	291
H/TOT	0	0	2	4	0	0	0	6	0	1	189	124	16	4	1	1133
10:00	0	0	1	0	1	0	0	2	0	0	62	16	2	2	0	206
10:15	0	0	2	0	0	0	0	2	0	0	66	16	3	1	0	231
Hh/TOT	0	0	3	0	1	0	0	4	0	0	128	32	5	3	0	437
P/TOT	0	0	10	5	1	0	0	16	2	4	901	307	47	17	6	4327

TIME	A - B							TOT	A - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
15:30	0	0	3	0	0	0	0	3	0	1	69	14	3	0	1	220
15:45	0	0	5	0	0	0	0	5	0	0	68	12	2	1	0	257
H/TOT	0	0	8	0	0	0	0	8	0	1	137	26	5	1	1	477
16:00	0	0	4	0	0	0	0	4	0	0	71	12	0	1	0	223
16:15	1	0	0	0	0	0	0	1	0	0	50	16	4	2	0	255
16:30	0	0	1	0	0	0	0	1	1	1	73	16	3	0	1	301
16:45	0	0	2	0	0	0	0	2	0	0	74	17	0	1	0	282
H/TOT	1	0	7	0	0	0	0	8	1	1	268	61	7	4	1	1061
17:00	0	0	2	1	0	0	0	3	0	0	96	15	1	0	1	348
17:15	0	0	3	0	0	0	0	3	0	3	66	9	0	0	1	331
17:30	0	0	3	0	0	0	0	3	0	1	91	10	0	0	0	333
17:45	0	0	0	1	0	0	0	1	0	0	71	5	0	0	0	299
H/TOT	0	0	8	2	0	0	0	10	0	4	324	39	1	0	2	1311
18:00	0	0	2	1	0	0	0	3	0	0	65	6	1	0	0	300
18:15	0	0	3	0	0	0	0	3	1	0	55	10	1	0	0	259
18:30	0	0	1	2	0	0	0	3	2	0	47	5	0	0	0	262
18:45	0	0	1	0	0	0	0	1	0	0	38	5	0	0	0	213
H/TOT	0	0	7	3	0	0	0	10	3	0	205	26	2	0	0	1034
P/TOT	1	0	30	5	0	0	0	36	4	6	934	152	15	5	4	3883



Site: 1

Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	B - C							TOT	B - A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
07:15	0	0	6	4	0	0	0	10	0	0	0	0	0	0	0	0
07:30	0	0	8	1	0	0	0	9	0	0	1	0	0	0	0	1
07:45	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
H/TOT	0	0	25	6	0	0	0	31	0	0	1	0	0	0	0	1
08:00	0	0	7	2	0	0	0	9	0	0	4	0	0	0	0	4
08:15	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0
08:30	0	0	11	1	0	0	0	12	0	0	4	0	0	0	0	4
08:45	0	0	4	2	0	0	0	6	0	0	1	0	0	0	0	1
H/TOT	0	0	33	5	0	0	0	38	0	0	9	0	0	0	0	9
09:00	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1
09:15	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	1
09:30	0	0	1	0	0	0	0	1	0	0	1	2	0	0	0	3
09:45	0	0	1	0	0	0	0	1	0	0	3	0	0	0	0	3
H/TOT	0	0	8	1	0	0	0	9	0	0	6	2	0	0	0	8
10:00	0	0	1	1	1	0	0	3	0	0	1	0	0	0	0	1
10:15	0	0	3	0	0	0	0	3	0	0	4	0	0	0	0	4
Hh/TOT	0	0	4	1	1	0	0	6	0	0	5	0	0	0	0	5
P/TOT	0	0	70	13	1	0	0	84	0	0	21	2	0	0	0	23

TIME	B - C							TOT	B - A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
15:30	0	0	5	0	0	0	0	5	0	0	2	0	0	0	0	2
15:45	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
H/TOT	0	0	7	0	0	0	0	7	0	0	2	0	0	0	0	2
16:00	0	0	2	0	0	0	0	2	0	0	3	0	0	0	0	3
16:15	0	0	5	0	0	0	0	5	0	0	4	1	0	0	0	5
16:30	0	0	7	1	0	0	0	8	0	0	2	0	0	0	0	2
16:45	0	0	7	0	0	0	0	7	0	0	3	0	0	0	0	3
H/TOT	0	0	21	1	0	0	0	22	0	0	12	1	0	0	0	13
17:00	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
17:15	0	0	5	0	0	0	0	5	0	0	1	1	0	0	0	2
17:30	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1
17:45	0	0	6	0	0	0	0	6	0	0	3	0	0	0	0	3
H/TOT	0	0	21	0	0	0	0	21	0	0	5	1	0	0	0	6
18:00	0	1	2	1	0	0	0	4	0	0	0	0	0	0	0	0
18:15	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	2
18:30	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
18:45	0	0	3	0	0	0	0	3	0	0	2	0	0	0	0	2
H/TOT	0	1	10	1	0	0	0	12	0	0	4	0	0	0	0	4
P/TOT	0	1	59	2	0	0	0	62	0	0	23	2	0	0	0	25



Site: 1

Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	15	8	1	0	0	191	0	0	1	1	0	0	0	2
07:15	0	1	24	6	2	0	0	226	0	0	2	0	0	0	0	2
07:30	0	0	41	19	3	3	1	313	0	0	1	0	0	0	0	1
07:45	0	0	48	13	2	0	2	306	0	0	1	0	1	0	0	2
H/TOT	0	1	128	46	8	3	3	1036	0	0	5	1	1	0	0	7
08:00	0	0	41	8	7	1	0	304	0	0	2	1	0	0	0	3
08:15	0	0	63	19	2	0	2	301	0	0	1	0	0	0	0	1
08:30	0	1	66	14	1	3	0	330	0	0	3	0	0	0	0	3
08:45	0	0	63	8	2	1	1	271	0	0	5	0	0	0	0	5
H/TOT	0	1	233	49	12	5	3	1206	0	0	11	1	0	0	0	12
09:00	0	0	73	9	3	1	1	295	0	0	1	0	0	0	0	1
09:15	0	1	47	14	1	3	1	290	0	0	1	0	0	0	0	1
09:30	0	0	38	14	6	1	0	225	0	0	1	0	0	0	0	1
09:45	0	1	47	5	6	1	0	220	0	0	0	0	0	0	0	0
H/TOT	0	2	205	42	16	6	2	1030	0	0	3	0	0	0	0	3
10:00	0	2	52	12	4	1	0	269	0	0	0	0	0	0	0	0
10:15	0	0	44	8	1	2	1	223	0	0	0	0	0	0	0	0
Hh/TOT	0	2	96	20	5	3	1	492	0	0	0	0	0	0	0	0
P/TOT	0	6	662	157	41	17	9	3764	0	0	19	2	1	0	0	22

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
15:30	1	0	83	14	1	1	0	359	0	1	8	0	0	0	0	9
15:45	0	2	58	12	1	0	1	363	0	0	6	2	0	0	0	8
H/TOT	1	2	141	26	2	1	1	722	0	1	14	2	0	0	0	17
16:00	0	2	95	14	3	0	0	392	0	0	8	0	0	0	0	8
16:15	2	0	80	24	1	1	0	343	0	0	8	0	0	0	0	8
16:30	1	1	81	16	6	1	0	382	0	0	6	1	0	0	0	7
16:45	1	2	92	24	2	1	0	379	0	0	15	6	0	0	0	21
H/TOT	4	5	348	78	12	3	0	1496	0	0	37	7	0	0	0	44
17:00	0	0	103	21	0	1	0	373	0	0	12	1	0	0	0	13
17:15	0	0	91	19	2	0	0	369	0	0	8	2	0	0	0	10
17:30	0	1	94	17	0	0	0	375	0	0	8	0	1	0	0	9
17:45	0	0	72	16	0	0	0	377	0	0	11	0	0	0	0	11
H/TOT	0	1	360	73	2	1	0	1494	0	0	39	3	1	0	0	43
18:00	1	0	76	8	1	0	0	401	0	0	6	2	0	0	0	8
18:15	1	0	62	9	0	0	0	352	0	1	6	0	0	0	0	7
18:30	0	0	69	9	1	1	0	341	0	0	4	0	0	0	0	4
18:45	0	0	33	7	0	0	0	312	0	0	5	0	0	0	0	5
H/TOT	2	0	240	33	2	1	0	1406	0	1	21	2	0	0	0	24
P/TOT	7	8	1089	210	18	6	1	5118	0	2	111	14	1	0	0	128



Site: 1

Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	15	8	1	0	0	24	0	0	37	21	1	0	0	59
07:15	0	1	24	6	2	0	0	33	0	0	56	16	2	0	0	74
07:30	0	0	42	19	3	3	1	68	2	0	70	25	2	0	1	100
07:45	0	0	48	13	2	0	2	65	0	1	77	25	4	1	0	108
H/TOT	0	1	129	46	8	3	3	190	2	1	240	87	9	1	1	341
08:00	0	0	45	8	7	1	0	61	0	2	91	19	7	4	1	124
08:15	0	0	63	19	2	0	2	86	0	0	82	14	4	0	2	102
08:30	0	1	70	14	1	3	0	89	0	0	98	12	3	2	1	116
08:45	0	0	64	8	2	1	1	76	0	0	78	20	3	3	0	104
H/TOT	0	1	242	49	12	5	3	312	0	2	349	65	17	9	4	446
09:00	0	0	74	9	3	1	1	88	0	0	40	46	4	0	0	90
09:15	0	1	48	14	1	3	1	68	0	0	47	40	6	1	0	94
09:30	0	0	39	16	6	1	0	62	0	0	49	25	3	0	0	77
09:45	0	1	50	5	6	1	0	63	0	1	55	17	3	3	1	80
H/TOT	0	2	211	44	16	6	2	281	0	1	191	128	16	4	1	341
10:00	0	2	53	12	4	1	0	72	0	0	63	16	3	2	0	84
10:15	0	0	48	8	1	2	1	60	0	0	68	16	3	1	0	88
Hh/TOT	0	2	101	20	5	3	1	132	0	0	131	32	6	3	0	172
P/TOT	0	6	683	159	41	17	9	915	2	4	911	312	48	17	6	1300

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
15:30	1	0	85	14	1	1	0	102	0	1	72	14	3	0	1	91
15:45	0	2	58	12	1	0	1	74	0	0	73	12	2	1	0	88
H/TOT	1	2	143	26	2	1	1	176	0	1	145	26	5	1	1	179
16:00	0	2	98	14	3	0	0	117	0	0	75	12	0	1	0	88
16:15	2	0	84	25	1	1	0	113	1	0	50	16	4	2	0	73
16:30	1	1	83	16	6	1	0	108	1	1	74	16	3	0	1	96
16:45	1	2	95	24	2	1	0	125	0	0	76	17	0	1	0	94
H/TOT	4	5	360	79	12	3	0	463	2	1	275	61	7	4	1	351
17:00	0	0	103	21	0	1	0	125	0	0	98	16	1	0	1	116
17:15	0	0	92	20	2	0	0	114	0	3	69	9	0	0	1	82
17:30	0	1	95	17	0	0	0	113	0	1	94	10	0	0	0	105
17:45	0	0	75	16	0	0	0	91	0	0	71	6	0	0	0	77
H/TOT	0	1	365	74	2	1	0	443	0	4	332	41	1	0	2	380
18:00	1	0	76	8	1	0	0	86	0	0	67	7	1	0	0	75
18:15	1	0	64	9	0	0	0	74	1	0	58	10	1	0	0	70
18:30	0	0	69	9	1	1	0	80	2	0	48	7	0	0	0	57
18:45	0	0	35	7	0	0	0	42	0	0	39	5	0	0	0	44
H/TOT	2	0	244	33	2	1	0	282	3	0	212	29	2	0	0	246
P/TOT	7	8	1112	212	18	6	1	1364	5	6	964	157	15	5	4	1156



Site: 1

Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	1	1	0	0	0	2	0	0	2	0	0	0	0	2
07:15	0	0	2	1	0	0	0	3	0	0	6	4	0	0	0	10
07:30	0	0	1	0	0	0	0	1	0	0	9	1	0	0	0	10
07:45	0	0	1	0	1	0	0	2	0	0	9	1	0	0	0	10
H/TOT	0	0	5	2	1	0	0	8	0	0	26	6	0	0	0	32
08:00	0	0	2	1	0	0	0	3	0	0	11	2	0	0	0	13
08:15	0	0	3	0	0	0	0	3	0	0	11	0	0	0	0	11
08:30	0	0	5	0	0	0	0	5	0	0	15	1	0	0	0	16
08:45	0	0	6	0	0	0	0	6	0	0	5	2	0	0	0	7
H/TOT	0	0	16	1	0	0	0	17	0	0	42	5	0	0	0	47
09:00	0	0	2	1	0	0	0	3	0	0	6	0	0	0	0	6
09:15	0	0	1	2	0	0	0	3	0	0	2	1	0	0	0	3
09:30	0	0	2	0	0	0	0	2	0	0	2	2	0	0	0	4
09:45	0	0	0	1	0	0	0	1	0	0	4	0	0	0	0	4
H/TOT	0	0	5	4	0	0	0	9	0	0	14	3	0	0	0	17
10:00	0	0	1	0	1	0	0	2	0	0	2	1	1	0	0	4
10:15	0	0	2	0	0	0	0	2	0	0	7	0	0	0	0	7
Hh/TOT	0	0	3	0	1	0	0	4	0	0	9	1	1	0	0	11
P/TOT	0	0	29	7	2	0	0	38	0	0	91	15	1	0	0	107

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
15:30	0	1	11	0	0	0	0	12	0	0	7	0	0	0	0	7
15:45	0	0	11	2	0	0	0	13	0	0	2	0	0	0	0	2
H/TOT	0	1	22	2	0	0	0	25	0	0	9	0	0	0	0	9
16:00	0	0	12	0	0	0	0	12	0	0	5	0	0	0	0	5
16:15	1	0	8	0	0	0	0	9	0	0	9	1	0	0	0	10
16:30	0	0	7	1	0	0	0	8	0	0	9	1	0	0	0	10
16:45	0	0	17	6	0	0	0	23	0	0	10	0	0	0	0	10
H/TOT	1	0	44	7	0	0	0	52	0	0	33	2	0	0	0	35
17:00	0	0	14	2	0	0	0	16	0	0	5	0	0	0	0	5
17:15	0	0	11	2	0	0	0	13	0	0	6	1	0	0	0	7
17:30	0	0	11	0	1	0	0	12	0	0	6	0	0	0	0	6
17:45	0	0	11	1	0	0	0	12	0	0	9	0	0	0	0	9
H/TOT	0	0	47	5	1	0	0	53	0	0	26	1	0	0	0	27
18:00	0	0	8	3	0	0	0	11	0	1	2	1	0	0	0	4
18:15	0	1	9	0	0	0	0	10	0	0	4	0	0	0	0	4
18:30	0	0	5	2	0	0	0	7	0	0	3	0	0	0	0	3
18:45	0	0	6	0	0	0	0	6	0	0	5	0	0	0	0	5
H/TOT	0	1	28	5	0	0	0	34	0	1	14	1	0	0	0	16
P/TOT	1	2	141	19	1	0	0	164	0	1	82	4	0	0	0	87



Site: 1

Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	39	21	1	0	0	61	0	0	16	9	1	0	0	26
07:15	0	0	62	19	2	0	0	83	0	1	26	6	2	0	0	35
07:30	2	0	78	26	2	0	1	109	0	0	42	19	3	3	1	68
07:45	0	1	86	26	4	1	0	118	0	0	49	13	3	0	2	67
H/TOT	2	1	265	92	9	1	1	371	0	1	133	47	9	3	3	196
08:00	0	2	98	21	7	4	1	133	0	0	43	9	7	1	0	60
08:15	0	0	91	14	4	0	2	111	0	0	64	19	2	0	2	87
08:30	0	0	107	13	3	2	1	126	0	1	69	14	1	3	0	88
08:45	0	0	81	22	3	3	0	109	0	0	68	8	2	1	1	80
H/TOT	0	2	377	70	17	9	4	479	0	1	244	50	12	5	3	315
09:00	0	0	44	45	4	0	0	93	0	0	74	9	3	1	1	88
09:15	0	0	48	39	6	1	0	94	0	1	48	14	1	3	1	68
09:30	0	0	49	25	3	0	0	77	0	0	39	14	6	1	0	60
09:45	0	1	56	16	3	3	1	80	0	1	47	5	6	1	0	60
H/TOT	0	1	197	125	16	4	1	344	0	2	208	42	16	6	2	276
10:00	0	0	63	17	3	2	0	85	0	2	52	12	4	1	0	71
10:15	0	0	69	16	3	1	0	89	0	0	44	8	1	2	1	56
Hh/TOT	0	0	132	33	6	3	0	174	0	2	96	20	5	3	1	127
P/TOT	2	4	971	320	48	17	6	1368	0	6	681	159	42	17	9	914

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
15:30	0	1	74	14	3	0	1	93	1	1	91	14	1	1	0	109
15:45	0	0	70	12	2	1	0	85	0	2	64	14	1	0	1	82
H/TOT	0	1	144	26	5	1	1	178	1	3	155	28	2	1	1	191
16:00	0	0	73	12	0	1	0	86	0	2	103	14	3	0	0	122
16:15	0	0	55	16	4	2	0	77	2	0	88	24	1	1	0	116
16:30	1	1	80	17	3	0	1	103	1	1	87	17	6	1	0	113
16:45	0	0	81	17	0	1	0	99	1	2	107	30	2	1	0	143
H/TOT	1	1	289	62	7	4	1	365	4	5	385	85	12	3	0	494
17:00	0	0	101	15	1	0	1	118	0	0	115	22	0	1	0	138
17:15	0	3	71	9	0	0	1	84	0	0	99	21	2	0	0	122
17:30	0	1	96	10	0	0	0	107	0	1	102	17	1	0	0	121
17:45	0	0	77	5	0	0	0	82	0	0	83	16	0	0	0	99
H/TOT	0	4	345	39	1	0	2	391	0	1	399	76	3	1	0	480
18:00	0	1	67	7	1	0	0	76	1	0	82	10	1	0	0	94
18:15	1	0	57	10	1	0	0	69	1	1	68	9	0	0	0	79
18:30	2	0	50	5	0	0	0	57	0	0	73	9	1	1	0	84
18:45	0	0	41	5	0	0	0	46	0	0	38	7	0	0	0	45
H/TOT	3	1	215	27	2	0	0	248	2	1	261	35	2	1	0	302
P/TOT	4	7	993	154	15	5	4	1182	7	10	1200	224	19	6	1	1467

Site: 1

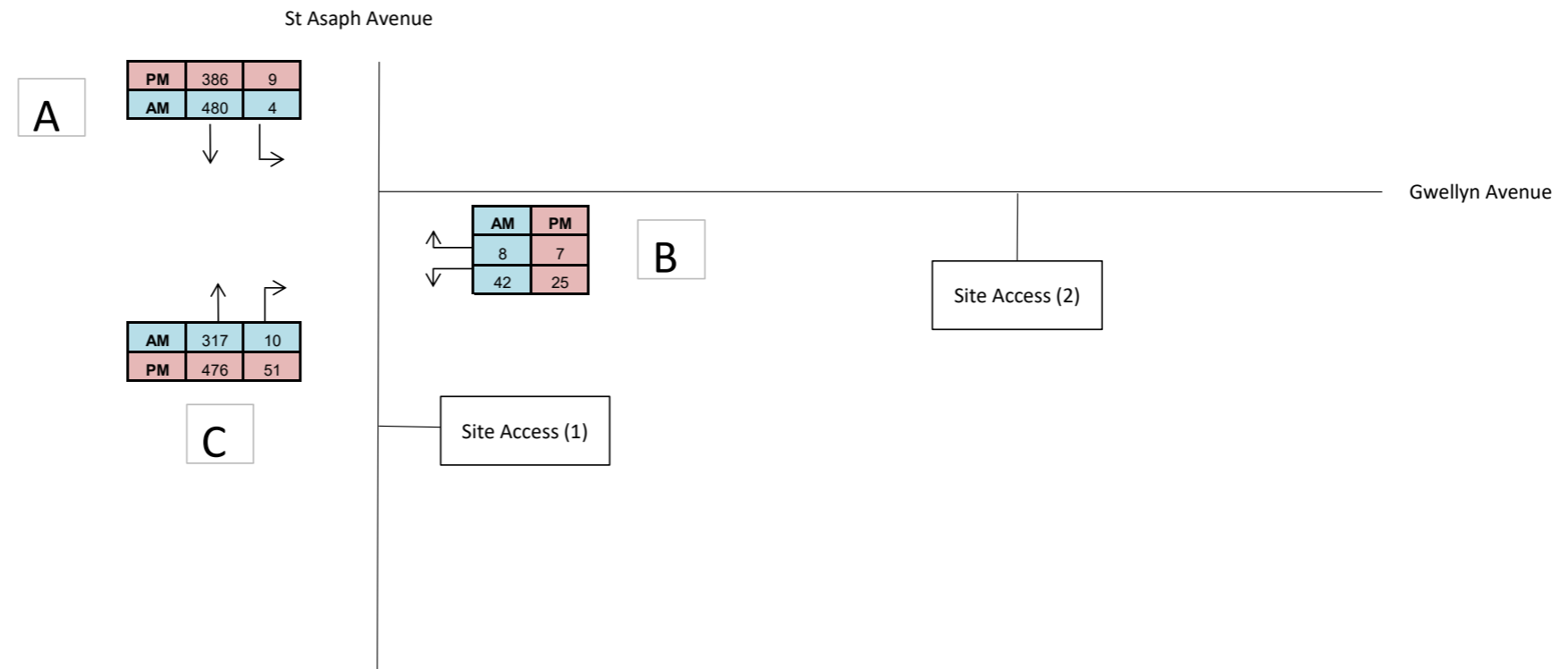
Location: St Asaph Avenue, Gwellyn Avenue - T junction

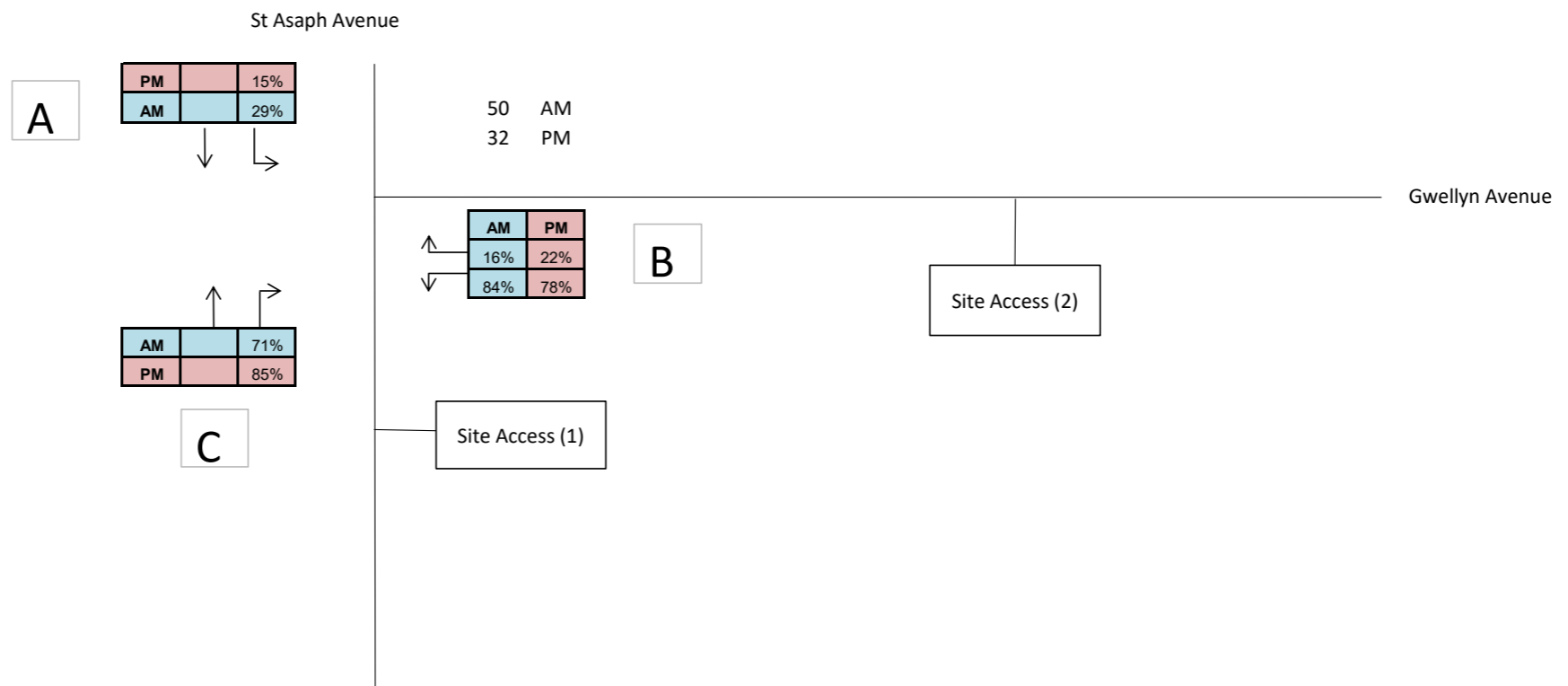
TIME	Arm B	
	Lane 1	
	Min	Max
07:00	0	0
07:05	0	0
07:10	0	0
07:15	0	0
07:20	0	0
07:25	0	1
07:30	0	0
07:35	0	1
07:40	0	1
07:45	0	1
07:50	0	1
07:55	0	1
08:00	0	1
08:05	0	1
08:10	0	2
08:15	0	1
08:20	0	1
08:25	0	1
08:30	0	1
08:35	0	2
08:40	0	1
08:45	0	1
08:50	0	1
08:55	0	0
09:00	0	2
09:05	0	1
09:10	0	1
09:15	0	1
09:20	0	1
09:25	0	0
09:30	0	1
09:35	0	1
09:40	0	0
09:45	0	1
09:50	0	1
09:55	0	0
10:00	0	0
10:05	0	0
10:10	0	1
10:15	0	1
10:20	0	1
10:25	0	1
10:30	0	1

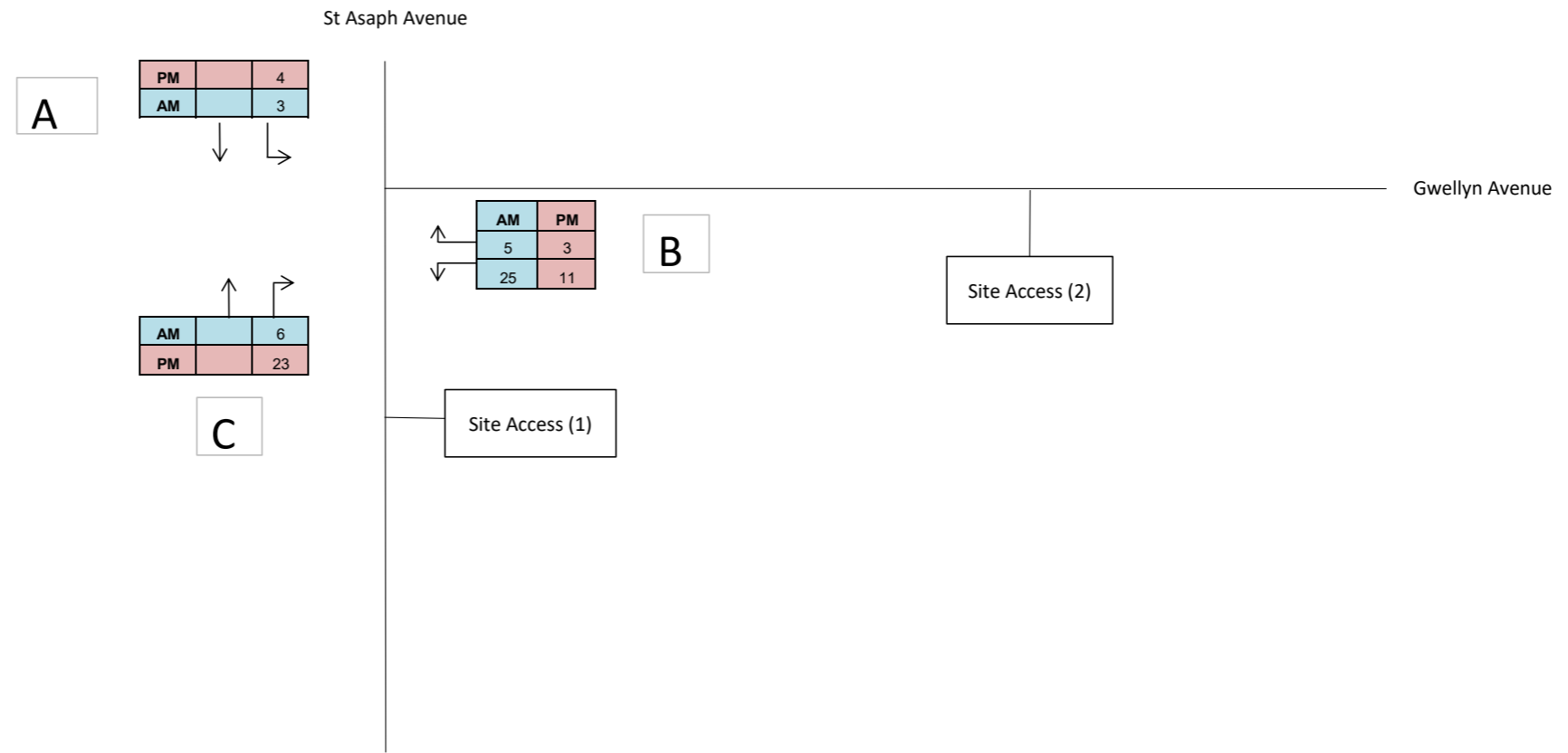
Site: 1

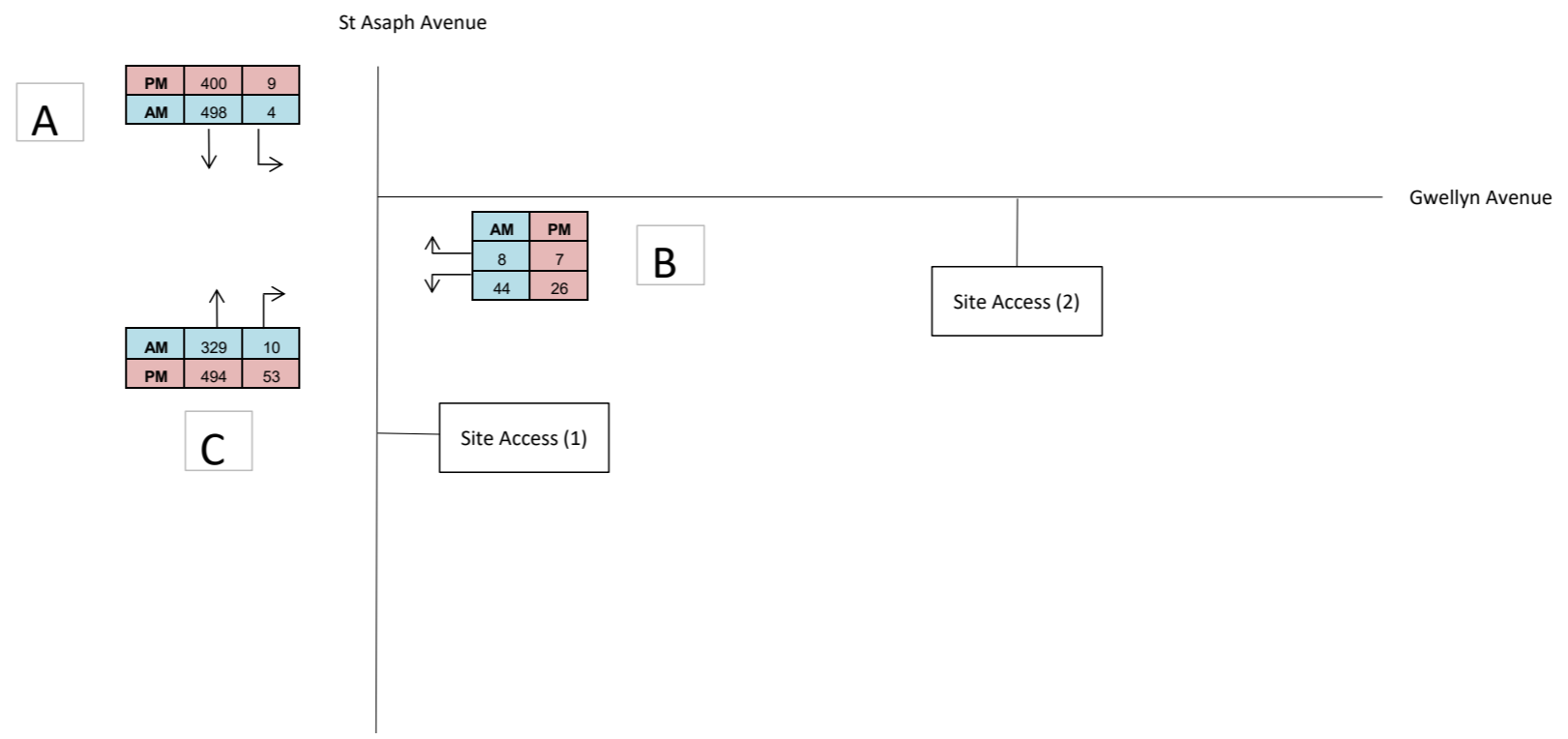
Location: St Asaph Avenue, Gwellyn Avenue - T junction

TIME	Arm B	
	Lane 1	
	Min	Max
15:30	0	0
15:35	0	2
15:40	0	1
15:45	0	1
15:50	0	0
15:55	0	0
16:00	0	0
16:05	0	0
16:10	0	2
16:15	0	1
16:20	0	1
16:25	0	1
16:30	0	2
16:35	0	1
16:40	0	1
16:45	0	1
16:50	0	1
16:55	0	1
17:00	0	1
17:05	0	0
17:10	0	0
17:15	0	0
17:20	0	2
17:25	0	0
17:30	0	2
17:35	0	1
17:40	0	1
17:45	0	1
17:50	0	1
17:55	0	1
18:00	0	0
18:05	0	0.5
18:10	0	1
18:15	0	0
18:20	0	0
18:25	0	1
18:30	0	0
18:35	0	0
18:40	0	1
18:45	0	0
18:50	0	0
18:55	0	0
19:00	0	0









TEMPRO 2023-2028	
AM	1.037
PM	1.036



Weekday AM & PM Peak Hour - 2028 Base Flows (PCUs)

Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

01 June 2023

Job Number - 27816-TMBI

Figure 4

St Asaph Avenue

A	PM	400	13
	AM	498	7

C	AM	329	17
	PM	494	76

B	AM	PM
	13	10
	68	37

Gwellyn Avenue

Site Access (2)

Site Access (1)



TEMPRO 2023-2028	
AM	1.0372
PM	1.0363



Weekday AM & PM Peak Hour - 2028 Base Flows (PCUs) + DEV

Proposed Residential Development - Gwellyn Avenue, Kinmel Bay

01 June 2023

Job Number - 27816-TMBI

Figure 5

Appendix J PICADY Assessment

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Site Access.j9

Path: P:\Transportation\27816-TMBI Gwellyn Avenue, Kinmel Bay\01_WIP\CA_Calculation\Junctions 9

Report generation date: 31/05/2023 10:45:13

- »2023 Base, AM
- »2023 Base, PM
- »2028 Base, AM
- »2028 Base, PM
- »2028 Base + Development, AM
- »2028 Base + Development, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2023 Base								
Stream B-AC	0.1	6.64	0.09	A	0.1	8.30	0.08	A
Stream C-AB	0.0	4.65	0.02	A	0.4	4.87	0.15	A
2028 Base								
Stream B-AC	0.1	6.66	0.10	A	0.1	8.39	0.08	A
Stream C-AB	0.0	4.62	0.02	A	0.4	4.85	0.16	A
2028 Base + Development								
Stream B-AC	0.2	7.13	0.15	A	0.1	8.80	0.11	A
Stream C-AB	0.1	4.67	0.04	A	0.6	5.13	0.23	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	31/05/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HYDROCK\chrispeachey
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15
D2	2023 Base	PM	ONE HOUR	17:00	18:30	15
D3	2028 Base	AM	ONE HOUR	08:00	09:30	15
D4	2028 Base	PM	ONE HOUR	17:00	18:30	15
D5	2028 Base + Development	AM	ONE HOUR	08:00	09:30	15
D6	2028 Base + Development	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	St Aspah North		Major
B	Site Access		Minor
C	St Aspah Avenue South		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.30			100.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.80	45	45

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	504	0.087	0.219	0.138	0.313
1	B-C	639	0.092	0.234	-	-
1	C-B	632	0.231	0.231	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	13	100.000
B		✓	50	100.000
C		✓	327	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	4	9
	B	8	0	42
	C	317	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	6.64	0.1	A
C-AB	0.02	4.65	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	602	0.063	37	0.1	6.370	A
C-AB	11	785	0.014	11	0.0	4.650	A
C-A	235			235			
A-B	3			3			
A-C	7			7			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	600	0.075	45	0.1	6.484	A
C-AB	14	815	0.017	14	0.0	4.495	A
C-A	280			280			
A-B	4			4			
A-C	8			8			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	597	0.092	55	0.1	6.643	A
C-AB	19	856	0.022	19	0.0	4.300	A
C-A	341			341			
A-B	4			4			
A-C	10			10			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	597	0.092	55	0.1	6.643	A
C-AB	19	856	0.022	19	0.0	4.300	A
C-A	341			341			
A-B	4			4			
A-C	10			10			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	600	0.075	45	0.1	6.486	A
C-AB	14	815	0.017	14	0.0	4.497	A
C-A	280			280			
A-B	4			4			
A-C	8			8			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	602	0.063	38	0.1	6.379	A
C-AB	11	785	0.014	11	0.0	4.651	A
C-A	235			235			
A-B	3			3			
A-C	7			7			

2023 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2023 Base	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	395	100.000
B		✓	32	100.000
C		✓	527	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	9	386
	B	7	0	25
	C	476	51	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	8.30	0.1	A
C-AB	0.15	4.87	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	24	514	0.047	24	0.0	7.345	A
C-AB	69	809	0.085	68	0.2	4.857	A
C-A	328			328			
A-B	7			7			
A-C	291			291			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	495	0.058	29	0.1	7.717	A
C-AB	93	847	0.110	93	0.2	4.774	A
C-A	381			381			
A-B	8			8			
A-C	347			347			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	469	0.075	35	0.1	8.299	A
C-AB	135	901	0.150	134	0.4	4.703	A
C-A	445			445			
A-B	10			10			
A-C	425			425			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	469	0.075	35	0.1	8.301	A
C-AB	135	901	0.150	135	0.4	4.709	A
C-A	445			445			
A-B	10			10			
A-C	425			425			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	495	0.058	29	0.1	7.722	A
C-AB	93	848	0.110	94	0.3	4.784	A
C-A	380			380			
A-B	8			8			
A-C	347			347			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	24	514	0.047	24	0.0	7.358	A
C-AB	69	810	0.086	70	0.2	4.871	A
C-A	327			327			
A-B	7			7			
A-C	291			291			

2028 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2028 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	13	100.000
B		✓	52	100.000
C		✓	339	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	4	9
	B	8	0	44
	C	329	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.10	6.66	0.1	A
C-AB	0.02	4.62	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	603	0.065	39	0.1	6.376	A
C-AB	11	791	0.014	11	0.0	4.616	A
C-A	244			244			
A-B	3			3			
A-C	7			7			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	47	601	0.078	47	0.1	6.494	A
C-AB	14	822	0.017	14	0.0	4.457	A
C-A	291			291			
A-B	4			4			
A-C	8			8			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	57	598	0.096	57	0.1	6.658	A
C-AB	19	864	0.022	19	0.0	4.258	A
C-A	354			354			
A-B	4			4			
A-C	10			10			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	57	598	0.096	57	0.1	6.658	A
C-AB	19	864	0.022	19	0.0	4.258	A
C-A	354			354			
A-B	4			4			
A-C	10			10			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	47	601	0.078	47	0.1	6.499	A
C-AB	14	822	0.017	14	0.0	4.458	A
C-A	291			291			
A-B	4			4			
A-C	8			8			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	603	0.065	39	0.1	6.383	A
C-AB	11	791	0.014	11	0.0	4.618	A
C-A	244			244			
A-B	3			3			
A-C	7			7			

2028 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2028 Base	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	409	100.000
B		✓	33	100.000
C		✓	547	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	9	400
	B	7	0	26
	C	494	53	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	8.39	0.1	A
C-AB	0.16	4.85	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	25	512	0.049	25	0.1	7.386	A
C-AB	73	817	0.090	73	0.2	4.837	A
C-A	339			339			
A-B	7			7			
A-C	301			301			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	493	0.060	30	0.1	7.774	A
C-AB	99	856	0.116	99	0.3	4.759	A
C-A	392			392			
A-B	8			8			
A-C	360			360			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	465	0.078	36	0.1	8.388	A
C-AB	145	913	0.159	145	0.4	4.694	A
C-A	457			457			
A-B	10			10			
A-C	440			440			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	465	0.078	36	0.1	8.389	A
C-AB	146	913	0.159	146	0.4	4.702	A
C-A	457			457			
A-B	10			10			
A-C	440			440			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	493	0.060	30	0.1	7.779	A
C-AB	100	857	0.116	100	0.3	4.770	A
C-A	392			392			
A-B	8			8			
A-C	360			360			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	25	512	0.049	25	0.1	7.398	A
C-AB	74	817	0.090	74	0.2	4.850	A
C-A	338			338			
A-B	7			7			
A-C	301			301			

2028 Base + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2028 Base + Development	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	20	100.000
B		✓	81	100.000
C		✓	346	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	7	13
	B	13	0	68
	C	329	17	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.15	7.13	0.2	A
C-AB	0.04	4.67	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	600	0.102	61	0.1	6.662	A
C-AB	19	790	0.024	19	0.0	4.669	A
C-A	242			242			
A-B	5			5			
A-C	10			10			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	598	0.122	73	0.1	6.852	A
C-AB	24	820	0.029	24	0.0	4.519	A
C-A	287			287			
A-B	6			6			
A-C	12			12			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	594	0.150	89	0.2	7.124	A
C-AB	32	863	0.037	32	0.1	4.333	A
C-A	349			349			
A-B	8			8			
A-C	14			14			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	594	0.150	89	0.2	7.127	A
C-AB	32	863	0.037	32	0.1	4.336	A
C-A	349			349			
A-B	8			8			
A-C	14			14			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	598	0.122	73	0.1	6.859	A
C-AB	24	820	0.029	24	0.0	4.520	A
C-A	287			287			
A-B	6			6			
A-C	12			12			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	600	0.102	61	0.1	6.675	A
C-AB	19	790	0.024	19	0.0	4.669	A
C-A	242			242			
A-B	5			5			
A-C	10			10			

2028 Base + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2028 Base + Development	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	413	100.000
B		✓	47	100.000
C		✓	570	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	13	400
	B	10	0	37
	C	494	76	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.11	8.80	0.1	A
C-AB	0.23	5.13	0.6	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	509	0.070	35	0.1	7.588	A
C-AB	105	816	0.129	104	0.3	5.053	A
C-A	324			324			
A-B	10			10			
A-C	301			301			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	489	0.086	42	0.1	8.050	A
C-AB	143	856	0.167	142	0.4	5.053	A
C-A	370			370			
A-B	12			12			
A-C	360			360			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	461	0.112	52	0.1	8.790	A
C-AB	209	912	0.229	208	0.6	5.123	A
C-A	419			419			
A-B	14			14			
A-C	440			440			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	461	0.112	52	0.1	8.797	A
C-AB	209	913	0.229	209	0.6	5.134	A
C-A	419			419			
A-B	14			14			
A-C	440			440			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	489	0.086	42	0.1	8.058	A
C-AB	143	856	0.167	144	0.4	5.070	A
C-A	369			369			
A-B	12			12			
A-C	360			360			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	509	0.070	35	0.1	7.602	A
C-AB	106	817	0.129	106	0.3	5.077	A
C-A	323			323			
A-B	10			10			
A-C	301			301			