

Hale Construction

**Proposed residential development of
200 dwellings at land off Leiros Park,
Neath Port Talbot**

TRANSPORT ASSESSMENT

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Applicant: Hale Construction

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1.0 INTRODUCTION

1.1 Background

1.1.1 Asbri Transport are appointed by Hale Construction Ltd to produce a Transport Assessment (TA) to accompany a planning application proposing the construction of a new residential development on greenfield land in the Rhyddings area of Neath. The proposed development will consist of 200 dwellings, of which 20 dwellings will be of affordable tenure.

1.1.2 The site is located on open land to the north-east of existing residential development accessed by Leiros Park Drive and Daphne Road. The application site is allocated in the Neath Port Talbot Local Development Plan (LDP) as a greenfield site for development of 200 residential dwellings.

1.1.3 A comprehensive Travel Plan also accompanies the planning submission which details measures, objectives and targets to ensure that sustainable travel to and from the development is both facilitated and maximised. This is the principal component of the development's Transport Implementation Strategy, (TIS) but there is also off-site highway works.

1.1.4 Both the Transport Assessment and Travel Plan have previously been submitted in draft to both the Highway and Local Planning Authority. The extensive scoping discussions and pre-application consultation with the LPA that have informed the methodology adopted for the Transport Assessment (abbreviated to TA hereafter) and HA are described below.

1.2 Scope of the report and pre-application dialogue with the Highway Authority.

1.2.1 There has been a significant level of pre-application consultation and scoping discussion with officers of both the Local Planning and Highway Authorities in the two-year period May 2016 to July 2018. This scoping dialogue that has been undertaken in line with best practice as advocated in Technical Advice Note 18: Transport (TAN 18) is summarised here.

1.2.2 An initial pre-application meeting was held with various officers (including highways) of Neath Port Talbot County Borough Council (NPTCBC) on 24th May

2016 where the proposed development was discussed in detail. The meeting included considerable discussion on highways and transport matters.

- 1.2.3 A formal pre-application response was then issued by the Authority on the 28th of June 2016 with advice for the proposed development. The response detailed the following with respect to the scope of the Transport Assessment:

‘The TA should incorporate all information in TAN 18, including paragraphs 3.4 to 3.6. In this respect, it is understood that you will be liaising further with us and our highway colleagues in respect of scoping of the TA.’

- 1.2.4 The pre-application response of 28th June 2016 also stated:

‘The Highways officer has identified that significant improvements are most likely to be required to the Cadoxton Roundabout on the A474 including road widening in order to mitigate the impacts of the proposed development.

- 1.2.5 In addition to the above, it is noted that that there are two points of access of the A474 (Daphne Road and Leiros Park Drive) which may also require improvements, subject to the findings of the required TA.’

- 1.2.6 The pre-application response also detailed that the access roads to the development should have a carriageway width of 6.5 metres and 2 metre footways on both sides of the carriageway.

- 1.2.7 The proposed scope of this TA was submitted to officers of NPT County Borough Council in August 2016. A response from the Highway Authority was received on 1 September 2016 which requested Asbri Transport to review the proposed vehicle trip generation rates, and detailed the committed development to be included within this TA. The response also queried the use of queue length data that was recorded during traffic surveys undertaken on 16th June 2016.

- 1.2.8 The TA Scoping Note and the response from the Highway Authority are included in full at **Appendix A**. The scoping note also contains the pre-application response letter in full. A Technical Note was submitted to the Highway Authority on 25 August 2016 which compared the June 2016 surveyed flows with 2008 flows that had been collected by NPTCBC.

- 1.2.9 In order to progress the TA with an agreed baseline traffic demand scenario a second, a full set of traffic and pedestrian surveys were undertaken on Tuesday 18 October 2016. These have been compared with the turning counts and queues recorded in June 2016, and whilst total volumetric demand through the surveyed network is similar the turning proportions at the junctions differ. October is a neutral month as defined by the Design Manual of Roads and Bridges (DMRB) and there were no unusual circumstances on the local highway network during the date of the surveys.
- 1.2.10 Asbri Transport met with officers of the Highway Authority on 20th January 2017 to discuss progress with the Transport Assessment. In response to this a meeting note was prepared and agreed by all attendees and is included at **Appendix B**.
- 1.2.11 Further, considerable scoping discussion occurred with the Highway Authority on such matters as trip generation rates, baseline traffic surveys, trip distribution methodology and assessment years during the period January – April 2017.
- 1.2.12 Neath Port Talbot Highways had undertaken their own traffic surveys of the study network adopted for the Transport Assessment in February 2017 and the Transport Assessment has been progressed with this traffic survey data.
- 1.2.13 The scoping exercise briefly described above concluded in the submission of a draft Transport Assessment and a draft Travel Plan in March 2017 and the submission of a further, second draft Transport Assessment in June 2017.
- 1.2.14 NPT highways officers responded that they were generally satisfied with the content of the Travel Plan dated March 2017, but questioned the level of modal shift detailed in the Travel Plan's targets.
- 1.2.15 It is understood that the Highway Authority confirmed to the Local Planning Authority that they were satisfied with the methodology used in the Transport Assessment on 22 June 2017.
- 1.2.16 A significant volume of traffic modelling has since been undertaken in 2018 to test various permutations of highway improvements to the A474 in the vicinity

of the application site. The outcome of these modelling exercises is reported in Section 6 of this Transport Assessment.

1.3 Structure of the report

1.3.1 Following this introductory chapter, the report is structured as follows:

- **Section 2** reviews the development proposals in relation to national and local planning policies;
- **Section 3** details the existing situation and reviews the recent accident history of the local highway network;
- **Section 4** outlines the development proposals;
- **Section 5** describes the likely demand generated by the development site;
- **Section 6** assesses the impact of the proposed development on the surrounding transport network; and,
- **Section 7** provides the conclusions of the report.

2.0 POLICY REVIEW

2.1 Introduction

- 2.1.1 This chapter reviews national and local transport related planning policy guidance that is relevant to the proposed development.

2.2 Wales Spatial Plan – People, Places, Futures

- 2.2.1 The Wales Spatial Plan – People, Places Future (WSP) – was originally adopted by the National Assembly for Wales in November 2004, and updated in 2008 to bring the WSP into line with One Wales [see below] and to give status to the Area work which has developed over the previous two years.

- 2.2.2 In Wales, spatial planning is the consideration of what can and should happen where. It is a principle of the WSP that development should be sustainable. Sustainable development is about improving well-being and quality of life by integrating social, economic and environmental objectives in the context of more efficient use of natural resources.

- 2.2.3 The purpose of the WSP is to ensure that what is done in the public, private and third sectors in Wales is integrated and sustainable, and that actions within an area support each other and jointly move towards a shared vision for Wales and for the different parts of Wales.

Achieving sustainable development

- 2.2.4 The WSP states that:

‘Citizens must be able to access job opportunities and public services – health, social services, education, etc. – if equality of opportunity is to be successfully promoted in Wales. This is particular concern for those who face barriers to accessibility, such as people on low incomes, young and old people, disabled people and those living in rural areas.’

2.2.5 The WSP also states that:

'In the context of responding to and mitigating the effects of climate change, the Wales Spatial Plan supports the development of spatially targeted responses. These include reducing the need to travel by co-locating jobs, housing and services, for instance, and changing behaviour in favour of 'greener' modes of travel, such as car sharing, public transport, walking and cycling.'

2.3 Planning Policy Wales (edition 10, December 2018)

2.3.1 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Assembly Government (the Assembly Government). It is supplemented by a series of Technical Advice Notes (TANs). Procedural advice is given in circulars and policy clarification letters.

2.3.2 PPW states that:

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

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

2.3.3 The overarching goal of The Welsh Government is to reduce reliance on single occupancy vehicles and support a modal shift to walking, cycling and public transport.

2.3.4 The Assembly Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by: enabling more sustainable travel choices, manage both the current and future transport network effectively and minimising the need to travel via single-occupancy private vehicles. This will be achieved through the integration:

- Within and between different types of transport;
- Between transport measures and land use planning;
- Between transport measures and policies to protect and improve the environment; and,
- Between transport measures and policies for education, health, social inclusion and wealth creation.

2.3.5 PPW states that:

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

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

2.3.6 In addition, PPW outlines:

‘Transport Assessments can be required for any proposed development if the planning authority considers that there is a justification or specific need.’

Promoting cycling and walking

2.3.7 PPW details the Welsh Government’s objective of promoting active travel and references the Active Travel (Wales) Act 2013. This Act is referenced below.

‘The Active Travel Act (Wales) 2013 makes walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or in order to access health, leisure or other services or facilities. The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities.’

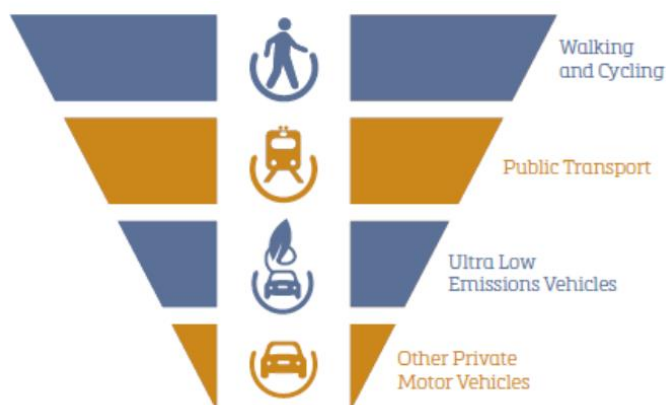
2.3.8 PPW also states that:

‘The planning system has an important role to play in promoting and supporting the delivery of the Active Travel Act and creating the right environments and infrastructure to make it easier for people to walk and cycle, including new and improved routes and related facilities.’

And,

‘Planning authorities should also seek to assist the completion of the national cycle network and key links to and from the network.’

2.3.9 PPW includes the following Hierarchy for Planning:



2.3.10 In relation to the sustainable transport hierarchy, PPW states that:

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

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

2.3.11 PPW also references the Active Travel Act 2013 which is discussed in further detail in sub-section 2.7 below.

Parking

2.3.12 In relation to parking, PPW details:

'Car parking provision is a major influence on how people choose to travel and the pattern of development...Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed.'

2.3.13 Additionally, PPW states:

'Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed. The needs of disabled people must be recognised and adequate parking provided for them.'

2.3.14 PPW notes that Local authorities are required to develop an integrated parking strategy which complies with the overall transport and locational policies of the development plan. Additionally, maximum levels of parking for broad classes of development should be established in conjunction with a threshold size of development above which such levels will apply.

- 2.3.15 Technical Advice Note 18 also details national planning policy on parking matters and this is described in sub-section 2.8.

2.4 One Wales: Connecting the nation

- 2.4.1 National transport policy for Wales is specified within the Wales Transport Strategy, One Wales: Connecting the Nation, which is supplemented by a series of Technical Advice Notes (TANs).

- 2.4.2 The goal of One Wales: Connecting the Nation is to:

'Promote sustainable transport networks that safeguard the environment while strengthening our country's economic and social life. The transport strategy identifies a series of high-level outcomes and sets out the steps to their delivery. The One Wales programme is working to achieve a nation with access for all, where travelling between communities and accessing services, jobs and facilities in different parts of Wales is both easy and sustainable, and which support the growth of our economy.'

2.5 Technical Advice Note 18: Transport (TAN18)

- 2.5.1 TAN 18 identifies that Planning Policy Wales and the Wales Transport Strategy both aim to secure the provision of transport infrastructure and services, which improve accessibility, build a stronger economy, improve road safety and foster more sustainable communities. To achieve this and the core objectives, the following initiatives relevant to the proposed development are:

- Reducing the need to travel;
- Promoting walking and cycling;
- Managing parking provision; and,
- Encouraging the location of development near other related uses to encourage multi-purpose trips.

- 2.5.2 Section 3.4 to 3.6 of TAN 18 references 'Accessible Housing Development', which in summary, seeks to ensure that housing development is sustainable in transport

and movement terms including maximising the opportunity for residents to walk and cycle to local facilities and public transport stops.

2.5.3 TAN 18 notes that where larger housing development applications require a Transport Assessment information on measures to encourage sustainable travel, (as detailed in TAN 18) shall be incorporated in the TA.

2.5.4 The Local Authority detailed in their pre-application response that they would seek a significant, development-related financial contribution towards extending a local bus service into the development. The Authority detailed that the financial contribution, to be paid over a three-year period would subsidise the extension of an existing service into the development.

2.5.5 Consequently, there has been preliminary discussion with South Wales Transport who operate the 150 service that currently serves Leiros Park. This discussion will continue during the planning process in conjunction with the Highway Authority.

2.5.6 It is understood that Service 150 currently enters the Leiros Park Estate and undertakes a three-point turning manoeuvre within the estate to exit and continue on its route. The geometric layout of the proposed development has been designed to accommodate bus movement, so that the service if extended into the proposed development will no longer have to undertake this manoeuvre.

2.5.7 Annex F of TAN 18 provided policy information regarding conditions requiring works in the highway. Paragraph F.3 of Annex F states,

“Developers will be required to pay the cost of any highway improvements where the need is directly created by their development. They should not, however, be required to pay for improvements to deal with existing deficiencies in the road system, which would not be made worse by the development. Works which are programmed for improvement by the highway authority may be brought forward to enable the development to proceed, but a financial contribution from the developer is generally required.”

2.6 Active Travel Act 2013 (Wales)

- 2.6.1 The Active Travel Act places a requirement on local authorities to continuously improve facilities for those who walk and cycle and to prepare information, such as maps, that identify current and potential future routes for their use.
- 2.6.2 The Act also requires highway authorities to have regard in the construction and improvement of highways to enhance provision for cyclists and pedestrians. The Active Travel Act makes provision for:
- Approved maps of existing active travel routes and related facilities in a local authority's area;
 - Approved integrated network maps of the new and improved active travel routes and related facilities needed to create integrated networks of active travel routes and related facilities in a local authority's area;
 - Requiring local authorities to have regard to integrated network maps in preparing transport policies and to make continuous improvements in the range and quality of active travel routes and related facilities; and,
 - Requiring the Welsh Ministers and local authorities, in constructing and improving highways, to have regard to the desirability of enhancing the provision made for walking and cycling.

2.7 Transport Implementation Strategy and conclusion to Policy Review

2.7.1 It is considered that the proposed development is fully in compliance with all relevant national and local planning and transport related planning policy guidance. The development is proposed in a sustainable location that is accessible to movement on the bus and rail networks and movement by non-motorised modes of transport.

2.7.2 The site is allocated in the Planning Authority's adopted Local Development Plan for residential development, which states,

The greenfield site adjoins an established residential area on the north-eastern edge of Bryncoch with good access to Neath Town Centre and the more local facilities and services on offer.

- 2.7.3 The significant level of pre-application scoping of transport assessment matters has identified what access arrangements and off-site highway works are required to ensure that the planning permission facilitates a successful development that *meets the needs of the developer, end user addressing impacts on neighbours and existing movements surrounding the site.*
- 2.7.4 The layout of the proposed development has been designed to accommodate bus movement by way of extending an existing, operational service. There has been preliminary discussion with South Wales Transport the current operator of service 150 regarding the extension of its route into the development.
- 2.7.5 The possible extension of the 150 bus service into the development site will further improve the site's public transport accessibility. This will be a matter for further discussion during the planning application determination process as to how any Section 106 financial contributions are prioritised. A bus stop within the development is shown on the application drawings.
- 2.7.6 A comprehensive Travel Plan also accompanies the planning submission which details measures and objectives to encourage and facilitate sustainable travel to and from the proposed development both by residents and their visitors. The measures and objectives of the Travel Plan are believed to be considered acceptable by officers of the Highway Authority.
- 2.7.7 The Travel Plan encompasses the principal objective and component of the Transport Implementation Strategy as required by guidance detailed in Planning Policy Wales Technical Advice Note 18: Transport.
- 2.7.8 Paragraph 9.7 of TAN 18 states:
- 'TISs resulting from the TA process are intended to incorporate all components of a Travel Plan and ensure these are integrated with design elements of new development.'*
- 2.7.9 In conclusion, it is considered that in transport and planning policy terms the planning application proposes 'accessible housing development' as defined in

paragraphs 3.4 to 3.6 in Planning Policy Wales Technical Advice Note 18:
Transport.

3.0 EXISTING SITUATION

3.1 Introduction

- 3.1.1 In order to assess the impact of the development site, it is necessary to establish the conditions that exist within the surrounding transport network. Therefore, this section of the report describes the current transport network.

3.2 Site location

- 3.2.1 The proposed development is to be situated on a greenfield site approximately 1.8km north of Neath town centre. The site is currently utilised as farmland and is irregular in shape, running in a north-east/south-west axis alignment.

- 3.2.2 The site is bounded to the north by farmland and Gilfach Quarry, to the east by Leiros Farm and Gilfach Road - a lane that runs north-south providing access to Gilfach Quarry. Leiros Parc Drive and Daphne Road abuts the site's southern boundary which also provide two access points to the development. To the west is dense woodland covering a steep topography, beyond that is Cwmbach Road and residential housing.

3.3 Highway network

- 3.3.1 The site location and the highway network within the vicinity of the proposed development are shown in **Figure 3.1**.

Leiros Parc Drive

- 3.3.2 Leiros Parc Drive is a two-way single carriageway road of approximate width and length of 7.3 metres and 515 metres respectively. It will form one of the two proposed main vehicular accesses to the development. It is currently used as an access road to six cul-de-sacs of residential housing which access it via individual priority junctions that differ in size.

- 3.3.3 Parking is permitted along the length of the road with footways for pedestrian movement and street lighting present.

- 3.3.4 The road provides access to Penywern Road (that is classified as the A474 in Neath Port Talbot's highway network) via a simple priority junction. Approximately 36m north of this junction is a signal-controlled pedestrian crossing. 33m south of the junction on the western side of the A474 is a further priority junction that provides access to residential housing.
- 3.3.5 There is a priority junction at the midpoint of Leiros Parc Road with Herons Way. This acts as a link road between Leiros Parc Road and Daphne Road which are the two main access roads to the planned development.

Daphne Road

- 3.3.6 Daphne Road forms a priority junction with the A474 approximately 310m south of the A474 junction with Leiros Parc Drive. It is a two-way single carriageway road, with an approximate width and length of 7m and 620m respectively. It provides access for eight cul-de-sacs of residential housing via individual junctions that differ in size.
- 3.3.7 The road forms a priority junction with the A474 and there is a ghosted right-turn lane provided on the A474.
- 3.3.8 Parking is permitted along the length of the road with footways for pedestrian on both sides and street lighting is present. Daphne Road accesses Penywern Road via two different junctions separated by approximately 120m. Both junctions slope down on their approach to Penywern Road.

Penywern Road (A474)

- 3.3.9 Penywern Road classified as the A474 is located to west of the application site and has a north-south alignment. It is the main arterial route providing access to Neath town centre from the nearby residential areas of Rhyddings and Brynoch. It also provides access to Pontardawe to the north.
- 3.3.10 Penywern Road at its southern end connects with Cadoxton roundabout that joins the A4230, Golwg-Y-Gamlas- access road to the Vale of Neath business park and Cadoxton Road which links the two main roundabouts in the vicinity.

- 3.3.11 To the north, Penywern Road there is a fork junction with slip way onto Main Road. Main Road is the minor road on this junction which provides access to the nearby Blarnhonddan Primary School. Penywern then joins Neath Road still on the A474.
- 3.3.12 The road has a 30mph speed limit with footways for pedestrian usage and street lighting either side. This speed limit lowers to 20mph approximately 80m north of the Leiros Parc Road junction in an area by the nearby school.
- 3.3.13 There is a signal-controlled pedestrian crossing with tactile paving and pedestrian refuge located approximately 45m north of the Leiros Park junction. Footways are present on both sides of the road. For a proportion of the road between Daphne Road and Blaenwern, the eastern footway is separated from the road by a grass verge over a distance of 260m.
- 3.3.14 It was noted during a site visit conducted on the 20th of January 2017 that there had been significant highway improvements undertaken along Penywern Road by Neath Port Talbot council. The highway improvements consist of traffic calming measures in the form of traffic islands and ghost island right turn lanes into Leiros Parc Drive, Daphne Road and Llewellyn Avenue priority junctions.

Cadoxton Road (A474)

- 3.3.15 Cadoxton Road is a two-way single carriageway road approximately 8.5m in width with a north east-south west alignment. It connects the two main roundabout junctions which are located approximately 120m apart. The roundabout junctions provide access to the A4230 and B4434 which provides access to Neath town centre.
- 3.3.16 On the highway link connecting the two roundabout junctions, the road provides access to six large residential dwellings that are all located on its northern side. Four of these are accessed by shared drives. There are 2 retail units located to the south of the road but these are accessed from the roundabout junction of the A474 and A4230.

- 3.3.17 At the link road's mid-point there is a signal-controlled pedestrian crossing with footways either side of the road for pedestrian use. There is a designated ambulance lay- bay on the northern side of Cadoxton Road which is demarcated by carriageway markings and is accompanied by highway signs.
- 3.3.18 The northernmost roundabout is conventional with the following 4 approach arms Penywern Road, Cadoxton Road (A4230) and Golwg-Y-Gamlas entering it. Each approach arm has a defection island providing a pedestrian refuge with tactile paving.
- 3.3.19 The southern roundabout is larger in size than the northern one. There are 3 separate arms entering the junction from the B4434, A474 and Cadoxton road with two lane access junctions.
- 3.3.20 There is provision at the roundabout junctions for pedestrians to cross to the traffic splitter islands where there are dropped kerbs. There are also dropped kerbs located on the adjacent footways.

3.4 Traffic surveys

- 3.4.1 In order to obtain the most recent traffic flows within the study area examined in this TA, classified turning/link counts were undertaken at the following locations:
1. Penywern Road/Leiros Parc Drive/Llygad-Yr-Haul staggered crossroads;
 2. Penywern Rd/Daphne Road/Llewellyn Avenue staggered crossroads;
 3. Penywern Rd/Cadoxton Rd/A4230 roundabout;
 4. Penywern Rd/A4230/Golwg-y-Gamlas roundabout; and,
 5. The Pelican crossing at the mid-point of Cadoxton Road.
- 3.4.2 Traffic surveys for the above junctions were undertaken on Thursday 06th October 2016. The maximum queues that formed on each approach to the roundabout junctions (numbers 3 & 4 above) were recorded at 5 minute increments during the surveyed period.
- 3.4.3 However, the queues recorded and traffic conditions generally were not considered by the Highway Authority to be representative of typical peak hour

network performance. Consequently, a further set of classified turning counts of all junctions detailed above were undertaken during the AM and PM peak periods on Tuesday 18th October 2016.

3.4.4 Following ongoing discussions with NPTCBC highways officers which has been summarised in Section 1 further traffic surveys were then undertaken by NPTCBC on Thursday 6th April 2017 during the AM and PM peak periods. It is the data collected in the NPTCBC 2017 traffic surveys that has been used in the highway network capacity modelling of the traffic impact of the development proposals undertaken in section 6 of this report.

3.4.5 The surveyed 2017 AM and PM baseline traffic flows are summarised in **Figure 3.2** and the data collected is presented in full in **Appendix C**. It should be noted that the traffic flows have been converted to Passenger Car Units (PCUs).

3.5 Public Transport

Bus Services

3.5.1 The application site is accessible to public transport, with the nearest bus stops located approximately 250m south of the application site's nearest boundary on Herons Way. Other stops are located on Penywern Road (A474) with more frequent services calling at these stops. Neath bus station is located within 1.7 km to the south of the application site. There are existing pedestrian routes providing safe access to the bus stops and station from the application site.

3.5.2 The bus station provides services to local destinations within Neath and destinations further afield such as Port Talbot, Swansea, Maesteg and Bridgend.

3.5.3 The pedestrian linkage between the application site and the bus station is detailed in the pedestrians and cyclists sub-section below.

3.5.4 **Table 3.1** shows the existing scheduled bus services at stops within the vicinity of the proposed development.

Route	Destination	First/Last	Frequency		
			Mon-Fri	Sat	Sun
5	Neath	10:07/14:07	Every 2 hrs	No service	No service
	Aberdulais	09:35/13:35	Every 2 hrs	No service	No service
56	Pontardawe	01:31/17:06	No Service	No Service	3 services/day
	Neath	11:27/18:02	No Service	No Service	3 services/day
161	Min Yr Awel	08:59/16:19	4 services/day	No Service	No Service
	Neath	11:15/16:05	3 services/day	No Service	No Service
164	Neath Victoria Gardens	08:44/12:49	2 services/day	No Service	No Service
	Crynant Business Park	11:29	1 service/day	No Service	No Service
256	Pontardawe	08:03/15:03	Hourly	No Service	No Service
	Neath	08:40/15:45	Hourly	No Service	No Service
X8	Banwen	08:08/18:05	Every 2 hrs	Every 2 hrs	No Service
	Neath	07:28/19:28	Every 2 hrs	Every 2 hrs	No Service

Table 3.1: Existing scheduled bus services in the local area

3.5.5 A map of local bus services and the location of Neath's bus station and railway station is detailed in **Figure 3.3**.

Rail

3.5.6 Neath Railway station is located approximately 1.7km to the south of the application site. The station is located on the Swansea to London Paddington line providing frequent inter-city services to Swansea to the west and, Port Talbot, Bridgend and Cardiff to the east and onwards to London Paddington.

3.5.7 Local services are also provided by Transport for Wales and these provide access to inter-mediate railway stations that are not served by the inter-city service between Swansea and London Paddington.

3.6 Pedestrian and cyclists

Pedestrians

3.6.1 The Chartered Institution of Highways and Transportation (CIHT) guidelines '*Providing for Journeys on Foot*' suggest that the desirable walking distance for

‘commuting/school’ walking trips is 500 metres, the acceptable distance is 1km, and 2km is the preferred maximum.

- 3.6.2 There are a number of local amenities including retail provision in the vicinity of the site due to its residential location near Neath town centre and other services and amenities that are located in the Cadoxton area.
- 3.6.3 A plot of local facilities/amenities within the vicinity of the proposed development is shown in **Figure 3.4**.
- 3.6.4 There is continuous footway provision connecting the application site to Neath town centre. There are footways either side of the access roads and pedestrian crossing provision by way of dropped kerbs at junction crossings. There is tactile paving, pedestrian refuges and dropped kerbs present on all arms of the Cadoxton roundabout. A signal-controlled pedestrian crossing is also located on Cadoxton Road.
- 3.6.5 As stated above, approximately 50m north of the Leiros park junction there is a signal controlled pedestrian crossing with tactile paving and pedestrian refuge. This provides opportunities for pedestrians with opportunities to cross the A474 safely to reach destinations to the north-west of the application site.

Cyclists

- 3.6.6 Cycling as a mode of travel is ever increasing given the growing trend of recreational cycling, and is seen as a key travel mode for mode shift away from the car. There are no formal cycle routes running directly past the site. However, there are several local cycle routes, both advisory and signposted, in proximity of the site that facilitate local connectivity as well as leading to national cycle route (NCN) 47.
- 3.6.7 NCN 47 of the National Cycle Network forms the main cycle route through Neath, running along the southern side of the River Neath through the town. It is a long-distance route starting at Newport and finishing at Fishguard passing through Carmarthen.

- 3.6.8 NCN 47 provides connections to NCN 4 which is a long-distance route between London and Fishguard via Reading, Bath, Bristol, Newport, Swansea, Carmarthen, Tenby, Haverfordwest and St. Davids.
- 3.6.9 The Port Talbot to Neath cycle route forms part of NCN routes 4 and 47. This 9.5-mile route starts at Port Talbot and routes to Neath Town Centre. Port Talbot Parkway and Neath railway station are within proximity to this cycle route.
- 3.6.10 In addition, NCN 46 is currently being constructed, which will form a new long distance route connecting Neath to towns such as Brynmawr, Abergavenny and Hereford along its route when complete. The entire route will provide a connection between Neath and Bromsgrove and the many towns along its route. **Figure 3.5** shows local cycle infrastructure within the vicinity of the site.

3.7 Highway safety

- 3.7.1 This section of the report reviews collision data reports, provided by Neath Port Talbot County Borough Council (NPTCBC). It should be noted that road safety focused improvements in the form of engineering measures, including new carriageway markings, ghosted right-turn provision and several traffic islands were implemented on the Pen y Wern Road/A474 road corridor in late 2016. All of the collision data assessed in this report pre-dated the implementation of these highway safety improvements.
- 3.7.2 The 2016 highway safety works included the provision of ghost-island right-turning lanes at all side road junctions with the A474 from the 'Lidl' roundabout junction in the south to the junction of Leiros Park Drive to the north.
- 3.7.3 The highway works allow safer right-turning movements from the A474 to its side road junctions and will also have a restraining effect on through traffic speeds as the width of the running carriageway has been reduced by the series of traffic islands and the presence of hatched, central carriageway markings.

Analysis

- 3.7.4 Personal injury collision (PIC) data has been obtained from Crashmap for the five-year period 2015-2019. The location and severity of the collisions within the study area is shown in **Figure 3.6**.

Year	No. of casualties			Casualties	Vehicles involved
	Fatal	Serious	Slight		
2015	0	0	3	4	5
2016	0	0	7	8	15
2017	0	0	1	2	2
2018	0	0	3	3	5
2019	0	0	1	1	1
Total	0	0	15	18	28

Table 3.2: Summary of PIC data

- 3.7.5 It is evident from **Table 3.2** that there has been a total of 15 collisions, resulting in 18 casualties, within the geographic cordon assessed for the period 2015-2019.

3.8 Fatal and serious collisions

- 3.8.1 It should be noted that no serious or fatal collisions have occurred within the study area within the time frame indicated.

3.9 Slight collisions

3.9.1 A total of 35 collisions were recorded resulting in casualties sustaining slight injuries. **Table 3.4** below shows the likely causation factors of the 27 slight collisions which have been supplied from NPTCBC.

Collision reference	Location	Causation/contributory factors
2016621600492	Neath Road	Unknown
2018621800901	Neath Road	Failed to look properly (Driver/Rider - Error)
2015621500095	Neath Road	Failed to look properly (Driver/Rider - Error)
2018621800181	Pen Y Wern Rd	Failed to look properly (Driver/Rider - Error)
2016621600248	Pen Y Wern Rd	Failed to look properly (Driver/Rider - Error)
2016621601410	Cadoxton Rd	Failed to look properly (Driver/Rider - Error)
2016621600864	Cadoxton Rd	Failed to look properly (Driver/Rider - Error)
2019621900782	Cadoxton Rd	Vehicle moving off failed to look properly and struck pedestrian
2017621700738	Cadoxton Rd	Driver collided with rear of another vehicle
2016621601107	Cadoxton Rd	Driver/rider error
2018621800452	Cadoxton Rd	Vehicle struck pedestrian crossing from drivers nearside
2016621601090	Neath Abbey Road	Failed to look properly (Driver/Rider - Error)
2016621601849	B4434	Pedal cyclist has collided with vehicle
2015621501018	Neath Abbey Road	Driver collided with crash barrier
2015621500713	Pen Y Wern Rd	Failed to judge other person's path/speed (Driver/Rider - Error)

Table 3.4 Causation/contributory factors of slight collisions.

3.9.2 The PIC reports obtained from Crashmap are appended in full at **Appendix D**.

4.0 DEVELOPMENT PROPOSALS

4.1 Introduction

4.1.1 As outlined in Section 1, the outline planning application proposes the development of up to 200 residential dwellings, split between 180 private and 20 affordable dwellings on greenfield land north of Neath Town Centre.

4.1.2 The proposed site layout is shown in **Appendix E**.

4.1.3 The development is to be constructed in 4 phases, with phase 1 delivering 46 units, phase two, 47 units, phase three, 34 units and phase four, the final 73 units.

4.2 Access

Vehicular access

4.2.1 As part of the development it is proposed to provide two points of vehicular access; one access from Leiros Parc Drive, and the other from Daphne Road. These accesses will form an extension to both existing carriageways, connecting with the proposed development's internal layout.

4.2.2 A short section of carriageway throttling is proposed on Leiros Park Drive where the new estate road connects with Leiros Park Drive.

4.3 Service vehicle and bus access

4.3.1 The internal layout of the proposed development has been designed with sufficient width and geometry to accommodate bus movement. A standard 12m bus may enter the site via Daphne Road and successfully navigate the estate road and exit to Leiros Park Drive.

4.3.2 Swept-path analysis has been undertaken of the internal route to test the bus route described above and the turning provision for a refuse collection vehicle.

4.3.3 The swept-path analysis of the internal site layout is included at **Appendix F**.

- 4.3.4 As is evident a refuse collection vehicle may turn within all turning heads within the development. A 12m bus has also been successfully tracked using the section of the proposed estate road that links Daphne Road with Leiros Park Drive.

4.4 Pedestrian and cyclist access

- 4.4.1 As shown in Appendix E, the proposed vehicular accesses will also provide the main point of access for pedestrians and cyclists with 2m wide footways along both sides of the access roads.
- 4.4.2 All footways will not exceed a maximum gradient of 1:12.
- 4.4.3 There are existing footpath links routing through the site that are to be maintained, these are situated along the southern boundary of the site, routing north and east.
- 4.4.4 The development will provide the necessary pedestrian and cyclist infrastructure within the site to encourage residents to walk and cycle, with 2m wide footways included on one or both sides of the carriageway for its entire length and, where appropriate, shared use private drives also included, prioritising the needs of pedestrians and cyclists over that of vehicles.

4.5 Parking provision

Car parking

- 4.5.1 On-site parking provision for the development is proposed in the context of the parking standards of the Highway Authority and Local Planning Authority, published in the Supplementary Planning Guidance dated July 2016.
- 4.5.2 It is proposed that all resident spaces will be provided within the curtilage of the site, either on plot by way of garages or in allocated bays adjacent to the properties. All visitor bays will also be provided within the curtilage of the development.
- 4.5.3 Based on the adopted standards, **Table 4.1** below outlines the number of parking spaces by dwelling type as per the Neath Port Talbot Parking Guidelines (2016).

Dwelling type	Parking standard (max. 3 per dwelling)	No. of units	Maximum Parking provision
Affordable			
1 bed	1 space per bedroom	6	6
2 bed	1 space per bedroom	10	20
3 bed	1 space per bedroom	4	12
Private			
2 bed	1 space per bedroom	16	32
3 bed	1 space per bedroom	58	174
4 bed	1 space per bedroom	74	222
5 bed	1 space per bedroom	21	63
6 bed	1 space per bedroom	11	33
Visitor			
	1 space per 5 dwellings	200	40
Total			602

Table 4.1: Car parking provision – residential development

- 4.5.4 Based on the application of the Council's Parking Standards the maximum level of parking provision required is 602 residential car parking spaces and 40 visitor spaces.
- 4.5.5 The Neath Port Talbot Parking Guidelines (2016) detail at paragraph 4.5: 'For developments where clear evidence has been supplied that car ownerships levels will be lower than normal, a more flexible approach to numbers of parking spaces may be taken.'
- 4.5.6 Statistical Bulletin (SB100/2013) 'People and Licensing and Vehicle Ownership, 2012' states that 23% of households in Wales do not have access to a car, however, this figure rises substantially to 53% of households that are housing association (affordable dwellings) accommodation as proposed in the planning application.
- 4.5.7 It is therefore considered that car ownership levels may be lower for the 20 dwellings that consist of the affordable element of the development.
- 4.5.8 Car parking at the proposed development is to be provided in accordance with Neath Port Talbot's maximum parking standards as identified above.

Cycle parking

- 4.5.9 Cycle parking at the proposed development will be provided in accordance with NPTCBC 'Parking Standards' contained within the consultation draft of the Supplementary Planning Guidance (July 2016), within the Local Development Plan.
- 4.5.10 This will generally be provided within the curtilage of the individual dwellings.
- 4.5.11 Note D.6 of the cycle parking standards states:

'All residential developments must be accessible by cycles and cycle storage must be a factor of dwelling design. In appropriate circumstances, convenient communal facilities may be provided.'

5.0 TRAVEL CHARACTERISTICS

5.1 Introduction

5.1.1 This section of the report outlines the likely volumes of traffic generated by the proposed (residential) use and identifies the likely impact of the proposals on the surrounding network.

5.1.2 As detailed in the preceding section of the report, the planning application seeks permission for the development of 200 dwellings, of which 20 are to be affordable.

5.2 Trip generation

5.2.1 The trip generation for the proposed development has been derived in relation to the anticipated split of private and affordable housing tenure. There was considerable discussion with officers of the Highway Authority regarding the vehicular trip generation rates to be used in the Transport Assessment during the scoping process.

5.2.2 The vehicle trip generation rates have been obtained from the TRICS 7.3.2 trip generation database. The use of these vehicle trip generation rates has been agreed with officers of the Highway Authority in pre-application scoping discussions.

5.2.3 Sites were selected on the basis of the following criteria:

Houses

- Land use: Residential – Mixed private/affordable housing;
- Survey days: Monday-Friday;
- Number of units: 82 to 285 units; and,
- Location of development: UK, excluding Greater London, Northern Ireland and Republic of Ireland.

5.2.4 The peak hour vehicle arrival/departure profiles are set out in **Appendix G** and summarised in **Table 5.1** below.

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.159	0.446	0.605	32	89	121
1700-1800	0.332	0.181	0.513	64	36	100

Table 5.1: Vehicle trip generation – 200 dwellings

5.2.5 It is evident from Table 5.1 that, in total, based on 200 residential units, the development could generate 121 vehicle movements (two-way) in the AM peak period and 100 vehicle movements (two-way) in the PM peak period.

5.3 Distribution and assignment of development traffic

5.3.1 The development traffic has been distributed and assigned to the local highway network on the basis of existing traffic flow movements at the surveyed junctions.

5.3.2 The vehicle trip distribution methodology was agreed with the Highway Authority during pre-application scoping discussions.

5.3.3 The percentage distribution has been carried out based on the site access locations. The individual percentage distribution figures for the access locations are shown in **Figure 5.1, 5.2 and 5.3** and the corresponding development trips assigned to the study network for 50 houses and 200 houses are shown in **Figures 5.4 to 5.8**.

5.4 Future base traffic flows

5.4.1 The impact of the development has been assessed for an opening year of 2023 and a future year of 2035 (planning application submission plus 15 years). In addition, a further interim assessment year of 2025 has been used to assess the impact of the traffic generation of 50 units, which have been assumed to have been built and occupied by that date.

5.4.2 In order to obtain the base traffic flows (i.e. with no development traffic) in 2023, 2025 and 2035, the baseline traffic flows (2017) have been factored using NTM growth factors. The growth factors were generated using Tempro 7. The middle layer super output areas covering the site area and assessed junctions were used. These were Neath Port Talbot; 006,007 and 008.

The factors applied to the 2017 baseline surveyed flows are identified in **Table 5.2** below.

Period	Level	Name	AM	PM
2017-2023	W02000204	Neath Port Talbot 006	1.0518	1.0495
	W02000205	Neath Port Talbot 007	1.0538	1.0539
	W02000206	Neath Port Talbot 008	1.0741	1.0702
	Average		1.060	1.058
2017-2025	W02000204	Neath Port Talbot 006	1.0664	1.0641
	W02000205	Neath Port Talbot 007	1.071	1.0713
	W02000206	Neath Port Talbot 008	1.0953	1.0909
	Average		1.078	1.075
2017-2035	W02000204	Neath Port Talbot 006	1.1342	1.1314
	W02000205	Neath Port Talbot 007	1.1531	1.1548
	W02000206	Neath Port Talbot 008	1.1955	1.1906
	Average		1.161	1.159

Table 5.2: NTM growth factors

5.4.3 The 2023, 2025 and 2035 base traffic flows are set out in **Figures 5.9, 5.10 and 5.11** respectively.

5.4.4 The Tempro growth factors will include for traffic from strategic committed development sites which are included in the LDP including the Land at Rhos site in Neath (Ref: H1/28). As such the inclusion of the committed development as a standalone site would result in double counting.

5.5 Final future traffic flows

5.5.1 The final future traffic flows have been obtained by combining the development flows (see Figure 5.4 & 5.8) with both the 2023, 2025 and 2033 base traffic flows. The 2023, 2025 and 2033 'with development' traffic flows are set out in **Figures 5.12, 5.13 and 5.14** respectively.

6.0 IMPACT OF THE DEVELOPMENT PROPOSALS

6.1 Introduction

6.1.1 This section of the report identifies the impact of the development proposals on the operational performance of the surrounding highway network, and identifies any mitigation measures to reduce the impact of development generated traffic, should these be required.

6.1.2 As has been detailed earlier in this report there has been extensive highway capacity assessments undertaken during the pre-application process to determine the optimum off-site highway works.

6.1.3 The following six junctions have been assessed:

1. Penywern Road/Leiros Parc Drive Priority T junction;
2. Penywern Road/Llygad Yr Haul Priority T junction;
3. Penywern Road/Daphne Road N Priority T junction
4. Penywern Road/Daphne Road/Llewellyn Road staggered crossroads;
5. Penywern Road/A4230/Golwg-Y-Gamlas/Cadoxton Road roundabout; and,
6. Cadoxton Road/B4434/Cadoxton Road roundabout.

6.1.4 The junctions identified above been assessed for the AM peak period of 0800-0900 and the PM peak period 1630-1730. As detailed earlier in the TA, the traffic flows collected by NPTCBC on 6th April 2017 have been assessed to derive the highway network peak periods adopted for the capacity assessments that follow.

6.1.5 A plan showing the location of the assessed junctions is shown in **Figure 6.1**.

6.2 Percentage Impact Assessment

6.2.1 In addition, the capacity modelling of junction performance, percentage impact analysis has been undertaken to determine the impact of the proposed development as shown in **Table 6.1**.

Junction	Percentage Impact					
	2023 + 50 houses		2025 + 200 houses		2035 + 200 houses	
	AM	PM	AM	PM	AM	PM
Penywern Road/A4230/Golwg y Gamlas/Cadoxton Road roundabout						
Penywern Rd	1.0%	0.9%	4.0%	3.7%	3.7%	3.5%
A4230	0.4%	0.3%	1.4%	1.2%	1.3%	1.1%
Golwg y Gamlas	0.3%	0.2%	1.1%	0.7%	1.0%	0.7%
Cadoxton Rd	0.7%	0.6%	2.7%	2.3%	2.5%	2.1%
Cadoxton Road/B4434 roundabout						
Cadoxton Rd (N)	0.7%	0.5%	2.9%	2.2%	2.7%	2.1%
B4434	0.4%	0.3%	1.6%	1.2%	1.5%	1.1%
Cadoxton Rd (SW)	0.4%	0.2%	1.6%	1.0%	1.5%	0.9%
Penywern Road/Leiros Parc Drive						
Penywern Road (N)	0.8%	0.9%	3.1%	3.9%	2.9%	3.6%
Leiros Parc Drive	29.7%	22.1%	53.6%	40.1%	49.8%	37.2%
Penywern Road (S)	1.3%	1.1%	4.0%	3.5%	3.7%	3.3%
Llygad-Yr-Haul/Penrywern Road T						
Penywern Road (N)	1.3%	1.1%	4.1%	3.7%	3.8%	3.4%
Llygad-Yr-Haul	0.6%	0.4%	2.2%	1.9%	2.0%	1.8%
Penywern Road (S)	1.1%	0.9%	4.1%	3.6%	3.8%	3.4%
Penywern Road/Daphne Road (N)						
Penywern Road (N)	1.1%	0.9%	4.0%	3.6%	3.7%	3.3%
Daphne Road (N)	0.0%	0.0%	102.2%	78.1%	94.9%	72.5%
Penywern Road (S)	1.1%	0.9%	4.1%	3.6%	3.8%	3.4%
Penywern Road/Daphne Road (S)/Llewellyn Road staggered crossroads						
Penywern Road (N)	1.0%	0.9%	3.8%	3.5%	3.6%	3.2%
Daphne Road (N)	0.0%	0.0%	90.2%	85.9%	83.8%	79.7%
Penywern Road (S)	1.0%	0.9%	2.2%	1.9%	2.0%	1.8%
Llewellyn Avenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 6.1: Percentage Impact Assessment

- 6.2.2 As shown within Table 6.1, the proportionate effect of the development traffic at the arms of the junctions closest to the site are the greatest, with the maximum impact of development traffic occurring at the Penywern/Daphne Road (N) junction during the 2023 AM peak period.
- 6.2.3 The impact of development traffic gradually decreases as distance from the site increases as vehicles leave the network.
- 6.2.4 The percentage impact on each arm of the network in the 2023, 2025 and 2035 scenarios can be seen in **Figures 6.2, 6.3 and 6.4** respectively.

6.2.5 A threshold for assessment of +5% has been used. Where the effect of the development proposals is greater than 5%, detailed junction modelling work is undertaken to quantify the effect in terms of queue lengths and junction capacity.

6.2.6 It has also been requested by the local highway authority that the Penywern Road/A4230/Golwg y Gamlas/Cadoxton Road roundabout and Cadoxton Road/B4434 roundabout are assessed in further detail.

6.3 Junction capacity assessments

The following section of the report details the capacity assessments undertaken using the traffic flows and the predicted vehicle trip generation as derived in the previous section of the Transport Assessment.

Penywern Road/Leiros Parc Drive priority junction

6.3.1 The operation of the Penywern Road/Leiros Parc Drive priority junction has been assessed using the TRL programme Junctions 9. The results of the analysis are presented in **Appendix H** and summarised in **Table 6.2** below.

Approach arm	No Development				With Development			
	0800-0900		17:00-18:00		0800-0900		17:00-18:00	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
2017 – baseline scenario								
Leiros Parc	0.20	0.2	0.08	0.1				
Penywern Rd	0.04	0.0	0.10	0.1				
2023 – Year of opening (50 houses)								
Leiros Parc	0.22	0.3	0.08	0.1	0.30	0.4	0.11	0.1
Penywern Rd	0.05	0.0	0.10	0.1	0.06	0.1	0.12	0.1
2025 – Future year assessment (200 houses)								
Leiros Parc	0.23	0.3	0.09	0.1	0.38	0.6	0.14	0.2
Penywern Rd	0.05	0.1	0.11	0.1	0.07	0.1	0.14	0.2
2035 – Future year assessment (200 houses)								
Leiros Parc	0.27	0.4	0.11	0.1	0.44	0.8	0.16	0.2
Penywern Rd	0.06	0.1	0.12	0.1	0.08	0.1	0.16	0.2

Table 6.2: Junctions 9 (PICADY) – Summary of results

6.3.2 It can be seen from Table 6.2 that the Penywern Road/Leiros Parc Drive priority junction operates with sufficient capacity in all assessment scenarios.

Penywern Road/Llygad Yr Haul priority junction

- 6.3.3 The operation of the Penywern Road/Llygad Yr Haul priority junction has been assessed using the TRL programme Junctions 9. The results of the analysis are presented in **Appendix I** and summarised in **Table 6.3** below.

Approach arm	No Development				With Development			
	0800-0900		17:00-18:00		0800-0900		17:00-18:00	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
2017 – baseline scenario								
Llygad Yr Haul	0.64	1.7	0.39	0.6				
Penywern Rd	0.20	0.3	0.07	0.1				
2023 – Year of opening (50 houses)								
Llygad Yr Haul	0.73	2.5	0.43	0.7	0.74	2.6	0.44	0.8
Penywern Rd	0.22	0.3	0.08	0.1	0.22	0.3	0.08	0.1
2025 – Future year assessment (200 houses)								
Llygad Yr Haul	0.76	2.8	0.45	0.8	0.81	3.6	0.47	0.9
Penywern Rd	0.23	0.3	0.08	0.1	0.24	0.3	0.08	0.1
2035 – Future year assessment (200 houses)								
Llygad Yr Haul	0.91	2.8	0.45	0.8	0.98	9.4	0.56	1.2
Penywern Rd	0.25	0.3	0.08	0.1	0.26	0.4	0.09	0.1

Table 6.3: Junctions 9 (PICADY) – Summary of results

- 6.3.4 It can be seen from Table 6.3 that although the Penywern Road / Llygad Yr Haul junction operates close to theoretical capacity in the 2035 Base + Development scenario in the AM peak period that the junction remains within theoretical capacity with limited queuing and delay occurring at the junction.
- 6.3.5 It is also considered that the capacity constraints at this junction are due to the background growth causing some entry starvation for right turning movements.

Penywern Road/Daphne Road priority junction

- 6.3.6 The operation of the Penywern Road/Daphne Road priority junction has been assessed using the TRL programme Junctions 9. The results of the analysis are presented in **Appendix J** and summarised in **Table 6.4**.

Approach arm	No Development				With Development			
	0800-0900		17:00-18:00		0800-0900		17:00-18:00	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
2017 – baseline scenario								
Daphne N	0.00	0.0	0.00	0.0				
Penywern Rd	0.02	0.0	0.01	0.0				
2023 – Year of opening (50 houses)								
Daphne N	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Penywern Rd	0.02	0.0	0.01	0.0	0.02	0.0	0.01	0.0
2025 – Future year assessment (200 houses)								
Daphne N	0.00	0.0	0.00	0.0	0.04	0.0	0.02	0.0
Penywern Rd	0.02	0.0	0.01	0.0	0.02	0.0	0.02	0.0
2035 – Future year assessment (200 houses)								
Daphne N	0.00	0.0	0.00	0.0	0.05	0.0	0.02	0.0
Penywern Rd	0.02	0.0	0.01	0.0	0.02	0.0	0.02	0.0

Table 6.4: Junctions 9 (PICADY) – Summary of results

- 6.3.7 It can be seen from Table 6.4 that the Penywern Road/Daphne Road priority junction operates with sufficient capacity in all assessment scenarios.

Penywern Road/Daphne Road/Llewellyn Avenue staggered crossroads

- 6.3.8 The operation of the Penywern Road/Daphne Road/Llewellyn Avenue staggered crossroads has been assessed using the TRL programme Junctions 9. The results of the analysis are presented in **Appendix K** and summarised in **Table 6.5**.

Approach arm	No Development				With Development			
	0800-0900		17:00-18:00		0800-0900		17:00-18:00	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
2017 – baseline scenario								
Daphne S	0.10	0.1	0.03	0.0				
Penywern Rd	0.03	0.0	0.01	0.0				
Llewellyn	0.00	0.0	0.04	0.0				
Penywern Rd	0.03	0.0	0.06	0.1				
2023 – Year of opening (50 houses)								
Daphne S	0.11	0.1	0.04	0.0	0.11	0.1	0.04	0.0
Penywern Rd	0.03	0.0	0.02	0.0	0.03	0.0	0.02	0.0
Llewellyn	0.00	0.0	0.05	0.0	0.00	0.0	0.05	0.0
Penywern Rd	0.04	0.0	0.06	0.1	0.04	0.0	0.06	0.1
2025 – Future year assessment (200 houses)								
Daphne S	0.11	0.1	0.04	0.0	0.27	0.4	0.09	0.1
Penywern Rd	0.03	0.0	0.02	0.0	0.03	0.0	0.02	0.0
Llewellyn	0.00	0.0	0.05	0.1	0.00	0.0	0.05	0.1
Penywern Rd	0.04	0.0	0.06	0.1	0.05	0.1	0.10	0.1
2035 – Future year assessment (200 houses)								
Daphne S	0.12	0.1	0.04	0.0	0.31	0.4	0.10	0.1
Penywern Rd	0.03	0.0	0.02	0.0	0.03	0.0	0.02	0.0
Llewellyn	0.00	0.1	0.05	0.1	0.00	0.0	0.06	0.1
Penywern Rd	0.04	0.0	0.07	0.1	0.06	0.1	0.10	0.1

Table 6.5: Junctions 9 (PICADY) – Summary of results

6.3.9 It can be seen from Table 6.5 that the Penywern/Daphne Road/Llewellyn Avenue staggered crossroads operates with sufficient capacity in all assessment scenarios.

**Cadoxton Road/B4434 roundabout (Roundabout A) and Penywern
Road/A4230/Golwg-Y-Gamlas/Cadoxton Road roundabout (Roundabout B)**

- 6.3.10 The operation of the Cadoxton Road/B4434 roundabout and Penywern Road/A4230/Golwg-Y-Gamlas/Cadoxton Road roundabout have been assessed using the TRL programme Junctions 9. The results of the analysis are presented in **Appendix L** and summarised in **Table 6.6** below.

Approach arm	No Development				With Development			
	0800-0900		17:00-18:00		0800-0900		17:00-18:00	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
2017 – baseline scenario								
Roundabout A								
Cadoxton North	0.88	6.8	0.64	1.8				
B4434	0.37	0.6	0.48	0.9				
Cadoxton South	0.49	1.0	0.80	3.9				
Roundabout B								
Cadoxton East	0.63	1.7	0.41	0.7				
Golwg Y Gamlas	0.18	0.2	0.29	0.4				
Cadoxton West	0.62	1.6	1.03	31.8				
Penywern Road	0.89	7.2	0.58	1.4				
2023 – Year of opening (50 houses)								
Roundabout A								
Cadoxton North	0.95	12.1	0.69	2.2	0.95	12.9	0.69	2.2
B4434	0.39	0.6	0.52	1.1	0.39	0.6	0.52	1.1
Cadoxton South	0.52	1.1	0.86	5.9	0.52	1.1	0.87	6.0
Roundabout B								
Cadoxton East	0.69	2.2	0.45	0.8	0.70	2.3	0.45	0.8
Golwg Y Gamlas	0.21	0.3	0.32	0.5	0.22	0.3	0.32	0.5
Cadoxton West	0.66	1.9	1.10	60.2	0.67	2.0	1.11	64.4
Penywern Road	0.95	12.7	0.62	1.6	0.96	14.4	0.62	1.6
2025 – Future year assessment (200 houses)								
Roundabout A								
Cadoxton North	0.96	14.6	0.70	2.3	0.98	18.3	0.71	2.4
B4434	0.40	0.7	0.53	1.1	0.41	0.7	0.54	1.2
Cadoxton South	0.53	1.1	0.88	6.8	0.54	1.2	0.90	7.9
Roundabout B								
Cadoxton East	0.71	2.4	0.46	0.8	0.73	2.6	0.47	0.9
Golwg Y Gamlas	0.22	0.3	0.33	0.5	0.23	0.3	0.34	0.5
Cadoxton West	0.67	2.0	1.12	70.0	0.69	2.2	1.16	88.5
Penywern Road	0.97	15.5	0.63	1.7	1.02	28.3	0.64	1.8
2035 – Future year assessment (200 houses)								
Roundabout A								
Cadoxton North	1.02	31.7	0.77	3.3	1.03	33.9	0.78	3.4
B4434	0.43	0.8	0.57	1.3	0.44	0.8	0.59	1.4
Cadoxton South	0.58	1.4	0.98	18.7	0.59	1.4	1.00	24.2
Roundabout B								
Cadoxton East	0.78	3.4	0.50	1.0	0.79	3.6	0.51	1.1
Golwg Y Gamlas	0.26	0.3	0.37	0.6	0.27	0.4	0.38	0.6
Cadoxton West	0.73	2.7	1.22	118.9	0.75	2.9	1.26	146.7
Penywern Road	1.05	41.8	0.68	2.1	1.10	65.6	0.69	2.2

Table 6.6: Junctions 9 (ARCADY) – Summary of results

Cadoxton Road/B4434 roundabout (A)

- 6.3.11 It can be seen from Table 6.5 that the Cadoxton Road/B4434 roundabout junction operates over its theoretical capacity in the 2035 forecast year scenario without the inclusion of development traffic. As such, it is not the traffic associated with the development that would drive the junction over its theoretical capacity.
- 6.3.12 It is also demonstrated that the junction has a minor impact on the operation of the junction with the inclusion of traffic associated with the development only increasing the RFC value by a maximum of 0.2% despite the exponential impact which would be experienced as a result of the junction operating close to or at theoretical capacity.
- 6.3.13 The capacity constraints at this roundabout appear to occur on the Cadoxton Rd North arm of the junction which links this roundabout to the neighbouring Penywern Rd roundabout.

Penywern Road/A4230/Golwg-Y-Gamlas/Cadoxton Road roundabout (B)

- 6.3.14 It can be seen from Table 6.5 that the Cadoxton Road/B4434 roundabout exceeds its maximum theoretical capacity in the 2017 baseline (no development) scenario with a maximum RFC of 1.03 and a mean queue of 32 PCUs.
- 6.3.15 The inclusion of the development traffic generally only increases the RFC by 0.4 to 0.5% despite the exponential impact which would be associated with the operation of the junction in conditions where flow exceeds capacity.
- 6.3.16 It is therefore concluded that the Cadoxton Road/B4434 roundabout junction operates over capacity irrespective of the addition of development generated traffic.
- 6.3.17 The capacity constraints at this roundabout appear to occur on the Cadoxton Rd West arm of the junction which links this roundabout to the neighbouring B4434 roundabout as well as the Penywern Rd arm to the north.

6.4 Mitigation

- 6.4.1 Based on the analysis carried out in section 6.3 of this TA both the Cadoxton Road/B4434 roundabout and the Penywern Road/A4230/Golwg-Y-Gamlas/Cadoxton Road roundabout exceed operational capacity in the baseline scenarios without the inclusion of the development.
- 6.4.2 Capacity constraints at these two roundabouts have previously been highlighted within a study carried out by Arup in 2013.
- 6.4.3 The ARUP report stated that, to achieve additional queueing capacity, any modification to the existing roundabouts would require the available section of verge along the southern edge of Cadaxton Road.
- 6.4.4 NPTCBC also confirmed that any such improvement would need to be achieved as part of a dualling of the section of Cadoxton Road link between the two roundabouts.
- 6.4.5 **Appendix M** shows a drawing produced by CB3 Consult based on an initial design prepared by Asbri Transport, showing localised widening of the carriageway between both roundabouts, creating a 2-lane approach into both junctions. The existing pedestrian crossing has been retained. This design has been referred to as the Option 4B improvement.
- 6.4.6 The Option 4(B) improvements include two-lane flared approaches to the northern and southern roundabouts, with a two-lane approach from the existing pedestrian crossing in a northbound and southbound direction respectively.
- 6.4.7 The operation of both roundabouts has been assessed using the TRL programme Junctions 9 to assess the predicted performance of the highway network if the highway improvements (discussed above) and as detailed on Appendix L were made.
- 6.4.8 The results of the analysis are presented in **Appendix N** and summarised in **Table 6.7**.

Approach arm	No Development				With Development			
	0800-0900		17:00-18:00		0800-0900		17:00-18:00	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
2035 – Future year assessment (200 houses) - Option 4 (B) improvement								
Roundabout A								
Cadoxton North	0.77	3.3	0.51	1.1	0.79	3.7	0.57	1.3
B4434	0.47	0.9	0.56	1.4	0.48	1.0	0.62	1.6
Cadoxton South	0.49	1.0	0.73	3.1	0.49	1.0	0.82	4.5
Roundabout B								
Cadoxton East	0.68	2.1	0.40	0.7	0.71	2.4	0.75	2.9
Golwg Y Gamlas	0.20	0.2	0.26	0.4	0.21	0.3	0.30	0.4
Cadoxton West	0.37	0.6	0.56	1.4	0.38	0.6	0.63	1.7
Penywern Road	0.89	7.4	0.54	1.3	0.93	11.2	0.61	1.5

Table 6.7: Junctions 9 (ARCADY) – Summary of results Option 4B Improvement

- 6.4.9 With the mitigation measures identified as part of the Arup study and formalised as part of this TA it has therefore been demonstrated that the junction would operate within theoretical capacity in all future year scenarios assessed.
- 6.4.10 As the proposed development is not the root cause of the capacity constraints but does contribute to the requirement for mitigation, it is not considered appropriate that the development should fund the entirety of the mitigation proposals.
- 6.4.11 However, it is considered a proportional S106 contribution can be agreed towards the implementation of the proposed mitigation measures.

6.5 Summary

- 6.5.1 It is evident that the three of the five junctions assessed perform within capacity in all scenarios.
- 6.5.2 However, the two existing roundabout junctions experience capacity constraint with and without the inclusion of vehicular movements associated with the proposed development.
- 6.5.3 As such, mitigation measures have been proposed which could be introduced to enable both of the junctions to operate within theoretical capacity. However, as identified in the percentage impact assessment the impact of the proposed development of 200 units does not exceed 5% other than at the access roads leading directly to the proposed development site.
- 6.5.4 As such, it is considered that the development does not warrant the full provision of the off-site improvements to be provided as mitigation to the predicted impact of the development.
- 6.5.5 The comparative assessment of the baseline and with-development traffic scenarios detail that the additional traffic generated by the development would not introduce significant extra delay for users of this part of the highway network to that already experienced with baseline operational performance.
- 6.5.6 It is acknowledged that there would be a further reduction in the roundabout junctions' operational performance by exacerbating pre-existing queuing delays, however the increase in delay is predicted to be marginal.
- 6.5.7 Finally, it should be noted that no reduction in vehicle trip generation has been assumed in terms of the peak hour vehicle trips that have been assessed as a consequence of the successful implementation of the Travel Plan.

7.0 CONCLUSION

7.1 Summary

- 7.1.1 Asbri Transport Limited has been appointed by Hale Construction to produce a Transport Assessment to accompany a planning application to develop land to the east of Leiros Parc Drive for residential development of 200 residential dwellings consisting of 180 private and 20 affordable dwellings.
- 7.1.2 The site is allocated for residential development in the Authority's Local Development Plan. An analysis of the local highway network, including provision for pedestrian, cyclist and public transport movement has been undertaken, and concluded that there are opportunities for residents of the proposed development to undertake trips by alternative modes of travel to the private car and that the site is closely situated within close proximity to existing bus services and local amenities.
- 7.1.3 The planning application submission is also accompanied by a Travel Plan focused on facilitating and encouraging active and sustainable travel. The estate road geometry of the development has been designed to accommodate the movement of a 12m bus. Discussions have occurred with the current bus operator and the Highway Authority about extending the service into the development site.
- 7.1.4 As part of the development, it is proposed to construct two new access points in to the site by way of extending the north-eastern spurs off Leiros Parc Drive and Daphne Road in to the site. The internal estate road that links both Daphne Road and Leiros Park Drive has been designed to accommodate use by a 12m bus.
- 7.1.5 The development will provide the necessary pedestrian and cyclist infrastructure within the site to encourage residents to walk and cycle, with 2m wide footways included on one or both sides of the carriageway for its entire length and, where appropriate, shared use private drives also included, prioritising the needs of pedestrians and cyclists over that of vehicles.
- 7.1.6 Car parking and cycle parking will be provided for the development in accordance with Neath Port Talbot's adopted Parking Standards.

- 7.1.7 It is estimated that the proposed development could generate up to 121 vehicle movements (two-way) in the AM peak period and 100 vehicle movements (two-way) in the PM peak period.
- 7.1.8 It is envisaged that the proposed development will have a marginal impact on the performance of the local highway network during the AM and PM peak hour periods, or throughout the course of the day. It is acknowledged that the local highway network experiences congestion during the network peak hours.
- 7.1.9 Junction analysis has shown that the Penywern Road/A4230/Golwg y Gamlas/Cadoxton Road roundabout is already over capacity with current demand conditions. It is considered that the development will do little to degrade the roundabout's operational performance further.
- 7.1.10 Significant junction analysis considering a number of improvements to Cadoxton Road has been undertaken which is proposed as a mitigation measure for the proposed development. This has concluded that the **Option 4B** improvement to Cadoxton Road would improve the operation of the junctions in the future assessment scenario of 2025 and 2035.
- 7.1.11 The average impact of the development traffic on all arms of the Penywern Road/A4230/Golwg Y Gamlas/Cadoxton Road roundabout is 2% in terms of the percentage change in traffic flow.

7.2 Conclusion

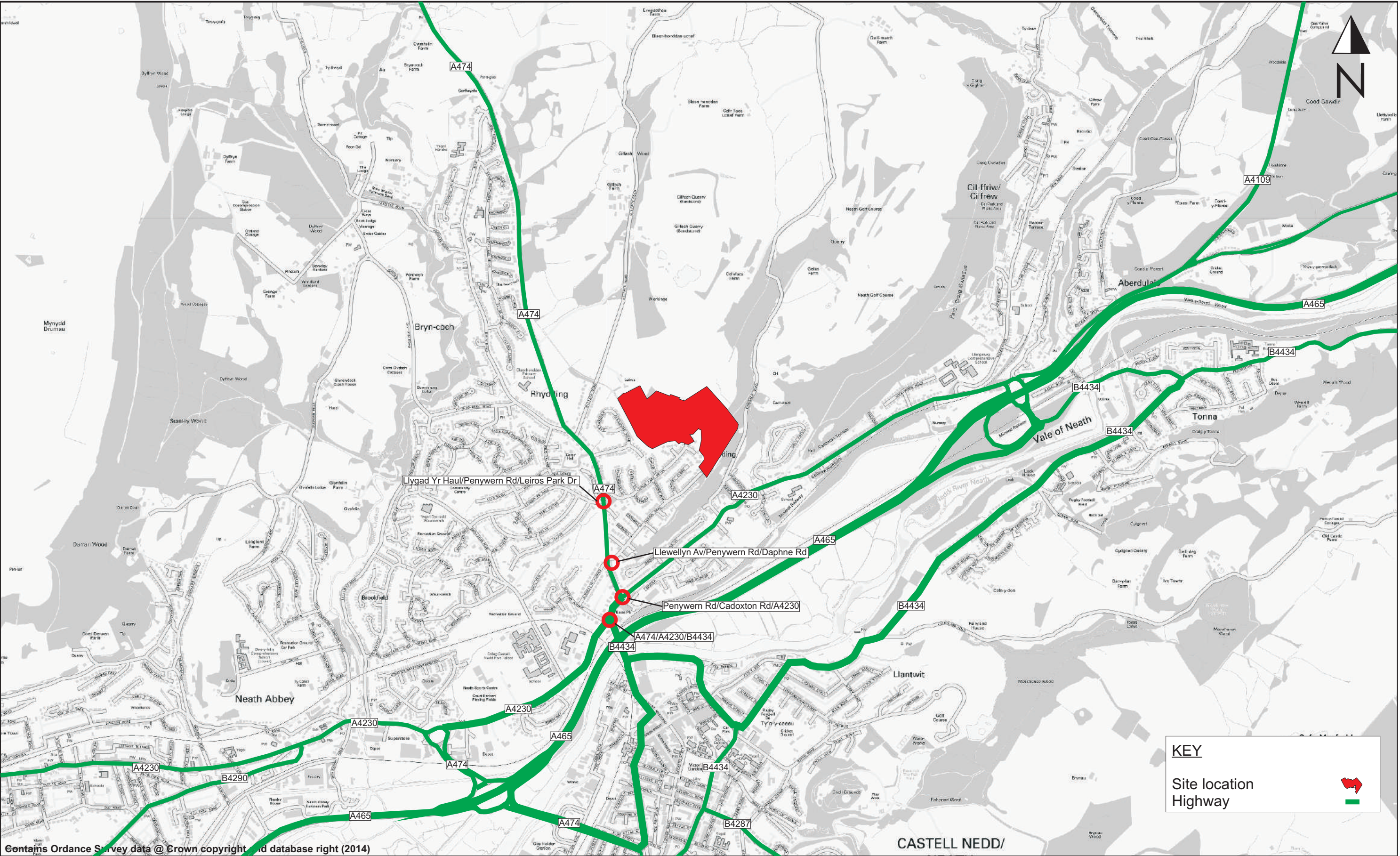
- 7.2.1 In conclusion, it is considered that this development proposed on an allocated site is appropriate and acceptable in traffic and transport terms. It is considered that the traffic movements associated with the development proposals could be accommodated on the highway network and will not have a significant detrimental impact on the conditions already experienced on the local highway network due to the existing volumes of traffic using the network and predicted growth in future traffic volumes.
- 7.2.2 The assessment has shown that there is peak hour congestion present on the local network currently and that this is expected to worsen with back-ground

traffic growth. Several site observations have been undertaken during the period June 2016 – July 2018 and it is noted that there is significant variance in peak hour highway network performance, with free-flowing traffic conditions observed on occasions.

7.2.3 The assessment has acknowledged that the widening of Cadoxton Road to allow a 2-approach lane into both roundabout junctions as detailed on Option 4B will significantly improve peak hour network performance. The existing pedestrian crossing will be retained with this improvement.

7.2.4 There have been discussions with the Local Planning and Highway Authority regarding Section 106 financial contributions that may be secured subject to the grant of planning permission.

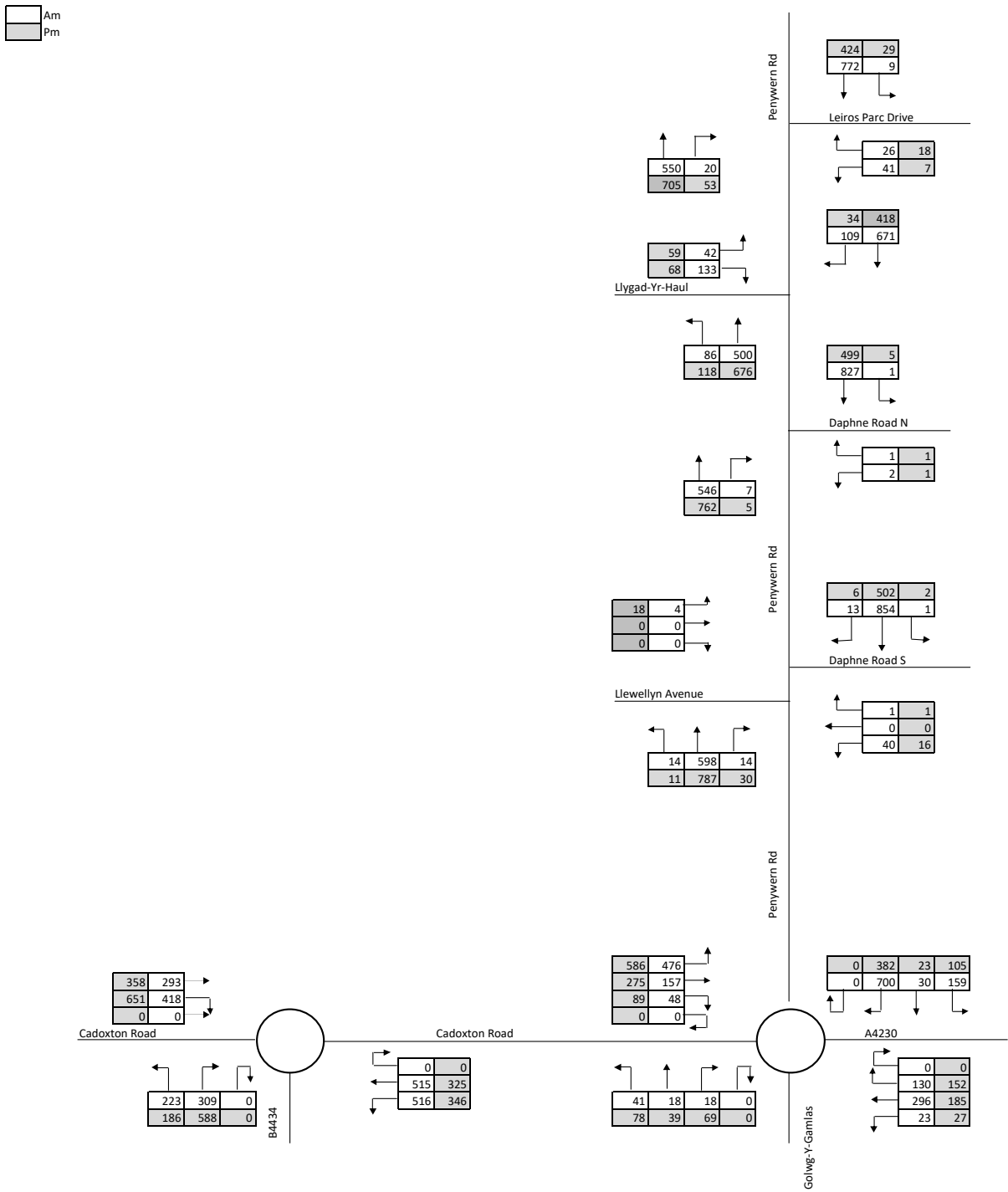
Figures

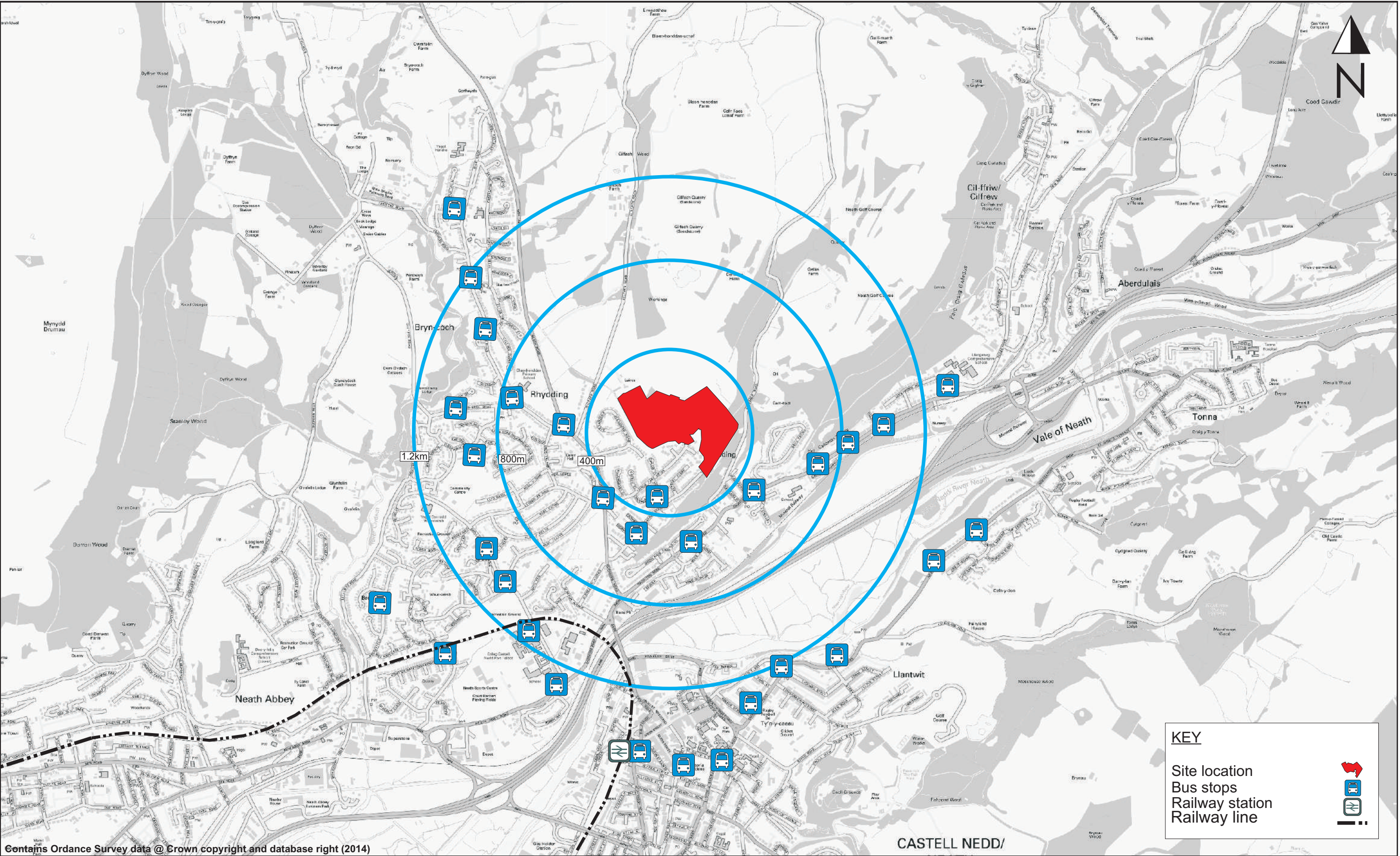


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	Job Title		Designed by: LV	
Site location and Local Highway Network	Hale Construction	Leiros Park, Neath	Drawn by: LV	Drg No: Figure 3.1
			Ckd/Appd: PO'C	
			1st Issued: Sept 2017	
			Job No: T16.130	

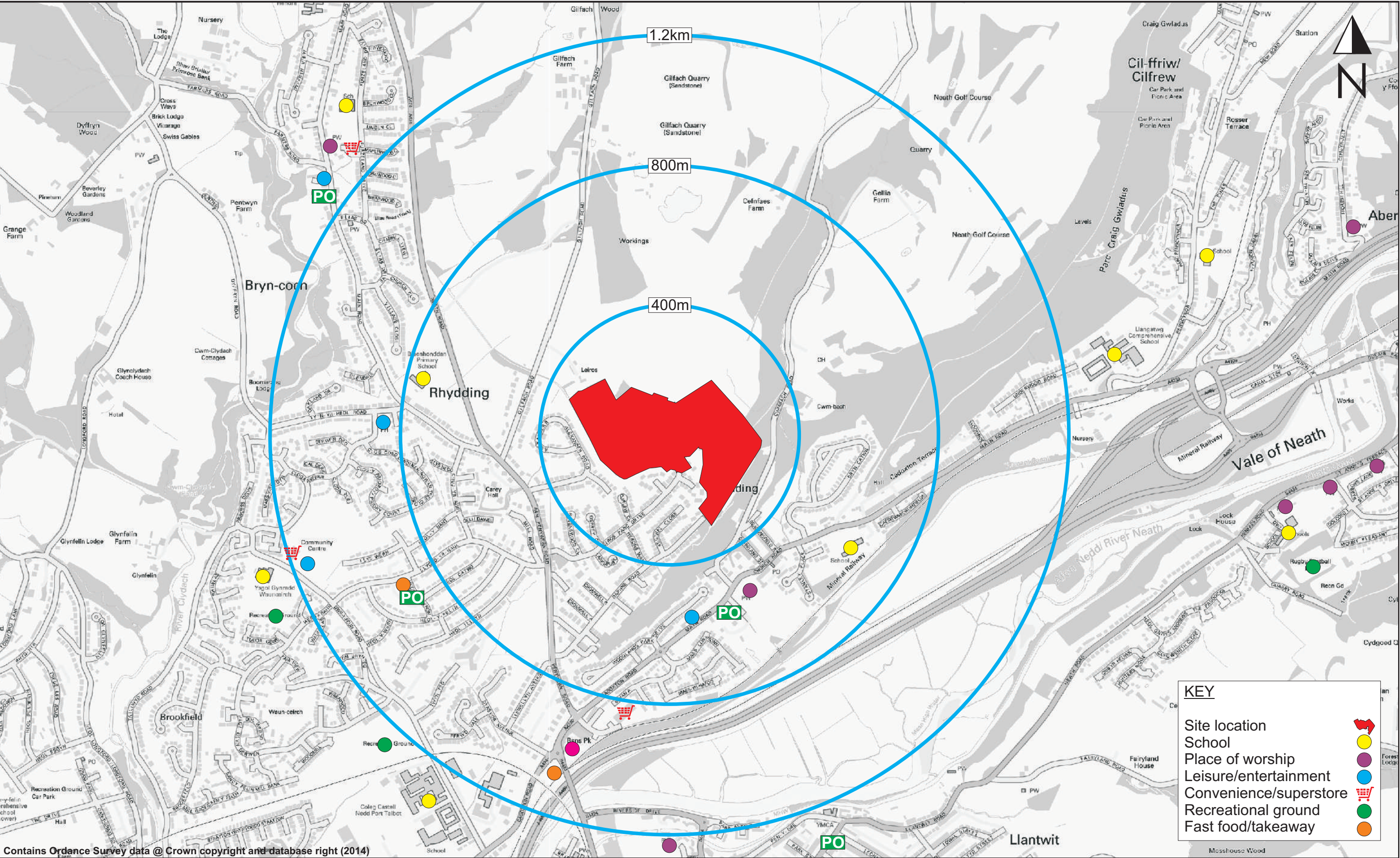
Figure 3.2 - 2017 BASE TRAFFIC FLOWS





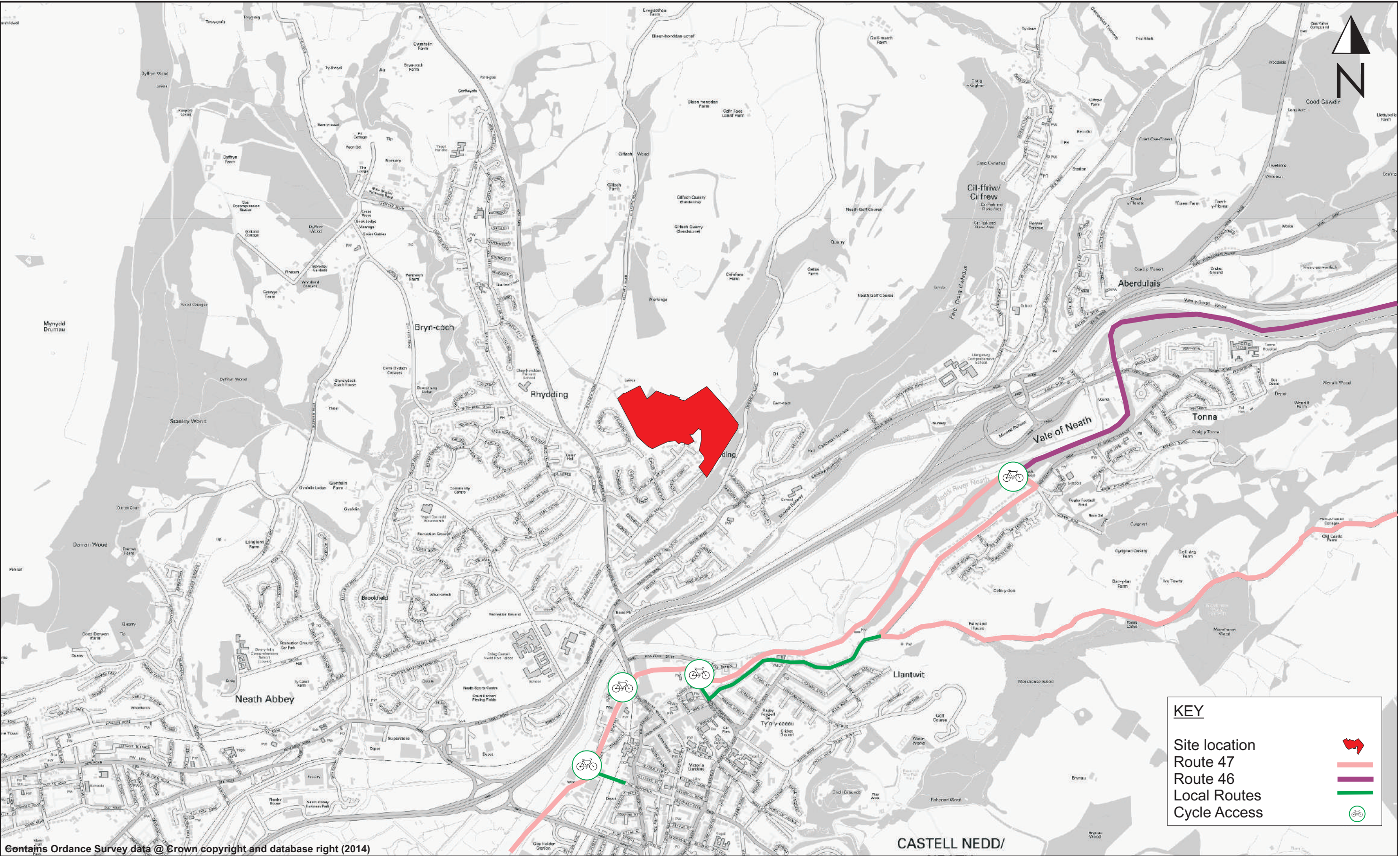
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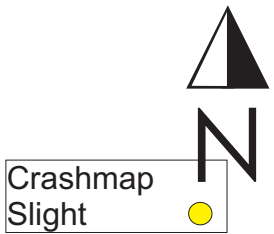
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Drawing Title	Client	 Suite 4 'J' Shed Kings Road Swansea Sa1 8PL T 01792 480535	Scale: NTS	File Extension:
	Job Title		Designed by: LV	
Local amenities within walking distance of the site	Hale Construction Ltd	Leiros Park, Neath	Drawn by: LV	Drg No: Figure 3.4
			Ckd/Appd: PO'C	
			1st Issued: Sept 2017	
			Job No: T16.130	



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Drawing Title	Client	 Suite 4 'J' Shed Kings Road Swansea Sa1 8PL T 01792 480535	Scale: NTS	File Extension:
	Job Title		Designed by: LV	
Local Cycle Infrastructure	Hale Construction	Leiros Park, Neath	Drawn by: LV	Drg No: Figure 3.5
			Ckd/Appd: PO'C	
			1st Issued: Sept 2017	
			Job No: T16.130	



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	Job Title		Designed by: LKW	
Personal Injury Collision Data	Hale Construction	Leiros Park, Neath	Drawn by: KW	Drg No: Figure 3.6
			Ckd/Appd: PO'C	
			1st Issued: Sept 2017	
			Job No: T16.130	

FIGURE 5.1 - NORTHERN SITE ACCESS TRAFFIC DISTRIBUTION

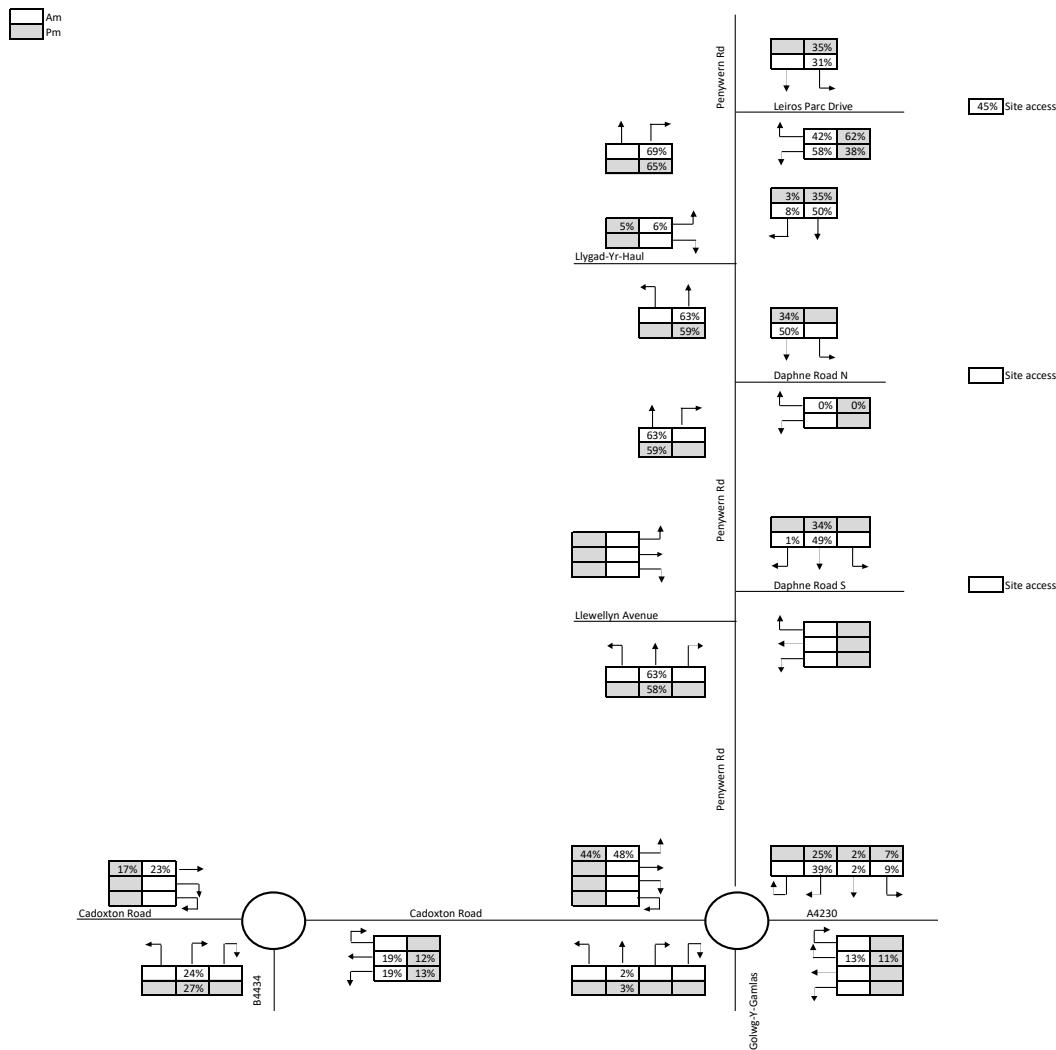


FIGURE 5.2 - CENTRAL SITE ACCESS TRAFFIC DISTRIBUTION

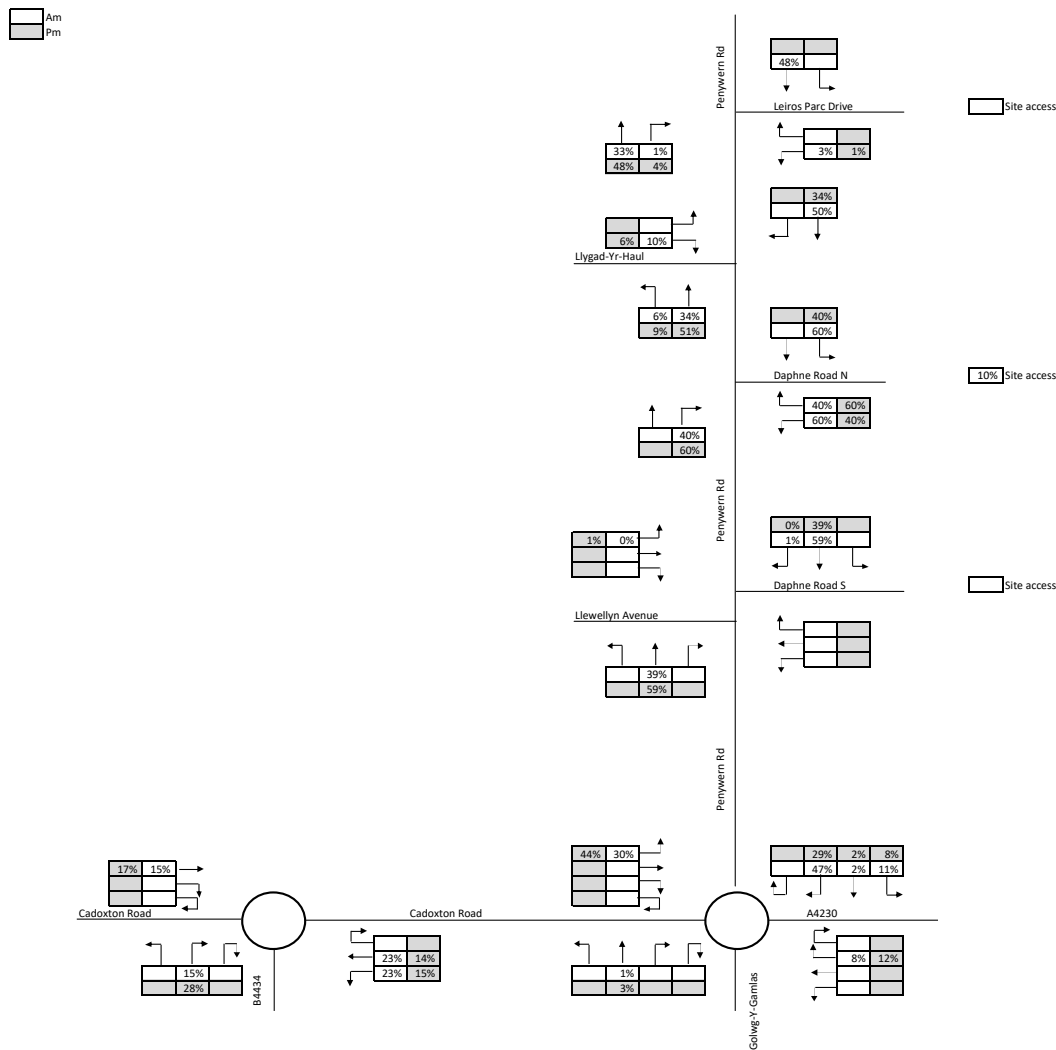


FIGURE 5.3 - SOUTHERN SITE ACCESS TRAFFIC DISTRIBUTION

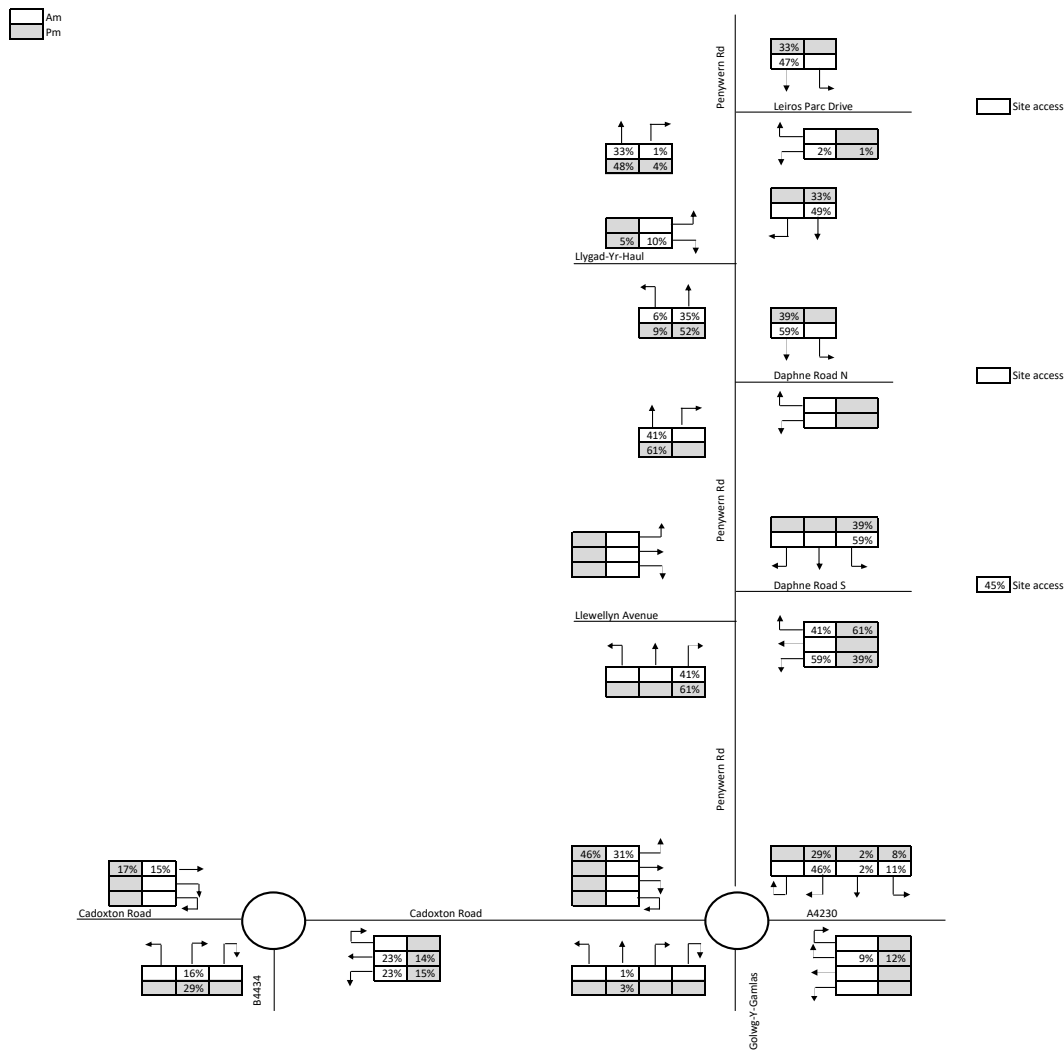


FIGURE 5.4 - DEVELOPMENT TRAFFIC FLOWS - 50 HOUSES (NORTHERN ACCESS)

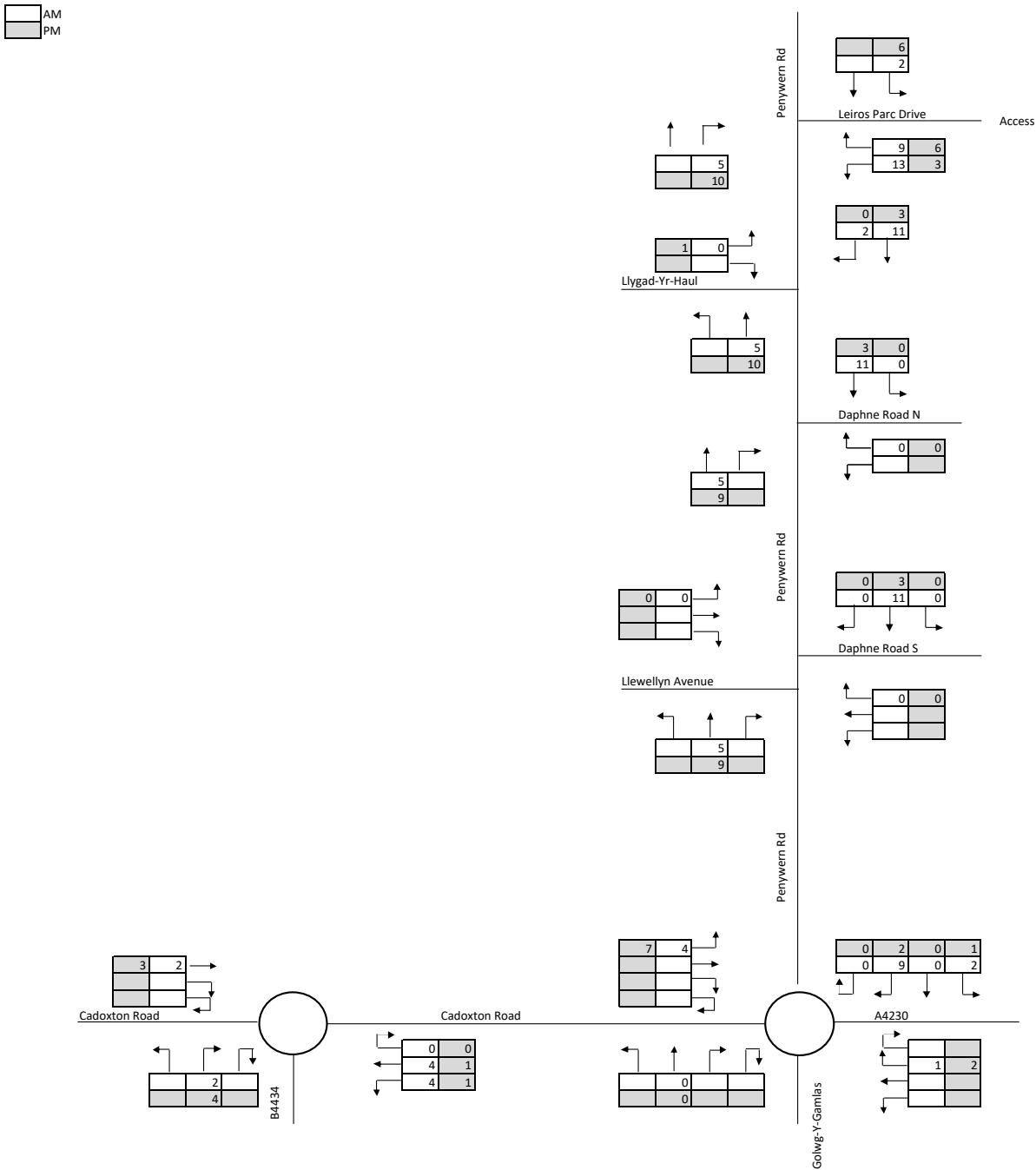


FIGURE 5.5 - DEVELOPMENT TRAFFIC FLOWS - 200 HOUSES (NORTHERN ACCESS)

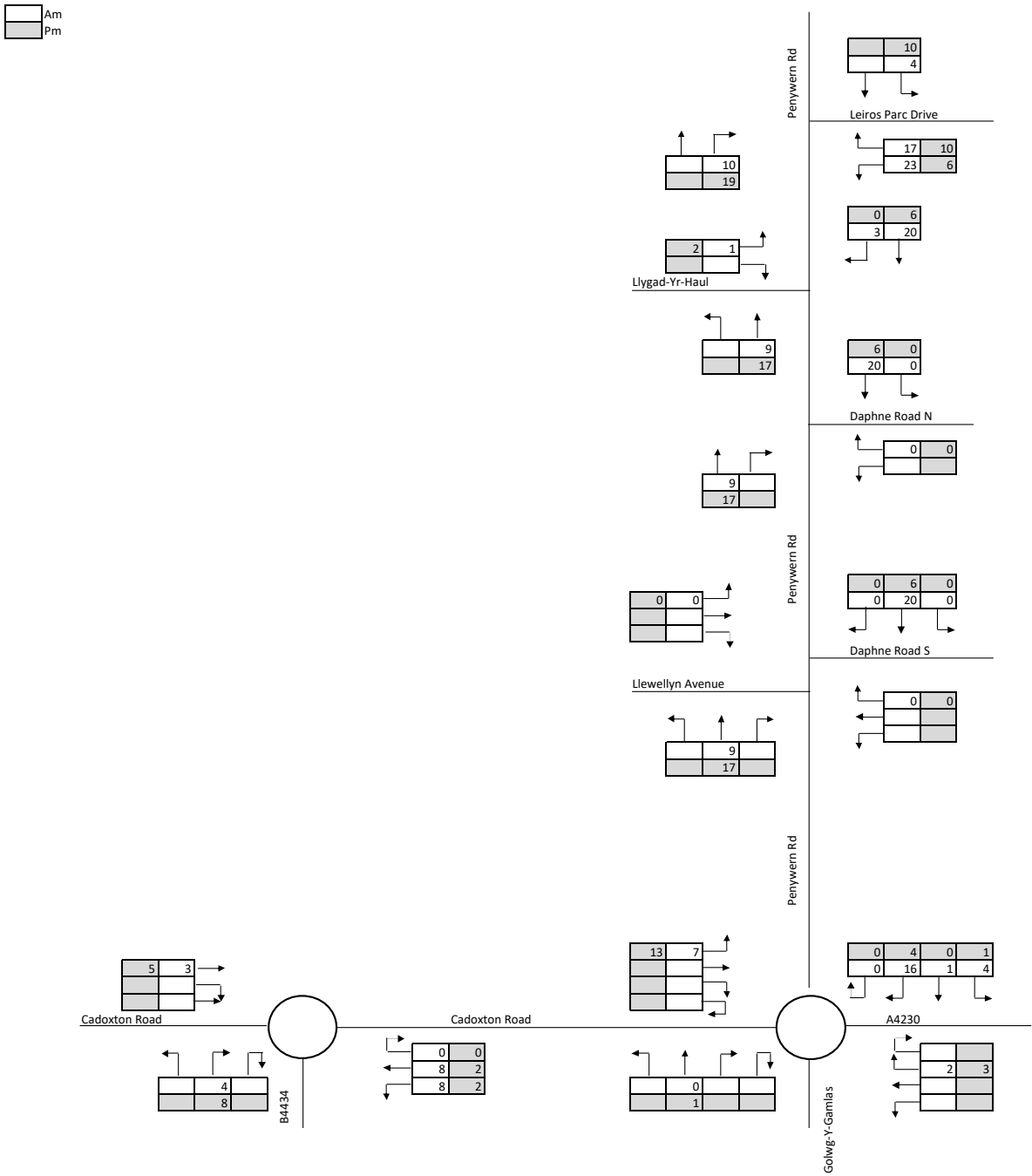


FIGURE 5.6 - DEVELOPMENT TRAFFIC FLOWS - 200 HOUSES (CENTRAL ACCESS)

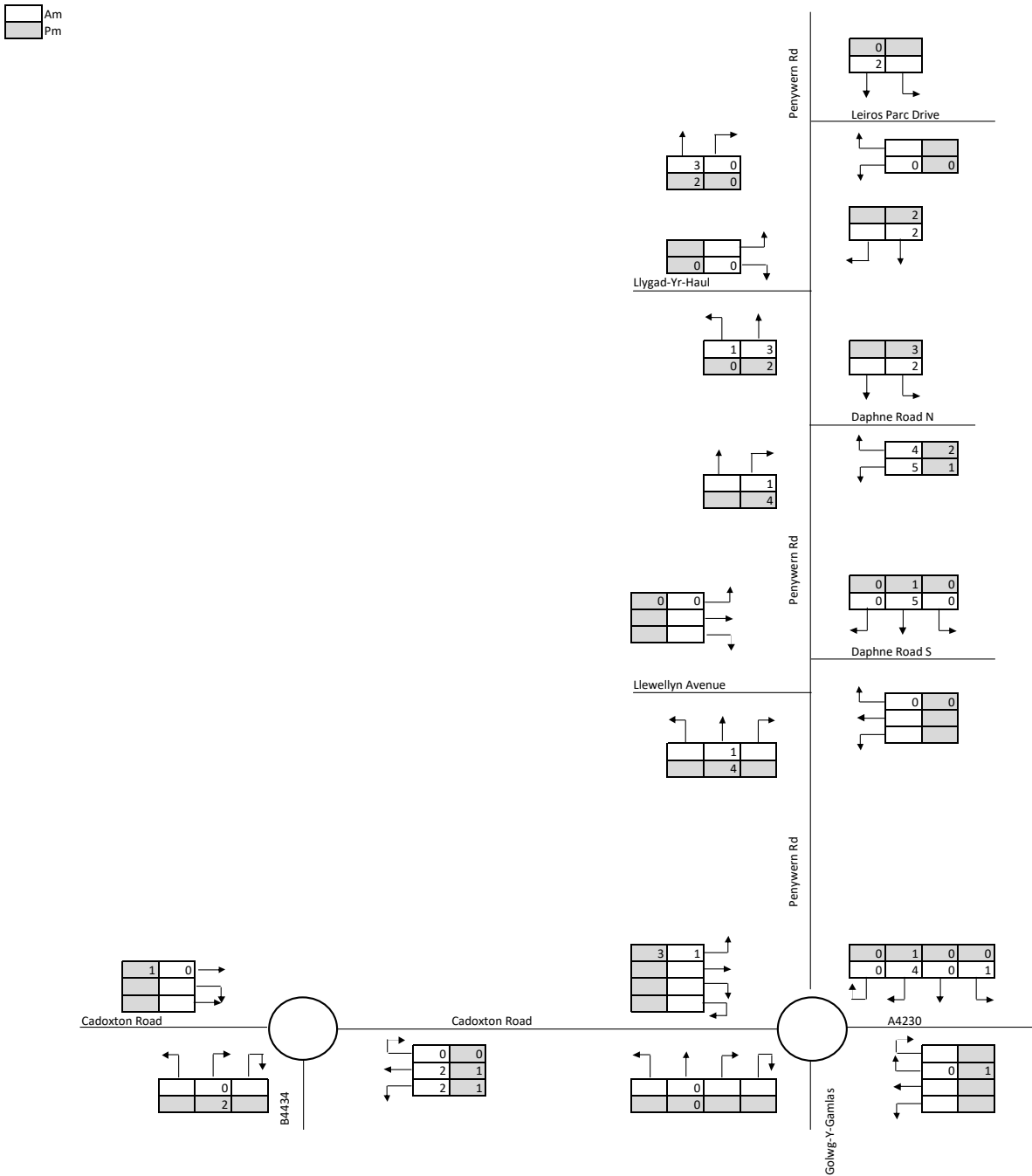


FIGURE 5.7 - DEVELOPMENT TRAFFIC FLOWS - 200 HOUSES (SOUTHERN ACCESS)

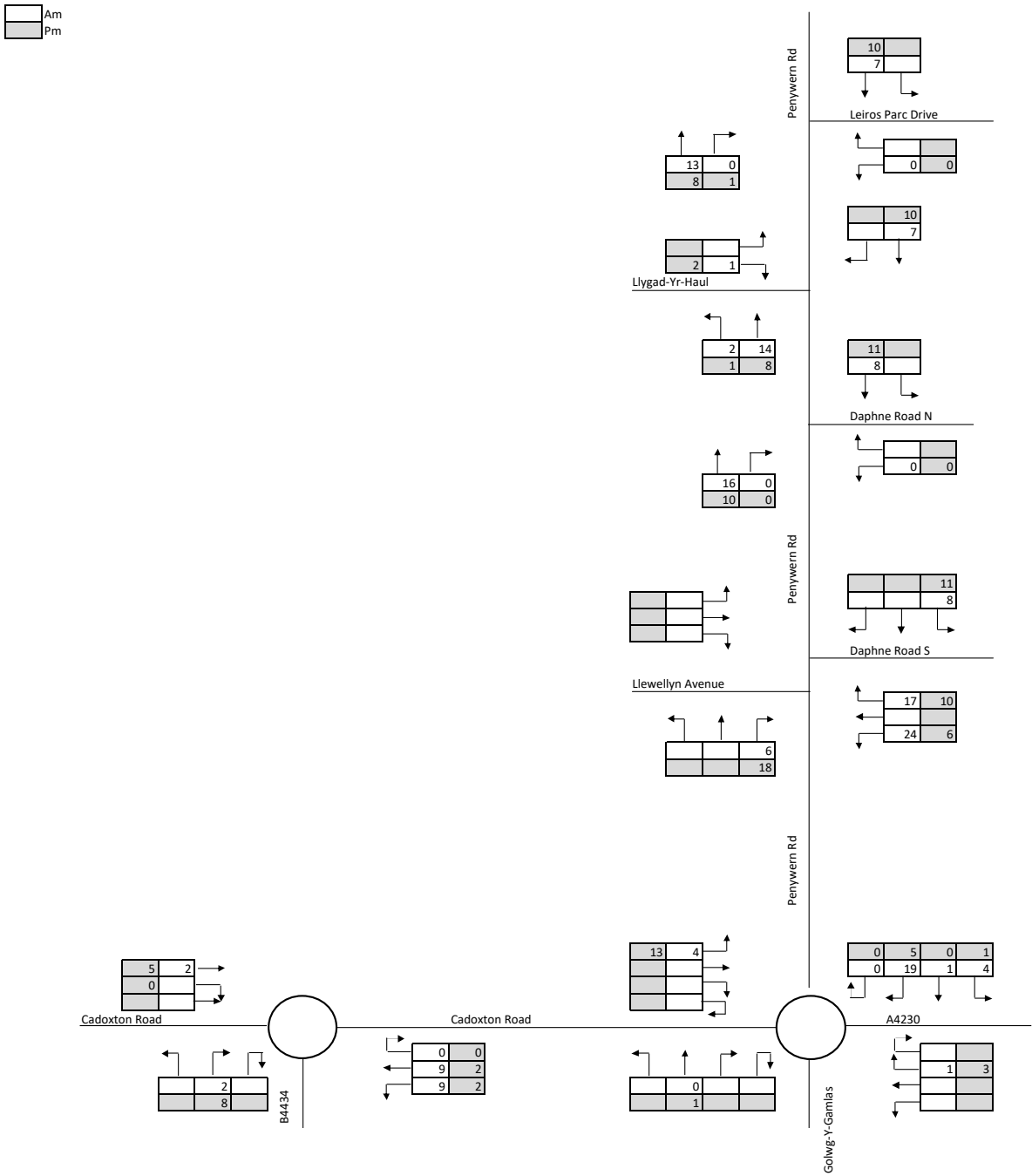


FIGURE 5.8 - DEVELOPMENT TRAFFIC FLOWS - 200 HOUSES (ALL ACCESSES)

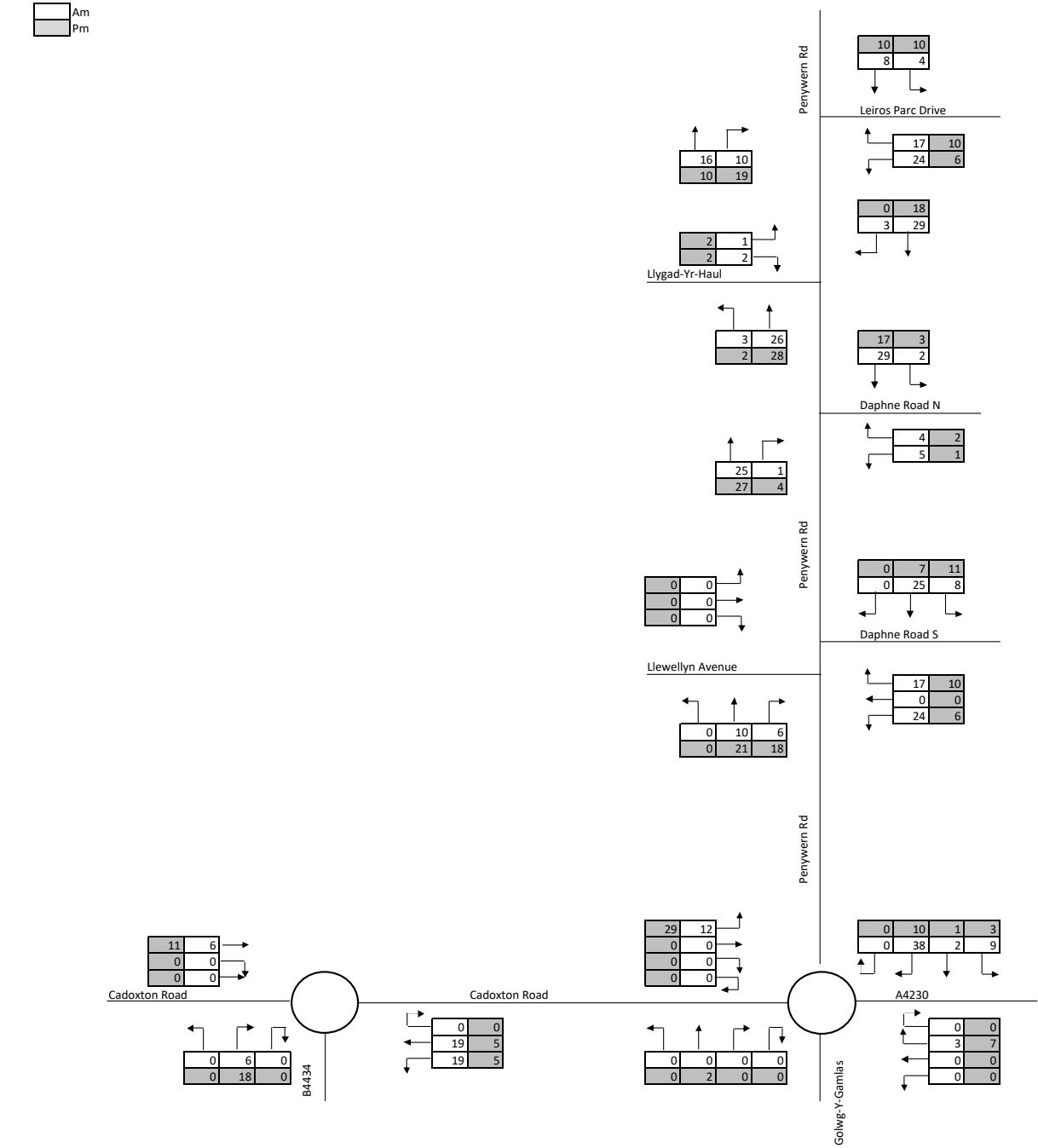


Figure 5.9 - 2023 BASE TRAFFIC FLOWS

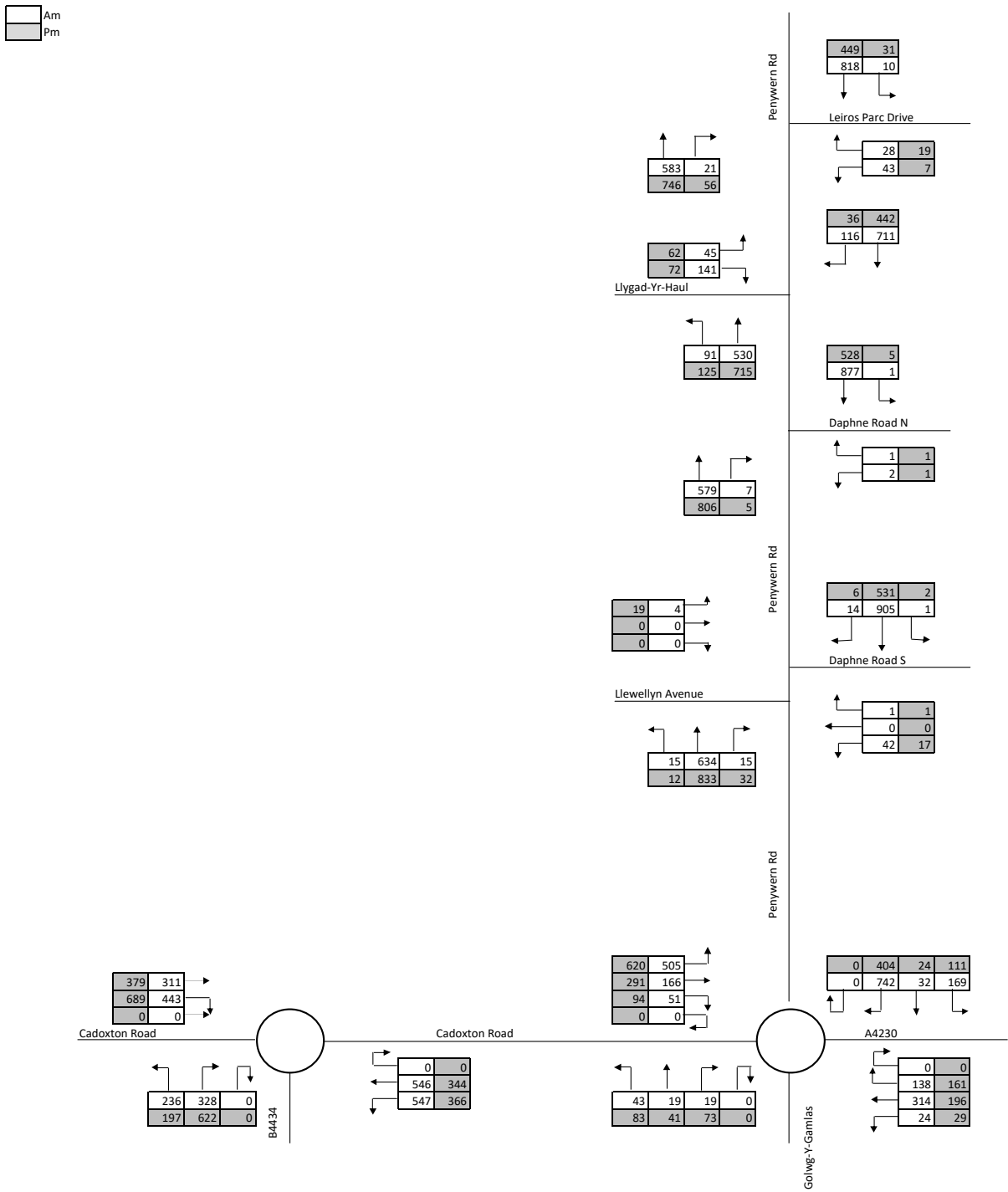


Figure 5.10 - 2025 BASE TRAFFIC FLOWS

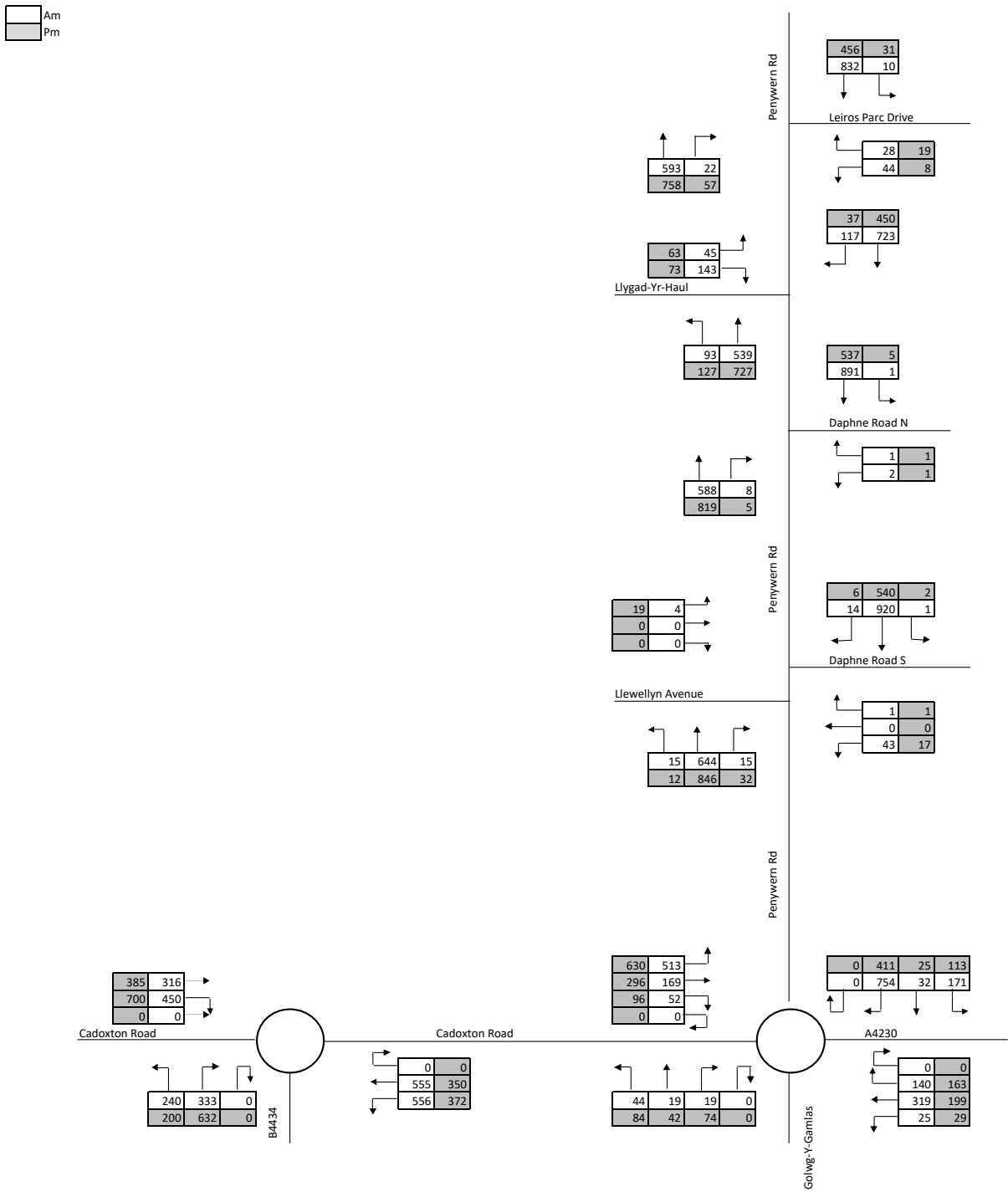


Figure 5.11 - 2035 BASE TRAFFIC FLOWS

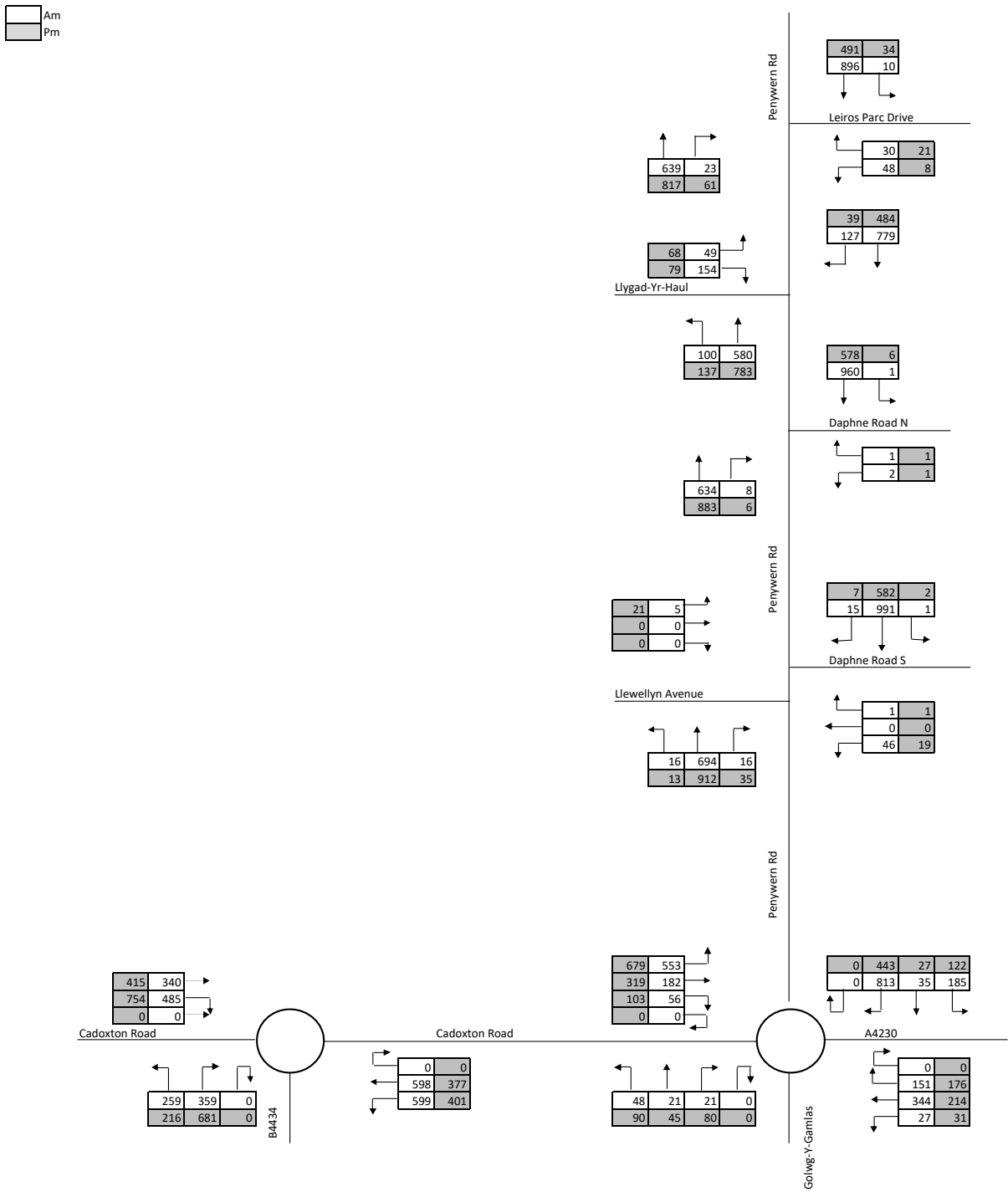


FIGURE 5.12 - 2023 WITH DEVELOPMENT FLOWS (50 HOUSES)

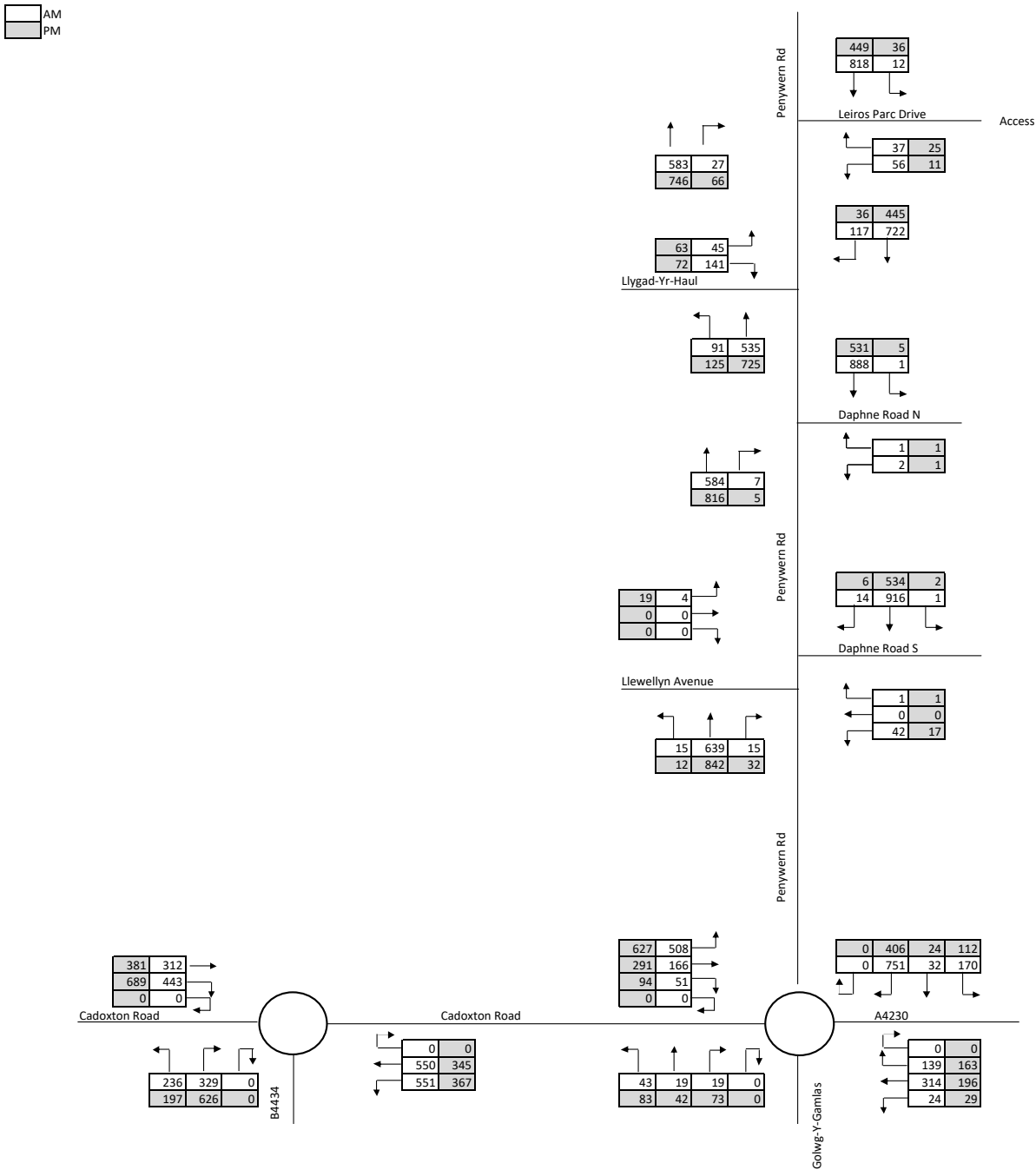


FIGURE 5.13 - 2025 WITH DEVELOPMENT FLOWS (200 HOUSES)

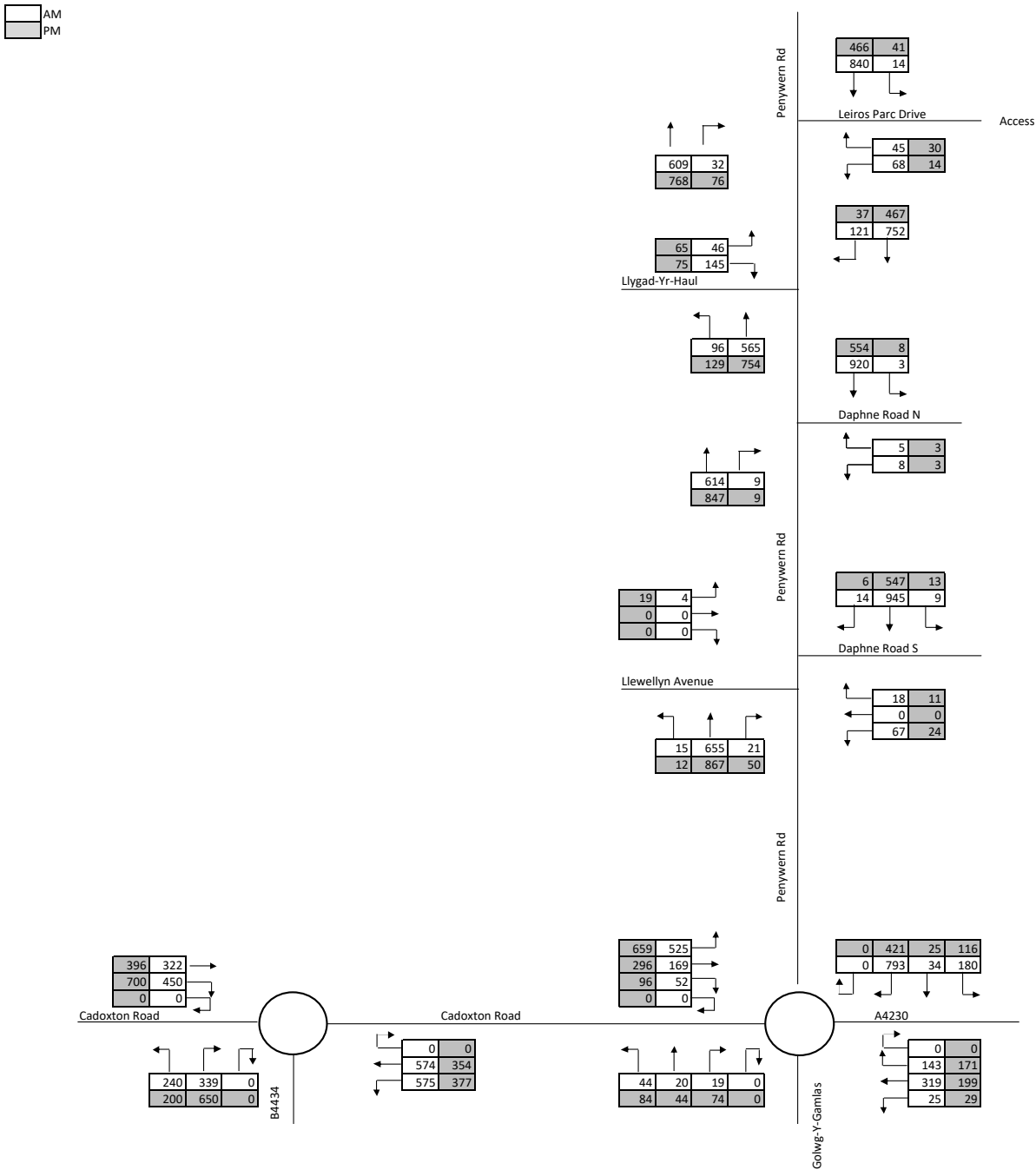
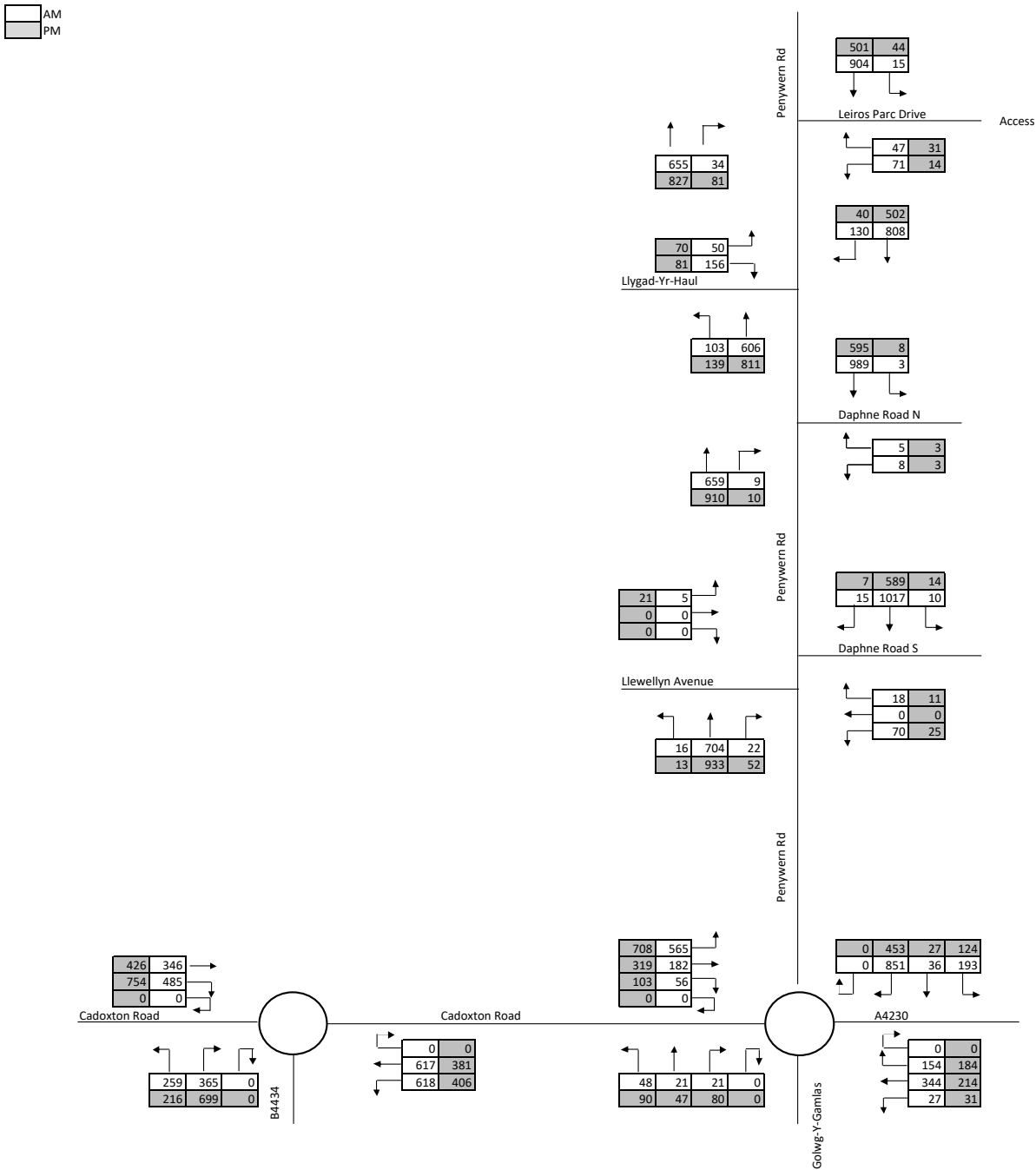
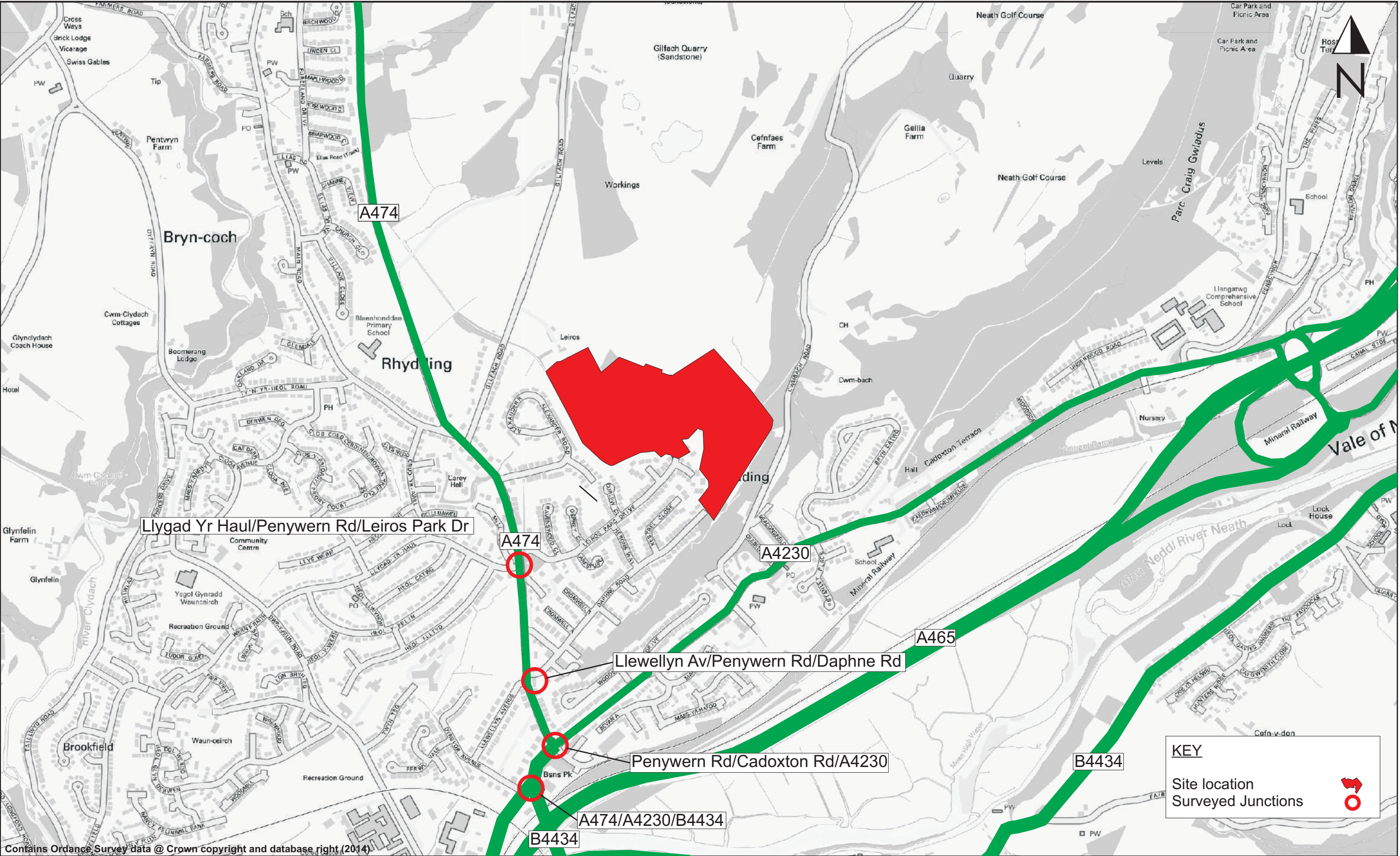


FIGURE 5.14 - 2035 WITH DEVELOPMENT FLOWS (200 HOUSES)





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	Job Title		Designed by: LV	
Site location and assessed junctions	Hale Construction	Leiros Park, Neath	Drawn by: LV	Drg No: Figure 6.1
			Ckd/Appd: PO'C	
			1st Issued: Sept 2017	
			Job No: T16.130	

FIGURE 6.2 - PERCENTAGE IMPACT OF 50 HOUSES IN 2023

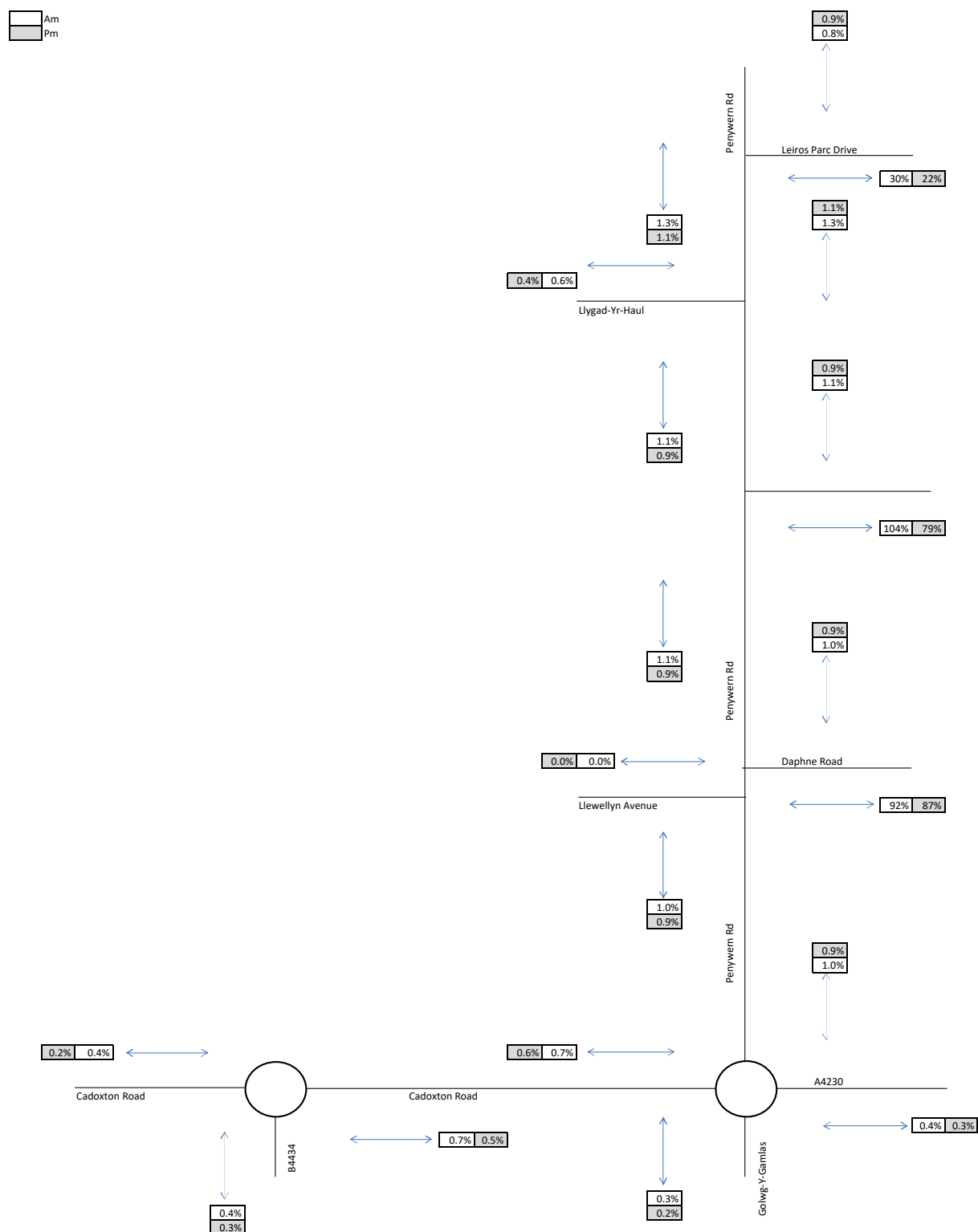


FIGURE 6.3 - PERCENTAGE IMPACT OF 200 HOUSES IN 2025

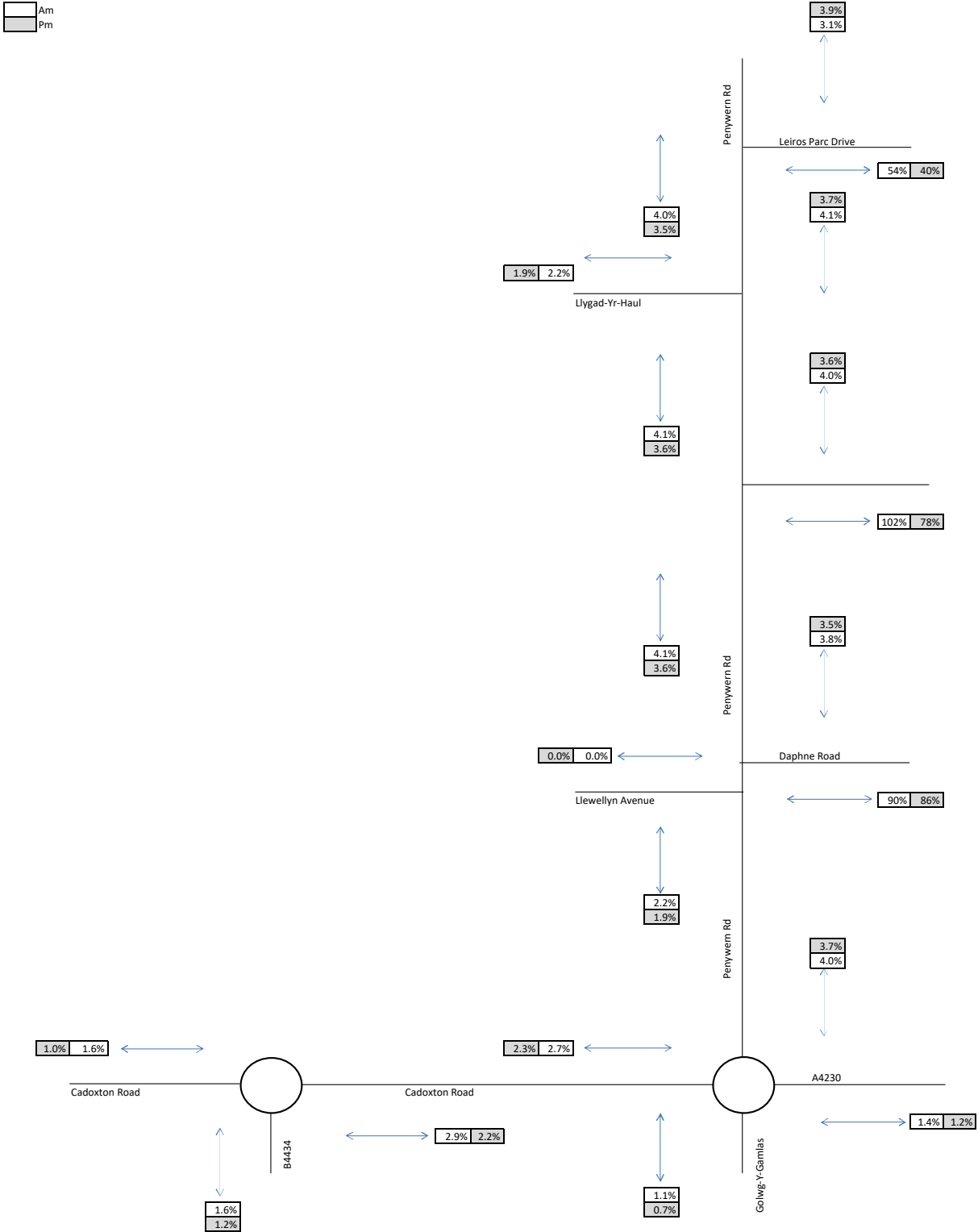
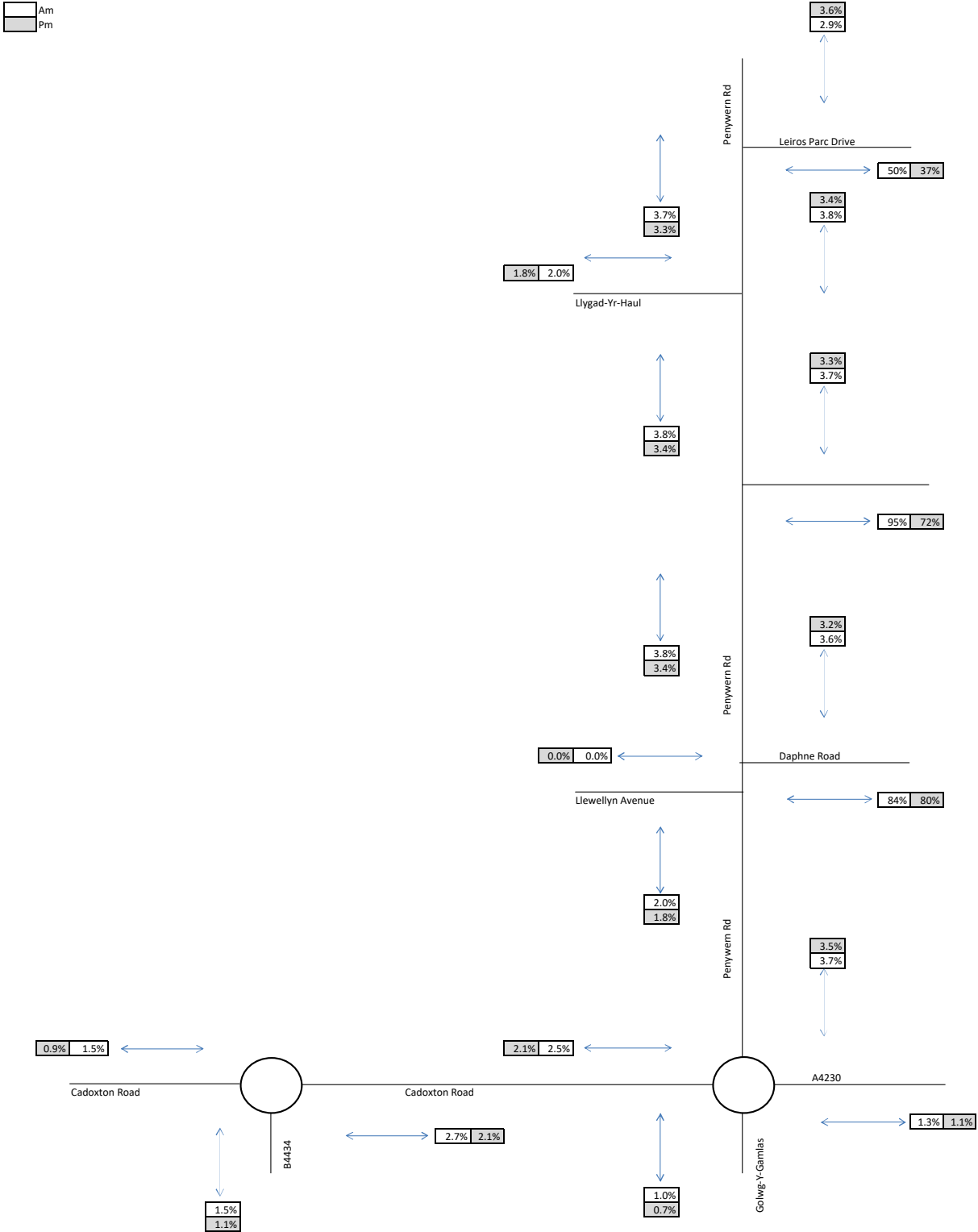


FIGURE 6.4 - PERCENTAGE IMPACT OF 200 HOUSES IN 2035



Appendices

Appendix A

Hale Construction
**Proposed residential development at
Land off Leiros Park,
Neath**

TRANSPORT ASSESSMENT SCOPING NOTE

August 2016

Applicant: Hale Construction

Project no: T16.130

Document ref no: T16.130 D1

Document issue date: **August 2016**

Project name: Land off Leiros Park

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Tel: 01792 480535

Contents

Section 1	Introduction
Section 2	Development proposal
Section 3	Scope of work
Section 4	Site layout, vehicular access and parking provision
Section 5	Committed development and committed highway improvements
Section 6	Trip generation
Section 7	Traffic and junction impact analysis
Section 8	Other technical work to be submitted

Figures

Figure 1	Site location plan
Figure 2	Percentage distribution of development generated traffic

Appendices

Appendix A	NPT Council pre-application response
Appendix B	TRICS output – Houses privately owned
Appendix C	TRICS output – Affordable housing

1. Introduction

1.1 Asbri Transport has been appointed by Hale Construction to produce a Transport Assessment (TA) to accompany an outline planning application proposing the construction of a new residential development on greenfield land north of Neath Town Centre, referred to as 'Leiros Park'.

1.2 The application site is allocated in the Neath Port Talbot LDP as a Greenfield site for development. The location of the proposed development is detailed in **Figure 1**.

Purpose of the Scoping Note

1.3 This Scoping Note sets out the proposed method and scope of work to be undertaken in the preparation of the Transport Assessment report that will form part of the supporting documentation for the planning application.

1.4 It is intended that the Scoping Note will be agreed by Neath Port Talbot County Borough Council (NPTCBC), to assist in the completion of a robust Transport Assessment.

1.5 A pre-application response was received from NPTCBC on 28th June 2016, outlining that the Transport Assessment should incorporate all information required by TAN18, including paragraphs 3.4 to 3.6.

1.6 The pre-application response also identified the potential for significant improvements to be required at the Cadoxton roundabout on the A474. The two points of access to the site (off Daphne Road & Leiros Park Drive) may also require improvements.

1.7 The pre-application response is shown in **Appendix A**.

2. Development proposal

2.1 The development proposals include a residential development of 200 dwellings, of which 40 dwellings will be of affordable tenure.

- 2.2 Two points of access are proposed to be provided, one from Leiros Park Drive, and one from Daphne Road. A potential emergency access from Gilfach Road, routing along a lane through Leiros Farm is shown on the site masterplan.
- 2.3 The site will consist of a number of shared private drives, secondary access roads, traffic calming and turning areas. The geometric design of the site will be such to permit bus movement.
- 2.4 A comprehensive Travel Plan will also accompany the planning submission which details measures, objectives and targets to ensure that that sustainable travel to and from the development is both facilitated and maximised.

3. Scope of assessment

- 3.1 The Transport Assessment will be undertaken in accordance with guidance set out in TAN18. The following subsections outline the content that will be included within the Transport Assessment.

Policy review

- 3.2 A review of local and national policy guidance related to the development proposals will be included. The policy review will include the following:
- Wales Spatial Plan – People, Places, Futures (adopted in 2004, and updated in 2008);
 - Planning Policy Wales (Edition 8, January 2016);
 - TAN18 – forms part of the Supplementary Guidance contained within Planning Policy Wales;
 - One Wales: Connecting the Nation;
 - The Active Travel (Wales) Act 2013; and,
 - NPTCBC Local Development Plan (2011-2026) – adopted in January 2016.

Background and existing conditions

- 3.3 A description of the area, and its relationship with:

- The existing highway network;
- Pedestrian/cycle infrastructure;
- Location of bus stops and frequency of services;
- Existing rail services
- Local traffic conditions and traffic data review
- A review of highway safety records for the most recent five year period (reports already obtained from NPTCBC);

4. Site layout, vehicular access and parking provision

4.1 This section of the TA will consider the following matters:

- Car parking standards (in-line with the NPTCBC consultation draft of the supplementary planning guidance);
- Cycle parking standards;
- Site layout and vehicular access

4.2 The site access strategy includes access from two points:

- Extension to Leiros Park Drive; and,
- Extension to Daphne Road.

5. Committed Development and committed highway improvements

5.1 The Highway Authority are requested to advise of any committed developments (that benefit from planning permission but are yet to be constructed or that are but not yet operational) that may affect traffic flows in the study area so that these may be accounted for in the TA process.

5.2 The Highway Authority is also requested to advise if there are any programmed improvements to the highway network that is detailed on **Figure 1**.

6. Trip generation

6.1 The following trip generation rates and subsequent vehicle trip generation have been derived for the privately owned and affordable element of the development proposals.

6.2 The vehicle trip generation rates have been obtained from the TRICS 7.3.2 trip generation database. Sites were selected on the basis of the following criteria:

Houses privately owned – 160 dwellings

- Land use: Residential – Houses privately owned;
- Survey days: Monday-Friday;
- Number of units: 135 to 185 units; and,
- Location of development: UK, excluding Greater London, Northern Ireland and Republic of Ireland.

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.139	0.415	0.554	22	66	88
1700-1800	0.397	0.249	0.646	63	40	103

Table 6.1 Vehicle trip generation – 160 privately owned dwellings

6.3 It is evident from Table 6.1 that, based on 160 privately owned houses, the development could generate 88 vehicle movements (two-way) in the AM peak period and 78 vehicle movements (two-way) in the PM peak period. The TRICS output is shown in **Appendix B**.

Affordable/local authority houses – 40 dwellings

- Land use: Residential – Affordable/local authority houses;
- Survey days: Monday-Friday;
- Number of units: 20 to 100; and,
- Location of development: UK, excluding Greater London, Northern Ireland and Republic of Ireland.

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.157	0.327	0.484	6	13	19
1700-1800	0.298	0.210	0.508	12	8	20

Table 6.2 Vehicle trip generation – 40 affordable dwellings

- 6.4 It is evident from Table 6.2 that, based on 40 affordable dwellings, the development could generate up to 19 vehicle movements (two-way) in the AM peak period and up to 20 vehicle movements (two-way) in the PM peak period. The TRICS output is shown in **Appendix C**.

Total trip generation

- 6.5 **Table 6.3** below shows the total vehicle trip generation anticipated at the proposed development.

Peak period	Vehicles		
	Arrive	Depart	Total
0800-0900	28	79	107
1700-1800	75	48	123

Table 6.3 Total trip generation (200 dwellings)

- 6.6 It can be seen from Table 5.3 that, in total, the proposed development could generate up to 107 vehicle movements (two-way) in the AM peak period and up to 123 vehicle movements (two-way) in the PM peak period.
- 6.7 It is proposed that a reduction of 8% to the predicted peak hour trip generation be made for the purposes of highway capacity modelling to reflect the modal split targets of the Travel Plan.

Traffic flows

- 6.8 Classified Turning Counts were undertaken on 16th June 2016 at the following junctions:

- Penywern Rd/Leiros Parc Drive/Llygad-yr-Haul staggered crossroads;

- Penywern Rd/Daphne Rd/Llewellyn Ave staggered crossroads;
- Penywern Rd/A4230/Golwg-y-Gamlas/Cadoxton Rd roundabout; and,
- Cadoxton Road/B4434 roundabout.

6.9 The peak hours of 0800-0900 & 1630-1730 have been derived based on the survey data.

Distribution and assignment of development traffic

6.10 The development traffic will be assigned and distributed to the local highway network on the basis of existing traffic flow turning movements. The proposed percentage distribution is shown in **Figure 5.1**.

Future base traffic flows

6.11 The impact of the development has been assessed for an opening year of 2018 and a future year of 2033 (year of opening plus 15 years).

6.12 In order to obtain the base traffic flows (i.e. with no development traffic) in 2018 and 2033, the baseline traffic flows (2016) have been factored using NTM growth factors.

6.13 The factors applied to the 2016 baseline surveyed flows are identified in **Table 5.4** below.

Period	NTM growth factors	
	AM	PM
2016 – 2018	1.0276	1.0277
2018 – 2033	1.2559	1.2558

Table 6.4 NTM growth factors

Final future traffic flows

6.14 The final future traffic flows will be obtained by combining the development flows with both the 2018 and 2033 base traffic flows.

7. Traffic and junction impact analysis

- 7.1 The TRL software package Junctions 8 will be used to model each of the junctions (as set out in Section 5) operational performance to determine if mitigation is required.
- 7.2 The roundabout junction models will be validated using queue length data that was undertaken simultaneously to the junction turning counts.
- 7.3 Google Earth Satellite imagery to be used to determine junction geometrics (scale checked via measurements taken on-site).

Assessment years

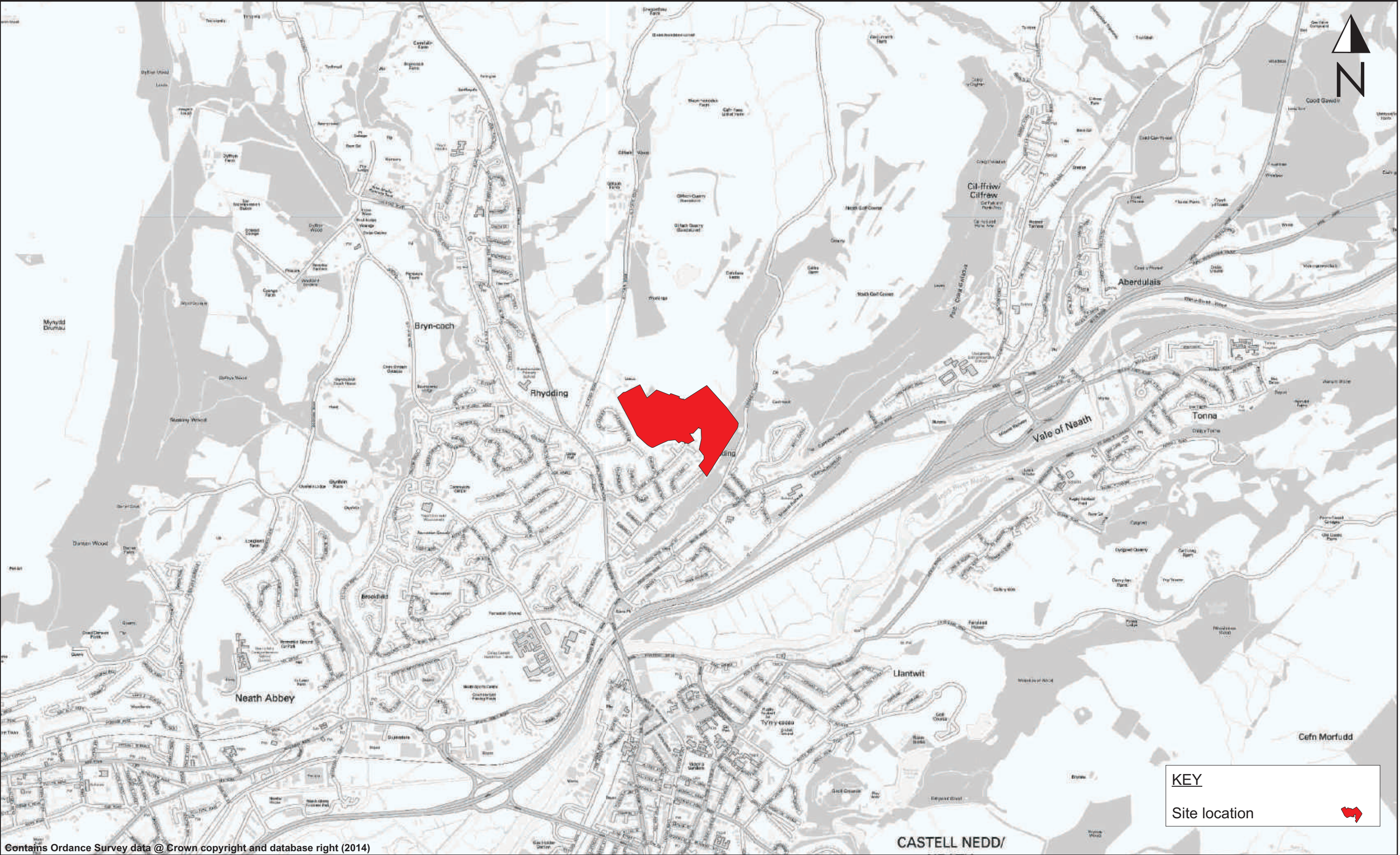
- 2016 baseline assessment;
- 2018 year of opening assessment;
- 2033 future year assessment.

8. Other technical work to be submitted

- 8.1 The following will also be submitted to the highway authority in support of the planning application:
- Travel Plan
 - The TA will include a Transport Implementation Strategy (TIS) as per guidance detailed in TAN 18. This will set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them. The TIS will set a framework for monitoring the objectives and targets, including the future modal split of transport to development sites.

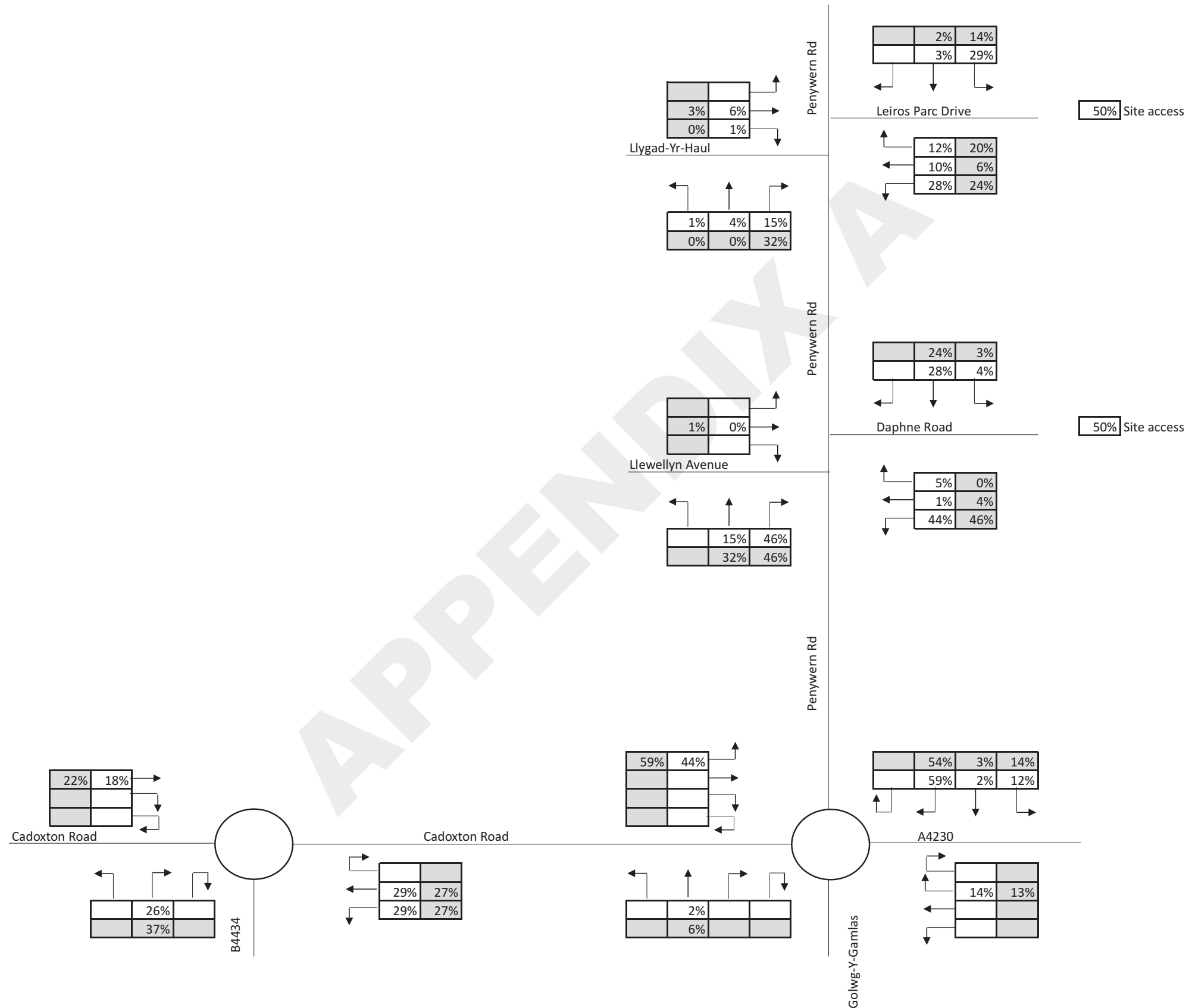
Figures

APPENDIX F



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Appendices

Appendix A

Asbri Planning
Suite 4 J Shed
Kings Road
Swansea
SA1 8PL

FAO Phil Baxter

BY EMAIL ONLY

Dear Sir,

Town and Country Planning Act, 1990 (as amended)

Pre-App. Ref: Q2016/0149
Proposal: 200 Dwellings and Associated Works
Location: Land off Leiros Park, Neath SA11 1YB.

I refer to your correspondence received on 3rd May 2016, concerning the above and your request for pre-application advice, and to our subsequent meeting on 24th May 2016. I apologise for the delay in formally responding due to the need to obtain additional information from colleagues notably in respect of education and highways.

Having considered the nature of submission, I respond as follows.

Local Context and Constraints

Coal Authority high risk area
Contaminated land
Footpaths crossing site
Live TPO – T146/W1

Please note that this information is based on our current records and is, as far as possible, accurate. Nevertheless, we reserve the right to advise you of any additional constraints that may be identified at the time of your application.

Relevant Planning History

From an examination of our records, the application site/ property has no relevant planning history.

Environment

Nicola Pearce Head of Planning and Public Protection
The Quays, Brunel Way, Baglan Energy Park, Neath SA11 2GG
Tel 01639 686868

Yr Amgylchedd

Nicola Pearce Pennaeth Cynllunio a Gwarchod y Cyhoedd
Y Ceiau, Ffordd Brunel, Parc Ynni Baglan, Castell-nedd SA11 2GG
Ffôn 01639 686868

We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.
Croesewir gohebiaeth yn y Gymraeg a byddwn yn ymdrin â gohebiaeth Gymraeg a Saesneg i'r un safonau ac amserlenni.

Relevant Planning Policies

In addition to national guidance contained within Planning Policy Wales, any application would be considered against the Policies within the Adopted Neath Port Talbot Local Development Plan, details of which are available on the Council's web site by visiting www.npt.gov.uk/ldp. The relevant policies would include:

Strategic Policies:

Policy SP1	Climate Change
Policy SP2	Health
Policy SP3	Sustainable Communities
Policy SP4	Infrastructure
Policy SP5	Development in the Coastal Corridor Strategy Area
Policy SP8	Affordable Housing
Policy SP10	Open Space
Policy SP15	Biodiversity and Geodiversity
Policy SP16	Environmental Protection
Policy SP18	Renewable and Low Carbon Energy
Policy SP19	Waste Management
Policy SP20	Transport Network
Policy SP21	Built Environment and Historic Heritage

Detailed Policies:

Policy H1/2	Housing sites
Policy I1	Infrastructure Requirements
Policy SC1	Settlement Limits
Policy AH1	Affordable Housing
Policy OS1	Open Space Provision
Policy OS2	Protection of Open Space
Policy EN6	Important biodiversity and geodiversity sites
Policy EN7	Important Natural Features
Policy RE2	Renewable and Low Carbon Energy in New Development
Policy W3	Waste Management in New Development
Policy TR2	Design and Access of New Development
Policy BE1	Design

Analysis of Proposal

The proposal relates to a housing development for up to 200 dwellings, together with associated infrastructure, on a site allocated in the Local Development Plan for residential development (Policy H1/2). The principle of residential development is therefore acceptable, subject to an assessment of, and any necessary mitigation to address any identified, impacts arising from the development.

Such impacts are addressed below, however please note that this response is based on initial responses from consultees, a number of which are yet to reply including Natural Resources Wales.

Site Layout – The greenfield site is located to the northern settlement boundary of Leiros Park, Neath and comprises an area of enclosed fields with heavily wooded areas and hedgerows an overgrown disused quarry is located to the north west of the site the site slopes steeply up from south the north.

Policy BE1 states that all development proposals will be expected to demonstrate high quality design which fully takes into account the natural, historic and built environmental context and contributes to the creation of attractive, sustainable places. A number of criterion are included, and we would expect your submissions to demonstrate how these high design expectations will be met on this site.

It is also noted that BE1 (8) requires best and efficient use of land, and that a minimum of 35 dwellings per hectare is expected in the Coastal Corridor Strategy Area. The submissions are based on the Local Development Plan process which restricted the numbers of dwellings to 200, such low density being dictated by overall highways restrictions identified during the LDP.

Policy BE1 also requires that the layout and design of development should achieve inclusive design by ensuring barrier free environments, allowing access by all and making full provision for people with disabilities. In this respect, it is emphasised that there is a requirement for the development to achieve maximum gradients of 1:12. You confirmed at our meeting that you understood such a requirement.

It is also noted that the indicative layout is subject to a number of constraints including topography, the existing footpath system and desirability of retaining a number of BAP habitats including ancient woodland hedgerows and stone walls. It is noted that both the footpaths, field boundaries and woodland have been successfully incorporated into the design. In this respect, the layout and general indicative highway design appears to be generally acceptable in principle allowing good connectivity with the existing development, while the lower density will also allow for a diverse mix of housing types. Open space provision is discussed under section 106 matters below.

Highways

It was emphasised at our meeting that the highway impacts of the development can only be fully understood following analysis of the required Transport Assessment (TA). The TA should incorporate all information required by TAN18, including paras 3.4 to 3.6. In this respect it is understood that you will be liaising further with us and our highway colleagues in respect of the scoping of the TA. In this respect, the following comments are based on current knowledge and submissions at LDP stage.

The Head of Engineering and Transport (Highways) advise that they have no objections to the indicative layout in principle, however there are a number of junctions in particular along the bus route in a loop between Leiros Park Drive and Daphne Road which may not be acceptable. As referred to above, they note that there may be issues with gradients due to site topography which may require significant amendments to the indicative plan.

The Highways Officer has identified that significant improvements are most likely to be required to the Cadoxton roundabout on the A474 including road widening in order to mitigate the impacts of the proposed development. These improvements were identified as a result of Traffic management assessments submitted during the LDP process including an indicative scheme for off-site highway improvements, and I note that you were already aware of these likely requirements.

Following our meeting, we have identified the extent of land within the Council's control, which is shown on the attached plan in *Appendix 1*. It is noted that the indicative scheme for road widening includes land

outside of the Councils (and applicant's) control, and therefore discussions between the applicant and landowner may be required. The need for, and nature of, off-site highway improvements will, however, be informed by the required TA work, and in this respect, we would expect the submitted TA to consider such matters in detail, including any suggested highway design alterations which could be achieved without the need for third party land. In the meantime, any required improvements would be based on this scheme until such a time as any feasible alternative options are submitted to address impacts identified within the Transport Assessment.

In addition to the above, it is noted that there are two points of access off the A474 (Daphne Road & Leiros Park Drive) which may also require improvements, subject to the findings of the required TA. Details of any such improvements can only be confirmed after analysis of the TA.

It is noted that the Highways Officer is seeking both the Leiros Park Drive and Daphne Road accesses to have a carriageway width of 6.5 metres and two 2m wide footways.

With respect to parking standards, the present standards are based on South Wales Parking Guidelines 1993, although it is noted that the Council is in the process of preparing SPG based on the CSS standards, which is likely to be out to consultation during the Summer.

Drainage – As discussed at our meeting, a comprehensive drainage strategy will be required. It is understood that the redundant canal will be utilised within the drainage strategy.

Public Rights of Way – It is noted that the submitted indicative layout seeks to retain all public rights of way without need for re-routing. On this basis, the Public Rights of Way officer has no objections to the proposal in principle.

Biodiversity – The Council's ecologist has offered the following initial observations: - The hedgerows / stone walls provide means of connectivity; retain appropriate buffer to the Rhyddings Canal; trees along the green lane are protected by a Tree Preservation Order; welcome retention of hedgerows and stone wall boundaries and woodland, some mitigation will be required for loss of habitat around the Leiros Park Drive access and the proposal will require extended phase 1 surveys which may result in additional mitigation measures.

Utilities - Part of the site is crossed by overhead power cables; hydraulic modelling / assessment required to overcome issues with water supply and connections to the sewerage network. Could not see power cables crossing site – recommend consult national grid wales and west.

Contamination – There are a number of coal mining features within the site. The site lies within a high risk coal mining area, and accordingly a mining risk report will be required. In addition to a land contamination desk top study and possibly site investigation will need to be submitted. Gas monitoring may be needed depending on the level of mining that has taken place and the results of the desk top study.

Archaeology – The line of the historic canal will need to be preserved. In addition, a response from GGAT has indicated that Sarn Helen Roman Road may cross the site (although it is noted that this was not identified at LDP stage), accordingly there may be an archaeological constraint to the proposal. A desk top assessment will be required as part of the application submission.

Energy - Policy RE2 of the LDP requires an application for residential development for 100 or more dwellings to be accompanied by an Energy Assessment. The assessment will be required to set out how the proposal can make a contribution towards increased levels of energy generation from renewable and low carbon sources.

Waste - Similarly, Policy W3 requires a development of this size to be accompanied by a Site Waste Management Plan. The management plan should set out how the waste generated by the development will be dealt with.

Section 106 Planning Obligations

Following our initial consideration of the proposed development and potential impacts and needs arising from the development, I would advise that the Council would seek planning obligations covering the following :

- **Off-Site Highways Contributions** (referred to above)
- **Affordable Housing Provision**

Policy AH1 requires that all new housing developments on sites accommodating 3 or more units provide affordable housing. The site falls within the Neath spatial area and therefore based on a percentage of the total number of units, affordable housing will be required at a rate of 25%. As an allocated LDP site, there is considered to be no justification for any relaxation of this requirement.

The initial response from our Housing section has confirmed that, based on the Local Housing Market Assessment (LHMA), there is a need for:

- 29% one bed units
- 35% two bed units
- 32% three bed units

The Housing section also confirms that there is strong demand for one bed apartments, and that even where there is a good supply the waiting lists are very strong. There is also strong demand for one bed bungalows, and we would encourage consideration of such provision on this site given the otherwise reduced density of development. Accordingly, there is a case for up 40% of the mix being one bed units. However, in general terms we would expect the development to largely reflect the guidance contained within the Supplementary Planning Guidance which states that the overall mix of affordable housing should reflect the overall mix of the development as a whole.

With regard to larger units, it is considered that there should be a higher proportion of two bedrooled units in comparison to three bed units.

It was emphasised at our meeting that that the affordable housing should be tenure neutral and transferred to an approved RSL at 40% of the market value. The Section 106 agreement will include a requirement for the completion of on-site affordable housing before, or in line with, the occupation of a specified number of market units. The affordable housing should be phased appropriately to ensure that it contributes to the mix of housing types and tenures, to aid the delivery of sustainable communities.

Any affordable units that are provided on-site should be externally indistinguishable from general market housing. Unless there are specific circumstances agreed by the Council and in order to help promote mixed and inclusive communities, all affordable housing units should be dispersed, or 'pepper-potted' throughout the site should not be concentrated in one area of the development.

All affordable housing contributions will be required to remain affordable in perpetuity, with secure mechanisms in place to ensure it is accessible to those who cannot afford market housing, both on first occupation and for subsequent occupiers.

The Authority will require the details of the Registered Social Landlord (SHL) as soon as practicable, and I would encourage you to liaise further with Claire Jones in this regard. It is understood that although it is desirable for the units to meet DQR standards this may not be achievable.

- **Open Space Provision**

Policy OS1 requires that where there is a quantitative deficiency in outdoor sport, children's play, informal space or allotments, provision will be sought, including the requirement for maintenance, in conjunction with all new residential developments of 3 or more dwellings, based on the following standards:

- Outdoor Sport 1.6 hectares per 1,000 population
- Children's Play 0.25 hectares per 1,000 population
- Informal Space 0.55 hectares per 1,000 population
- Allotments 0.19 hectares per 1,000 population

The site straddles the boundaries of the Bryncoch North (BN), Cadoxton (C) and Bryncoch South (BS) wards, and an assessment has therefore been made of the proportion of development in each ward, the effects on existing ward shortfalls/ over provision and consideration of the accessibility of existing facilities to the site. Taking all of the above into account, the following assessment is made of the minimum required provision:

Category	Commentary	BN	C	BS	Site Req't
Pitch sport	Require full requirement for Bryncoch N and Cadoxton. In Bryncoch S facility is within accessibility standard and ward still has over provision, therefore no requirement for the Bryncoch S element.	3081.2	2106.8	0	5188sqm
Non pitch sport	Require full requirement for Bryncoch N and Cadoxton. Bryncoch S facility is within accessibility standard, but there is an under provision in the ward, therefore potential for S106 contributions towards this facility to satisfy the Bryncoch S requirement. However it would be better to make on site provision (see note below)	1205.7	824.4	41.2	2071.3sqm
Children's Play	Full requirement for Bryncoch N and Cadoxton. Bryncoch S facility within accessibility standard but there is an under provision in the ward. On site provision required.	669.8	458	22.9	1150.7sqm
Informal	Full requirement for Bryncoch N and Cadoxton.	1473.6	1007.6	0	2481.2sqm

open space	Bryncoch S facility is within the accessibility standard and ward still has over provision, therefore no requirement for the Bryncoch S element.				
Allotments	Shortfall in spatial area therefore full contribution required	509.1	348.1	17.4	874.6sqm

Therefore the proposed development has the following open space requirements:

- Pitch sport – 5188 sq m
- Non pitch sports – 2071sq m
- Children’s play 1151sq m
- Informal – 2481 sq m
- Allotments – 875 sq m

Due to the size of the site and the issue with accessibility to existing facilities in the 3 wards, open space provision needs to be provided on site to meet the needs of the new residents. Informal open space, children’s play and if possible pitch provision should be provided.

Your client referred at the meeting to the potential to build an all-weather multi use pitch on site, and in this respect I would advise that this would help meet the pitch and non-pitch provision. Section 106 contributions can be made for the provision of off-site allotments in the Spatial area, if these are unable to be provided on site (although given the size of the site it may be able to accommodate these). Full details of the on-site open space provision should be supplied as part of the planning application, together with details of future maintenance, which is likely to be required through a management company secured by agreement.

In terms of the indicative layout, it is noted that there are a number areas of open spaces identified, including the large area of open space located to the north west of the site which is part of a disused quarry and undevelopable. It is emphasised at this point that it would be desirable to have a larger more centrally located area of open space within the site, and that this should incorporate the required formal children’s play provision.

• **Education Provision**

The Council is presently preparing its Planning Obligations Supplementary Planning Guidance, which is due out for public consultation in Summer 2016. This draft SPG addresses Development Impact & Schools Infrastructure Provision.

In order to inform our discussions and your client’s negotiations on land value with the owner, our Education Department has produced an overview, justification and calculation for education planning obligations for the proposed Leiros Park development of 200 houses. This information has been attached in Appendix 2.

In summary, this indicates that while some of the demand can be met by existing schools, there is an expected requirement for financial contribution of £862,231 in respect of 4 primary and 29 secondary pupil places.

• **Public Transport / Connectivity**

The Transport Assessment will need to identify key linkages for Public Transport / cycling / pedestrian connectivity, and any improvements necessary to serve the development.

Although the TA will need to inform such matters, at this stage it is noted that the site should be adequately served by public transport and an extended bus route may be required to serve the proposed development, utilising the proposed loop within the site accessed from Daphne Road and Leiros Park Drive. The bus contributions would likely be considered on the additional distance and time the bus will have to travel and the impact on the route, noting also that at present the bus currently serves this area approximately three times a week.

Initial discussions with highways officers suggest there may be a need for a sustainable transport contribution of £30,000 per annum for 3 years towards such extended bus services. However, this figure may be subject to change as renewed tenders are due shortly. You are encouraged to liaise direct with the bus provider on such matters given that this may influence the assumptions within your TA.

S106 Conclusion

Please note that the above is a summary of the likely expectations at this stage, although it is likely that we will need to have further discussions in respect of the same once additional evidence is available. In this regard in order for the Authority to provide accurate figures with regard to off-site highways contributions and an accurate response in respect to the affordable housing mix the first two items will be required prior to submission.

Required Supporting Documentation

If you decide to submit an application, we would encourage you to submit your application electronically via www.planningportal.gov.uk.

Having regard to the nature of your proposal, it is considered at this stage that in addition to the submission of standard mandatory supporting documentation such as application forms, plans and a Design and Access Statement (see TAN 12 Design, Appendix 1), any application for the above development should also be accompanied by the following additional documentation: -

- Pre-Application Consultation report (PAC) – if application submitted on or after 1st August 2016. On this point, we emphasised our view that such community consultation should ideally be undertaken given the potential impacts of your scheme on the local area.
- Transport Assessment
- Details of the affordable housing mix
- Design and Access Statement
- Coal risk assessment
- Phase 1 Habitat Survey Badger/bat/bird/reptile surveys and dormouse survey depending on the results of the phase 1 survey.
- Tree survey
- Contaminated land desk top assessment
- Drainage strategy
- Topography survey/sections and long sections.

- Archaeological desk top assessment
- Construction management plan (CMP).
- A site waste management plan (SWMP)
- An energy assessment in accordance with Policy RE2.

If any subsequent application fails to include the information above, there is a chance it may not be registered and, in any event, it is likely that an application will either be refused or will not be able to be progressed until its satisfactory submission.

It is also this Authority's practice to recommend to applicants that detailed information is submitted at application stage to ensure that, in the event of planning permission being granted, 'pre-commencement' conditions (which require approval of details prior to work starting on site) can be minimised. You are therefore encouraged to ensure that your initial submissions incorporate as much information as possible (for example materials, boundary treatment, ecology mitigation, Construction Management Plan, Travel Plan etc.), and address all matters raised in the advice given above.

Detailed guidance on the use of the national standard application form for planning permission and other associated consent regimes; and the information which must accompany a planning application so that the local planning authority can determine the validity of the application, can be found as follows: -

"Guidance on the use of the standard application form ('1app') and validation of applications":

<http://wales.gov.uk/topics/planning/policy/guidanceandleaflets/1appguidance>

The Town and Country Planning (Development Management Procedure) (Wales) Order 2012:

<http://www.legislation.gov.uk/wsi/2012/801/contents/made>

How we will deal with your planning application

As part of its emphasis on 'Delivering Quality Development Quickly', the Planning department prides itself on the service it offers our customers. Once your application has been received, this will include an allocated case officer making contact with you or your appointed agent within the first week and arranging a visit, following which we will contact you by phone or email to advise of any discrepancies with your application. We will also work with you to address any outstanding concerns, including any amendments required to make your proposal acceptable.

Once we are happy with the validity of your application, we will formally consult neighbours and relevant consultees. Provided there are no significant matters of concern resulting from such consultations, we will then seek to determine your application as swiftly as possible after the expiry of the statutory publicity period, and aim to do so within the 8 week statutory period.

While Officers will endeavour to ensure you are aware of the progress of your application, we would encourage you to contact the case officer should you wish to discuss any matter further.

Development Team Approach – Building Control

The Development Management and Building Control teams work closely to assist developer's in improving the quality of their development and ensuring compliance with all appropriate conditions and Regulations. In particular, Building Control provides a competitive and highly professional service and

seeks to actively engage with developer's at the earliest stage of their project. You are therefore encouraged to contact the Building Control team on 01639 686820 or by emailing building.control@npt.gov.uk to enter into early negotiations and understand the benefits of the Council's Development Team approach.

Requests for Further Advice

Following receipt of this initial advice, should you wish to discuss your scheme prior to formal submission, please contact the case officer on the direct number or email address given above. Further charges may apply.

Yours faithfully,

Paul Colman
Senior Planning Officer

Please Note:

The advice offered in this response represents an informal opinion, provided in accordance with the Council's Planning Pre-Application Service Protocol. In particular, it is emphasised that while this pre application advice will be carefully considered in reaching a decision or recommendation on an application, the final decision on any application that you may make can only be taken after we have consulted local people, statutory consultees and any other interested parties. It does not, therefore prejudice any decision which the Local Planning Authority may make should an application be submitted.

If you require this information in larger print, or in an alternative format, please contact the above named officer.

Appendix B

Calculation Reference: AUDIT-317901-160810-0832

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	WS WEST SUSSEX	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
	NT NOTTINGHAMSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	LC LANCASHIRE	1 days
11	SCOTLAND	
	FI FIFE	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
Actual Range: 150 to 185 (units:)
Range Selected by User: 135 to 185 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/99 to 10/08/16

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	1 days
Tuesday	2 days
Wednesday	1 days
Thursday	2 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	6
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This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
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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.

Filtering Stage 3 selection:

Use Class:

C3

6 days

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

Population within 1 mile:

5,001 to 10,000

1 days

10,001 to 15,000

1 days

15,001 to 20,000

4 days

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

Population within 5 miles:

75,001 to 100,000

2 days

100,001 to 125,000

2 days

125,001 to 250,000

2 days

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

Car ownership within 5 miles:

0.6 to 1.0

3 days

1.1 to 1.5

3 days

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

Travel Plan:

Yes

1 days

No

5 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.

LIST OF SITES relevant to selection parameters

1	CH-03-A-02 SYDNEY ROAD	HOUSES/FLATS		CHESHIRE
	CREWE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	174		
	Survey date: TUESDAY	14/10/08		Survey Type: MANUAL
2	FI-03-A-03 WOODMILL ROAD	MIXED HOUSES		FIFE
	DUNFERMLINE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	155		
	Survey date: MONDAY	30/04/07		Survey Type: MANUAL
3	LC-03-A-29 REVIDGE ROAD FOUR LANE ENDS BLACKBURN	DETACHED/SEMI D.		LANCASHIRE
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	185		
	Survey date: THURSDAY	10/06/04		Survey Type: MANUAL
4	LN-03-A-01 BRANT ROAD BRACEBRIDGE LINCOLN	MIXED HOUSES		LINCOLNSHIRE
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	150		
	Survey date: TUESDAY	15/05/07		Survey Type: MANUAL
5	NT-03-A-03 B6018 SUTTON ROAD	SEMI DETACHED		NOTTINGHAMSHIRE
	KIRKBY-IN-ASHFIELD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	166		
	Survey date: WEDNESDAY	28/06/06		Survey Type: MANUAL
6	WS-03-A-04 HILLS FARM LANE BROADBRIDGE HEATH HORSHAM	MIXED HOUSES		WEST SUSSEX
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	151		
	Survey date: THURSDAY	11/12/14		Survey Type: MANUAL

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

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

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 160 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	164	0.068	10.928	6	164	0.314	50.234	6	164	0.382	61.162
08:00 - 09:00	6	164	0.139	22.181	6	164	0.415	66.381	6	164	0.554	88.562
09:00 - 10:00	6	164	0.144	22.997	6	164	0.201	32.130	6	164	0.345	55.127
10:00 - 11:00	6	164	0.148	23.649	6	164	0.196	31.315	6	164	0.344	54.964
11:00 - 12:00	6	164	0.175	28.053	6	164	0.175	28.053	6	164	0.350	56.106
12:00 - 13:00	6	164	0.194	30.989	6	164	0.190	30.336	6	164	0.384	61.325
13:00 - 14:00	6	164	0.181	29.032	6	164	0.150	23.976	6	164	0.331	53.008
14:00 - 15:00	6	164	0.182	29.195	6	164	0.182	29.195	6	164	0.364	58.390
15:00 - 16:00	6	164	0.272	43.547	6	164	0.192	30.663	6	164	0.464	74.210
16:00 - 17:00	6	164	0.325	52.029	6	164	0.207	33.109	6	164	0.532	85.138
17:00 - 18:00	6	164	0.397	63.445	6	164	0.249	39.796	6	164	0.646	103.241
18:00 - 19:00	6	164	0.260	41.590	6	164	0.235	37.676	6	164	0.495	79.266
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			2.485	397.635			2.706	432.864			5.191	830.499

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

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

Parameter summary

Trip rate parameter range selected:	150 - 185 (units:)
Survey date range:	01/01/99 - 10/08/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

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

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 160 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	164	0.002	0.326	6	164	0.000	0.000	6	164	0.002	0.326
08:00 - 09:00	6	164	0.002	0.326	6	164	0.003	0.489	6	164	0.005	0.815
09:00 - 10:00	6	164	0.004	0.652	6	164	0.000	0.000	6	164	0.004	0.652
10:00 - 11:00	6	164	0.003	0.489	6	164	0.006	0.979	6	164	0.009	1.468
11:00 - 12:00	6	164	0.001	0.163	6	164	0.000	0.000	6	164	0.001	0.163
12:00 - 13:00	6	164	0.002	0.326	6	164	0.004	0.652	6	164	0.006	0.978
13:00 - 14:00	6	164	0.004	0.652	6	164	0.002	0.326	6	164	0.006	0.978
14:00 - 15:00	6	164	0.002	0.326	6	164	0.004	0.652	6	164	0.006	0.978
15:00 - 16:00	6	164	0.001	0.163	6	164	0.000	0.000	6	164	0.001	0.163
16:00 - 17:00	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
17:00 - 18:00	6	164	0.001	0.163	6	164	0.003	0.489	6	164	0.004	0.652
18:00 - 19:00	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.022	3.586			0.022	3.587			0.044	7.173

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

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

Parameter summary

Trip rate parameter range selected: 150 - 185 (units:)
Survey date range: 01/01/99 - 10/08/16
Number of weekdays (Monday-Friday): 6
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 0
Surveys manually removed from selection: 0

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

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

PSVS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 160 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
08:00 - 09:00	6	164	0.003	0.489	6	164	0.003	0.489	6	164	0.006	0.978
09:00 - 10:00	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
10:00 - 11:00	6	164	0.001	0.163	6	164	0.001	0.163	6	164	0.002	0.326
11:00 - 12:00	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
12:00 - 13:00	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
13:00 - 14:00	6	164	0.001	0.163	6	164	0.001	0.163	6	164	0.002	0.326
14:00 - 15:00	6	164	0.001	0.163	6	164	0.000	0.000	6	164	0.001	0.163
15:00 - 16:00	6	164	0.002	0.326	6	164	0.002	0.326	6	164	0.004	0.652
16:00 - 17:00	6	164	0.001	0.163	6	164	0.001	0.163	6	164	0.002	0.326
17:00 - 18:00	6	164	0.000	0.000	6	164	0.000	0.000	6	164	0.000	0.000
18:00 - 19:00	6	164	0.001	0.163	6	164	0.001	0.163	6	164	0.002	0.326
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.010	1.630			0.009	1.467			0.019	3.097

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

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

Parameter summary

Trip rate parameter range selected: 150 - 185 (units:)
 Survey date range: 01/01/99 - 10/08/16
 Number of weekdays (Monday-Friday): 6
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

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

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 160 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	164	0.010	1.631	6	164	0.012	1.957	6	164	0.022	3.588
08:00 - 09:00	6	164	0.001	0.163	6	164	0.007	1.142	6	164	0.008	1.305
09:00 - 10:00	6	164	0.006	0.979	6	164	0.004	0.652	6	164	0.010	1.631
10:00 - 11:00	6	164	0.005	0.815	6	164	0.006	0.979	6	164	0.011	1.794
11:00 - 12:00	6	164	0.002	0.326	6	164	0.003	0.489	6	164	0.005	0.815
12:00 - 13:00	6	164	0.005	0.815	6	164	0.001	0.163	6	164	0.006	0.978
13:00 - 14:00	6	164	0.002	0.326	6	164	0.003	0.489	6	164	0.005	0.815
14:00 - 15:00	6	164	0.001	0.163	6	164	0.002	0.326	6	164	0.003	0.489
15:00 - 16:00	6	164	0.007	1.142	6	164	0.006	0.979	6	164	0.013	2.121
16:00 - 17:00	6	164	0.004	0.652	6	164	0.008	1.305	6	164	0.012	1.957
17:00 - 18:00	6	164	0.016	2.610	6	164	0.006	0.979	6	164	0.022	3.589
18:00 - 19:00	6	164	0.003	0.489	6	164	0.003	0.489	6	164	0.006	0.978
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.062	10.111			0.061	9.949			0.123	20.060

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

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

Parameter summary

Trip rate parameter range selected: 150 - 185 (units:)
Survey date range: 01/01/99 - 10/08/16
Number of weekdays (Monday-Friday): 6
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 0
Surveys manually removed from selection: 0

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

Appendix C

Calculation Reference: AUDIT-317901-160810-0853

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : B - AFFORDABLE/LOCAL AUTHORITY HOUSES
VEHICLES

Selected regions and areas:

06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	NB NORTHUMBERLAND	1 days
10	WALES	
	DB DENBIGHSHIRE	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
Actual Range: 43 to 97 (units:)
Range Selected by User: 20 to 100 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/99 to 10/08/16

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	2 days
Friday	1 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town 6

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

Selected Location Sub Categories:

Residential Zone 6

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.

Filtering Stage 3 selection:

Use Class:

C3

6 days

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

Population within 1 mile:

5,001 to 10,000

1 days

10,001 to 15,000

1 days

15,001 to 20,000

4 days

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

Population within 5 miles:

50,001 to 75,000

1 days

75,001 to 100,000

1 days

125,001 to 250,000

3 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

5 days

1.1 to 1.5

1 days

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

Travel Plan:

Not Known

2 days

No

4 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.

LIST OF SITES relevant to selection parameters

1	CH-03-B-01	HOUSES & FLATS			CESHIRE
	WORDSWORTH CRES.				
	BLACON				
	CHESTER				
	Edge of Town				
	Residential Zone				
	Total Number of dwellings:		80		
	Survey date: MONDAY		17/11/14		Survey Type: MANUAL
2	DB-03-B-01	SEMI DETACHED			DENBIGHSHIRE
	PEN-Y-MAES AVENUE				
	RHYL				
	Edge of Town				
	Residential Zone				
	Total Number of dwellings:		43		
	Survey date: TUESDAY		30/11/99		Survey Type: MANUAL
3	NB-03-B-01	SEMI DET. & TERRACED			NORTHUMBERLAND
	WESTLEA				
	BEDLINGTON				
	Edge of Town				
	Residential Zone				
	Total Number of dwellings:		97		
	Survey date: MONDAY		19/11/12		Survey Type: MANUAL
4	WM-03-B-01	SEMI DET./TERRACED			WEST MIDLANDS
	YORKMINSTER DRIVE				
	CHELMSLEY WOOD				
	BIRMINGHAM				
	Edge of Town				
	Residential Zone				
	Total Number of dwellings:		97		
	Survey date: MONDAY		17/10/11		Survey Type: MANUAL
5	WO-03-B-01	TERRACED			WORCESTERSHIRE
	KNOTTS AVENUE				
	LYPPARD HANFORD				
	WORCESTER				
	Edge of Town				
	Residential Zone				
	Total Number of dwellings:		76		
	Survey date: FRIDAY		15/03/02		Survey Type: MANUAL
6	WY-03-B-02	MIXED HOUSES			WEST YORKSHIRE
	WHITEACRE STREET				
	DEIGHTON				
	HUDDERSFIELD				
	Edge of Town				
	Residential Zone				
	Total Number of dwellings:		54		
	Survey date: TUESDAY		17/09/13		Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
VEHICLES

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 40 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	75	0.074	2.953	6	75	0.197	7.875	6	75	0.271	10.828
08:00 - 09:00	6	75	0.157	6.264	6	75	0.327	13.065	6	75	0.484	19.329
09:00 - 10:00	6	75	0.179	7.159	6	75	0.208	8.322	6	75	0.387	15.481
10:00 - 11:00	6	75	0.179	7.159	6	75	0.190	7.606	6	75	0.369	14.765
11:00 - 12:00	6	75	0.172	6.890	6	75	0.195	7.785	6	75	0.367	14.675
12:00 - 13:00	6	75	0.201	8.054	6	75	0.168	6.711	6	75	0.369	14.765
13:00 - 14:00	6	75	0.183	7.338	6	75	0.181	7.248	6	75	0.364	14.586
14:00 - 15:00	6	75	0.235	9.396	6	75	0.219	8.770	6	75	0.454	18.166
15:00 - 16:00	6	75	0.264	10.559	6	75	0.199	7.964	6	75	0.463	18.523
16:00 - 17:00	6	75	0.298	11.902	6	75	0.157	6.264	6	75	0.455	18.166
17:00 - 18:00	6	75	0.298	11.902	6	75	0.210	8.412	6	75	0.508	20.314
18:00 - 19:00	6	75	0.213	8.501	6	75	0.170	6.801	6	75	0.383	15.302
19:00 - 20:00	1	43	0.372	14.884	1	43	0.116	4.651	1	43	0.488	19.535
20:00 - 21:00	1	43	0.093	3.721	1	43	0.116	4.651	1	43	0.209	8.372
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			2.918	116.682			2.653	106.125			5.571	222.807

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

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

Parameter summary

Trip rate parameter range selected: 43 - 97 (units:)
 Survey date range: 01/01/99 - 10/08/16
 Number of weekdays (Monday-Friday): 6
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES

OGVS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 40 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
08:00 - 09:00	6	75	0.007	0.268	6	75	0.004	0.179	6	75	0.011	0.447
09:00 - 10:00	6	75	0.009	0.358	6	75	0.011	0.447	6	75	0.020	0.805
10:00 - 11:00	6	75	0.009	0.358	6	75	0.009	0.358	6	75	0.018	0.716
11:00 - 12:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
12:00 - 13:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
13:00 - 14:00	6	75	0.007	0.268	6	75	0.007	0.268	6	75	0.014	0.536
14:00 - 15:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
15:00 - 16:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
16:00 - 17:00	6	75	0.002	0.089	6	75	0.000	0.000	6	75	0.002	0.089
17:00 - 18:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
18:00 - 19:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
19:00 - 20:00	1	43	0.000	0.000	1	43	0.000	0.000	1	43	0.000	0.000
20:00 - 21:00	1	43	0.000	0.000	1	43	0.000	0.000	1	43	0.000	0.000
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.040	1.608			0.037	1.519			0.077	3.127

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

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

Parameter summary

Trip rate parameter range selected:	43 - 97 (units:)
Survey date range:	01/01/99 - 10/08/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
PSVS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 40 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
08:00 - 09:00	6	75	0.007	0.268	6	75	0.007	0.268	6	75	0.014	0.536
09:00 - 10:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
10:00 - 11:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
11:00 - 12:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
12:00 - 13:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
13:00 - 14:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
14:00 - 15:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
15:00 - 16:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
16:00 - 17:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
17:00 - 18:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
18:00 - 19:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
19:00 - 20:00	1	43	0.070	2.791	1	43	0.000	0.000	1	43	0.070	2.791
20:00 - 21:00	1	43	0.000	0.000	1	43	0.000	0.000	1	43	0.000	0.000
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.083	3.326			0.013	0.535			0.096	3.861

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

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Parameter summary

Trip rate parameter range selected: 43 - 97 (units:)
Survey date range: 01/01/99 - 10/08/16
Number of weekdays (Monday-Friday): 6
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 0
Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
CYCLISTS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 40 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	6	75	0.004	0.179	6	75	0.009	0.358	6	75	0.013	0.537
08:00 - 09:00	6	75	0.002	0.089	6	75	0.020	0.805	6	75	0.022	0.894
09:00 - 10:00	6	75	0.004	0.179	6	75	0.004	0.179	6	75	0.008	0.358
10:00 - 11:00	6	75	0.000	0.000	6	75	0.004	0.179	6	75	0.004	0.179
11:00 - 12:00	6	75	0.004	0.179	6	75	0.000	0.000	6	75	0.004	0.179
12:00 - 13:00	6	75	0.000	0.000	6	75	0.000	0.000	6	75	0.000	0.000
13:00 - 14:00	6	75	0.004	0.179	6	75	0.000	0.000	6	75	0.004	0.179
14:00 - 15:00	6	75	0.002	0.089	6	75	0.002	0.089	6	75	0.004	0.178
15:00 - 16:00	6	75	0.013	0.537	6	75	0.002	0.089	6	75	0.015	0.626
16:00 - 17:00	6	75	0.013	0.537	6	75	0.002	0.089	6	75	0.015	0.626
17:00 - 18:00	6	75	0.016	0.626	6	75	0.009	0.358	6	75	0.025	0.984
18:00 - 19:00	6	75	0.007	0.268	6	75	0.007	0.268	6	75	0.014	0.536
19:00 - 20:00	1	43	0.047	1.860	1	43	0.000	0.000	1	43	0.047	1.860
20:00 - 21:00	1	43	0.000	0.000	1	43	0.000	0.000	1	43	0.000	0.000
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.116	4.722			0.059	2.414			0.175	7.136

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

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 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

Appendix B

Project number	T16.130	Project name	Leiros Park, Neath
Contact/participants	David Adlam, Justin Griffiths (Neath Port Talbot Highways Department) Patrick O'Connor, Louie Vaughan (Asbri Transport Ltd),		
Noted by	Patrick O'Connor/Louie Vaughan		
Subject	Neath Port Talbot Highways Meeting Notes	Date	20/01/2017

DRAFT Meeting note

Item	Description	Action
1.	Introductions / reason for meeting / outline planning application	
1.1	PO'C updated NPT on the progress with the Transport Assessment. Discussion followed surrounding capacity of the local road network in the vicinity of the two roundabouts on Cadoxton Road.	
1.2	The requirement for development-related highway improvements or contributions were outlined in the pre-application response. PO'C advised that the TA is being progressed with the traffic surveys conducted on the 18 th of October 2016 and that the future capacity modelling had accounted for the dualling improvement scheme detailed on NPT drawing number R15390/02, 'Road widening between Penywern Road and Burger King Roundabouts.'	
1.3	PO'C advised that the TA has been progressed with trip rates derived from the mixed private/affordable housing sub-category of the TRICS database as discussed with Dave Adlam (DA) during scoping correspondence. PO'C advised that the TRICS analysis including the sample of sites had been issued to DA,	
1.4	PO'C advised that a Travel Plan would accompany the planning application submission and that this may be submitted in draft prior to the application submission.	
2	Local highway network/roundabout Capacity	
2.1	PO'C noted that the TA would consider a 50 - 60 residential unit trigger point for highway works to Cadoxton Road. Justin Griffiths (JG) suggested submitting a planning application for just 50 – 60 units in the first instance. PO'C advised that it was likely that the planning submission would be for 200 houses as per the LDP allocation.	
2.2	DA/JG advised that a complete package of information would be required to support a 200 unit planning application. This would need to include a comprehensive drainage strategy. PO'C advised that CB3 engineers are progressing drainage matters.	
2.3	All parties agreed that the roundabouts on Cadoxton Road were already over capacity in the future year baseline analysis. This is a consequence of back-ground traffic growth. PO'C advised that the addition of development vehicular	

	trips causes a further, albeit marginal loss in operational performance of the roundabout junctions.	
2.4	PO'C noted that the operational performance of the local road network improved after the implementation of the Cadoxton Road dualling improvement.	
2.5	JG highlighted that there is public concern regarding the junctions and the impact of the site will need to be defended in committee. JG advised that because of this, evidence will need to be presented in a form so that residents may easily interpret it.	
3	Highway works/alterations to A474.	
3.1	PO'C advised that the October 2016 traffic survey had included counts of pedestrians using the crossing provision located on Cadoxton Road. The pedestrian flows at the crossing will be referenced in the TA.	
3.2	DA and JG highlighted that there have been road improvements on the A474 corridor in the vicinity of the priority junctions of Daphne Road and Leiros Park Drive. Highway works have been constructed in 2016 in the form of traffic islands and ghosted turn provision at the existing priority junctions.	
3.3	PO'C advised that the capacity modelling details that both priority junctions of the A474 and Leiros Park Drive were generally operating within capacity in the future assessment scenarios but he would review the modelling work of these junctions in the context of the highway improvements. (Post-meeting note: the A474 corridor improvements should have improved capacity and safety at the priority junctions.)	
3.4	DA and JG highlighted that a stage 1 and stage 2 safety audit will be needed for any highway works that may be proposed in the planning application.	
4	Bus infrastructure	
4.1	PO'C advised that the design of the site's internal layout allows for bus movement between Leiros Park Dive and Daphne Road and the planning application will include swept-path analysis.	
4.2	PO'C asked for clarification on the costs associated with extending bus services into the development. DA advised that the costs quoted in the pre-app correspondence may have increased. PO'C also sought information on the current operator of service 150. PO'C to liaise with Peter Jackson or Brendan Griffiths.	PO'C/NPT
5	Parking matters	
5.1	The maximum number of 3 spaces per dwelling should be annotated on the application drawings.	

Appendix C



Cadoxton Road Roundabout

NPT15099 Thursday 06/04/2017

23 Cadoxton Road East -> B4434 South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	40	9	0	0	1	1	51	0	52	0
7:30-8:00	106	13	3	0	0	2	124	3	131	2.4
8:00-8:30	219	14	1	0	1	1	236	1	240	0.4
8:30-9:00	242	23	0	3	0	0	268	3	276	1.1
7:00-9:00 bloc	607	59	4	3	2	4	679	7	698	1.1
8:00-9:00 peak	461	37	1	3	1	1	504	4	515	0.8
15:00-15:30	169	16	1	3	2	0	191	4	198	2.1
15:30-16:00	163	18	2	1	2	0	186	3	194	1.6
16:00-16:30	162	15	0	3	2	2	184	3	187	1.6
16:30-17:00	147	11	0	0	2	0	160	0	161	0
17:00-17:30	151	5	0	2	3	1	162	2	163	1.2
17:30-18:00	167	12	0	0	3	0	182	0	183	0
15:00-18:00 bloc	959	77	3	9	14	3	1065	12	1086	1.1
15:00-16:00 peak	332	34	3	4	4	0	377	7	392	1.9
total	1566	136	7	12	16	7	1744	19	1784	1.1

24 Cadoxton Road East -> Cadoxton Rd A474 West

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	146	18	3	0	1	1	169	3	177	1.8
7:30-8:00	243	31	6	1	2	0	283	7	301	2.5
8:00-8:30	227	28	5	3	2	0	265	8	283	3
8:30-9:00	192	22	1	5	1	0	221	6	232	2.7
7:00-9:00 bloc	808	99	15	9	6	1	938	24	993	2.5
7:30-8:30 peak	470	59	11	4	4	0	548	15	584	2.7
15:00-15:30	139	14	4	1	0	0	158	5	170	3.2
15:30-16:00	141	20	4	4	2	1	172	8	186	4.7
16:00-16:30	133	20	0	1	3	0	157	1	161	0.6
16:30-17:00	142	18	0	0	5	0	165	0	166	0
17:00-17:30	127	7	0	0	0	0	134	0	135	0
17:30-18:00	177	10	0	0	1	2	190	0	190	0
15:00-18:00 bloc	859	89	8	6	11	3	976	14	1008	1.4
15:00-16:00 peak	280	34	8	5	2	1	330	13	356	3.9
total	1667	188	23	15	17	4	1914	38	2001	2

32 B4434 South -> Cadoxton Road East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	59	8	4	0	0	1	72	4	81	5.6
7:30-8:00	106	17	6	1	0	0	130	7	146	5.4
8:00-8:30	128	32	2	6	0	0	168	8	184	4.8
8:30-9:00	78	22	7	0	0	0	107	7	125	6.5
7:00-9:00 bloc	371	79	19	7	0	1	477	26	537	5.4
7:30-8:30 peak	234	49	8	7	0	0	298	15	331	5
15:00-15:30	177	24	3	0	1	1	206	3	216	1.5
15:30-16:00	158	19	5	3	2	0	187	8	203	4.3
16:00-16:30	226	22	1	0	0	0	249	1	255	0.4
16:30-17:00	255	17	3	5	0	1	281	8	295	2.8
17:00-17:30	300	14	1	2	0	0	317	3	324	0.9
17:30-18:00	251	10	0	0	1	0	262	0	264	0
15:00-18:00 bloc	1367	106	13	10	4	2	1502	23	1556	1.5
16:45-17:45 peak	561	35	3	6	0	0	605	9	624	1.5
total	1738	185	32	17	4	3	1979	49	2093	2.5

34 B4434 South -> Cadoxton Rd A474 West

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	20	4	1	1	0	0	26	2	30	7.7
7:30-8:00	38	5	0	2	0	0	45	2	48	4.4
8:00-8:30	103	6	0	1	0	0	110	1	112	0.9
8:30-9:00	83	7	0	10	0	0	100	10	111	10
7:00-9:00 bloc	244	22	1	14	0	0	281	15	301	5.3
8:00-9:00 peak	186	13	0	11	0	0	210	11	224	5.2
15:00-15:30	90	7	0	2	1	0	100	2	103	2
15:30-16:00	95	8	1	1	0	0	105	2	110	1.9
16:00-16:30	82	7	0	2	1	2	94	2	95	2.1
16:30-17:00	87	3	0	3	0	0	93	3	97	3.2
17:00-17:30	94	5	0	1	1	0	101	1	103	1
17:30-18:00	79	2	0	1	0	0	82	1	83	1.2
15:00-18:00 bloc	527	32	1	10	3	2	575	11	590	1.9
15:00-16:00 peak	185	15	1	3	1	0	205	4	213	2
total	771	54	2	24	3	2	856	26	892	3

42 Cadoxton Rd A474 West -> Cadoxton Road East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	31	2	0	1	0	0	34	1	35	2.9
7:30-8:00	47	9	4	1	0	0	61	5	72	8.2
8:00-8:30	92	19	2	1	1	0	115	3	123	2.6
8:30-9:00	134	17	3	3	2	0	159	6	170	3.8
7:00-9:00 bloc	304	47	9	6	3	0	369	15	401	4.1
8:00-9:00 peak	226	36	5	4	3	0	274	9	294	3.3
15:00-15:30	134	14	2	0	2	1	153	2	158	1.3
15:30-16:00	187	15	2	1	0	0	205	3	213	1.5
16:00-16:30	172	14	0	2	0	0	188	2	193	1.1
16:30-17:00	159	13	2	1	2	2	179	3	184	1.7
17:00-17:30	187	9	0	1	2	1	200	1	201	0.5
17:30-18:00	143	7	0	1	6	5	162	1	157	0.6
15:00-18:00 bloc	982	72	6	6	12	9	1087	12	1106	1.1
15:30-16:30 peak	359	29	2	3	0	0	393	5	406	1.3
total	1286	119	15	12	15	9	1456	27	1507	1.9

43 Cadoxton Rd A474 West -> B4434 South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	45	13	2	0	0	0	60	2	67	3.3
7:30-8:00	75	26	0	2	2	0	105	2	111	1.9
8:00-8:30	155	31	0	8	1	0	195	8	209	4.1
8:30-9:00	168	23	1	5	0	0	197	6	209	3
7:00-9:00 bloc	443	93	3	15	3	0	557	18	595	3.2
8:00-9:00 peak	323	54	1	13	1	0	392	14	417	3.6
15:00-15:30	233	18	0	3	3	0	257	3	262	1.2
15:30-16:00	224	18	3	4	0	0	251	5	261	2
16:00-16:30	234	19	0	2	5	2	262	2	264	0.8
16:30-17:00	282	13	0	1	5	0	301	1	302	0.3
17:00-17:30	296	21	0	2	4	1	324	2	327	0.6
17:30-18:00	302	14	1	1	0	2	320	2	324	0.6
15:00-18:00 bloc	1571	103	4	11	21	5	1715	15	1740	0.9
17:00-18:00 peak	598	35	1	3	4	3	644	4	652	0.6
total	2014	196	7	26	24	5	2272	33	2335	1.5



Perquimans Roundabout

NP115094 Thursday 06/04/2017

12 Perquimans Road North -> A4220 East											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	28	3	0	0	0	0	0	0	0	0	0
7:30-8:00	47	0	0	0	0	0	0	0	0	0	0
8:00-8:30	85	12	0	0	0	0	0	0	0	0	0
8:30-9:00	171	14	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	228	16	0	0	0	0	0	0	0	0	0.0
9:30-10:00	121	0	0	0	0	0	0	0	0	0	0
10:00-10:30	41	0	0	0	0	0	0	0	0	0	0
10:30-11:00	41	0	0	0	0	0	0	0	0	0	0
11:00-11:30	51	0	0	0	0	0	0	0	0	0	0
11:30-12:00	50	0	0	0	0	0	0	0	0	0	0
12:00-12:30	88	0	0	0	0	0	0	0	0	0	0
12:30-1:00	89	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	272	16	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	272	16	0	0	0	0	0	0	0	0	0.0
total	859	32	0	0	0	0	0	0	0	0	0.0

13 Perquimans Road North -> Goring - y- Goring South											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	1	0	0	0	0	0	0	0	0	0	0
7:30-8:00	3	0	0	0	0	0	0	0	0	0	0
8:00-8:30	11	0	0	0	0	0	0	0	0	0	0
8:30-9:00	28	0	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	35	0	0	0	0	0	0	0	0	0	0.0
9:30-10:00	17	0	0	0	0	0	0	0	0	0	0
10:00-10:30	11	0	0	0	0	0	0	0	0	0	0
10:30-11:00	11	0	0	0	0	0	0	0	0	0	0
11:00-11:30	11	0	0	0	0	0	0	0	0	0	0
11:30-12:00	11	0	0	0	0	0	0	0	0	0	0
12:00-12:30	11	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	35	0	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	35	0	0	0	0	0	0	0	0	0	0.0
total	107	0	0	0	0	0	0	0	0	0	0.0

14 Perquimans Road North -> Caledonian Road West											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	148	18	0	0	0	0	0	0	0	0	0
7:30-8:00	289	0	0	0	0	0	0	0	0	0	0
8:00-8:30	255	13	0	0	0	0	0	0	0	0	0
8:30-9:00	275	17	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	532	30	0	0	0	0	0	0	0	0	0.0
9:30-10:00	180	0	0	0	0	0	0	0	0	0	0
10:00-10:30	150	0	0	0	0	0	0	0	0	0	0
10:30-11:00	174	0	0	0	0	0	0	0	0	0	0
11:00-11:30	175	0	0	0	0	0	0	0	0	0	0
11:30-12:00	175	0	0	0	0	0	0	0	0	0	0
12:00-12:30	147	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	532	30	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	532	30	0	0	0	0	0	0	0	0	0.0
total	2011	208	0	0	0	0	0	0	0	0	0.0

15 A4220 East -> Perquimans Road North											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	3	0	0	0	0	0	0	0	0	0	0
7:30-8:00	48	0	0	0	0	0	0	0	0	0	0
8:00-8:30	11	0	0	0	0	0	0	0	0	0	0
8:30-9:00	13	0	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	24	0	0	0	0	0	0	0	0	0	0.0
9:30-10:00	144	0	0	0	0	0	0	0	0	0	0
10:00-10:30	41	0	0	0	0	0	0	0	0	0	0
10:30-11:00	38	0	0	0	0	0	0	0	0	0	0
11:00-11:30	38	0	0	0	0	0	0	0	0	0	0
11:30-12:00	38	0	0	0	0	0	0	0	0	0	0
12:00-12:30	38	0	0	0	0	0	0	0	0	0	0
12:30-1:00	71	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	244	0	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	244	0	0	0	0	0	0	0	0	0	0.0
total	518	0	0	0	0	0	0	0	0	0	0.0

16 A4220 East -> Goring - y- Goring South											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	3	0	0	0	0	0	0	0	0	0	0
7:30-8:00	11	0	0	0	0	0	0	0	0	0	0
8:00-8:30	13	0	0	0	0	0	0	0	0	0	0
8:30-9:00	13	0	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	26	0	0	0	0	0	0	0	0	0	0.0
9:30-10:00	13	0	0	0	0	0	0	0	0	0	0
10:00-10:30	13	0	0	0	0	0	0	0	0	0	0
10:30-11:00	13	0	0	0	0	0	0	0	0	0	0
11:00-11:30	13	0	0	0	0	0	0	0	0	0	0
11:30-12:00	13	0	0	0	0	0	0	0	0	0	0
12:00-12:30	13	0	0	0	0	0	0	0	0	0	0
12:30-1:00	26	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	26	0	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	26	0	0	0	0	0	0	0	0	0	0.0
total	108	0	0	0	0	0	0	0	0	0	0.0

17 A4220 East -> Caledonian Road West											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	3	0	0	0	0	0	0	0	0	0	0
7:30-8:00	11	0	0	0	0	0	0	0	0	0	0
8:00-8:30	13	0	0	0	0	0	0	0	0	0	0
8:30-9:00	13	0	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	26	0	0	0	0	0	0	0	0	0	0.0
9:30-10:00	13	0	0	0	0	0	0	0	0	0	0
10:00-10:30	13	0	0	0	0	0	0	0	0	0	0
10:30-11:00	13	0	0	0	0	0	0	0	0	0	0
11:00-11:30	13	0	0	0	0	0	0	0	0	0	0
11:30-12:00	13	0	0	0	0	0	0	0	0	0	0
12:00-12:30	13	0	0	0	0	0	0	0	0	0	0
12:30-1:00	26	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	26	0	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	26	0	0	0	0	0	0	0	0	0	0.0
total	110	0	0	0	0	0	0	0	0	0	0.0

18 Goring - y- Goring South -> Perquimans Road North											
Time	PAB	REV	REV	BSL	MCL	PCL	HTHS	REV	REV	NSL	
7:00-7:30	1	0	0	0	0	0	0	0	0	0	0
7:30-8:00	3	0	0	0	0	0	0	0	0	0	0
8:00-8:30	5	0	0	0	0	0	0	0	0	0	0
8:30-9:00	11	0	0	0	0	0	0	0	0	0	0
9:00-9:30 AM peak	19	0	0	0	0	0	0	0	0	0	0.0
9:30-10:00	11	0	0	0	0	0	0	0	0	0	0
10:00-10:30	11	0	0	0	0	0	0	0	0	0	0
10:30-11:00	11	0	0	0	0	0	0	0	0	0	0
11:00-11:30	11	0	0	0	0	0	0	0	0	0	0
11:30-12:00	11	0	0	0	0	0	0	0	0	0	0
12:00-12:30	11	0	0	0	0	0	0	0	0	0	0
12:30-1:00	22	0	0	0	0	0	0	0	0	0	0
16:00-18:00 AM peak	19	0	0	0	0	0	0	0	0	0	0.0
18:00-17:00 peak	19	0	0	0	0	0	0	0	0	0	0.0
total	143	0	0	0	0	0	0	0	0	0	0.0

19 Goring - y- Goring South -> A4220 East		
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Llewellyn Avenue T - Junction

NPT15101 Thursday 06/04/2017

13 Penywern Road North -> Penywern Road South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	183	20	4	0	2	3	212	4	221	1.9
7:30-8:00	315	40	7	0	1	1	364	7	385	1.9
8:00-8:30	376	39	5	3	4	0	427	8	446	1.9
8:30-9:00	356	59	4	6	0	0	425	10	451	2.3
7:00-9:00 bloc	1230	158	20	9	7	4	1428	29	1502	2
8:00-9:00 peak	732	98	9	9	4	0	852	18	897	2.1
15:00-15:30	250	38	8	8	2	1	307	16	337	5.2
15:30-16:00	234	34	3	10	2	0	283	13	305	4.6
16:00-16:30	230	33	1	1	5	0	270	2	277	0.7
16:30-17:00	218	35	0	0	4	0	257	0	262	0
17:00-17:30	204	8	0	1	0	0	213	1	216	0.5
17:30-18:00	246	22	0	0	4	5	277	0	275	0
15:00-18:00 bloc	1382	170	12	20	17	6	1607	32	1672	2
15:00-16:00 peak	484	72	11	18	4	1	590	29	642	4.9
total	2612	328	32	29	24	10	3035	61	3174	2

14 Penywern Road North -> Llewellyn Avenue West

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	1	0	0	0	0	0	1	0	1	0
7:30-8:00	3	0	0	0	0	0	3	0	3	0
8:00-8:30	4	1	0	0	0	0	5	0	5	0
8:30-9:00	4	3	0	0	0	0	7	0	8	0
7:00-9:00 bloc	12	4	0	0	0	0	16	0	17	0
8:00-9:00 peak	8	4	0	0	0	0	12	0	13	0
15:00-15:30	3	0	0	0	0	0	3	0	3	0
15:30-16:00	4	1	0	0	0	0	5	0	5	0
16:00-16:30	4	0	0	0	0	0	4	0	4	0
16:30-17:00	3	0	0	0	0	0	3	0	3	0
17:00-17:30	3	0	0	0	0	0	3	0	3	0
17:30-18:00	3	0	0	0	0	0	3	0	3	0
15:00-18:00 bloc	20	1	0	0	0	0	21	0	21	0
15:15-16:15 peak	8	1	0	0	0	0	9	0	9	0
total	32	5	0	0	0	0	37	0	38	0

31 Penywern Road South -> Penywern Road North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	65	20	6	0	1	0	92	6	108	6.5
7:30-8:00	125	36	4	2	2	0	169	6	185	3.5
8:00-8:30	217	54	3	9	2	0	285	12	310	4.2
8:30-9:00	212	46	9	4	0	1	272	13	302	4.8
7:00-9:00 bloc	619	156	22	15	5	1	818	37	905	4.5
8:00-9:00 peak	429	100	12	13	2	1	557	25	612	4.5
15:00-15:30	300	42	5	3	7	0	357	8	375	2.2
15:30-16:00	291	29	7	4	3	2	336	11	357	3.3
16:00-16:30	276	37	2	0	1	2	318	2	327	0.6
16:30-17:00	245	39	2	2	4	1	293	4	304	1.4
17:00-17:30	375	28	1	3	2	1	410	4	419	1
17:30-18:00	356	32	1	0	0	3	392	1	398	0.2
15:00-18:00 bloc	1843	207	18	12	17	9	2106	30	2180	1.4
17:00-18:00 peak	731	60	2	3	2	4	802	5	817	0.6
total	2462	363	40	27	22	10	2924	67	3085	2.3

34 Penywern Road South -> Llewellyn Avenue West

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	5	1	0	0	0	0	6	0	6	0
7:30-8:00	2	0	0	0	0	0	2	0	2	0
8:00-8:30	0	5	0	0	0	0	5	0	6	0
8:30-9:00	7	1	0	0	0	0	8	0	8	0
7:00-9:00 bloc	14	7	0	0	0	0	21	0	22	0
8:00-9:00 peak	7	6	0	0	0	0	13	0	14	0
15:00-15:30	2	0	0	0	0	0	2	0	2	0
15:30-16:00	8	2	0	0	0	0	10	0	10	0
16:00-16:30	9	1	0	0	0	0	10	0	10	0
16:30-17:00	9	1	0	0	1	0	11	0	11	0
17:00-17:30	5	0	0	0	0	0	5	0	5	0
17:30-18:00	6	0	0	0	0	0	6	0	6	0
15:00-18:00 bloc	39	4	0	0	1	0	44	0	44	0
15:45-16:45 peak	19	1	0	0	1	0	21	0	21	0
total	53	11	0	0	1	0	65	0	67	0

41 Llewellyn Avenue West -> Penywern Road North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	2	0	0	0	0	0	2	0	2	0
7:30-8:00	1	0	0	0	0	0	1	0	1	0
8:00-8:30	1	0	0	0	0	0	1	0	1	0
8:30-9:00	2	1	0	0	0	0	3	0	3	0
7:00-9:00 bloc	6	1	0	0	0	0	7	0	7	0
8:00-9:00 peak	3	1	0	0	0	0	4	0	4	0
15:00-15:30	4	0	0	0	0	0	4	0	4	0
15:30-16:00	4	1	0	1	0	0	6	1	7	16.7
16:00-16:30	13	1	0	0	0	0	14	0	14	0
16:30-17:00	8	2	0	0	0	0	10	0	10	0
17:00-17:30	7	1	0	0	0	0	8	0	8	0
17:30-18:00	9	1	0	0	0	0	10	0	10	0
15:00-18:00 bloc	45	6	0	1	0	0	52	1	54	1.9
15:45-16:45 peak	20	3	0	1	0	0	24	1	26	4.2
total	51	7	0	1	0	0	59	1	61	1.7

43 Llewellyn Avenue West -> Penywern Road South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	0	0	0	0	0	0	0	0	0	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	0	0	0	0	0	0	0	0	0	0
8:30-9:00	0	0	0	0	0	0	0	0	0	0
7:00-9:00 bloc	0	0	0	0	0	0	0	0	0	0
7:00-8:00 peak	0	0	0	0	0	0	0	0	0	0
15:00-15:30	0	0	0	0	0	0	0	0	0	0
15:30-16:00	0	0	0	0	0	0	0	0	0	0
16:00-16:30	0	0	0	0	0	0	0	0	0	0
16:30-17:00	0	0	0	0	0	0	0	0	0	0
17:00-17:30	0	0	0	0	0	0	0	0	0	0
17:30-18:00	0	0	0	0	0	0	0	0	0	0
15:00-18:00 bloc	0	0	0	0	0	0	0	0	0	0
15:00-16:00 peak	0	0	0	0	0	0	0	0	0	0
total	0	0	0	0	0	0	0	0	0	0



Daphne Road T - Junction

NPT15095 Thursday 06/04/2017

12 Penywern Road North -> Daphne Road East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	0	0	0	0	0	0	0	0	0	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	0	0	0	0	0	0	0	0	0	0
8:30-9:00	1	0	0	0	0	0	1	0	1	0
7:00-9:00 bloc	1	0	0	0	0	0	1	0	1	0
7:45-8:45 peak	1	0	0	0	0	0	1	0	1	0
15:00-15:30	1	0	0	0	0	0	1	0	1	0
15:30-16:00	0	0	0	0	0	0	1	0	1	0
16:00-16:30	2	0	0	0	0	0	2	0	2	0
16:30-17:00	1	0	0	0	0	0	1	0	1	0
17:00-17:30	1	0	0	0	0	0	1	0	1	0
17:30-18:00	1	0	0	0	0	0	1	0	1	0
15:00-18:00 bloc	6	0	0	0	0	0	6	0	6	0
16:00-17:00 peak	3	0	0	0	0	0	3	0	3	0
total	7	0	0	0	0	0	7	0	7	0

13 Penywern Road North -> Penywern Road South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	178	22	4	0	2	3	209	4	218	1.9
7:30-8:00	305	41	7	2	1	1	357	9	380	2.5
8:00-8:30	364	36	5	3	5	1	414	8	431	1.9
8:30-9:00	342	62	4	4	0	0	412	8	436	1.9
7:00-9:00 bloc	1189	161	20	9	8	5	1392	29	1465	2.1
8:00-9:00 peak	706	98	9	7	5	1	826	16	867	1.9
15:00-15:30	240	41	7	0	2	1	291	7	311	2.4
15:30-16:00	237	33	4	9	2	0	285	13	308	4.6
16:00-16:30	232	33	1	1	5	0	272	2	279	0.7
16:30-17:00	209	35	0	0	4	0	248	0	253	0
17:00-17:30	216	9	0	1	0	0	226	1	229	0.4
17:30-18:00	248	23	0	0	4	5	280	0	279	0
15:00-18:00 bloc	1382	174	12	11	17	6	1602	23	1659	1.4
15:15-16:15 peak	488	69	7	10	6	1	581	17	615	2.9
total	2571	335	32	20	25	11	2994	52	3124	1.7

21 Daphne Road East -> Penywern Road North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	0	0	0	0	0	0	0	0	0	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	0	0	0	0	0	0	0	0	0	0
8:30-9:00	1	0	0	0	0	0	1	0	1	0
7:00-9:00 bloc	1	0	0	0	0	0	1	0	1	0
8:00-9:00 peak	1	0	0	0	0	0	1	0	1	0
15:00-15:30	0	0	1	1	0	0	2	2	5	100
15:30-16:00	1	0	0	0	0	0	1	0	1	0
16:00-16:30	2	0	0	0	0	0	2	0	2	0
16:30-17:00	1	0	0	0	0	0	1	0	1	0
17:00-17:30	1	0	0	0	0	0	1	0	1	0
17:30-18:00	0	0	0	0	0	0	0	0	0	0
15:00-18:00 bloc	5	0	1	1	0	0	7	2	10	28.6
15:45-16:45 peak	4	0	0	0	0	0	4	0	4	0
total	6	0	1	1	0	0	8	2	11	25

23 Daphne Road East -> Penywern Road South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	10	1	0	0	0	1	12	0	11	0
7:30-8:00	28	2	0	0	0	0	30	0	30	0
8:00-8:30	22	2	0	0	0	0	24	0	24	0
8:30-9:00	14	2	0	0	0	0	16	0	16	0
7:00-9:00 bloc	74	7	0	0	0	1	82	0	83	0
7:15-8:15 peak	50	4	0	0	0	0	54	0	55	0
15:00-15:30	13	2	0	0	0	0	15	0	15	0
15:30-16:00	7	2	0	0	0	0	9	0	9	0
16:00-16:30	8	1	0	0	0	0	9	0	9	0
16:30-17:00	10	0	0	0	0	0	10	0	10	0
17:00-17:30	8	1	0	0	0	0	9	0	9	0
17:30-18:00	6	1	0	0	0	0	7	0	7	0
15:00-18:00 bloc	52	7	0	0	0	0	59	0	60	0
15:00-16:00 peak	20	4	0	0	0	0	24	0	25	0
total	126	14	0	0	0	1	141	0	143	0

31 Penywern Road South -> Penywern Road North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	66	18	6	0	1	0	91	6	106	6.6
7:30-8:00	127	33	4	2	2	0	168	6	184	3.6
8:00-8:30	226	43	7	9	1	0	286	16	317	5.6
8:30-9:00	219	46	9	0	0	1	275	9	301	3.3
7:00-9:00 bloc	638	140	26	11	4	1	820	37	908	4.5
8:00-9:00 peak	445	89	16	9	1	1	561	25	619	4.4
15:00-15:30	309	33	4	2	6	0	354	6	368	1.7
15:30-16:00	282	29	7	2	4	1	325	9	344	2.8
16:00-16:30	276	38	2	0	2	2	320	2	329	0.6
16:30-17:00	350	39	2	2	4	1	398	4	409	1
17:00-17:30	377	28	1	3	1	1	411	4	420	1
17:30-18:00	359	32	1	0	0	3	395	1	401	0.2
15:00-18:00 bloc	1953	199	17	9	17	8	2203	26	2271	1.2
16:30-17:30 peak	727	67	3	5	5	2	809	8	829	1
total	2591	339	43	20	21	9	3023	63	3179	2.1

32 Penywern Road South -> Daphne Road East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	3	1	0	0	0	0	4	0	4	0
7:30-8:00	3	1	0	0	0	0	4	0	4	0
8:00-8:30	3	4	0	0	0	0	7	0	8	0
8:30-9:00	5	1	0	0	0	0	6	0	6	0
7:00-9:00 bloc	14	7	0	0	0	0	21	0	22	0
8:00-9:00 peak	8	5	0	0	0	0	13	0	14	0
15:00-15:30	8	3	0	0	0	0	11	0	12	0
15:30-16:00	14	2	0	0	0	0	16	0	16	0
16:00-16:30	17	1	0	0	0	0	18	0	18	0
16:30-17:00	10	1	0	0	0	0	11	0	11	0
17:00-17:30	12	2	0	0	0	1	15	0	15	0
17:30-18:00	14	1	0	0	0	0	15	0	15	0
15:00-18:00 bloc	75	10	0	0	0	1	86	0	87	0
15:30-16:30 peak	31	3	0	0	0	0	34	0	35	0
total	89	17	0	0	0	1	107	0	110	0



Daphne Road (Second Entrance) T - Junction

NPT15096 Thursday 06/04/2017

12 Penywern Road North -> Daphne Road (Second Entrance) East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	0	0	0	0	0	1	1	0	0	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	1	0	0	0	0	0	1	0	1	0
8:30-9:00	0	0	0	0	0	0	0	0	0	0
7:00-9:00 bloc	1	0	0	0	0	1	2	0	1	0
7:00-9:00 peak	0	0	0	0	0	1	1	0	0	0
15:00-15:30	0	0	0	0	0	0	0	0	0	0
15:30-16:00	1	0	0	0	0	0	1	0	1	0
16:00-16:30	1	0	0	0	0	0	1	0	1	0
16:30-17:00	0	0	0	0	0	0	0	0	0	0
17:00-17:30	3	0	0	0	0	0	3	0	3	0
17:30-18:00	2	0	0	0	0	0	2	0	2	0
15:00-18:00 bloc	7	0	0	0	0	0	7	0	7	0
16:45-17:45 peak	5	0	0	0	0	0	5	0	5	0
total	8	0	0	0	0	1	9	0	8	0

13 Penywern Road North -> Penywern Road South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	197	2	1	0	2	3	205	1	204	0.5
7:30-8:00	323	4	3	0	1	1	332	3	336	0.9
8:00-8:30	402	2	3	2	4	0	413	5	419	1.2
8:30-9:00	394	1	1	5	0	0	401	6	408	1.5
7:00-9:00 bloc	1316	9	8	7	7	4	1351	15	1369	1.1
8:00-9:00 peak	796	3	4	7	4	0	814	11	828	1.4
15:00-15:30	278	5	1	0	2	1	287	1	288	0.3
15:30-16:00	262	3	0	9	2	0	276	9	285	3.3
16:00-16:30	263	1	0	1	4	0	269	1	268	0.4
16:30-17:00	241	0	0	0	3	0	244	0	243	0
17:00-17:30	220	0	0	1	0	0	221	1	222	0.4
17:30-18:00	273	1	0	0	3	5	282	0	277	0
15:00-18:00 bloc	1537	10	1	11	14	6	1579	12	1582	0.8
15:15-16:15 peak	547	6	0	10	6	1	570	10	577	1.8
total	2853	19	9	18	21	10	2930	27	2951	0.9

21 Daphne Road (Second Entrance) East -> Penywern Road North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	1	1	0	0	0	0	2	0	2	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	1	0	0	0	0	0	1	0	1	0
8:30-9:00	0	0	0	0	0	0	0	0	0	0
7:00-9:00 bloc	2	1	0	0	0	0	3	0	3	0
7:00-9:00 peak	1	1	0	0	0	0	2	0	2	0
15:00-15:30	0	0	0	0	0	0	0	0	0	0
15:30-16:00	3	0	0	0	0	0	3	0	3	0
16:00-16:30	2	0	0	0	0	0	2	0	2	0
16:30-17:00	0	0	0	0	0	0	0	0	0	0
17:00-17:30	0	0	0	0	0	0	0	0	0	0
17:30-18:00	1	0	0	0	0	0	1	0	1	0
15:00-18:00 bloc	6	0	0	0	0	0	6	0	6	0
15:30-16:30 peak	5	0	0	0	0	0	5	0	5	0
total	8	1	0	0	0	0	9	0	9	0

23 Daphne Road (Second Entrance) East -> Penywern Road South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	2	0	0	0	0	0	2	0	2	0
7:30-8:00	2	0	0	0	0	0	2	0	2	0
8:00-8:30	1	0	0	0	0	0	1	0	1	0
8:30-9:00	1	0	0	0	0	0	1	0	1	0
7:00-9:00 bloc	6	0	0	0	0	0	6	0	6	0
7:00-9:00 peak	4	0	0	0	0	0	4	0	4	0
15:00-15:30	2	0	0	0	0	0	2	0	2	0
15:30-16:00	2	0	0	0	0	0	2	0	2	0
16:00-16:30	1	0	0	0	0	0	1	0	1	0
16:30-17:00	1	0	0	0	0	0	1	0	1	0
17:00-17:30	0	0	0	0	0	0	0	0	0	0
17:30-18:00	1	0	0	0	0	0	1	0	1	0
15:00-18:00 bloc	7	0	0	0	0	0	7	0	7	0
15:00-16:00 peak	4	0	0	0	0	0	4	0	4	0
total	13	0	0	0	0	0	13	0	13	0

31 Penywern Road South -> Penywern Road North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	75	10	1	0	1	0	87	1	91	1.1
7:30-8:00	155	4	2	0	2	0	163	2	167	1.2
8:00-8:30	246	17	1	6	1	0	271	7	282	2.6
8:30-9:00	246	10	2	0	0	1	259	2	264	0.8
7:00-9:00 bloc	722	41	6	6	4	1	780	12	803	1.5
8:00-9:00 peak	492	27	3	6	1	1	530	9	546	1.7
15:00-15:30	334	10	0	2	5	0	351	2	353	0.6
15:30-16:00	305	6	2	0	4	1	318	2	320	0.6
16:00-16:30	296	3	0	0	4	1	304	0	302	0
16:30-17:00	381	1	0	1	5	0	388	1	387	0.2
17:00-17:30	388	2	0	2	0	0	392	2	394	0.5
17:30-18:00	366	1	0	0	1	3	371	0	368	0
15:00-18:00 bloc	2070	23	2	5	19	5	2124	7	2124	0.3
16:30-17:30 peak	769	3	0	3	5	0	780	3	781	0.4
total	2792	64	8	11	23	6	2904	19	2928	0.6

32 Penywern Road South -> Daphne Road (Second Entrance) East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	1	0	0	0	0	0	1	0	1	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	3	0	0	0	0	0	3	0	3	0
8:30-9:00	4	0	0	0	0	0	4	0	4	0
7:00-9:00 bloc	8	0	0	0	0	0	8	0	8	0
8:00-9:00 peak	7	0	0	0	0	0	7	0	7	0
15:00-15:30	3	0	0	0	0	0	3	0	3	0
15:30-16:00	3	0	0	0	0	0	3	0	3	0
16:00-16:30	1	0	0	0	0	0	1	0	1	0
16:30-17:00	3	0	0	0	0	0	3	0	3	0
17:00-17:30	4	0	0	0	0	0	4	0	4	0
17:30-18:00	1	0	0	0	0	0	1	0	1	0
15:00-18:00 bloc	15	0	0	0	0	0	15	0	15	0
16:45-17:45 peak	8	0	0	0	0	0	8	0	8	0
total	23	0	0	0	0	0	23	0	23	0



Ulygad yr Haul T - Junction

NPT15097 Thursday 06/04/2017

13 Penywern Rd North -> Penywern Rd South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	156	22	3	0	2	2	185	3	193	1.6
7:30-8:00	254	35	7	0	0	1	297	7	317	2.3
8:00-8:30	288	22	6	3	4	0	323	9	340	2.8
8:30-9:00	258	33	3	12	0	0	306	15	331	4.9
7:00-9:00 bloc	956	112	19	15	6	3	1111	34	1181	3.1
7:45-8:45 peak	558	58	10	13	4	0	638	23	680	3.6
15:00-15:30	195	25	8	9	1	1	236	14	262	5.9
15:30-16:00	193	26	6	9	3	0	235	15	261	6.4
16:00-16:30	187	35	1	2	1	0	226	3	237	1.3
16:30-17:00	169	26	1	1	1	1	199	2	206	1
17:00-17:30	176	7	0	1	0	0	184	1	186	0.5
17:30-18:00	206	17	1	0	3	4	231	1	232	0.4
15:00-18:00 bloc	1126	136	17	19	7	6	1311	36	1383	2.7
15:15-16:15 peak	394	56	9	11	2	1	473	20	511	4.2
total	2082	248	36	34	13	9	2422	70	2564	2.9

14 Penywern Rd North -> Ulygad yr Haul West

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	10	3	0	0	0	0	4	0	5	0
7:30-8:00	10	1	0	2	0	0	13	2	15	15.4
8:00-8:30	38	3	0	1	0	0	42	1	44	2.4
8:30-9:00	58	2	1	1	0	0	62	2	65	3.2
7:00-9:00 bloc	107	9	1	4	0	0	121	5	129	4.1
8:00-9:00 peak	96	5	1	2	0	0	104	3	109	2.9
15:00-15:30	15	1	0	1	0	0	17	1	18	5.9
15:30-16:00	12	2	0	0	0	0	14	0	14	0
16:00-16:30	10	1	0	2	0	0	13	2	15	15.4
16:30-17:00	11	0	0	1	0	0	12	1	13	8.3
17:00-17:30	16	0	0	1	0	0	17	1	18	5.9
17:30-18:00	13	1	0	1	0	0	15	1	16	6.7
15:00-18:00 bloc	77	5	0	6	0	0	88	6	95	6.8
16:45-17:45 peak	33	1	0	2	0	0	36	2	38	5.6
total	184	14	1	10	0	0	209	11	224	5.3

31 Penywern Rd South -> Penywern Rd North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	56	15	5	1	1	0	78	6	92	7.7
7:30-8:00	103	24	5	2	1	0	135	7	151	5.2
8:00-8:30	179	37	3	13	0	0	232	16	258	6.9
8:30-9:00	164	37	9	3	0	1	214	12	242	5.6
7:00-9:00 bloc	502	113	22	19	2	1	659	41	743	6.2
8:00-9:00 peak	343	74	12	16	0	1	446	28	500	6.3
15:00-15:30	234	23	5	0	1	0	263	5	277	1.9
15:30-16:00	213	18	6	5	4	1	247	11	265	4.4
16:00-16:30	223	31	2	0	3	1	260	2	268	0.8
16:30-17:00	285	29	3	2	1	0	320	5	333	1.6
17:00-17:30	322	25	1	2	0	0	350	3	359	0.9
17:30-18:00	285	21	2	0	1	3	312	2	317	0.6
15:00-18:00 bloc	1562	147	19	9	10	5	1752	28	1819	1.6
16:30-17:30 peak	607	54	4	4	1	0	670	8	692	1.2
total	2064	260	41	28	12	6	2411	69	2562	2.9

34 Penywern Rd South -> Ulygad yr Haul West

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	10	2	0	0	0	0	12	0	12	0
7:30-8:00	18	8	0	0	0	1	27	0	28	0
8:00-8:30	31	5	0	0	0	0	36	0	37	0
8:30-9:00	36	10	0	0	1	0	47	0	49	0
7:00-9:00 bloc	95	25	0	0	2	0	122	0	126	0
8:00-9:00 peak	67	15	0	0	1	0	83	0	86	0
15:00-15:30	37	7	0	1	3	0	48	1	49	2.1
15:30-16:00	49	6	0	1	0	0	56	1	58	1.8
16:00-16:30	50	7	0	1	1	0	59	1	61	1.7
16:30-17:00	52	6	0	0	2	0	60	0	60	0
17:00-17:30	44	3	0	1	0	0	48	1	50	2.1
17:30-18:00	58	8	0	0	0	0	66	0	68	0
15:00-18:00 bloc	290	37	0	4	6	0	337	4	345	1.2
15:45-16:45 peak	102	15	0	2	2	0	121	2	125	1.6
total	385	62	0	4	8	0	459	4	471	0.9

41 Ulygad yr Haul West -> Penywern Rd North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	6	0	0	0	0	0	6	0	6	0
7:30-8:00	3	2	0	0	0	0	5	0	5	0
8:00-8:30	24	2	0	0	0	0	26	0	26	0
8:30-9:00	10	3	0	1	0	0	14	1	16	7.1
7:00-9:00 bloc	43	7	0	1	0	0	51	1	53	2
8:00-9:00 peak	34	5	0	1	0	0	40	1	42	2.5
15:00-15:30	22	0	0	0	0	0	22	0	22	0
15:30-16:00	20	0	2	0	1	0	23	2	27	8.7
16:00-16:30	26	3	0	1	1	0	31	1	32	3.2
16:30-17:00	20	1	0	1	0	0	22	1	23	4.5
17:00-17:30	30	3	0	1	0	0	34	1	36	2.9
17:30-18:00	17	3	0	1	1	0	22	1	23	4.5
15:00-18:00 bloc	135	10	2	4	3	0	154	6	163	3.9
16:45-17:45 peak	52	6	0	2	0	0	60	2	63	3.4
total	178	17	2	5	3	0	205	7	216	3.4

43 Ulygad yr Haul West -> Penywern Rd South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	13	0	0	0	0	0	13	0	13	0
7:30-8:00	24	4	0	0	1	0	29	0	29	0
8:00-8:30	46	10	0	0	0	0	56	0	58	0
8:30-9:00	59	10	0	2	0	0	71	2	75	2.8
7:00-9:00 bloc	142	24	0	2	1	0	169	2	175	1.2
8:00-9:00 peak	105	20	0	2	0	0	127	2	133	1.6
15:00-15:30	22	3	0	1	1	0	27	1	28	3.7
15:30-16:00	33	7	1	0	1	0	42	1	45	2.4
16:00-16:30	37	5	0	1	2	0	45	1	46	2.2
16:30-17:00	37	4	0	0	1	0	42	0	42	0
17:00-17:30	25	2	0	0	0	0	27	0	27	0
17:30-18:00	34	5	0	0	1	1	41	0	41	0
15:00-18:00 bloc	188	26	1	2	6	1	224	3	229	1.3
15:30-16:30 peak	70	12	1	1	3	0	87	2	91	2.3
total	330	50	1	4	7	1	393	5	405	1.3



Leiros Parc Drive T - Junction

NPT15100 Thursday 06/04/2017

12 Penywern Rd North -> Leiros Parc Drive East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	0	0	0	0	0	0	0	0	0	0
7:30-8:00	4	0	0	0	0	0	4	0	4	0
8:00-8:30	1	0	0	0	0	0	1	0	1	0
8:30-9:00	6	2	0	0	0	0	8	0	8	0
7:00-9:00 bloc	11	2	0	0	0	0	13	0	13	0
8:00-9:00 peak	7	2	0	0	0	0	9	0	9	0
15:00-15:30	0	1	0	0	0	0	7	0	7	0
15:30-16:00	26	4	0	0	0	0	30	0	31	0
16:00-16:30	15	2	0	0	0	0	17	0	17	0
16:30-17:00	5	1	0	0	0	0	6	0	6	0
17:00-17:30	14	0	0	1	0	0	15	1	16	6.7
17:30-18:00	13	0	0	0	0	0	13	0	13	0
15:00-18:00 bloc	79	8	0	1	0	0	88	1	91	1.1
15:30-16:30 peak	41	6	0	0	0	0	47	0	48	0
total	90	10	0	1	0	0	101	1	104	1

13 Penywern Rd North -> Penywern Rd South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	150	25	3	0	2	2	182	3	190	1.6
7:30-8:00	245	36	7	2	0	1	291	9	313	3.1
8:00-8:30	327	30	4	4	4	0	369	8	385	2.2
8:30-9:00	308	46	4	6	0	0	364	10	387	2.7
7:00-9:00 bloc	1030	137	18	12	6	3	1206	30	1276	2.5
8:00-9:00 peak	635	76	8	10	4	0	733	18	772	2.5
15:00-15:30	216	36	5	1	0	1	259	6	276	2.3
15:30-16:00	198	33	1	7	1	0	240	8	255	3.3
16:00-16:30	190	36	0	2	3	0	231	2	239	0.9
16:30-17:00	181	32	0	1	2	0	216	1	222	0.5
17:00-17:30	183	11	0	1	0	0	195	1	198	0.5
17:30-18:00	197	20	0	1	3	5	226	1	226	0.4
15:00-18:00 bloc	1165	168	6	13	9	6	1367	19	1416	1.4
15:30-16:00 peak	414	69	6	8	1	1	499	14	532	2.8
total	2195	305	24	25	15	9	2573	49	2692	1.9

21 Leiros Parc Drive East -> Penywern Rd North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	4	1	0	0	0	0	5	0	5	0
7:30-8:00	1	0	0	0	0	0	1	0	1	0
8:00-8:30	7	3	0	1	0	0	11	1	13	9.1
8:30-9:00	12	1	0	0	0	0	13	0	13	0
7:00-9:00 bloc	24	5	0	1	0	0	30	1	32	3.3
8:00-9:00 peak	19	4	0	1	0	0	24	1	26	4.2
15:00-15:30	5	1	0	1	0	0	7	1	8	14.3
15:30-16:00	9	0	0	0	0	0	9	0	9	0
16:00-16:30	8	1	0	0	0	0	9	0	9	0
16:30-17:00	1	0	0	0	0	0	1	0	1	0
17:00-17:30	10	0	0	0	1	0	11	0	11	0
17:30-18:00	7	0	0	0	0	0	7	0	7	0
15:00-18:00 bloc	40	2	0	1	1	0	44	1	45	2.3
15:30-16:30 peak	17	1	0	0	0	0	18	0	18	0
total	64	7	0	2	1	0	74	2	77	2.7

23 Leiros Parc Drive East -> Penywern Rd South

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	8	1	0	0	0	0	9	0	9	0
7:30-8:00	16	0	0	0	0	0	16	0	16	0
8:00-8:30	24	0	0	0	0	0	24	0	24	0
8:30-9:00	17	0	0	0	0	0	17	0	17	0
7:00-9:00 bloc	65	1	0	0	0	0	66	0	66	0
8:00-9:00 peak	41	0	0	0	0	0	41	0	41	0
15:00-15:30	0	0	0	0	0	0	0	0	0	0
15:30-16:00	0	0	0	0	0	0	0	0	0	0
16:00-16:30	0	0	0	0	0	0	0	0	0	0
16:30-17:00	0	0	0	0	0	0	0	0	0	0
17:00-17:30	0	0	0	0	0	0	0	0	0	0
17:30-18:00	7	0	0	0	0	0	7	0	7	0
15:00-18:00 bloc	7	0	0	0	0	0	7	0	7	0
17:00-18:00 peak	7	0	0	0	0	0	7	0	7	0
total	72	1	0	0	0	0	73	0	73	0

31 Penywern Rd South -> Penywern Rd North

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	55	15	6	0	1	0	77	6	92	7.8
7:30-8:00	100	30	4	1	1	0	136	5	151	3.7
8:00-8:30	216	42	2	8	1	0	269	10	289	3.7
8:30-9:00	193	30	10	1	0	1	235	11	261	4.7
7:00-9:00 bloc	564	117	22	10	3	1	717	32	792	4.5
8:00-9:00 peak	409	72	12	9	1	1	504	21	550	4.2
15:00-15:30	267	19	5	1	2	0	294	6	308	2
15:30-16:00	212	18	6	1	5	1	243	7	256	2.9
16:00-16:30	229	28	3	1	1	6	268	4	275	1.5
16:30-17:00	308	24	4	3	2	1	342	7	356	2
17:00-17:30	249	30	2	1	0	0	282	3	293	0.8
17:30-18:00	278	23	1	1	1	3	307	2	312	0.6
15:00-18:00 bloc	1643	142	21	8	11	11	1836	29	1900	1.6
16:30-17:30 peak	657	54	6	4	2	1	724	10	749	1.4
total	2207	259	43	18	14	12	2553	61	2692	2.4

32 Penywern Rd South -> Leiros Parc Drive East

	CAR	LGV	HGV	BUS	MCL	PCL	VEHS	HGV	PCU	[%]
7:00-7:30	3	1	0	0	0	0	4	0	4	0
7:30-8:00	0	0	0	0	0	0	0	0	0	0
8:00-8:30	8	0	0	0	0	0	8	0	8	0
8:30-9:00	10	2	0	0	0	0	12	0	12	0
7:00-9:00 bloc	21	3	0	0	0	0	24	0	25	0
8:00-9:00 peak	18	2	0	0	0	0	20	0	20	0
15:00-15:30	14	2	0	1	0	0	17	1	18	5.9
15:30-16:00	20	0	0	0	0	0	20	0	20	0
16:00-16:30	17	2	0	0	0	0	19	0	19	0
16:30-17:00	21	5	0	0	0	0	26	0	27	0
17:00-17:30	23	0	0	1	0	0	24	1	25	4.2
17:30-18:00	28	0	0	0	0	0	28	0	28	0
15:00-18:00 bloc	123	9	0	2	0	0	134	2	138	1.5
17:00-18:00 peak	51	0	0	1	0	0	52	1	53	1.9
total	144	12	0	2	0	0	158	2	162	1.3



Appendix D



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Crash Date:	Monday, January 12, 2015	Time of Crash:	1:16:00 PM	Crash Reference:	2015621500095
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	1
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot			OS Grid Reference:	274832 198985
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	56 - 65	Vehicle proceeding normally along the carriageway, on a right hand bend	Nearside	Other	None	None
1	Car (excluding private hire)	-1	Female	26 - 35	Vehicle is moving off	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

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Crash Date:	Thursday, April 23, 2015	Time of Crash:	11:42:00 PM	Crash Reference:	2015621500713
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	2
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot			OS Grid Reference:	275003 198499
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	16 - 20	Vehicle is in the act of turning right	Offside	Other	None	None
1	Motorcycle over 500cc	-1	Male	26 - 35	Vehicle is passing another moving vehicle on its offside	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

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Crash Date:	Monday, June 15, 2015	Time of Crash:	5:03:00 PM	Crash Reference:	2015621501018
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	1
Highway Authority:	Neath Port Talbot			Number of Vehicles:	1
Local Authority:	Neath Port Talbot			OS Grid Reference:	274605 197676
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	Pelican, puffin, toucan or similar non-junction pedestrian light crossing				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	Nearside or offside crash barrier

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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Crash Date: Friday, January 29, 2016 **Time of Crash:** 12:47:00 PM **Crash Reference:** 2016621600248

Highest Injury Severity: Slight
Highway Authority: Neath Port Talbot
Local Authority: Neath Port Talbot County Borough
Weather Description: Raining with high winds
Road Surface Description: Wet or Damp
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: A474

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 274990 198649



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)		1 Male	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Car (excluding private hire)		9 Male	66 - 75	Vehicle is in the act of turning right	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Male	66 - 75	Unknown or other	Unknown or other

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Crash Date: Saturday, March 12, 2016 **Time of Crash:** 1:18:00 PM **Crash Reference:** 2016621600492

Highest Injury Severity: Slight
Highway Authority: Neath Port Talbot
Local Authority: Neath Port Talbot County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 60
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A474

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 274762 199121



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	24	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
1	Car (excluding private hire)	14	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

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Crash Date:	Friday, May 20, 2016	Time of Crash:	8:54:00 AM	Crash Reference:	2016621600864
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	1
Highway Authority:	Neath Port Talbot			Number of Vehicles:	3
Local Authority:	Neath Port Talbot County Borough			OS Grid Reference:	275063 198180
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
3	Car (excluding private hire)	-1	Male	66 - 75	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
2	Car (excluding private hire)	1	Female	46 - 55	Vehicle is waiting to proceed normally but is held up	Back	Journey as part of work	None	None
1	Car (excluding private hire)	12	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
3	4	Slight	Vehicle or pillion passenger	Female	66 - 75	Unknown or other	Unknown or other

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Crash Date:	Thursday, June 16, 2016	Time of Crash:	12:18:00 PM	Crash Reference:	2016621601090
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	1
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot County Borough			OS Grid Reference:	274813 197800
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)		8 Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Taking pupil to/from school	None	None
1	Car (excluding private hire)		5 Male	66 - 75	Vehicle is in the act of turning right	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

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Crash Date: Thursday, June 30, 2016 **Time of Crash:** 11:15:00 AM **Crash Reference:** 2016621601107

Highest Injury Severity: Slight
Highway Authority: Neath Port Talbot
Local Authority: Neath Port Talbot County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A474

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 274949 198010



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	4	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Motorcycle over 500cc	13	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Monday, August 22, 2016	Time of Crash:	6:16:00 PM	Crash Reference:	2016621601410
Highest Injury Severity:	Slight	Road Number:	A4230	Number of Casualties:	2
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot County Borough			OS Grid Reference:	275072 198187
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Mini roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	12	Female	21 - 25	Vehicle is in the act of turning right	Offside	Other	Kerb	Other permanent object
1	Car (excluding private hire)	1	Male	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	Kerb	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	Over 75	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Female	21 - 25	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Wednesday, November 09, 2016	Time of Crash:	5:29:00 PM	Crash Reference:	2016621601849
Highest Injury Severity:	Slight	Road Number:	B4434	Number of Casualties:	1
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot County Borough			OS Grid Reference:	275118 197826
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)		2 Male	21 - 25	Vehicle is passing a stationary vehicle on its offside	Front	Commuting to/from work	None	None
1	Pedal cycle		-1 Male	11 - 15	Vehicle is moving off	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	11 - 15	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Friday, May 05, 2017	Time of Crash:	5:02:00 PM	Crash Reference:	2017621700738
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	2
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot County Borough			OS Grid Reference:	274953 198020
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)		4 Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None
1	Car (excluding private hire)		6 Male	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other
2	3	Slight	Vehicle or pillion passenger	Female	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Friday, January 26, 2018	Time of Crash:	1:10:00 PM	Crash Reference:	2018621800181
Highest Injury Severity:	Slight	Road Number:	A474	Number of Casualties:	1
Highway Authority:	Neath Port Talbot			Number of Vehicles:	2
Local Authority:	Neath Port Talbot County Borough			OS Grid Reference:	274992 198649
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	9	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Car (excluding private hire)	15	Male	16 - 20	Vehicle is in the act of turning right	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date: Wednesday, April 04, 2018 **Time of Crash:** 12:23:00 PM **Crash Reference:** 2018621800452

Highest Injury Severity: Slight
Highway Authority: Neath Port Talbot
Local Authority: Neath Port Talbot County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 20
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A474

Number of Casualties: 1

Number of Vehicles: 1

OS Grid Reference: 274931 197960



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	2	Female	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	11 - 15	In carriageway, crossing elsewhere	Crossing from driver's nearside

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date: Thursday, July 19, 2018 **Time of Crash:** 11:22:00 PM **Crash Reference:** 2018621800901

Highest Injury Severity: Slight
Highway Authority: Neath Port Talbot
Local Authority: Neath Port Talbot County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Darkness: street lights present and lit
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: A474

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 274806 199010



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	12	Female	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
1	Car (excluding private hire)	2	Female	26 - 35	Vehicle is in the act of turning right	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Female	21 - 25	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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2019 data is provisional and is subject to change

Crash Date:

Saturday, June 08, 2019

Time of Crash: 9:41:00 AM

Crash Reference: 2019621900782

Highest Injury Severity:

Slight

Road Number: A474

Number of Casualties: 1

Highway Authority:

Neath Port Talbot

Number of Vehicles: 1

Local Authority:

Neath Port Talbot County Borough

OS Grid Reference: 275003 198082

Weather Description:

Fine without high winds

Road Surface Description:

Dry

Speed Limit:

30

Light Conditions:

Daylight: regardless of presence of streetlights

Carriageway Hazards:

None

Junction Detail:

Roundabout

Junction Pedestrian Crossing:

No physical crossing facility within 50 metres

Road Type:

Single carriageway

Junction Control:

Give way or uncontrolled



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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2019 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	45-54	Vehicle is moving off	Unknown	Other	None	None

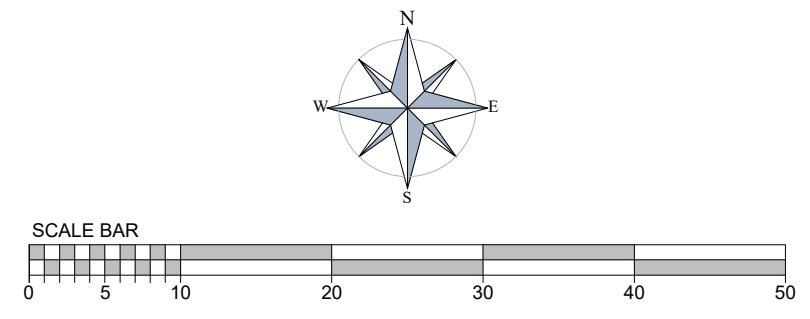
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Female	75-84	In carriageway, crossing elsewhere	Crossing from driver's nearside

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Appendix E



HOUSE SCHEDULE : Sales.

1	=	6 BED/12 PERSON	3636sqft	11
2	=	5 BED/9 PERSON	2368sqft	14
3	=	4 BED/7 PERSON	2034sqft	18
4	=	4 BED/7 PERSON	2057sqft	8
5	=	4 BED/7 PERSON	1798sqft	4

HOUSE SCHEDULE : Affordable.

1BF	=	1 BED/2 PERSON	540sqft	3
2BF	=	2 BED/3 PERSON	676sqft	1
2Bu	=	2 BED/4 PERSON	658sqft	2
2B	=	2 BED/4 PERSON	912sqft	6
3B	=	3 BED/5 PERSON	1041sqft	4

TOTAL No OF UNITS. 301.717sqft 124.

TOTAL ON SCHEME. 317.604sqft 200.

- Site Key**
- 1.8m High Close Board Fence
 - 1.8m High Brick Screen Wall
 - 450mm High Timber Knee Rail
 - 1.8m Timber Gate
 - Retaining Wall Position (indicative only - refer to engineers information)
 - 1.8x1.8m Patio
 - Bin collection Point
 - Private parking space
 - Visitor parking space
 - Proposed Trees & Planting (refer to landscape architects information)
 - Existing Hedgerow/Trees to be retained
 - Existing Hedgerow/Trees to be removed
 - Existing route of Public Right of Way
 - Sub Station Kiosk
 - Block Paving
 - Affordable Units (20 units)

D.	House type 3B (3 Bed House Affordable unit) footprint updated.	18/09/20.
C.	Plot 139 HT change following latest engineering comments. Retaining wall locations added to layout. Refer to Engineering layout for further details.	07/09/20.
B.	Highway and block paved road surface amendments updated following latest Road Engineering layout.	06/08/20.
A.	Plots 6-8 repositioned and plots 87-93 re-claimed following comments from the LA on the pre-app submission.	29/06/20.

REV.	DESCRIPTION	DATE
1	HALE Construction	

JOB TITLE
Leiros Park, Neath.

DRAWING TITLE
Planning Application Layout.

SCALE @ A0	DATE	DRAWN BY
1:500	August '20	KE

JOB NO.	DRAWING NO.	REVISION
1602	PL-01	D.

hammond
Architectural Ltd

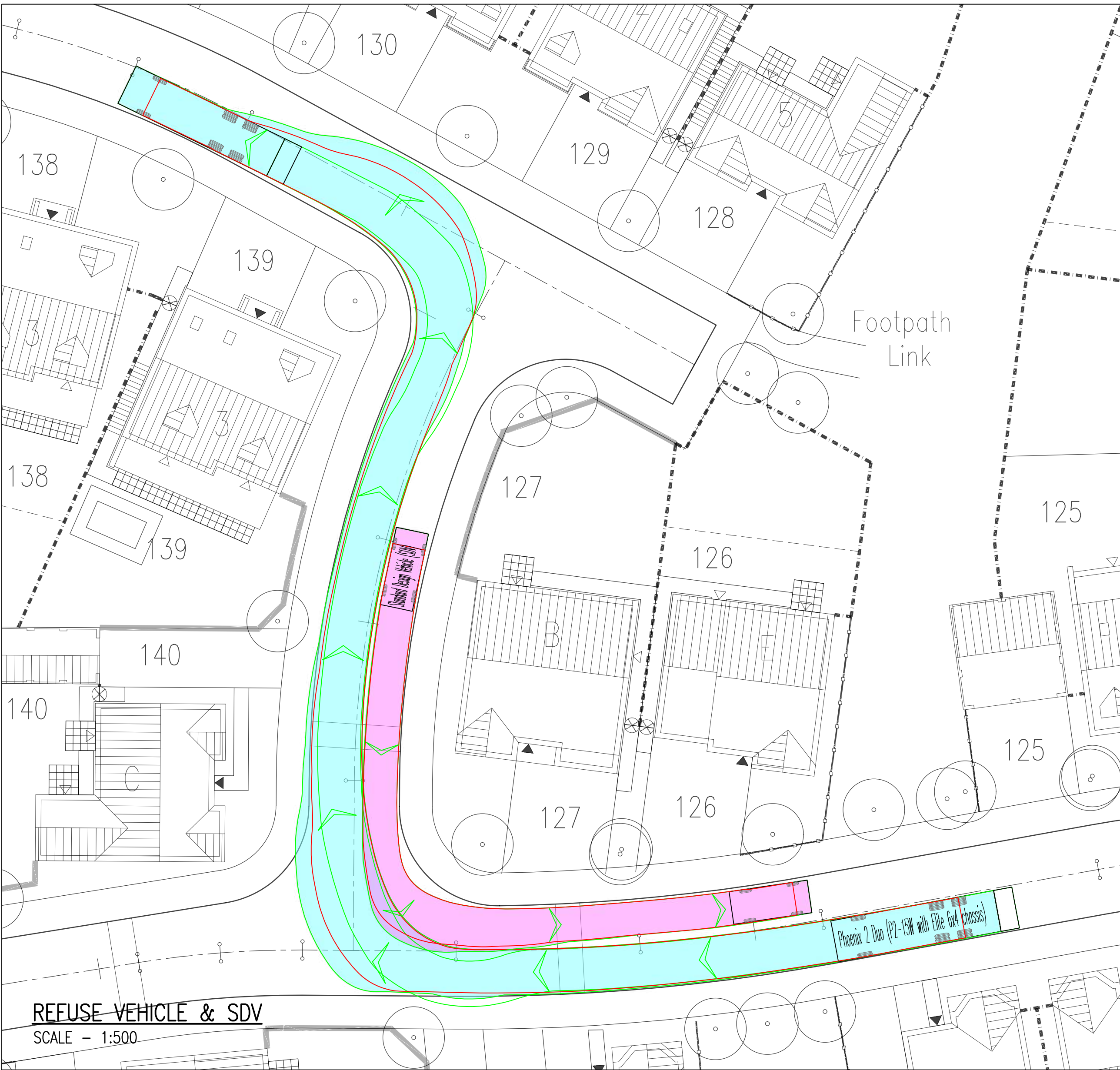
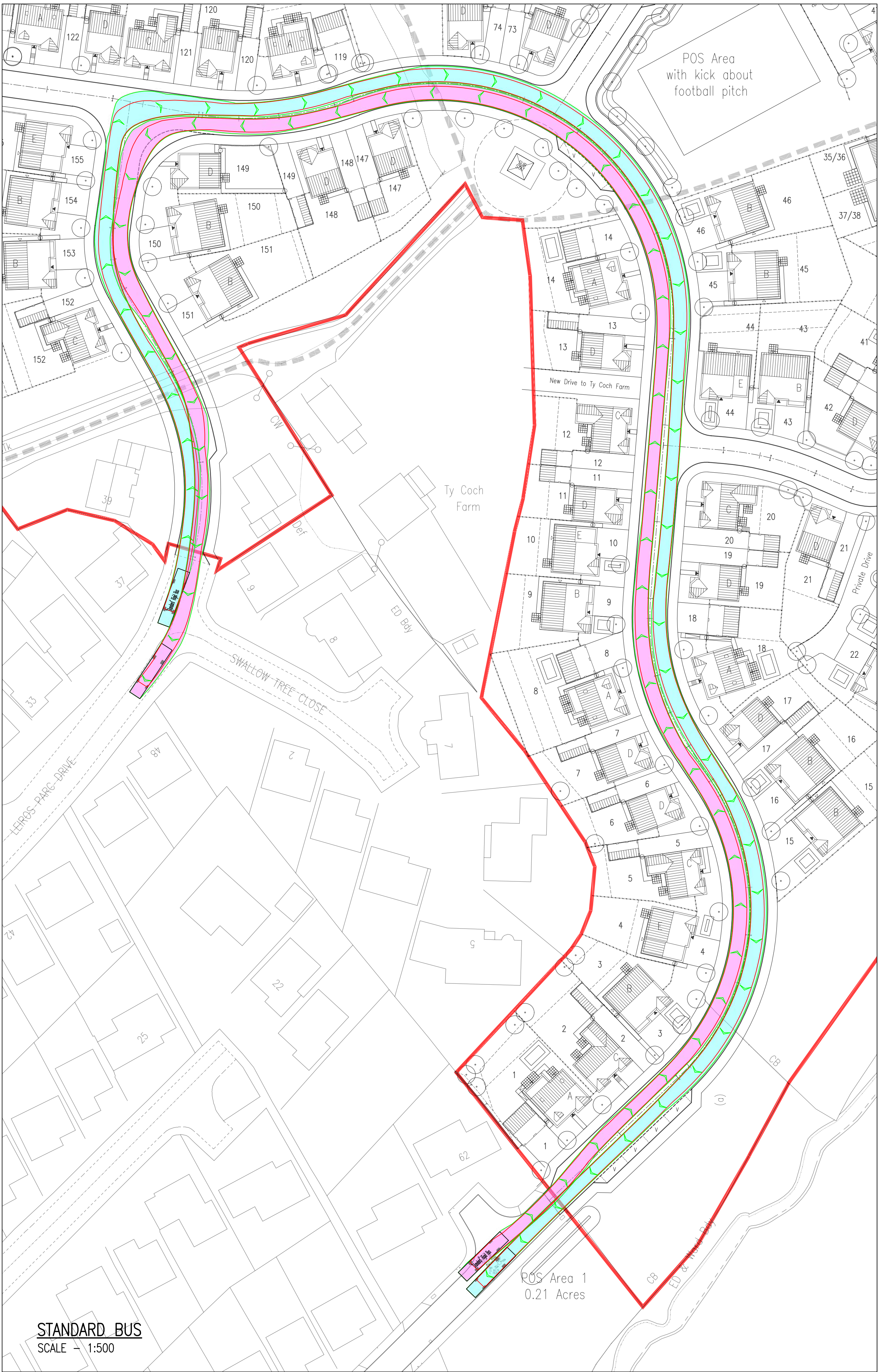
10 Gold Tops
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Figured dimensions must be taken in preference to scaled dimensions and any discrepancies are to be referred to Hammond Architectural Ltd. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any workshop drawings.

Appendix F



GENERAL NOTES

- DO NOT SCALE THIS DRAWING.
- CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ENGINEER.
- ANY DISCREPANCY TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.

'Standard' Rigid Bus

Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	3.068m
Min Body Ground Clearance	0.309m
Track Width	2.550m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

Phoenix 2 Duo
(P2-15W with Elite 6x4 chassis)

Overall Length	11.200m
Overall Width	2.550m
Overall Body Height	4.751m
Min Body Ground Clearance	0.304m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.500m

Standard Design Vehicle (SDV)

Overall Length	4.800m
Overall Width	2.000m
Overall Body Height	1.950m
Min Body Ground Clearance	0.100m
Track Width	2.000m
Lock to lock time	4.00s
Wall to Wall Turning Radius	6.000m

Rev.	Detail	By	Date
Revisions			
Reinforcement schedules nos.			

Structural & Civil Engineering Consultants

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web www.cb3consult.co.uk

Client

Project

RESIDENTIAL DEVELOPMENT
AT LEIROS PARK DRIVE
NEATH

Drawing Title

VEHICLE TRACKING
ANALYSIS

Project No. C0589

Drawing No. C-009

Scales AS STATED

Date 09.08.20

Revision

Drawn DH

Checked DF

Sheet Size A1

Appendix G

Calculation Reference: AUDIT-317901-170306-0313

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING
VEHICLES

Selected regions and areas:

02	SOUTH EAST	
HC	HAMPSHIRE	1 days
WS	WEST SUSSEX	2 days

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

Secondary Filtering selection:

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

Parameter:	Number of dwellings
Actual Range:	90 to 282 (units:)
Range Selected by User:	82 to 285 (units:)

Public Transport Provision:

Selection by:	Include all surveys
---------------	---------------------

Date Range:	01/01/08 to 27/04/16
-------------	----------------------

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

Selected survey days:

Tuesday	1 days
Wednesday	1 days
Thursday	1 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	3
--------------	---

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

Selected Location Sub Categories:

Residential Zone	3
------------------	---

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

Secondary Filtering selection:

Use Class:

C3

3 days

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

Population within 1 mile:

1,001 to 5,000

1 days

5,001 to 10,000

1 days

10,001 to 15,000

1 days

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

Population within 5 miles:

100,001 to 125,000

1 days

125,001 to 250,000

2 days

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

Car ownership within 5 miles:

1.1 to 1.5

3 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

3 days

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

PTAL Rating:

No PTAL Present

3 days

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

LIST OF SITES relevant to selection parameters

1	HC-03-M-04	HOUSES & FLATS	HAMPSHIRE
	HUNTS POND ROAD		
	TITCHFIELD		
	NEAR FAREHAM		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	282	
	Survey date: TUESDAY	11/12/12	Survey Type: MANUAL
2	WS-03-M-05	MIXED HOUSING	WEST SUSSEX
	ELLIS ROAD		
	S BROADBRIDGE HEATH		
	WEST HORSHAM		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	92	
	Survey date: THURSDAY	23/10/14	Survey Type: MANUAL
3	WS-03-M-07	HOUSES & FLATS	WEST SUSSEX
	ROSE GREEN ROAD		
	ALDWICK		
	BOGNOR REGIS		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	90	
	Survey date: WEDNESDAY	05/03/14	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
EB-03-M-01	Not representative bus provision
ES-03-M-07	Not representative bus provision
KC-03-M-01	Not representative bus provision
SC-03-M-07	Not representative bus provision
WS-03-M-04	Not representative bus provision
WS-03-M-08	Not representative bus provision
WS-03-M-10	Not representative bus provision
WS-03-M-12	Not representative bus provision

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
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	3	155	0.129	3	155	0.351	3	155	0.480
08:00 - 09:00	3	155	0.159	3	155	0.446	3	155	0.605
09:00 - 10:00	3	155	0.159	3	155	0.196	3	155	0.355
10:00 - 11:00	3	155	0.166	3	155	0.211	3	155	0.377
11:00 - 12:00	3	155	0.185	3	155	0.149	3	155	0.334
12:00 - 13:00	3	155	0.188	3	155	0.172	3	155	0.360
13:00 - 14:00	3	155	0.188	3	155	0.190	3	155	0.378
14:00 - 15:00	3	155	0.164	3	155	0.207	3	155	0.371
15:00 - 16:00	3	155	0.289	3	155	0.183	3	155	0.472
16:00 - 17:00	3	155	0.297	3	155	0.213	3	155	0.510
17:00 - 18:00	3	155	0.332	3	155	0.181	3	155	0.513
18:00 - 19:00	3	155	0.343	3	155	0.185	3	155	0.528
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.599			2.684			5.283

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

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

Parameter summary

Trip rate parameter range selected: 90 - 282 (units:)
 Survey date range: 01/01/08 - 27/04/16
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 8

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	155	0.009	3	155	0.004	3	155	0.013
08:00 - 09:00	3	155	0.006	3	155	0.013	3	155	0.019
09:00 - 10:00	3	155	0.000	3	155	0.000	3	155	0.000
10:00 - 11:00	3	155	0.009	3	155	0.006	3	155	0.015
11:00 - 12:00	3	155	0.000	3	155	0.000	3	155	0.000
12:00 - 13:00	3	155	0.002	3	155	0.002	3	155	0.004
13:00 - 14:00	3	155	0.009	3	155	0.009	3	155	0.018
14:00 - 15:00	3	155	0.002	3	155	0.004	3	155	0.006
15:00 - 16:00	3	155	0.009	3	155	0.009	3	155	0.018
16:00 - 17:00	3	155	0.009	3	155	0.011	3	155	0.020
17:00 - 18:00	3	155	0.004	3	155	0.002	3	155	0.006
18:00 - 19:00	3	155	0.002	3	155	0.002	3	155	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.061			0.062			0.123

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

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

Parameter summary

Trip rate parameter range selected: 90 - 282 (units:)
 Survey date range: 01/01/08 - 27/04/16
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 8

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	155	0.002	3	155	0.000	3	155	0.002
08:00 - 09:00	3	155	0.004	3	155	0.004	3	155	0.008
09:00 - 10:00	3	155	0.002	3	155	0.004	3	155	0.006
10:00 - 11:00	3	155	0.004	3	155	0.002	3	155	0.006
11:00 - 12:00	3	155	0.009	3	155	0.004	3	155	0.013
12:00 - 13:00	3	155	0.002	3	155	0.004	3	155	0.006
13:00 - 14:00	3	155	0.004	3	155	0.000	3	155	0.004
14:00 - 15:00	3	155	0.000	3	155	0.002	3	155	0.002
15:00 - 16:00	3	155	0.002	3	155	0.004	3	155	0.006
16:00 - 17:00	3	155	0.002	3	155	0.006	3	155	0.008
17:00 - 18:00	3	155	0.000	3	155	0.000	3	155	0.000
18:00 - 19:00	3	155	0.000	3	155	0.002	3	155	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.031			0.032			0.063

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

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

Parameter summary

Trip rate parameter range selected: 90 - 282 (units:)
 Survey date range: 01/01/08 - 27/04/16
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 8

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	155	0.000	3	155	0.000	3	155	0.000
08:00 - 09:00	3	155	0.000	3	155	0.000	3	155	0.000
09:00 - 10:00	3	155	0.000	3	155	0.000	3	155	0.000
10:00 - 11:00	3	155	0.000	3	155	0.000	3	155	0.000
11:00 - 12:00	3	155	0.000	3	155	0.000	3	155	0.000
12:00 - 13:00	3	155	0.000	3	155	0.000	3	155	0.000
13:00 - 14:00	3	155	0.000	3	155	0.000	3	155	0.000
14:00 - 15:00	3	155	0.000	3	155	0.000	3	155	0.000
15:00 - 16:00	3	155	0.000	3	155	0.000	3	155	0.000
16:00 - 17:00	3	155	0.000	3	155	0.000	3	155	0.000
17:00 - 18:00	3	155	0.000	3	155	0.000	3	155	0.000
18:00 - 19:00	3	155	0.000	3	155	0.000	3	155	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

Parameter summary

Trip rate parameter range selected: 90 - 282 (units:)
 Survey date range: 01/01/08 - 27/04/16
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 8

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	155	0.006	3	155	0.006	3	155	0.012
08:00 - 09:00	3	155	0.009	3	155	0.019	3	155	0.028
09:00 - 10:00	3	155	0.000	3	155	0.002	3	155	0.002
10:00 - 11:00	3	155	0.000	3	155	0.006	3	155	0.006
11:00 - 12:00	3	155	0.004	3	155	0.000	3	155	0.004
12:00 - 13:00	3	155	0.000	3	155	0.000	3	155	0.000
13:00 - 14:00	3	155	0.009	3	155	0.000	3	155	0.009
14:00 - 15:00	3	155	0.002	3	155	0.006	3	155	0.008
15:00 - 16:00	3	155	0.011	3	155	0.006	3	155	0.017
16:00 - 17:00	3	155	0.009	3	155	0.019	3	155	0.028
17:00 - 18:00	3	155	0.011	3	155	0.004	3	155	0.015
18:00 - 19:00	3	155	0.002	3	155	0.000	3	155	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.063			0.068			0.131

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

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

Parameter summary

Trip rate parameter range selected: 90 - 282 (units:)
 Survey date range: 01/01/08 - 27/04/16
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 8

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 H

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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: leiros Parc Drive T junction (DC).j9

Path: K:\T20\Jobs\T20.143 Leiros Park\Analysis\Junctions 9

Report generation date: 23/09/2020 20:38:46

»2017 Baseline, AM
 »2017 Baseline, PM
 »2023 Baseline, AM
 »2023 Baseline, PM
 »2025 Baseline, AM
 »2025 Baseline, PM
 »2033 Baseline, AM
 »2033 Baseline, PM
 »2023 + 50 Houses, AM
 »2023 + 50 Houses, PM
 »2025 + 200 Houses, AM
 »2025 + 200 Houses, PM
 »2033 + 200 Houses, AM
 »2033 + 200 Houses, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2017 Baseline							
Stream B-AC	D1	0.2	12.13	0.20	D2	0.1	10.68	0.08
Stream C-AB		0.0	7.59	0.04		0.1	6.68	0.10
	2023 Baseline							
Stream B-AC	D3	0.3	13.29	0.22	D4	0.1	11.29	0.08
Stream C-AB		0.1	7.85	0.05		0.1	6.82	0.10
	2025 Baseline							
Stream B-AC	D5	0.3	13.68	0.23	D6	0.1	11.49	0.09
Stream C-AB		0.1	7.93	0.05		0.1	6.87	0.11
	2033 Baseline							
Stream B-AC	D7	0.4	15.93	0.27	D8	0.1	12.57	0.10
Stream C-AB		0.1	8.33	0.06		0.1	7.09	0.12
	2023 + 50 Houses							
Stream B-AC	D9	0.4	14.86	0.30	D10	0.1	11.65	0.11
Stream C-AB		0.1	7.96	0.06		0.1	6.99	0.12
	2025 + 200 Houses							
Stream B-AC	D11	0.6	17.46	0.38	D12	0.2	12.45	0.14
Stream C-AB		0.1	8.20	0.07		0.2	7.24	0.14
	2033 + 200 Houses							
Stream B-AC	D13	0.8	21.36	0.44	D14	0.2	13.76	0.16
Stream C-AB		0.1	8.63	0.08		0.2	7.49	0.16

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.

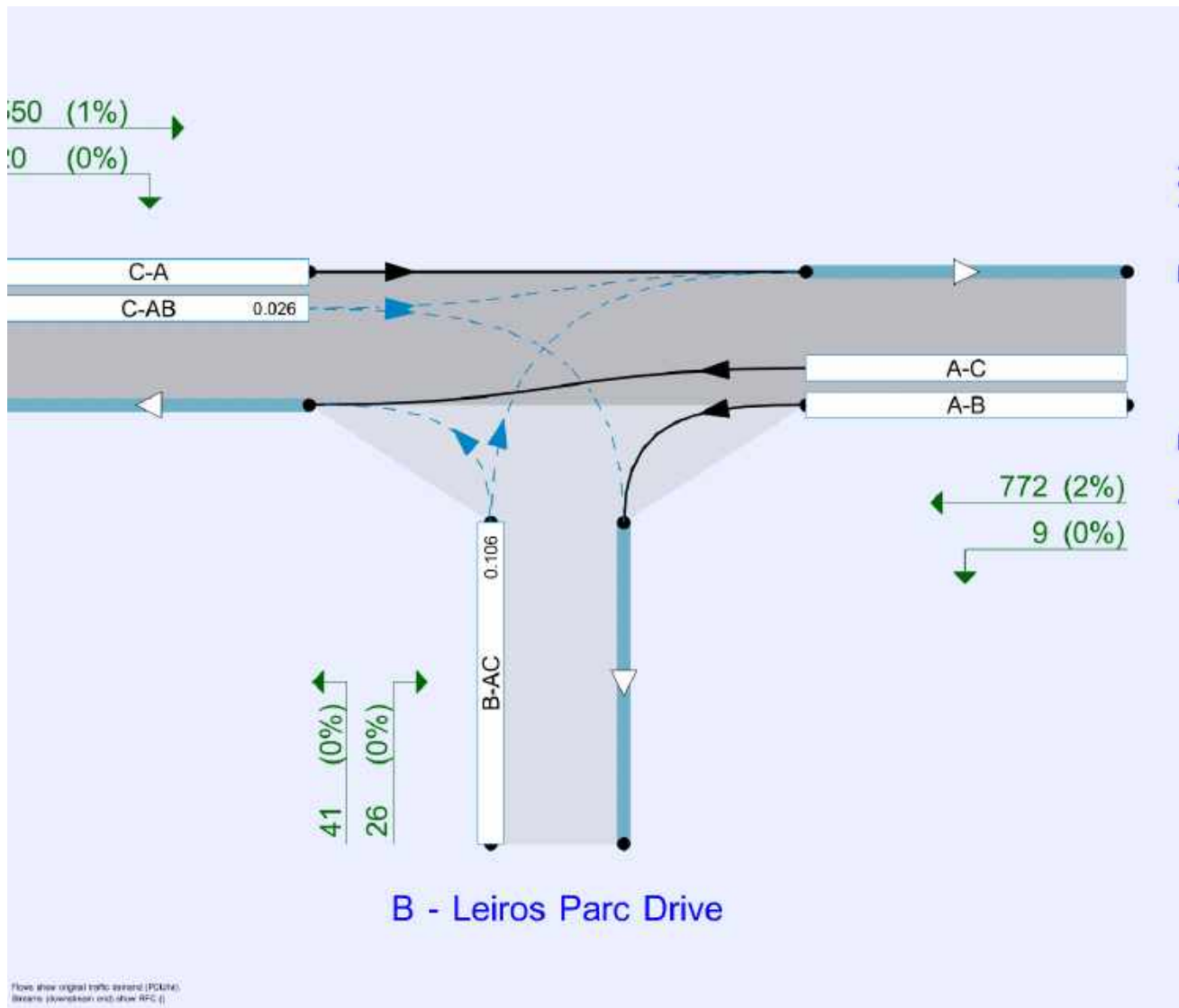
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Louie
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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	08:00	09:30	15	✓
D2	2017 Baseline	PM	ONE HOUR	17:00	18:30	15	✓
D3	2023 Baseline	AM	ONE HOUR	08:00	09:30	15	✓
D4	2023 Baseline	PM	ONE HOUR	17:00	18:30	15	✓
D5	2025 Baseline	AM	ONE HOUR	08:00	09:30	15	✓
D6	2025 Baseline	PM	ONE HOUR	17:00	18:30	15	✓
D7	2033 Baseline	AM	ONE HOUR	08:00	09:30	15	✓
D8	2033 Baseline	PM	ONE HOUR	17:00	18:30	15	✓
D9	2023 + 50 Houses	AM	ONE HOUR	08:00	09:30	15	✓
D10	2023 + 50 Houses	PM	ONE HOUR	17:00	18:30	15	✓
D11	2025 + 200 Houses	AM	ONE HOUR	08:00	09:30	15	✓
D12	2025 + 200 Houses	PM	ONE HOUR	17:00	18:30	15	✓
D13	2033 + 200 Houses	AM	ONE HOUR	08:00	09:30	15	✓
D14	2033 + 200 Houses	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Penywern Road N		Major
B	Leiros Parc Drive		Minor
C	Penywern Road South		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Penywern Road South	6.50		✓	3.00	179.0	✓	4.00

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 - Leiros Parc Drive	One lane	5.00	29	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	596	0.106	0.269	0.169	0.384
B-C	764	0.115	0.290	-	-
C-B	737	0.279	0.279	-	-

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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	781	100.000
B - Leiros Parc Drive		ONE HOUR	✓	67	100.000
C - Penywern Road South		ONE HOUR	✓	570	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
A - Penywern Road N		0	9	772
B - Leiros Parc Drive		26	0	41
C - Penywern Road South		550	20	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
A - Penywern Road N		0	0	2
B - Leiros Parc Drive		0	0	0
C - Penywern Road South		1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	12.13	0.2	B	61	92
C-AB	0.04	7.59	0.0	A	18	28
C-A					505	757
A-B					8	12
A-C					708	1063

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13	477	0.106	50	0.0	0.1	8.416	A
C-AB	15	4	572	0.026	15	0.0	0.0	6.457	A
C-A	414	104			414				
A-B	7	2			7				
A-C	581	145			581				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	60	15	434	0.139	60	0.1	0.2	9.636	A
C-AB	18	4	541	0.033	18	0.0	0.0	6.887	A
C-A	494	124			494				
A-B	8	2			8				
A-C	694	174			694				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	74	18	370	0.199	73	0.2	0.2	12.105	B
C-AB	22	6	497	0.044	22	0.0	0.0	7.585	A
C-A	606	151			606				
A-B	10	2			10				
A-C	850	212			850				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	74	18	370	0.199	74	0.2	0.2	12.132	B
C-AB	22	6	497	0.044	22	0.0	0.0	7.585	A
C-A	606	151			606				
A-B	10	2			10				
A-C	850	212			850				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	60	15	433	0.139	61	0.2	0.2	9.663	A
C-AB	18	4	541	0.033	18	0.0	0.0	6.891	A
C-A	494	124			494				
A-B	8	2			8				
A-C	694	174			694				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13	477	0.106	51	0.2	0.1	8.442	A
C-AB	15	4	572	0.026	15	0.0	0.0	6.460	A
C-A	414	104			414				
A-B	7	2			7				
A-C	581	145			581				

2017 Baseline, 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	Leiros Parc/Penywern	T-Junction	Two-way		0.50	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)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	453	100.000
B - Leiros Parc Drive		ONE HOUR	✓	25	100.000
C - Penywern Road South		ONE HOUR	✓	758	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	29	424
	B - Leiros Parc Drive	18	0	7
	C - Penywern Road South	705	53	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	0
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	10.68	0.1	B	23	34
C-AB	0.10	6.68	0.1	A	49	73
C-A					647	970
A-B					27	40
A-C					389	584

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	19	5	454	0.041	19	0.0	0.0	8.274	A
C-AB	40	10	641	0.062	40	0.0	0.1	5.979	A
C-A	531	133			531				
A-B	22	5			22				
A-C	319	80			319				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22	6	417	0.054	22	0.0	0.1	9.126	A
C-AB	48	12	623	0.076	48	0.1	0.1	6.256	A
C-A	634	158			634				
A-B	26	7			26				
A-C	381	95			381				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	7	365	0.075	27	0.1	0.1	10.671	B
C-AB	58	15	597	0.098	58	0.1	0.1	6.677	A
C-A	776	194			776				
A-B	32	8			32				
A-C	467	117			467				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	7	365	0.075	28	0.1	0.1	10.676	B
C-AB	58	15	597	0.098	58	0.1	0.1	6.677	A
C-A	776	194			776				
A-B	32	8			32				
A-C	467	117			467				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22	6	417	0.054	23	0.1	0.1	9.134	A
C-AB	48	12	623	0.076	48	0.1	0.1	6.261	A
C-A	634	158			634				
A-B	26	7			26				
A-C	381	95			381				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	19	5	454	0.041	19	0.1	0.0	8.281	A
C-AB	40	10	641	0.062	40	0.1	0.1	5.987	A
C-A	531	133			531				
A-B	22	5			22				
A-C	319	80			319				

2023 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.74	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)	Run automatically
D3	2023 Baseline	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	828	100.000
B - Leiros Parc Drive		ONE HOUR	✓	71	100.000
C - Penywern Road South		ONE HOUR	✓	604	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	10	818
	B - Leiros Parc Drive	28	0	43
	C - Penywern Road South	583	21	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.22	13.29	0.3	B	65	98
C-AB	0.05	7.85	0.1	A	19	29
C-A					535	802
A-B					9	13
A-C					751	1126

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	53	13	464	0.115	53	0.0	0.1	8.750	A
C-AB	16	4	563	0.028	16	0.0	0.0	6.581	A
C-A	439	110			439				
A-B	7	2			7				
A-C	616	154			616				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	16	417	0.153	64	0.1	0.2	10.181	B
C-AB	19	5	529	0.036	19	0.0	0.0	7.060	A
C-A	524	131			524				
A-B	9	2			9				
A-C	736	184			736				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	78	20	349	0.224	78	0.2	0.3	13.229	B
C-AB	23	6	482	0.048	23	0.0	0.1	7.844	A
C-A	642	160			642				
A-B	11	3			11				
A-C	901	225			901				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	78	20	349	0.224	78	0.3	0.3	13.291	B
C-AB	23	6	482	0.048	23	0.1	0.1	7.845	A
C-A	642	160			642				
A-B	11	3			11				
A-C	901	225			901				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	16	417	0.153	64	0.3	0.2	10.216	B
C-AB	19	5	529	0.036	19	0.1	0.0	7.064	A
C-A	524	131			524				
A-B	9	2			9				
A-C	736	184			736				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	53	13	464	0.115	54	0.2	0.1	8.780	A
C-AB	16	4	563	0.028	16	0.0	0.0	6.587	A
C-A	439	110			439				
A-B	7	2			7				
A-C	616	154			616				

2023 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.52	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)	Run automatically
D4	2023 Baseline	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	479	100.000
B - Leiros Parc Drive		ONE HOUR	✓	26	100.000
C - Penywern Road South		ONE HOUR	✓	802	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	31	449
	B - Leiros Parc Drive	19	0	7
	C - Penywern Road South	746	56	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	11.29	0.1	B	24	36
C-AB	0.10	6.82	0.1	A	51	77
C-A					684	1027
A-B					28	42
A-C					412	617

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	443	0.045	20	0.0	0.0	8.505	A
C-AB	42	11	636	0.066	42	0.0	0.1	6.058	A
C-A	561	140			561				
A-B	23	6			23				
A-C	338	84			338				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	24	6	404	0.059	24	0.0	0.1	9.477	A
C-AB	50	13	616	0.082	50	0.1	0.1	6.360	A
C-A	670	168			670				
A-B	28	7			28				
A-C	403	101			403				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	348	0.084	29	0.1	0.1	11.282	B
C-AB	62	15	589	0.105	62	0.1	0.1	6.818	A
C-A	821	205			821				
A-B	34	8			34				
A-C	494	123			494				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	348	0.084	29	0.1	0.1	11.290	B
C-AB	62	15	589	0.105	62	0.1	0.1	6.821	A
C-A	821	205			821				
A-B	34	8			34				
A-C	494	123			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	24	6	403	0.059	24	0.1	0.1	9.488	A
C-AB	50	13	616	0.082	51	0.1	0.1	6.362	A
C-A	670	168			670				
A-B	28	7			28				
A-C	403	101			403				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	443	0.045	20	0.1	0.0	8.518	A
C-AB	42	11	636	0.066	42	0.1	0.1	6.064	A
C-A	561	140			561				
A-B	23	6			23				
A-C	338	84			338				

2025 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.76	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)	Run automatically
D5	2025 Baseline	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	842	100.000
B - Leiros Parc Drive		ONE HOUR	✓	72	100.000
C - Penywern Road South		ONE HOUR	✓	614	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	10	832
	B - Leiros Parc Drive	28	0	44
	C - Penywern Road South	593	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.23	13.68	0.3	B	66	99
C-AB	0.05	7.93	0.1	A	20	30
C-A					544	816
A-B					9	13
A-C					763	1145

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	54	14	460	0.118	54	0.0	0.1	8.853	A
C-AB	16	4	560	0.029	16	0.0	0.0	6.620	A
C-A	446	112			446				
A-B	7	2			7				
A-C	626	157			626				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	16	412	0.157	65	0.1	0.2	10.354	B
C-AB	19	5	525	0.037	19	0.0	0.0	7.113	A
C-A	533	133			533				
A-B	9	2			9				
A-C	748	187			748				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	343	0.232	79	0.2	0.3	13.635	B
C-AB	24	6	478	0.050	24	0.0	0.1	7.924	A
C-A	653	163			653				
A-B	11	3			11				
A-C	916	229			916				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	343	0.232	79	0.3	0.3	13.681	B
C-AB	24	6	478	0.050	24	0.1	0.1	7.925	A
C-A	653	163			653				
A-B	11	3			11				
A-C	916	229			916				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	16	412	0.157	65	0.3	0.2	10.395	B
C-AB	19	5	525	0.037	19	0.1	0.0	7.117	A
C-A	533	133			533				
A-B	9	2			9				
A-C	748	187			748				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	54	14	460	0.118	55	0.2	0.1	8.886	A
C-AB	16	4	560	0.029	16	0.0	0.0	6.623	A
C-A	446	112			446				
A-B	7	2			7				
A-C	626	157			626				

2025 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.53	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)	Run automatically
D6	2025 Baseline	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	487	100.000
B - Leiros Parc Drive		ONE HOUR	✓	27	100.000
C - Penywern Road South		ONE HOUR	✓	815	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	31	456
	B - Leiros Parc Drive	19	0	8
	C - Penywern Road South	758	57	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	11.49	0.1	B	25	37
C-AB	0.11	6.87	0.1	A	52	78
C-A					696	1044
A-B					29	43
A-C					418	628

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	440	0.046	20	0.0	0.0	8.579	A
C-AB	43	11	634	0.068	43	0.0	0.1	6.082	A
C-A	571	143			571				
A-B	23	6			23				
A-C	343	86			343				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	24	6	399	0.061	24	0.0	0.1	9.589	A
C-AB	51	13	614	0.083	51	0.1	0.1	6.392	A
C-A	682	170			682				
A-B	28	7			28				
A-C	410	102			410				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	7	343	0.086	29	0.1	0.1	11.487	B
C-AB	63	16	587	0.107	63	0.1	0.1	6.864	A
C-A	835	209			835				
A-B	34	9			34				
A-C	502	126			502				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	7	343	0.086	30	0.1	0.1	11.492	B
C-AB	63	16	587	0.107	63	0.1	0.1	6.866	A
C-A	835	209			835				
A-B	34	9			34				
A-C	502	126			502				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	24	6	399	0.061	24	0.1	0.1	9.600	A
C-AB	51	13	614	0.083	51	0.1	0.1	6.394	A
C-A	682	170			682				
A-B	28	7			28				
A-C	410	102			410				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	439	0.046	20	0.1	0.0	8.593	A
C-AB	43	11	634	0.068	43	0.1	0.1	6.088	A
C-A	571	143			571				
A-B	23	6			23				
A-C	343	86			343				

2033 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.87	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)	Run automatically
D7	2033 Baseline	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	907	100.000
B - Leiros Parc Drive		ONE HOUR	✓	78	100.000
C - Penywern Road South		ONE HOUR	✓	662	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	10	896
	B - Leiros Parc Drive	30	0	48
	C - Penywern Road South	639	23	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.27	15.93	0.4	C	71	107
C-AB	0.06	8.33	0.1	A	21	32
C-A					586	879
A-B					10	14
A-C					822	1234

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	15	441	0.133	58	0.0	0.2	9.396	A
C-AB	17	4	546	0.032	17	0.0	0.0	6.807	A
C-A	481	120			481				
A-B	8	2			8				
A-C	675	169			675				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	17	389	0.180	70	0.2	0.2	11.272	B
C-AB	21	5	509	0.041	21	0.0	0.0	7.373	A
C-A	574	144			574				
A-B	9	2			9				
A-C	806	201			806				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	86	21	312	0.275	85	0.2	0.4	15.841	C
C-AB	26	6	458	0.056	25	0.0	0.1	8.324	A
C-A	703	176			703				
A-B	12	3			12				
A-C	987	247			987				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	86	21	312	0.275	86	0.4	0.4	15.931	C
C-AB	26	6	458	0.056	26	0.1	0.1	8.326	A
C-A	703	176			703				
A-B	12	3			12				
A-C	987	247			987				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	17	389	0.180	71	0.4	0.2	11.336	B
C-AB	21	5	509	0.041	21	0.1	0.0	7.378	A
C-A	574	144			574				
A-B	9	2			9				
A-C	806	201			806				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	15	441	0.133	59	0.2	0.2	9.424	A
C-AB	17	4	546	0.032	18	0.0	0.0	6.811	A
C-A	481	120			481				
A-B	8	2			8				
A-C	675	169			675				

2033 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.56	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)	Run automatically
D8	2033 Baseline	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	525	100.000
B - Leiros Parc Drive		ONE HOUR	✓	29	100.000
C - Penywern Road South		ONE HOUR	✓	878	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	34	491
	B - Leiros Parc Drive	21	0	8
	C - Penywern Road South	817	61	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.10	12.57	0.1	B	27	40
C-AB	0.12	7.09	0.1	A	56	85
C-A					750	1125
A-B					31	46
A-C					451	676

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22	5	424	0.051	22	0.0	0.1	8.950	A
C-AB	46	12	626	0.074	46	0.0	0.1	6.200	A
C-A	615	154			615				
A-B	25	6			25				
A-C	370	92			370				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	7	380	0.069	26	0.1	0.1	10.162	B
C-AB	55	14	605	0.091	55	0.1	0.1	6.548	A
C-A	735	184			735				
A-B	30	8			30				
A-C	442	110			442				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	318	0.100	32	0.1	0.1	12.553	B
C-AB	68	17	575	0.118	68	0.1	0.1	7.086	A
C-A	900	225			900				
A-B	37	9			37				
A-C	541	135			541				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	318	0.100	32	0.1	0.1	12.567	B
C-AB	68	17	575	0.118	68	0.1	0.1	7.089	A
C-A	900	225			900				
A-B	37	9			37				
A-C	541	135			541				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	7	380	0.069	26	0.1	0.1	10.179	B
C-AB	55	14	605	0.091	55	0.1	0.1	6.554	A
C-A	735	184			735				
A-B	30	8			30				
A-C	442	110			442				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22	5	423	0.052	22	0.1	0.1	8.967	A
C-AB	46	12	626	0.074	46	0.1	0.1	6.209	A
C-A	615	154			615				
A-B	25	6			25				
A-C	370	92			370				

2023 + 50 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	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)	Run automatically
D9	2023 + 50 Houses	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	830	100.000
B - Leiros Parc Drive		ONE HOUR	✓	93	100.000
C - Penywern Road South		ONE HOUR	✓	610	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	12	818
	B - Leiros Parc Drive	37	0	56
	C - Penywern Road South	583	27	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.30	14.86	0.4	B	86	128
C-AB	0.06	7.96	0.1	A	24	37
C-A					535	802
A-B					11	17
A-C					751	1126

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	18	461	0.152	70	0.0	0.2	9.181	A
C-AB	20	5	562	0.036	20	0.0	0.0	6.638	A
C-A	439	110			439				
A-B	9	2			9				
A-C	616	154			616				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	21	414	0.203	84	0.2	0.3	10.897	B
C-AB	24	6	528	0.045	24	0.0	0.0	7.138	A
C-A	524	131			524				
A-B	11	3			11				
A-C	736	184			736				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	345	0.298	102	0.3	0.4	14.787	B
C-AB	29	7	481	0.061	29	0.0	0.1	7.962	A
C-A	642	160			642				
A-B	13	3			13				
A-C	901	225			901				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	345	0.298	103	0.4	0.4	14.864	B
C-AB	29	7	481	0.061	29	0.1	0.1	7.963	A
C-A	642	160			642				
A-B	13	3			13				
A-C	901	225			901				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	21	414	0.203	85	0.4	0.3	10.960	B
C-AB	24	6	528	0.045	24	0.1	0.0	7.143	A
C-A	524	131			524				
A-B	11	3			11				
A-C	736	184			736				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	18	461	0.152	71	0.3	0.2	9.230	A
C-AB	20	5	562	0.036	20	0.0	0.0	6.644	A
C-A	439	110			439				
A-B	9	2			9				
A-C	616	154			616				

2023 + 50 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.66	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)	Run automatically
D10	2023 + 50 Houses	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	485	100.000
B - Leiros Parc Drive		ONE HOUR	✓	35	100.000
C - Penywern Road South		ONE HOUR	✓	812	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	36	449
	B - Leiros Parc Drive	25	0	11
	C - Penywern Road South	746	66	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.11	11.65	0.1	B	33	49
C-AB	0.12	6.99	0.1	A	61	91
C-A					684	1027
A-B					33	50
A-C					412	617

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	27	7	445	0.060	26	0.0	0.1	8.602	A
C-AB	50	12	635	0.079	50	0.0	0.1	6.151	A
C-A	561	140			561				
A-B	27	7			27				
A-C	338	84			338				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	405	0.079	32	0.1	0.1	9.651	A
C-AB	60	15	615	0.097	60	0.1	0.1	6.482	A
C-A	670	168			670				
A-B	33	8			33				
A-C	403	101			403				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	348	0.112	39	0.1	0.1	11.635	B
C-AB	73	18	588	0.124	73	0.1	0.1	6.991	A
C-A	821	205			821				
A-B	40	10			40				
A-C	494	123			494				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	348	0.112	39	0.1	0.1	11.648	B
C-AB	73	18	588	0.124	73	0.1	0.1	6.994	A
C-A	821	205			821				
A-B	40	10			40				
A-C	494	123			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	405	0.079	32	0.1	0.1	9.665	A
C-AB	60	15	615	0.097	60	0.1	0.1	6.485	A
C-A	670	168			670				
A-B	33	8			33				
A-C	403	101			403				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	27	7	445	0.060	27	0.1	0.1	8.619	A
C-AB	50	12	635	0.079	50	0.1	0.1	6.160	A
C-A	561	140			561				
A-B	27	7			27				
A-C	338	84			338				

2025 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		1.39	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)	Run automatically
D11	2025 + 200 Houses	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	854	100.000
B - Leiros Parc Drive		ONE HOUR	✓	113	100.000
C - Penywern Road South		ONE HOUR	✓	641	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	14	840
	B - Leiros Parc Drive	45	0	68
	C - Penywern Road South	609	32	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.38	17.46	0.6	C	103	155
C-AB	0.07	8.20	0.1	A	29	44
C-A					559	838
A-B					13	19
A-C					771	1156

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	85	21	452	0.188	84	0.0	0.2	9.757	A
C-AB	24	6	557	0.043	24	0.0	0.0	6.751	A
C-A	459	115			459				
A-B	11	3			11				
A-C	632	158			632				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	101	25	403	0.252	101	0.2	0.3	11.918	B
C-AB	29	7	522	0.055	29	0.0	0.1	7.294	A
C-A	547	137			547				
A-B	13	3			13				
A-C	755	189			755				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	124	31	330	0.376	123	0.3	0.6	17.300	C
C-AB	35	9	474	0.074	35	0.1	0.1	8.199	A
C-A	671	168			671				
A-B	16	4			16				
A-C	925	231			925				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	124	31	330	0.376	124	0.6	0.6	17.463	C
C-AB	35	9	474	0.074	35	0.1	0.1	8.203	A
C-A	671	168			671				
A-B	16	4			16				
A-C	925	231			925				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	101	25	403	0.252	102	0.6	0.3	12.034	B
C-AB	29	7	522	0.055	29	0.1	0.1	7.300	A
C-A	547	137			547				
A-B	13	3			13				
A-C	755	189			755				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	85	21	452	0.188	85	0.3	0.2	9.829	A
C-AB	24	6	557	0.043	24	0.1	0.0	6.757	A
C-A	459	115			459				
A-B	11	3			11				
A-C	632	158			632				

2025 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.78	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)	Run automatically
D12	2025 + 200 Houses	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	507	100.000
B - Leiros Parc Drive		ONE HOUR	✓	43	100.000
C - Penywern Road South		ONE HOUR	✓	844	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	41	466
	B - Leiros Parc Drive	30	0	14
	C - Penywern Road South	768	76	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.14	12.45	0.2	B	40	60
C-AB	0.14	7.24	0.2	A	70	105
C-A					704	1057
A-B					38	57
A-C					427	641

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	8	439	0.074	32	0.0	0.1	8.862	A
C-AB	58	14	630	0.091	57	0.0	0.1	6.279	A
C-A	578	144			578				
A-B	31	8			31				
A-C	350	88			350				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	397	0.098	39	0.1	0.1	10.059	B
C-AB	69	17	609	0.113	69	0.1	0.1	6.654	A
C-A	690	173			690				
A-B	37	9			37				
A-C	419	105			419				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	12	337	0.142	48	0.1	0.2	12.429	B
C-AB	84	21	581	0.145	84	0.1	0.2	7.240	A
C-A	845	211			845				
A-B	46	11			46				
A-C	513	128			513				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	12	337	0.142	48	0.2	0.2	12.449	B
C-AB	84	21	581	0.145	84	0.2	0.2	7.243	A
C-A	845	211			845				
A-B	46	11			46				
A-C	513	128			513				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	397	0.098	39	0.2	0.1	10.082	B
C-AB	69	17	609	0.113	69	0.2	0.1	6.663	A
C-A	690	173			690				
A-B	37	9			37				
A-C	419	105			419				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	8	438	0.074	33	0.1	0.1	8.877	A
C-AB	58	14	630	0.091	58	0.1	0.1	6.289	A
C-A	578	144			578				
A-B	31	8			31				
A-C	350	88			350				

2033 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		1.63	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)	Run automatically
D13	2033 + 200 Houses	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	919	100.000
B - Leiros Parc Drive		ONE HOUR	✓	118	100.000
C - Penywern Road South		ONE HOUR	✓	689	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	15	904
	B - Leiros Parc Drive	47	0	71
	C - Penywern Road South	655	34	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.44	21.36	0.8	C	109	163
C-AB	0.08	8.63	0.1	A	31	46
C-A					601	901
A-B					14	20
A-C					830	1245

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	22	433	0.206	88	0.0	0.3	10.404	B
C-AB	25	6	543	0.047	25	0.0	0.0	6.945	A
C-A	493	123			493				
A-B	11	3			11				
A-C	681	170			681				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	106	27	379	0.281	106	0.3	0.4	13.156	B
C-AB	30	8	506	0.060	30	0.0	0.1	7.568	A
C-A	589	147			589				
A-B	13	3			13				
A-C	813	203			813				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33	299	0.436	129	0.4	0.7	21.028	C
C-AB	37	9	454	0.082	37	0.1	0.1	8.630	A
C-A	721	180			721				
A-B	16	4			16				
A-C	996	249			996				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33	299	0.436	130	0.7	0.8	21.365	C
C-AB	37	9	454	0.082	37	0.1	0.1	8.633	A
C-A	721	180			721				
A-B	16	4			16				
A-C	996	249			996				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	106	27	379	0.281	108	0.8	0.4	13.346	B
C-AB	30	8	506	0.060	30	0.1	0.1	7.574	A
C-A	589	147			589				
A-B	13	3			13				
A-C	813	203			813				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	22	433	0.206	90	0.4	0.3	10.498	B
C-AB	25	6	543	0.047	25	0.1	0.0	6.950	A
C-A	493	123			493				
A-B	11	3			11				
A-C	681	170			681				

2033 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Leiros Parc/Penywern	T-Junction	Two-way		0.82	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)	Run automatically
D14	2033 + 200 Houses	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road N		ONE HOUR	✓	545	100.000
B - Leiros Parc Drive		ONE HOUR	✓	45	100.000
C - Penywern Road South		ONE HOUR	✓	907	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	44	501
	B - Leiros Parc Drive	31	0	14
	C - Penywern Road South	827	81	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road N	B - Leiros Parc Drive	C - Penywern Road South
From	A - Penywern Road N	0	0	2
	B - Leiros Parc Drive	0	0	0
	C - Penywern Road South	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.16	13.76	0.2	B	42	63
C-AB	0.16	7.49	0.2	A	74	111
C-A					758	1138
A-B					40	60
A-C					460	690

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	422	0.081	34	0.0	0.1	9.260	A
C-AB	61	15	622	0.098	60	0.0	0.1	6.405	A
C-A	622	156			622				
A-B	33	8			33				
A-C	377	94			377				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10	377	0.108	41	0.1	0.1	10.705	B
C-AB	73	18	600	0.121	73	0.1	0.1	6.823	A
C-A	743	186			743				
A-B	39	10			39				
A-C	450	113			450				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13	312	0.161	50	0.1	0.2	13.730	B
C-AB	89	22	570	0.156	89	0.1	0.2	7.482	A
C-A	910	228			910				
A-B	48	12			48				
A-C	552	138			552				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13	312	0.161	50	0.2	0.2	13.760	B
C-AB	89	22	570	0.156	89	0.2	0.2	7.490	A
C-A	910	228			910				
A-B	48	12			48				
A-C	552	138			552				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10	377	0.108	41	0.2	0.1	10.739	B
C-AB	73	18	600	0.121	73	0.2	0.1	6.833	A
C-A	743	186			743				
A-B	39	10			39				
A-C	450	113			450				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	422	0.081	34	0.1	0.1	9.289	A
C-AB	61	15	622	0.098	61	0.1	0.1	6.415	A
C-A	622	156			622				
A-B	33	8			33				
A-C	377	94			377				

Appendix I

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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Filename: Llygad Yr Haul T junction (DC).j9

Path: K:\T20\Jobs\T20.143 Leiros Park\Analysis\Junctions 9

Report generation date: 23/09/2020 20:08:19

»2017 Baseline, AM
 »2017 Baseline, PM
 »2023 Baseline, AM
 »2023 Baseline, PM
 »2025 Baseline, AM
 »2025 Baseline, PM
 »2033 Baseline, AM
 »2033 Baseline, PM
 »2023 + 50 Houses, AM
 »2023 + 50 Houses, PM
 »2025 + 200 Houses, AM
 »2025 + 200 Houses, PM
 »2033 + 200 Houses, AM
 »2033 + 200 Houses, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2017 Baseline							
Stream B-AC	D1	1.2	27.12	0.56	D2	0.6	16.27	0.39
Stream C-AB		0.1	8.43	0.09		0.1	7.44	0.07
	2023 Baseline							
Stream B-AC	D3	2.5	45.75	0.73	D4	0.7	18.45	0.43
Stream C-AB		0.3	7.96	0.22		0.1	7.71	0.08
	2025 Baseline							
Stream B-AC	D5	2.8	51.50	0.76	D6	0.8	19.23	0.45
Stream C-AB		0.3	8.05	0.23		0.1	7.80	0.08
	2033 Baseline							
Stream B-AC	D7	6.2	106.89	0.91	D8	1.1	24.15	0.52
Stream C-AB		0.3	8.53	0.25		0.1	8.24	0.09
	2023 + 50 Houses							
Stream B-AC	D9	2.6	48.43	0.74	D10	0.8	18.82	0.44
Stream C-AB		0.3	8.02	0.22		0.1	7.77	0.08
	2025 + 200 Houses							
Stream B-AC	D11	3.6	67.06	0.81	D12	0.9	21.04	0.47
Stream C-AB		0.3	8.29	0.24		0.1	7.97	0.08
	2033 + 200 Houses							
Stream B-AC	D13	9.4	155.31	0.98	D14	1.2	27.12	0.56
Stream C-AB		0.4	8.80	0.26		0.1	8.43	0.09

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

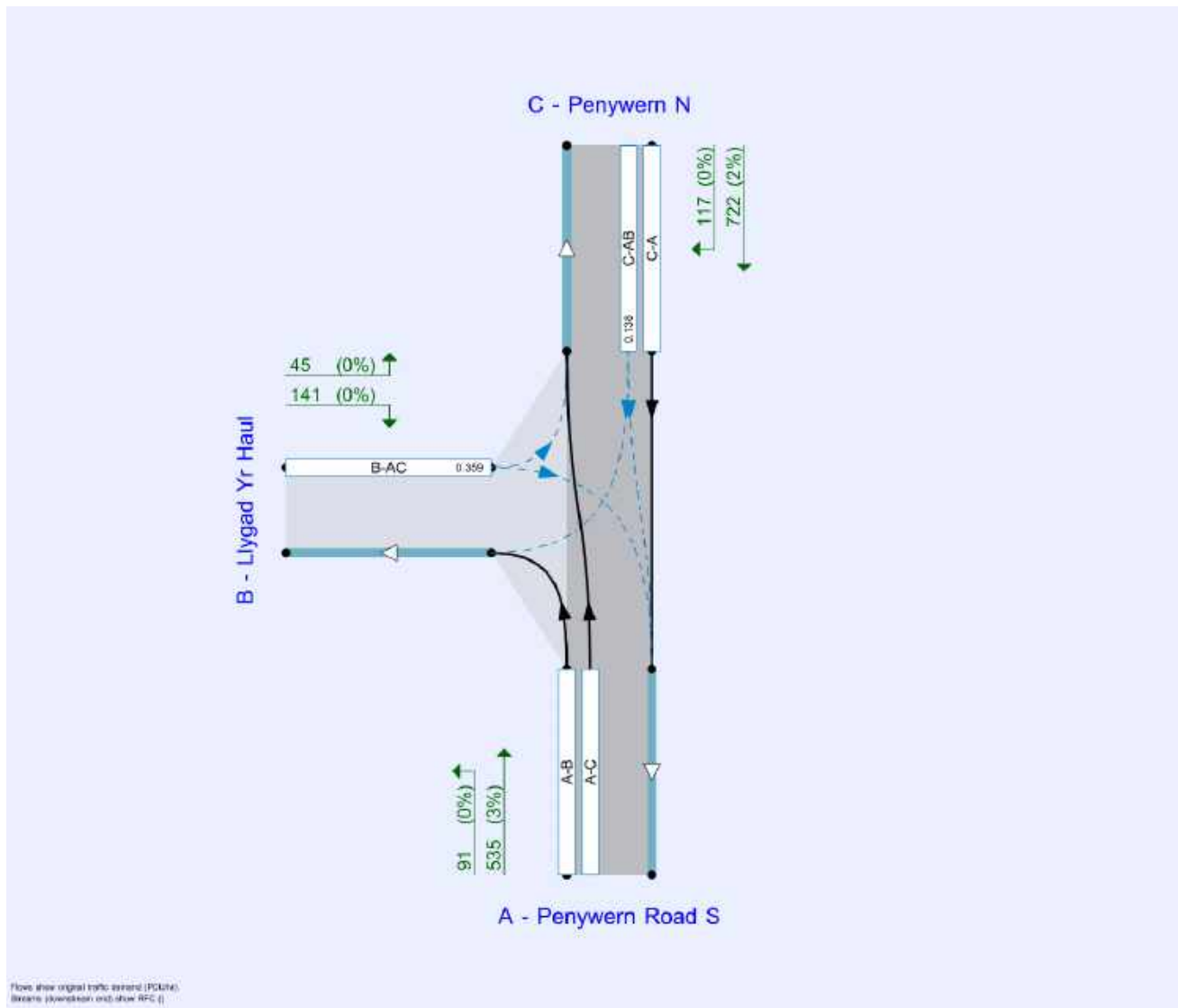
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Louie
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		2.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Penywern Road S		Major
B	Llygad Yr Haul		Minor
C	Penywern N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Penywern N	6.42		✓	3.00	250.0	✓	4.00

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 - Llygad Yr Haul	One lane	4.85	23	18

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	585	0.105	0.265	0.166	0.378
B-C	753	0.113	0.286	-	-
C-B	781	0.297	0.297	-	-

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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	586	100.000
B - Llygad Yr Haul		ONE HOUR	✓	175	100.000
C - Penywern N		ONE HOUR	✓	780	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	86	500
	B - Llygad Yr Haul	133	0	42
	C - Penywern N	671	109	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.56	27.12	1.2	D	138	207
C-AB	0.09	8.43	0.1	A	37	55
C-A					461	691
A-B					127	191
A-C					744	1116

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	113	28	416	0.272	112	0.0	0.4	11.772	B
C-AB	30	8	569	0.053	30	0.0	0.1	6.674	A
C-A	378	94			378				
A-B	104	26			104				
A-C	611	153			611				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	135	34	368	0.368	135	0.4	0.6	15.385	C
C-AB	36	9	528	0.068	36	0.1	0.1	7.318	A
C-A	451	113			451				
A-B	125	31			125				
A-C	729	182			729				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	41	298	0.556	163	0.6	1.2	26.252	D
C-AB	44	11	471	0.093	44	0.1	0.1	8.431	A
C-A	553	138			553				
A-B	153	38			153				
A-C	893	223			893				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	41	298	0.556	166	1.2	1.2	27.117	D
C-AB	44	11	471	0.093	44	0.1	0.1	8.434	A
C-A	553	138			553				
A-B	153	38			153				
A-C	893	223			893				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	135	34	368	0.368	138	1.2	0.6	15.823	C
C-AB	36	9	528	0.068	36	0.1	0.1	7.322	A
C-A	451	113			451				
A-B	125	31			125				
A-C	729	182			729				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	113	28	416	0.272	114	0.6	0.4	11.955	B
C-AB	30	8	569	0.053	30	0.1	0.1	6.684	A
C-A	378	94			378				
A-B	104	26			104				
A-C	611	153			611				

2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		1.69	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)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	794	100.000
B - Llygad Yr Haul		ONE HOUR	✓	127	100.000
C - Penywern N		ONE HOUR	✓	452	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	118	676
	B - Llygad Yr Haul	68	0	59
	C - Penywern N	418	34	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.39	16.27	0.6	C	117	175
C-AB	0.07	7.44	0.1	A	31	47
C-A					384	575
A-B					108	162
A-C					620	930

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	96	24	457	0.209	95	0.0	0.3	9.911	A
C-AB	26	6	604	0.042	25	0.0	0.0	6.224	A
C-A	315	79			315				
A-B	89	22			89				
A-C	509	127			509				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	114	29	417	0.274	114	0.3	0.4	11.847	B
C-AB	31	8	569	0.054	31	0.0	0.1	6.682	A
C-A	376	94			376				
A-B	106	27			106				
A-C	608	152			608				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	140	35	361	0.387	139	0.4	0.6	16.131	C
C-AB	37	9	522	0.072	37	0.1	0.1	7.435	A
C-A	460	115			460				
A-B	130	32			130				
A-C	744	186			744				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	140	35	361	0.387	140	0.6	0.6	16.266	C
C-AB	37	9	522	0.072	37	0.1	0.1	7.435	A
C-A	460	115			460				
A-B	130	32			130				
A-C	744	186			744				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	114	29	417	0.274	115	0.6	0.4	11.961	B
C-AB	31	8	569	0.054	31	0.1	0.1	6.687	A
C-A	376	94			376				
A-B	106	27			106				
A-C	608	152			608				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	96	24	457	0.209	96	0.4	0.3	9.997	A
C-AB	26	6	604	0.042	26	0.1	0.0	6.230	A
C-A	315	79			315				
A-B	89	22			89				
A-C	509	127			509				

2023 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		5.76	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)	Run automatically
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	621	100.000
B - Llygad Yr Haul		ONE HOUR	✓	185	100.000
C - Penywern N		ONE HOUR	✓	827	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	91	530
	B - Llygad Yr Haul	141	0	45
	C - Penywern N	711	116	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.73	45.75	2.5	E	170	255
C-AB	0.22	7.96	0.3	A	106	159
C-A					652	979
A-B					84	125
A-C					486	729

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	140	35	392	0.356	137	0.0	0.5	14.009	B
C-AB	87	22	643	0.135	86	0.0	0.2	6.466	A
C-A	535	134			535				
A-B	69	17			69				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	167	42	346	0.482	165	0.5	0.9	19.740	C
C-AB	104	26	616	0.169	104	0.2	0.2	7.028	A
C-A	639	160			639				
A-B	82	20			82				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	204	51	281	0.727	199	0.9	2.3	41.275	E
C-AB	128	32	580	0.220	127	0.2	0.3	7.948	A
C-A	783	196			783				
A-B	100	25			100				
A-C	583	146			583				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	204	51	281	0.728	204	2.3	2.5	45.748	E
C-AB	128	32	580	0.220	128	0.3	0.3	7.959	A
C-A	783	196			783				
A-B	100	25			100				
A-C	583	146			583				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	167	42	346	0.482	173	2.5	1.0	21.409	C
C-AB	104	26	616	0.169	104	0.3	0.2	7.042	A
C-A	639	160			639				
A-B	82	20			82				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	140	35	392	0.356	141	1.0	0.6	14.434	B
C-AB	87	22	643	0.135	87	0.2	0.2	6.483	A
C-A	535	134			535				
A-B	69	17			69				
A-C	399	100			399				

2023 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		1.90	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)	Run automatically
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	840	100.000
B - Llygad Yr Haul		ONE HOUR	✓	134	100.000
C - Penywern N		ONE HOUR	✓	478	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	125	715
	B - Llygad Yr Haul	72	0	62
	C - Penywern N	442	36	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.43	18.45	0.7	C	123	185
C-AB	0.08	7.71	0.1	A	33	50
C-A					406	609
A-B					115	172
A-C					656	984

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	101	25	445	0.227	100	0.0	0.3	10.400	B
C-AB	27	7	593	0.046	27	0.0	0.0	6.353	A
C-A	333	83			333				
A-B	94	23			94				
A-C	538	135			538				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	121	30	403	0.300	120	0.3	0.4	12.715	B
C-AB	32	8	557	0.058	32	0.0	0.1	6.861	A
C-A	398	99			398				
A-B	112	28			112				
A-C	643	161			643				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	148	37	343	0.431	147	0.4	0.7	18.223	C
C-AB	40	10	506	0.078	40	0.1	0.1	7.706	A
C-A	487	122			487				
A-B	137	34			137				
A-C	787	197			787				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	148	37	343	0.431	148	0.7	0.7	18.447	C
C-AB	40	10	506	0.078	40	0.1	0.1	7.710	A
C-A	487	122			487				
A-B	137	34			137				
A-C	787	197			787				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	121	30	403	0.300	122	0.7	0.4	12.875	B
C-AB	32	8	557	0.058	32	0.1	0.1	6.864	A
C-A	398	99			398				
A-B	112	28			112				
A-C	643	161			643				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	101	25	445	0.227	102	0.4	0.3	10.504	B
C-AB	27	7	593	0.046	27	0.1	0.0	6.359	A
C-A	333	83			333				
A-B	94	23			94				
A-C	538	135			538				

2025 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		6.42	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)	Run automatically
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	631	100.000
B - Llygad Yr Haul		ONE HOUR	✓	189	100.000
C - Penywern N		ONE HOUR	✓	841	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	93	539
	B - Llygad Yr Haul	143	0	45
	C - Penywern N	723	117	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.76	51.50	2.8	F	173	260
C-AB	0.23	8.05	0.3	A	108	162
C-A					663	995
A-B					85	128
A-C					494	742

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	142	35	389	0.365	140	0.0	0.6	14.343	B
C-AB	88	22	640	0.138	88	0.0	0.2	6.510	A
C-A	544	136			544				
A-B	70	17			70				
A-C	406	101			406				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	170	42	341	0.496	168	0.6	0.9	20.565	C
C-AB	106	26	613	0.172	105	0.2	0.2	7.090	A
C-A	650	162			650				
A-B	83	21			83				
A-C	484	121			484				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	208	52	275	0.756	201	0.9	2.6	45.395	E
C-AB	130	32	577	0.225	129	0.2	0.3	8.043	A
C-A	796	199			796				
A-B	102	26			102				
A-C	593	148			593				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	208	52	275	0.756	207	2.6	2.8	51.502	F
C-AB	130	32	577	0.225	130	0.3	0.3	8.054	A
C-A	796	199			796				
A-B	102	26			102				
A-C	593	148			593				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	170	42	341	0.497	177	2.8	1.0	22.692	C
C-AB	106	26	613	0.172	106	0.3	0.2	7.101	A
C-A	650	162			650				
A-B	83	21			83				
A-C	484	121			484				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	142	35	388	0.366	144	1.0	0.6	14.826	B
C-AB	88	22	640	0.138	89	0.2	0.2	6.528	A
C-A	544	136			544				
A-B	70	17			70				
A-C	406	101			406				

2025 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		1.97	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)	Run automatically
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	854	100.000
B - Llygad Yr Haul		ONE HOUR	✓	137	100.000
C - Penywern N		ONE HOUR	✓	486	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	127	727
	B - Llygad Yr Haul	73	0	63
	C - Penywern N	450	37	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.45	19.23	0.8	C	125	188
C-AB	0.08	7.80	0.1	A	34	50
C-A					412	619
A-B					116	175
A-C					667	1001

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	441	0.233	102	0.0	0.3	10.557	B
C-AB	28	7	590	0.047	27	0.0	0.0	6.394	A
C-A	338	85			338				
A-B	96	24			96				
A-C	547	137			547				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	123	31	398	0.308	122	0.3	0.4	13.005	B
C-AB	33	8	553	0.059	33	0.0	0.1	6.917	A
C-A	404	101			404				
A-B	114	29			114				
A-C	654	163			654				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	150	38	337	0.446	149	0.4	0.8	18.972	C
C-AB	40	10	502	0.080	40	0.1	0.1	7.794	A
C-A	495	124			495				
A-B	140	35			140				
A-C	800	200			800				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	150	38	337	0.446	150	0.8	0.8	19.231	C
C-AB	40	10	502	0.080	40	0.1	0.1	7.797	A
C-A	495	124			495				
A-B	140	35			140				
A-C	800	200			800				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	123	31	398	0.308	124	0.8	0.5	13.188	B
C-AB	33	8	553	0.059	33	0.1	0.1	6.920	A
C-A	404	101			404				
A-B	114	29			114				
A-C	654	163			654				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	441	0.233	103	0.5	0.3	10.669	B
C-AB	28	7	590	0.047	28	0.1	0.0	6.397	A
C-A	338	85			338				
A-B	96	24			96				
A-C	547	137			547				

2033 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		12.74	B

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)	Run automatically
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	680	100.000
B - Llygad Yr Haul		ONE HOUR	✓	203	100.000
C - Penywern N		ONE HOUR	✓	906	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	100	580
	B - Llygad Yr Haul	154	0	49
	C - Penywern N	779	127	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.91	106.89	6.2	F	186	280
C-AB	0.25	8.53	0.3	A	116	175
C-A					714	1072
A-B					92	137
A-C					533	799

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	153	38	370	0.413	150	0.0	0.7	16.190	C
C-AB	95	24	629	0.151	95	0.0	0.2	6.723	A
C-A	586	147			586				
A-B	75	19			75				
A-C	437	109			437				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	183	46	319	0.573	180	0.7	1.3	25.575	D
C-AB	114	28	600	0.190	114	0.2	0.2	7.392	A
C-A	700	175			700				
A-B	90	22			90				
A-C	522	130			522				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	224	56	246	0.910	209	1.3	5.0	77.472	F
C-AB	140	35	562	0.249	140	0.2	0.3	8.518	A
C-A	857	214			857				
A-B	110	27			110				
A-C	639	160			639				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	224	56	246	0.910	219	5.0	6.2	106.894	F
C-AB	140	35	562	0.249	140	0.3	0.3	8.533	A
C-A	857	214			857				
A-B	110	27			110				
A-C	639	160			639				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	183	46	319	0.573	202	6.2	1.4	34.938	D
C-AB	114	28	600	0.190	114	0.3	0.2	7.413	A
C-A	700	175			700				
A-B	90	22			90				
A-C	522	130			522				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	153	38	370	0.414	156	1.4	0.7	17.046	C
C-AB	95	24	629	0.151	96	0.2	0.2	6.747	A
C-A	586	147			586				
A-B	75	19			75				
A-C	437	109			437				

2033 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		2.44	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)	Run automatically
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	920	100.000
B - Llygad Yr Haul		ONE HOUR	✓	147	100.000
C - Penywern N		ONE HOUR	✓	524	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	137	783
	B - Llygad Yr Haul	79	0	68
	C - Penywern N	484	39	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.52	24.15	1.1	C	135	203
C-AB	0.09	8.24	0.1	A	36	54
C-A					445	667
A-B					125	188
A-C					719	1078

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	111	28	424	0.261	109	0.0	0.3	11.380	B
C-AB	30	7	575	0.052	29	0.0	0.1	6.588	A
C-A	365	91			365				
A-B	103	26			103				
A-C	590	147			590				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	132	33	378	0.350	132	0.3	0.5	14.587	B
C-AB	35	9	535	0.066	35	0.1	0.1	7.198	A
C-A	435	109			435				
A-B	123	31			123				
A-C	704	176			704				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	162	41	311	0.521	160	0.5	1.0	23.564	C
C-AB	43	11	480	0.090	43	0.1	0.1	8.236	A
C-A	533	133			533				
A-B	151	38			151				
A-C	863	216			863				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	162	41	311	0.522	162	1.0	1.1	24.149	C
C-AB	43	11	480	0.090	43	0.1	0.1	8.240	A
C-A	533	133			533				
A-B	151	38			151				
A-C	863	216			863				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	132	33	378	0.350	134	1.1	0.6	14.921	B
C-AB	35	9	535	0.066	36	0.1	0.1	7.201	A
C-A	435	109			435				
A-B	123	31			123				
A-C	704	176			704				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	111	28	424	0.261	112	0.6	0.4	11.539	B
C-AB	30	7	575	0.052	30	0.1	0.1	6.597	A
C-A	365	91			365				
A-B	103	26			103				
A-C	590	147			590				

2023 + 50 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		6.02	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)	Run automatically
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	626	100.000
B - Llygad Yr Haul		ONE HOUR	✓	186	100.000
C - Penywern N		ONE HOUR	✓	840	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	91	535
	B - Llygad Yr Haul	141	0	45
	C - Penywern N	722	117	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.74	48.43	2.6	E	171	256
C-AB	0.22	8.02	0.3	A	108	162
C-A					663	994
A-B					84	125
A-C					491	736

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	140	35	390	0.359	138	0.0	0.5	14.161	B
C-AB	88	22	641	0.138	88	0.0	0.2	6.495	A
C-A	544	136			544				
A-B	69	17			69				
A-C	403	101			403				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	167	42	343	0.487	166	0.5	0.9	20.122	C
C-AB	106	26	615	0.172	105	0.2	0.2	7.069	A
C-A	649	162			649				
A-B	82	20			82				
A-C	481	120			481				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	205	51	277	0.740	199	0.9	2.4	43.241	E
C-AB	130	32	578	0.224	129	0.2	0.3	8.010	A
C-A	795	199			795				
A-B	100	25			100				
A-C	589	147			589				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	205	51	277	0.740	204	2.4	2.6	48.432	E
C-AB	130	32	578	0.224	130	0.3	0.3	8.021	A
C-A	795	199			795				
A-B	100	25			100				
A-C	589	147			589				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	167	42	343	0.488	174	2.6	1.0	21.990	C
C-AB	106	26	615	0.172	106	0.3	0.2	7.083	A
C-A	649	162			649				
A-B	82	20			82				
A-C	481	120			481				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	140	35	390	0.359	142	1.0	0.6	14.611	B
C-AB	88	22	641	0.138	89	0.2	0.2	6.513	A
C-A	544	136			544				
A-B	69	17			69				
A-C	403	101			403				

2023 + 50 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		1.93	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)	Run automatically
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	849	100.000
B - Llygad Yr Haul		ONE HOUR	✓	135	100.000
C - Penywern N		ONE HOUR	✓	482	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	125	725
	B - Llygad Yr Haul	72	0	63
	C - Penywern N	445	36	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.44	18.82	0.8	C	124	186
C-AB	0.08	7.77	0.1	A	33	50
C-A					409	613
A-B					115	172
A-C					665	997

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	25	443	0.230	101	0.0	0.3	10.470	B
C-AB	27	7	591	0.046	27	0.0	0.0	6.379	A
C-A	335	84			335				
A-B	94	23			94				
A-C	546	136			546				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	30	401	0.303	121	0.3	0.4	12.854	B
C-AB	33	8	554	0.059	33	0.0	0.1	6.898	A
C-A	400	100			400				
A-B	112	28			112				
A-C	651	163			651				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	149	37	340	0.438	148	0.4	0.8	18.583	C
C-AB	40	10	503	0.079	40	0.1	0.1	7.762	A
C-A	490	123			490				
A-B	137	34			137				
A-C	798	199			798				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	149	37	340	0.438	149	0.8	0.8	18.822	C
C-AB	40	10	503	0.079	40	0.1	0.1	7.766	A
C-A	490	123			490				
A-B	137	34			137				
A-C	798	199			798				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	30	401	0.303	123	0.8	0.4	13.019	B
C-AB	33	8	554	0.059	33	0.1	0.1	6.900	A
C-A	400	100			400				
A-B	112	28			112				
A-C	651	163			651				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	25	443	0.230	102	0.4	0.3	10.577	B
C-AB	27	7	591	0.046	27	0.1	0.0	6.383	A
C-A	335	84			335				
A-B	94	23			94				
A-C	546	136			546				

2025 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		8.02	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)	Run automatically
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	660	100.000
B - Llygad Yr Haul		ONE HOUR	✓	191	100.000
C - Penywern N		ONE HOUR	✓	873	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	96	565
	B - Llygad Yr Haul	145	0	46
	C - Penywern N	752	121	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.81	67.06	3.6	F	175	263
C-AB	0.24	8.29	0.3	A	111	167
C-A					690	1034
A-B					88	132
A-C					518	777

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	144	36	379	0.380	141	0.0	0.6	15.029	C
C-AB	91	23	634	0.143	90	0.0	0.2	6.614	A
C-A	566	141			566				
A-B	72	18			72				
A-C	425	106			425				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	172	43	329	0.522	170	0.6	1.0	22.333	C
C-AB	109	27	606	0.179	108	0.2	0.2	7.238	A
C-A	676	169			676				
A-B	86	21			86				
A-C	508	127			508				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	210	53	259	0.811	202	1.0	3.2	55.583	F
C-AB	134	33	568	0.235	133	0.2	0.3	8.277	A
C-A	827	207			827				
A-B	105	26			105				
A-C	622	155			622				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	210	53	259	0.811	209	3.2	3.6	67.061	F
C-AB	134	33	568	0.235	134	0.3	0.3	8.290	A
C-A	827	207			827				
A-B	105	26			105				
A-C	622	155			622				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	172	43	329	0.522	182	3.6	1.1	25.850	D
C-AB	109	27	606	0.179	109	0.3	0.2	7.253	A
C-A	676	169			676				
A-B	86	21			86				
A-C	508	127			508				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	144	36	378	0.380	146	1.1	0.6	15.619	C
C-AB	91	23	634	0.143	91	0.2	0.2	6.635	A
C-A	566	141			566				
A-B	72	18			72				
A-C	425	106			425				

2025 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		2.12	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)	Run automatically
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	883	100.000
B - Llygad Yr Haul		ONE HOUR	✓	140	100.000
C - Penywern N		ONE HOUR	✓	504	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	129	754
	B - Llygad Yr Haul	75	0	65
	C - Penywern N	467	37	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.47	21.04	0.9	C	128	193
C-AB	0.08	7.97	0.1	A	34	51
C-A					429	643
A-B					118	177
A-C					692	1039

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	105	26	433	0.243	104	0.0	0.3	10.892	B
C-AB	28	7	584	0.048	28	0.0	0.0	6.473	A
C-A	352	88			352				
A-B	97	24			97				
A-C	568	142			568				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	126	31	389	0.324	125	0.3	0.5	13.631	B
C-AB	33	8	545	0.061	33	0.0	0.1	7.029	A
C-A	420	105			420				
A-B	116	29			116				
A-C	678	170			678				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	154	39	325	0.474	153	0.5	0.9	20.688	C
C-AB	41	10	492	0.083	41	0.1	0.1	7.968	A
C-A	514	129			514				
A-B	142	35			142				
A-C	831	208			831				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	154	39	325	0.474	154	0.9	0.9	21.044	C
C-AB	41	10	492	0.083	41	0.1	0.1	7.971	A
C-A	514	129			514				
A-B	142	35			142				
A-C	831	208			831				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	126	31	389	0.324	127	0.9	0.5	13.864	B
C-AB	33	8	545	0.061	33	0.1	0.1	7.031	A
C-A	420	105			420				
A-B	116	29			116				
A-C	678	170			678				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	105	26	433	0.243	106	0.5	0.3	11.020	B
C-AB	28	7	584	0.048	28	0.1	0.1	6.477	A
C-A	352	88			352				
A-B	97	24			97				
A-C	568	142			568				

2033 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		17.86	C

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)	Run automatically
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	709	100.000
B - Llygad Yr Haul		ONE HOUR	✓	206	100.000
C - Penywern N		ONE HOUR	✓	938	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	103	606
	B - Llygad Yr Haul	156	0	50
	C - Penywern N	808	130	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.98	155.31	9.4	F	189	283
C-AB	0.26	8.80	0.4	A	120	179
C-A					741	1111
A-B					94	141
A-C					556	835

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	155	39	360	0.430	152	0.0	0.7	17.071	C
C-AB	98	24	623	0.157	97	0.0	0.2	6.834	A
C-A	608	152			608				
A-B	77	19			77				
A-C	457	114			457				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	185	46	307	0.603	182	0.7	1.4	28.324	D
C-AB	117	29	593	0.197	117	0.2	0.2	7.556	A
C-A	726	181			726				
A-B	92	23			92				
A-C	545	136			545				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	226	57	230	0.983	205	1.4	6.8	100.345	F
C-AB	144	36	553	0.260	144	0.2	0.3	8.778	A
C-A	888	222			888				
A-B	113	28			113				
A-C	668	167			668				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	226	57	230	0.984	216	6.8	9.4	155.315	F
C-AB	144	36	553	0.260	144	0.3	0.4	8.795	A
C-A	888	222			888				
A-B	113	28			113				
A-C	668	167			668				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	185	46	306	0.604	216	9.4	1.7	50.054	F
C-AB	117	29	593	0.197	117	0.4	0.2	7.578	A
C-A	726	181			726				
A-B	92	23			92				
A-C	545	136			545				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	155	39	360	0.431	158	1.7	0.8	18.179	C
C-AB	98	24	623	0.157	98	0.2	0.2	6.862	A
C-A	608	152			608				
A-B	77	19			77				
A-C	457	114			457				

2033 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llygad Yr Haul/Penywern T junction	T-Junction	Two-way		2.69	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)	Run automatically
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern Road S		ONE HOUR	✓	949	100.000
B - Llygad Yr Haul		ONE HOUR	✓	151	100.000
C - Penywern N		ONE HOUR	✓	542	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	139	811
	B - Llygad Yr Haul	81	0	70
	C - Penywern N	502	40	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Penywern Road S	B - Llygad Yr Haul	C - Penywern N
From	A - Penywern Road S	0	0	3
	B - Llygad Yr Haul	0	0	0
	C - Penywern N	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.56	27.12	1.2	D	138	207
C-AB	0.09	8.43	0.1	A	37	55
C-A					461	691
A-B					127	191
A-C					744	1116

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	113	28	416	0.272	112	0.0	0.4	11.772	B
C-AB	30	8	569	0.053	30	0.0	0.1	6.674	A
C-A	378	94			378				
A-B	104	26			104				
A-C	611	153			611				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	135	34	368	0.368	135	0.4	0.6	15.385	C
C-AB	36	9	528	0.068	36	0.1	0.1	7.318	A
C-A	451	113			451				
A-B	125	31			125				
A-C	729	182			729				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	41	298	0.556	163	0.6	1.2	26.252	D
C-AB	44	11	471	0.093	44	0.1	0.1	8.431	A
C-A	553	138			553				
A-B	153	38			153				
A-C	893	223			893				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	41	298	0.556	166	1.2	1.2	27.117	D
C-AB	44	11	471	0.093	44	0.1	0.1	8.434	A
C-A	553	138			553				
A-B	153	38			153				
A-C	893	223			893				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	135	34	368	0.368	138	1.2	0.6	15.823	C
C-AB	36	9	528	0.068	36	0.1	0.1	7.322	A
C-A	451	113			451				
A-B	125	31			125				
A-C	729	182			729				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	113	28	416	0.272	114	0.6	0.4	11.955	B
C-AB	30	8	569	0.053	30	0.1	0.1	6.684	A
C-A	378	94			378				
A-B	104	26			104				
A-C	611	153			611				

Appendix J

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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Filename: Daphne Rd N T junction (DC).j9

Path: K:\T20\Jobs\T20.143 Leiros Park\Analysis\Junctions 9

Report generation date: 23/09/2020 20:33:30

-
- »2017 Baseline, AM
 - »2017 Baseline, PM
 - »2023 Baseline, AM
 - »2023 Baseline, PM
 - »2025 Baseline, AM
 - »2025 Baseline, PM
 - »2035 Baseline, AM
 - »2035 Baseline, PM
 - »2023 + 50 Houses, AM
 - »2023 + 50 Houses, PM
 - »2025 + 200 Houses, AM
 - »2025 + 200 Houses, PM
 - »2035 + 200 Houses, AM
 - »2035 + 200 Houses, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2017 Baseline							
Stream B-AC	D1	0.0	0.00	0.00	D2	0.0	0.00	0.00
Stream C-AB		0.0	7.99	0.02		0.0	6.70	0.01
	2023 Baseline							
Stream B-AC	D3	0.0	0.00	0.00	D4	0.0	0.00	0.00
Stream C-AB		0.0	8.24	0.02		0.0	6.80	0.01
	2025 Baseline							
Stream B-AC	D5	0.0	0.00	0.00	D6	0.0	0.00	0.00
Stream C-AB		0.0	8.31	0.02		0.0	6.83	0.01
	2035 Baseline							
Stream B-AC	D7	0.0	0.00	0.00	D8	0.0	0.00	0.00
Stream C-AB		0.0	8.69	0.02		0.0	6.98	0.01
	2023 + 50 Houses							
Stream B-AC	D9	0.0	0.00	0.00	D10	0.0	0.00	0.00
Stream C-AB		0.0	8.30	0.02		0.0	6.81	0.01
	2025 + 200 Houses							
Stream B-AC	D11	0.0	12.04	0.04	D12	0.0	10.79	0.02
Stream C-AB		0.0	8.50	0.02		0.0	6.96	0.02
	2035 + 200 Houses							
Stream B-AC	D13	0.0	13.22	0.05	D14	0.0	11.52	0.02
Stream C-AB		0.0	8.89	0.02		0.0	7.11	0.02

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

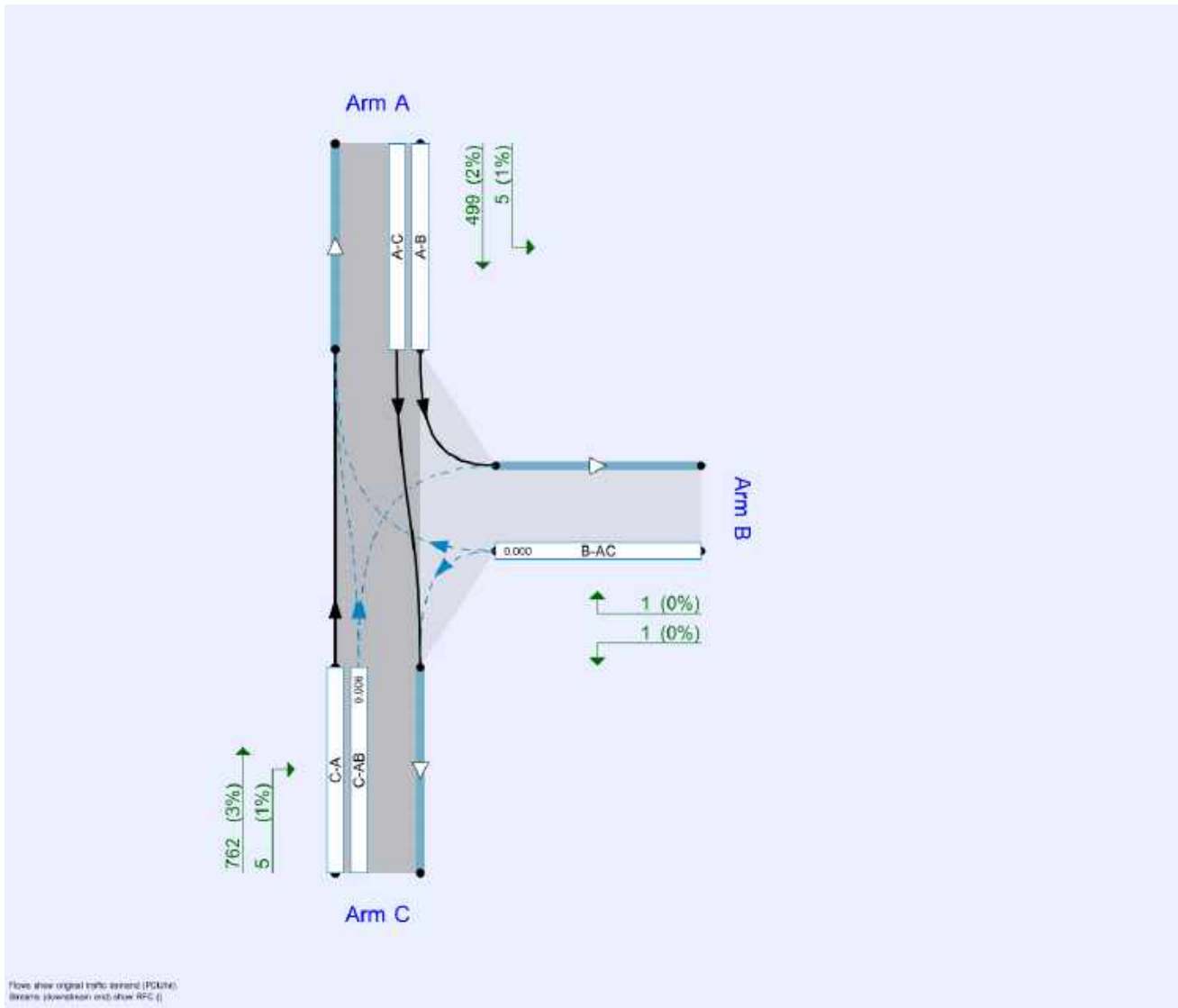
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Louie
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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D7	2035 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D8	2035 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D13	2035 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D14	2035 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Penywern Road N		Major
B	Daphne Road N		Minor
C	Penywern Road South		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.10		✓	2.20	185.0	✓	4.00

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	3.73	29	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	538	0.089	0.225	0.142	0.322
B-C	689	0.096	0.243	-	-
C-B	681	0.240	0.240	-	-

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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	828	100.000
B		ONE HOUR	✓	3	100.000
C		ONE HOUR	✓	553	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	1	827
	B	1	0	2
	C	546	7	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.02	7.99	0.0	A	6	10
C-A					501	752
AB					0.92	1
A-C					759	1138

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	532	0.010	5	0.0	0.0	6.907	A
C-A	411	103			411				
AB	0.75	0.19			0.75				
A-C	623	156			623				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	377	0.000	0	0.0	0.0	0.000	A
C-AB	6	2	503	0.013	6	0.0	0.0	7.324	A
C-A	491	123			491				
A-B	0.90	0.22			0.90				
A-C	743	186			743				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	322	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	463	0.017	8	0.0	0.0	7.994	A
C-A	601	150			601				
A-B	1	0.28			1				
A-C	911	228			911				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	322	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	463	0.017	8	0.0	0.0	7.994	A
C-A	601	150			601				
A-B	1	0.28			1				
A-C	911	228			911				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	377	0.000	0	0.0	0.0	0.000	A
C-AB	6	2	503	0.013	6	0.0	0.0	7.328	A
C-A	491	123			491				
A-B	0.90	0.22			0.90				
A-C	743	186			743				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	532	0.010	5	0.0	0.0	6.909	A
C-A	411	103			411				
A-B	0.75	0.19			0.75				
A-C	623	156			623				

2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.03	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)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	504	100.000
B		ONE HOUR	✓	2	100.000
C		ONE HOUR	✓	767	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	499
	B	1	0	1
	C	762	5	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.01	6.70	0.0	A	5	7
C-A					699	1049
A-B					5	7
A-C					458	687

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	458	0.000	0	0.0	0.0	0.000	A
C-AB	4	0.94	590	0.006	4	0.0	0.0	6.200	A
C-A	574	143			574				
A-B	4	0.94			4				
A-C	376	94			376				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	427	0.000	0	0.0	0.0	0.000	A
C-AB	4	1	572	0.008	4	0.0	0.0	6.401	A
C-A	685	171			685				
A-B	4	1			4				
A-C	449	112			449				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	384	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	548	0.010	5	0.0	0.0	6.701	A
C-A	839	210			839				
A-B	6	1			6				
A-C	549	137			549				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	384	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	548	0.010	6	0.0	0.0	6.701	A
C-A	839	210			839				
A-B	6	1			6				
A-C	549	137			549				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	427	0.000	0	0.0	0.0	0.000	A
C-AB	4	1	572	0.008	5	0.0	0.0	6.403	A
C-A	685	171			685				
A-B	4	1			4				
A-C	449	112			449				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	458	0.000	0	0.0	0.0	0.000	A
C-AB	4	0.94	590	0.006	4	0.0	0.0	6.200	A
C-A	574	143			574				
A-B	4	0.94			4				
A-C	376	94			376				

2023 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.04	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)	Run automatically
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	878	100.000
B		ONE HOUR	✓	3	100.000
C		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	1	877
	B	1	0	2
	C	579	7	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.02	8.24	0.0	A	7	10
C-A					531	797
A-B					0.97	1
A-C					804	1206

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	403	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	523	0.011	6	0.0	0.0	7.030	A
C-A	436	109			436				
A-B	0.80	0.20			0.80				
A-C	660	165			660				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	362	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	492	0.014	7	0.0	0.0	7.492	A
C-A	520	130			520				
A-B	0.95	0.24			0.95				
A-C	788	197			788				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	304	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	449	0.018	8	0.0	0.0	8.240	A
C-A	637	159			637				
A-B	1	0.29			1				
A-C	965	241			965				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	304	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	449	0.018	8	0.0	0.0	8.240	A
C-A	637	159			637				
A-B	1	0.29			1				
A-C	965	241			965				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	362	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	492	0.014	7	0.0	0.0	7.495	A
C-A	520	130			520				
A-B	0.95	0.24			0.95				
A-C	788	197			788				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	403	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	523	0.011	6	0.0	0.0	7.033	A
C-A	436	109			436				
A-B	0.80	0.20			0.80				
A-C	660	165			660				

2023 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.03	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)	Run automatically
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	533	100.000
B		ONE HOUR	✓	2	100.000
C		ONE HOUR	✓	811	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	528
	B	1	0	1
	C	806	5	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.01	6.80	0.0	A	5	7
C-A					740	1110
A-B					5	7
A-C					484	727

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	449	0.000	0	0.0	0.0	0.000	A
C-AB	4	1.00	585	0.007	4	0.0	0.0	6.258	A
C-A	607	152			607				
A-B	4	1.00			4				
A-C	397	99			397				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	416	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	566	0.008	5	0.0	0.0	6.475	A
C-A	725	181			725				
A-B	5	1			5				
A-C	475	119			475				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	370	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	540	0.011	6	0.0	0.0	6.801	A
C-A	888	222			888				
A-B	6	1			6				
A-C	581	145			581				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	370	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	540	0.011	6	0.0	0.0	6.801	A
C-A	888	222			888				
A-B	6	1			6				
A-C	581	145			581				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	416	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	566	0.008	5	0.0	0.0	6.478	A
C-A	725	181			725				
A-B	5	1			5				
A-C	475	119			475				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	449	0.000	0	0.0	0.0	0.000	A
C-AB	4	1.00	585	0.007	4	0.0	0.0	6.259	A
C-A	607	152			607				
A-B	4	1.00			4				
A-C	397	99			397				

2025 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.04	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)	Run automatically
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	892	100.000
B		ONE HOUR	✓	3	100.000
C		ONE HOUR	✓	596	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	1	891
	B	1	0	2
	C	588	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.02	8.31	0.0	A	7	10
C-A					540	810
A-B					0.99	1
A-C					818	1227

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	400	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	520	0.011	6	0.0	0.0	7.068	A
C-A	443	111			443				
A-B	0.81	0.20			0.81				
A-C	671	168			671				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	358	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	489	0.014	7	0.0	0.0	7.542	A
C-A	529	132			529				
A-B	0.97	0.24			0.97				
A-C	801	200			801				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	298	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	446	0.019	8	0.0	0.0	8.315	A
C-A	648	162			648				
A-B	1	0.30			1				
A-C	981	245			981				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	298	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	446	0.019	8	0.0	0.0	8.315	A
C-A	648	162			648				
A-B	1	0.30			1				
A-C	981	245			981				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	358	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	489	0.014	7	0.0	0.0	7.543	A
C-A	529	132			529				
A-B	0.97	0.24			0.97				
A-C	801	200			801				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	400	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	520	0.011	6	0.0	0.0	7.071	A
C-A	443	111			443				
A-B	0.81	0.20			0.81				
A-C	671	168			671				

2025 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.03	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)	Run automatically
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	542	100.000
B		ONE HOUR	✓	2	100.000
C		ONE HOUR	✓	825	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	537
	B	1	0	1
	C	819	5	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.01	6.83	0.0	A	5	7
C-A					752	1128
A-B					5	7
A-C					492	739

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	446	0.000	0	0.0	0.0	0.000	A
C-AB	4	1	583	0.007	4	0.0	0.0	6.276	A
C-A	617	154			617				
A-B	4	1			4				
A-C	404	101			404				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	413	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	564	0.009	5	0.0	0.0	6.498	A
C-A	737	184			737				
A-B	5	1			5				
A-C	482	121			482				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	366	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	538	0.011	6	0.0	0.0	6.832	A
C-A	902	226			902				
A-B	6	1			6				
A-C	591	148			591				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	366	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	538	0.011	6	0.0	0.0	6.832	A
C-A	902	226			902				
A-B	6	1			6				
A-C	591	148			591				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	413	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	564	0.009	5	0.0	0.0	6.501	A
C-A	737	184			737				
A-B	5	1			5				
A-C	482	121			482				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	446	0.000	0	0.0	0.0	0.000	A
C-AB	4	1	583	0.007	4	0.0	0.0	6.276	A
C-A	617	154			617				
A-B	4	1			4				
A-C	404	101			404				

2035 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.04	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)	Run automatically
D7	2035 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	961	100.000
B		ONE HOUR	✓	3	100.000
C		ONE HOUR	✓	642	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	1	960
	B	1	0	2
	C	634	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.02	8.69	0.0	A	7	11
C-A					582	872
A-B					1	2
A-C					881	1321

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	383	0.000	0	0.0	0.0	0.000	A
C-AB	6	2	508	0.012	6	0.0	0.0	7.250	A
C-A	477	119			477				
A-B	0.87	0.22			0.87				
A-C	723	181			723				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	338	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	474	0.015	7	0.0	0.0	7.792	A
C-A	570	142			570				
A-B	1	0.26			1				
A-C	863	216			863				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	272	0.000	0	0.0	0.0	0.000	A
C-AB	9	2	427	0.021	9	0.0	0.0	8.690	A
C-A	698	174			698				
A-B	1	0.32			1				
A-C	1057	264			1057				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	272	0.000	0	0.0	0.0	0.000	A
C-AB	9	2	427	0.021	9	0.0	0.0	8.690	A
C-A	698	174			698				
A-B	1	0.32			1				
A-C	1057	264			1057				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	338	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	474	0.015	7	0.0	0.0	7.793	A
C-A	570	142			570				
A-B	1	0.26			1				
A-C	863	216			863				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	383	0.000	0	0.0	0.0	0.000	A
C-AB	6	2	508	0.012	6	0.0	0.0	7.250	A
C-A	477	119			477				
A-B	0.87	0.22			0.87				
A-C	723	181			723				

2035 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.03	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)	Run automatically
D8	2035 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	584	100.000
B		ONE HOUR	✓	2	100.000
C		ONE HOUR	✓	889	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	6	578
	B	1	0	1
	C	883	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.01	6.98	0.0	A	5	8
C-A					810	1216
A-B					5	8
A-C					531	796

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	433	0.000	0	0.0	0.0	0.000	A
C-AB	4	1	576	0.008	4	0.0	0.0	6.363	A
C-A	665	166			665				
A-B	4	1			4				
A-C	435	109			435				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	397	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	555	0.009	5	0.0	0.0	6.610	A
C-A	794	198			794				
A-B	5	1			5				
A-C	520	130			520				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	345	0.000	0	0.0	0.0	0.000	A
C-AB	6	2	527	0.012	6	0.0	0.0	6.984	A
C-A	972	243			972				
A-B	6	2			6				
A-C	637	159			637				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	345	0.000	0	0.0	0.0	0.000	A
C-AB	6	2	527	0.012	6	0.0	0.0	6.984	A
C-A	972	243			972				
A-B	6	2			6				
A-C	637	159			637				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	397	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	555	0.009	5	0.0	0.0	6.613	A
C-A	794	198			794				
A-B	5	1			5				
A-C	520	130			520				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	433	0.000	0	0.0	0.0	0.000	A
C-AB	4	1	576	0.008	4	0.0	0.0	6.366	A
C-A	665	166			665				
A-B	4	1			4				
A-C	435	109			435				

2023 + 50 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.04	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)	Run automatically
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	889	100.000
B		ONE HOUR	✓	3	100.000
C		ONE HOUR	✓	591	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A	B	C
	A	0	1	888
	B	1	0	2
	C	584	7	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A	B	C
	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.02	8.30	0.0	A	7	10
C-A					536	803
A-B					0.97	1
A-C					815	1222

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	401	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	521	0.011	6	0.0	0.0	7.058	A
C-A	439	110			439				
A-B	0.80	0.20			0.80				
A-C	668	167			668				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	359	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	490	0.014	7	0.0	0.0	7.529	A
C-A	525	131			525				
A-B	0.95	0.24			0.95				
A-C	798	200			798				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	300	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	446	0.018	8	0.0	0.0	8.295	A
C-A	643	161			643				
A-B	1	0.29			1				
A-C	977	244			977				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	300	0.000	0	0.0	0.0	0.000	A
C-AB	8	2	446	0.018	8	0.0	0.0	8.295	A
C-A	643	161			643				
A-B	1	0.29			1				
A-C	977	244			977				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	359	0.000	0	0.0	0.0	0.000	A
C-AB	7	2	490	0.014	7	0.0	0.0	7.532	A
C-A	525	131			525				
A-B	0.95	0.24			0.95				
A-C	798	200			798				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	401	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	521	0.011	6	0.0	0.0	7.061	A
C-A	439	110			439				
A-B	0.80	0.20			0.80				
A-C	668	167			668				

2023 + 50 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.03	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)	Run automatically
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	536	100.000
B		ONE HOUR	✓	2	100.000
C		ONE HOUR	✓	821	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	531
	B	1	0	1
	C	816	5	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.01	6.81	0.0	A	5	7
C-A					748	1123
A-B					5	7
A-C					487	731

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	447	0.000	0	0.0	0.0	0.000	A
C-AB	4	1.00	584	0.007	4	0.0	0.0	6.264	A
C-A	614	154			614				
A-B	4	1.00			4				
A-C	400	100			400				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	565	0.008	5	0.0	0.0	6.483	A
C-A	733	183			733				
A-B	5	1			5				
A-C	477	119			477				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	368	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	540	0.011	6	0.0	0.0	6.812	A
C-A	898	224			898				
A-B	6	1			6				
A-C	585	146			585				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	368	0.000	0	0.0	0.0	0.000	A
C-AB	6	1	540	0.011	6	0.0	0.0	6.812	A
C-A	898	224			898				
A-B	6	1			6				
A-C	585	146			585				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	5	1	565	0.008	5	0.0	0.0	6.486	A
C-A	733	183			733				
A-B	5	1			5				
A-C	477	119			477				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	447	0.000	0	0.0	0.0	0.000	A
C-AB	4	1.00	584	0.007	4	0.0	0.0	6.267	A
C-A	614	154			614				
A-B	4	1.00			4				
A-C	400	100			400				

2025 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.14	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)	Run automatically
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	923	100.000
B		ONE HOUR	✓	12	100.000
C		ONE HOUR	✓	623	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	3	920
	B	5	0	8
	C	614	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.04	12.04	0.0	B	11	17
C-AB	0.02	8.50	0.0	A	8	12
C-A					563	845
A-B					3	4
A-C					844	1266

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	417	0.022	9	0.0	0.0	8.828	A
C-AB	7	2	515	0.013	7	0.0	0.0	7.157	A
C-A	462	116			462				
A-B	2	0.56			2				
A-C	692	173			692				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	3	374	0.029	11	0.0	0.0	9.912	A
C-AB	8	2	482	0.016	8	0.0	0.0	7.665	A
C-A	552	138			552				
A-B	3	0.67			3				
A-C	827	207			827				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	3	312	0.043	13	0.0	0.0	12.038	B
C-AB	10	2	438	0.022	10	0.0	0.0	8.498	A
C-A	676	169			676				
A-B	3	0.82			3				
A-C	1013	253			1013				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	3	312	0.043	13	0.0	0.0	12.044	B
C-AB	10	2	438	0.022	10	0.0	0.0	8.498	A
C-A	676	169			676				
A-B	3	0.82			3				
A-C	1013	253			1013				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	3	374	0.029	11	0.0	0.0	9.918	A
C-AB	8	2	482	0.016	8	0.0	0.0	7.666	A
C-A	552	138			552				
A-B	3	0.67			3				
A-C	827	207			827				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	417	0.022	9	0.0	0.0	8.833	A
C-AB	7	2	515	0.013	7	0.0	0.0	7.158	A
C-A	462	116			462				
A-B	2	0.56			2				
A-C	692	173			692				

2025 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.09	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)	Run automatically
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	561	100.000
B		ONE HOUR	✓	6	100.000
C		ONE HOUR	✓	856	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	8	554
	B	3	0	3
	C	847	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	10.79	0.0	B	5	8
C-AB	0.02	6.96	0.0	A	9	13
C-A					777	1165
A-B					7	11
A-C					508	762

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	425	0.010	4	0.0	0.0	8.550	A
C-AB	7	2	580	0.012	7	0.0	0.0	6.347	A
C-A	637	159			637				
A-B	6	1			6				
A-C	417	104			417				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	1	390	0.013	5	0.0	0.0	9.348	A
C-AB	8	2	560	0.015	8	0.0	0.0	6.589	A
C-A	761	190			761				
A-B	7	2			7				
A-C	498	124			498				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	2	340	0.019	6	0.0	0.0	10.792	B
C-AB	10	3	533	0.019	10	0.0	0.0	6.955	A
C-A	932	233			932				
A-B	9	2			9				
A-C	609	152			609				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	2	340	0.019	6	0.0	0.0	10.792	B
C-AB	10	3	533	0.019	10	0.0	0.0	6.955	A
C-A	932	233			932				
A-B	9	2			9				
A-C	609	152			609				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	1	390	0.013	5	0.0	0.0	9.351	A
C-AB	8	2	560	0.015	8	0.0	0.0	6.589	A
C-A	761	190			761				
A-B	7	2			7				
A-C	498	124			498				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	425	0.010	4	0.0	0.0	8.551	A
C-AB	7	2	580	0.012	7	0.0	0.0	6.347	A
C-A	637	159			637				
A-B	6	1			6				
A-C	417	104			417				

2035 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.15	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)	Run automatically
D13	2035 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	992	100.000
B		ONE HOUR	✓	12	100.000
C		ONE HOUR	✓	669	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	3	989
	B	5	0	8
	C	659	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.05	13.22	0.0	B	11	17
C-AB	0.02	8.89	0.0	A	9	13
C-A					605	907
A-B					3	4
A-C					907	1361

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	401	0.023	9	0.0	0.0	9.194	A
C-AB	7	2	502	0.014	7	0.0	0.0	7.344	A
C-A	496	124			496				
A-B	2	0.58			2				
A-C	744	186			744				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	3	354	0.032	11	0.0	0.0	10.491	B
C-AB	8	2	467	0.018	8	0.0	0.0	7.923	A
C-A	593	148			593				
A-B	3	0.69			3				
A-C	889	222			889				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	3	286	0.048	14	0.0	0.0	13.211	B
C-AB	10	3	419	0.025	10	0.0	0.0	8.890	A
C-A	726	181			726				
A-B	3	0.85			3				
A-C	1089	272			1089				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	3	286	0.048	14	0.0	0.0	13.217	B
C-AB	10	3	419	0.025	10	0.0	0.0	8.890	A
C-A	726	181			726				
A-B	3	0.85			3				
A-C	1089	272			1089				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	3	354	0.032	11	0.0	0.0	10.498	B
C-AB	8	2	467	0.018	8	0.0	0.0	7.924	A
C-A	593	148			593				
A-B	3	0.69			3				
A-C	889	222			889				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	401	0.023	9	0.0	0.0	9.202	A
C-AB	7	2	502	0.014	7	0.0	0.0	7.345	A
C-A	496	124			496				
A-B	2	0.58			2				
A-C	744	186			744				

2035 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.09	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)	Run automatically
D14	2035 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	604	100.000
B		ONE HOUR	✓	6	100.000
C		ONE HOUR	✓	920	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	8	595
	B	3	0	3
	C	910	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	1	2
	B	0	0	0
	C	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	11.52	0.0	B	5	8
C-AB	0.02	7.11	0.0	A	9	13
C-A					835	1253
A-B					8	11
A-C					546	819

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	412	0.011	4	0.0	0.0	8.824	A
C-AB	7	2	572	0.013	7	0.0	0.0	6.436	A
C-A	685	171			685				
A-B	6	2			6				
A-C	448	112			448				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	1	374	0.014	5	0.0	0.0	9.760	A
C-AB	9	2	551	0.016	9	0.0	0.0	6.704	A
C-A	818	205			818				
A-B	8	2			8				
A-C	535	134			535				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	2	319	0.021	7	0.0	0.0	11.516	B
C-AB	11	3	522	0.020	11	0.0	0.0	7.113	A
C-A	1002	251			1002				
A-B	9	2			9				
A-C	655	164			655				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	2	319	0.021	7	0.0	0.0	11.516	B
C-AB	11	3	522	0.020	11	0.0	0.0	7.113	A
C-A	1002	251			1002				
A-B	9	2			9				
A-C	655	164			655				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	1	374	0.014	5	0.0	0.0	9.764	A
C-AB	9	2	551	0.016	9	0.0	0.0	6.704	A
C-A	818	205			818				
A-B	8	2			8				
A-C	535	134			535				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	412	0.011	5	0.0	0.0	8.826	A
C-AB	7	2	572	0.013	7	0.0	0.0	6.436	A
C-A	685	171			685				
A-B	6	2			6				
A-C	448	112			448				

Appendix K

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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Filename: Llewellyn Ave-Daphne S Stagger (DC).j9
Path: K:\T20\Jobs\T20.143 Leiros Park\Analysis\Junctions 9
Report generation date: 23/09/2020 20:27:17

-
- »2017 Baseline, AM
 - »2017 Baseline, PM
 - »2023 Baseline, AM
 - »2023 Baseline, PM
 - »2025 Baseline, AM
 - »2025 Baseline, PM
 - »2033 Baseline, AM
 - »2033 Baseline, PM
 - »2023 + 50 Houses, AM
 - »2023 + 50 Houses, PM
 - »2025 + 200 Houses, AM
 - »2025 + 200 Houses, PM
 - »2033 + 200 Houses, AM
 - »2033 + 200 Houses, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2017 Baseline							
Stream B-ACD	D1	0.1	8.44	0.10	D2	0.0	6.63	0.03
Stream AB-CD		0.0	6.94	0.03		0.0	7.71	0.01
Stream D-ABC		0.0	0.00	0.00		0.0	8.18	0.04
Stream CD-AB		0.0	7.84	0.03		0.1	6.52	0.06
	2023 Baseline							
Stream B-ACD	D3	0.1	8.86	0.11	D4	0.0	6.80	0.04
Stream AB-CD		0.0	7.10	0.03		0.0	7.96	0.02
Stream D-ABC		0.0	0.00	0.00		0.0	8.46	0.05
Stream CD-AB		0.0	8.14	0.04		0.1	6.65	0.06
	2025 Baseline							
Stream B-ACD	D5	0.1	9.00	0.11	D6	0.0	6.85	0.04
Stream AB-CD		0.0	7.15	0.03		0.0	8.04	0.02
Stream D-ABC		0.0	0.00	0.00		0.1	8.55	0.05
Stream CD-AB		0.0	8.24	0.04		0.1	6.69	0.06
	2033 Baseline							
Stream B-ACD	D7	0.1	9.70	0.12	D8	0.0	7.11	0.04
Stream AB-CD		0.0	7.39	0.03		0.0	8.43	0.02
Stream D-ABC		0.0	0.00	0.00		0.1	9.01	0.05
Stream CD-AB		0.0	8.71	0.04		0.1	6.90	0.07
	2023 + 50 Houses							
Stream B-ACD	D9	0.1	8.94	0.11	D10	0.0	6.82	0.04
Stream AB-CD		0.0	7.12	0.03		0.0	8.01	0.02
Stream D-ABC		0.0	0.00	0.00		0.0	8.51	0.05
Stream CD-AB		0.0	8.21	0.04		0.1	6.66	0.06
	2025 + 200 Houses							
Stream B-ACD	D11	0.4	14.25	0.27	D12	0.1	9.84	0.09
Stream AB-CD		0.0	7.22	0.03		0.0	8.25	0.02
Stream D-ABC		0.0	0.00	0.00		0.1	8.78	0.05
Stream CD-AB		0.1	8.57	0.05		0.1	7.01	0.10
	2033 + 200 Houses							
Stream B-ACD	D13	0.4	16.61	0.31	D14	0.1	10.57	0.10
Stream AB-CD		0.0	7.47	0.03		0.0	8.66	0.02
Stream D-ABC		0.0	0.00	0.00		0.1	9.26	0.06
Stream CD-AB		0.1	9.08	0.06		0.1	7.23	0.10

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

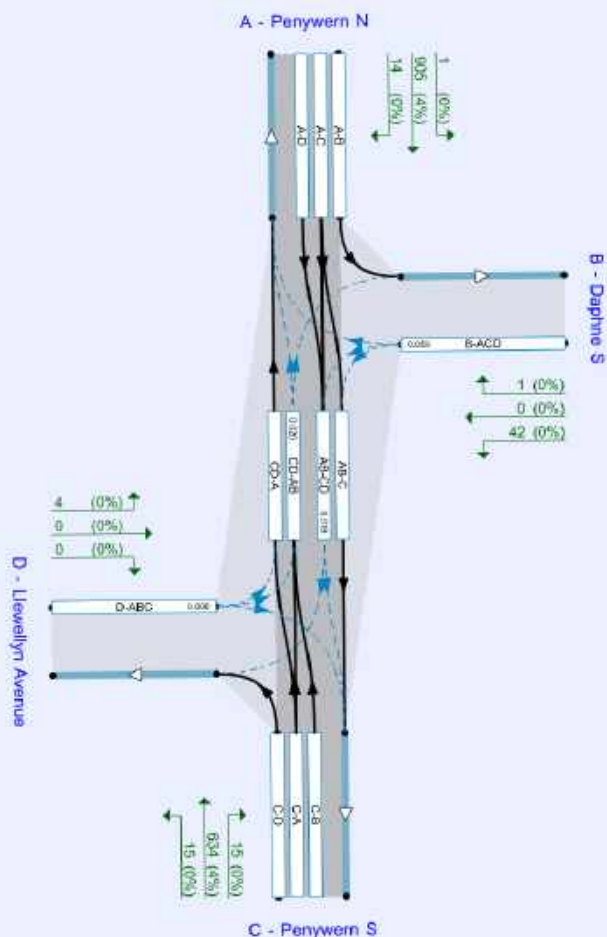
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	19/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Louie
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



Flows show original traffic demand (PCUs).
Breaks (shown in red) show RPS (1).

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Penywern N		Major
B	Daphne S		Minor
C	Penywern S		Major
D	Llewellyn Avenue		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Penywern N	6.80		✓	3.00	150.0	✓	3.00
C - Penywern S	6.59		✓	2.50	250.0	✓	3.00

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 - Daphne S	One lane	4.76	23	34
D - Llewellyn Avenue	One lane	3.92	24	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B
AB-D	718	-	-	-	-	-	0.269	0.269	0.269	-	-
B-A	590	0.105	0.265	0.265	-	-	0.167	0.378	-	0.167	0.378
B-CD	759	0.113	0.287	0.287	-	-	-	-	-	-	-
CD-B	742	0.280	0.280	0.280	-	-	-	-	-	-	-
D-AB	695	-	-	-	-	-	0.260	0.260	0.103	-	-
D-C	541	-	0.151	0.343	0.151	0.343	0.240	0.240	0.095	-	-

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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	868	100.000
B - Daphne S		ONE HOUR	✓	41	100.000
C - Penywern S		ONE HOUR	✓	626	100.000
D - Llewellyn Avenue		ONE HOUR	✓	4	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	1	854	13
	B - Daphne S	1	0	40	0
	C - Penywern S	598	14	0	14
	D - Llewellyn Avenue	4	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.10	8.44	0.1	A	38	56
A-B					0.92	1
A-C					784	1175
A-D					12	18
AB-CD	0.03	6.94	0.0	A	12	18
AB-C					820	1230
D-ABC	0.00	0.00	0.0	A	0	0
C-D					13	19
C-A					549	823
C-B					13	19
CD-AB	0.03	7.84	0.0	A	13	19
CD-A					549	823

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	31	8	562	0.055	31	0.0	0.1	6.765	A
A-B	0.75	0.19			0.75				
A-C	643	161			643				
A-D	10	2			10				
AB-CD	10	2	592	0.017	10	0.0	0.0	6.185	A
AB-C	673	168			673				
D-ABC	0	0	414	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	450	113			450				
C-B	11	3			11				
CD-AB	11	3	559	0.019	10	0.0	0.0	6.561	A
CD-A	450	113			450				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	37	9	525	0.070	37	0.1	0.1	7.378	A
A-B	0.90	0.22			0.90				
A-C	768	192			768				
A-D	12	3			12				
AB-CD	12	3	567	0.021	12	0.0	0.0	6.479	A
AB-C	804	201			804				
D-ABC	0	0	373	0.000	0	0.0	0.0	0.000	A
C-D	13	3			13				
C-A	538	134			538				
C-B	13	3			13				
CD-AB	13	3	524	0.024	13	0.0	0.0	7.044	A
CD-A	538	134			538				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	45	11	472	0.096	45	0.1	0.1	8.435	A
A-B	1	0.28			1				
A-C	940	235			940				
A-D	14	4			14				
AB-CD	14	4	533	0.027	14	0.0	0.0	6.936	A
AB-C	984	246			984				
D-ABC	0	0	312	0.000	0	0.0	0.0	0.000	A
C-D	15	4			15				
C-A	658	165			658				
C-B	15	4			15				
CD-AB	15	4	474	0.032	15	0.0	0.0	7.842	A
CD-A	658	165			658				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	45	11	472	0.096	45	0.1	0.1	8.438	A
A-B	1	0.28			1				
A-C	940	235			940				
A-D	14	4			14				
AB-CD	14	4	533	0.027	14	0.0	0.0	6.936	A
AB-C	984	246			984				
D-ABC	0	0	312	0.000	0	0.0	0.0	0.000	A
C-D	15	4			15				
C-A	658	165			658				
C-B	15	4			15				
CD-AB	15	4	474	0.032	15	0.0	0.0	7.842	A
CD-A	658	165			658				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	37	9	525	0.070	37	0.1	0.1	7.381	A
A-B	0.90	0.22			0.90				
A-C	768	192			768				
A-D	12	3			12				
AB-CD	12	3	567	0.021	12	0.0	0.0	6.480	A
AB-C	804	201			804				
D-ABC	0	0	373	0.000	0	0.0	0.0	0.000	A
C-D	13	3			13				
C-A	538	134			538				
C-B	13	3			13				
CD-AB	13	3	524	0.024	13	0.0	0.0	7.047	A
CD-A	538	134			538				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	31	8	562	0.055	31	0.1	0.1	6.775	A
A-B	0.75	0.19			0.75				
A-C	643	161			643				
A-D	10	2			10				
AB-CD	10	2	592	0.017	10	0.0	0.0	6.185	A
AB-C	673	168			673				
D-ABC	0	0	414	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	450	113			450				
C-B	11	3			11				
CD-AB	11	3	559	0.019	11	0.0	0.0	6.564	A
CD-A	450	113			450				

2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.18	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)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	510	100.000
B - Daphne S		ONE HOUR	✓	17	100.000
C - Penywern S		ONE HOUR	✓	828	100.000
D - Llewellyn Avenue		ONE HOUR	✓	18	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	2	502	6
From B - Daphne S	1	0	16	0
From C - Penywern S	787	30	0	11
From D - Llewellyn Avenue	18	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	0	4	0
From B - Daphne S	0	0	0	0
From C - Penywern S	4	0	0	0
From D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.03	6.63	0.0	A	16	23
A-B					2	3
A-C					461	691
A-D					6	8
AB-CD	0.01	7.71	0.0	A	6	8
AB-C					475	713
D-ABC	0.04	8.18	0.0	A	17	25
C-D					10	15
C-A					722	1083
C-B					28	41
CD-AB	0.06	6.52	0.1	A	28	41
CD-A					739	1108

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	13	3	623	0.021	13	0.0	0.0	5.897	A
A-B	2	0.38			2				
A-C	378	94			378				
A-D	5	1			5				
AB-CD	5	1	551	0.008	4	0.0	0.0	6.587	A
AB-C	390	97			390				
D-ABC	14	3	534	0.025	13	0.0	0.0	6.908	A
C-D	8	2			8				
C-A	592	148			592				
C-B	23	6			23				
CD-AB	23	6	635	0.036	22	0.0	0.0	5.878	A
CD-A	606	151			606				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	15	4	598	0.026	15	0.0	0.0	6.178	A
A-B	2	0.45			2				
A-C	451	113			451				
A-D	5	1			5				
AB-CD	5	1	518	0.010	5	0.0	0.0	7.016	A
AB-C	466	116			466				
D-ABC	16	4	503	0.032	16	0.0	0.0	7.390	A
C-D	10	2			10				
C-A	707	177			707				
C-B	27	7			27				
CD-AB	27	7	614	0.044	27	0.0	0.0	6.133	A
CD-A	724	181			724				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	19	5	561	0.033	19	0.0	0.0	6.633	A
A-B	2	0.55			2				
A-C	553	138			553				
A-D	7	2			7				
AB-CD	7	2	473	0.014	7	0.0	0.0	7.710	A
AB-C	570	143			570				
D-ABC	20	5	460	0.043	20	0.0	0.0	8.175	A
C-D	12	3			12				
C-A	867	217			867				
C-B	33	8			33				
CD-AB	33	8	585	0.056	33	0.0	0.1	6.521	A
CD-A	886	222			886				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	19	5	561	0.033	19	0.0	0.0	6.633	A
A-B	2	0.55			2				
A-C	553	138			553				
A-D	7	2			7				
AB-CD	7	2	473	0.014	7	0.0	0.0	7.710	A
AB-C	570	143			570				
D-ABC	20	5	460	0.043	20	0.0	0.0	8.176	A
C-D	12	3			12				
C-A	867	217			867				
C-B	33	8			33				
CD-AB	33	8	585	0.056	33	0.1	0.1	6.521	A
CD-A	886	222			886				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	15	4	598	0.026	15	0.0	0.0	6.179	A
A-B	2	0.45			2				
A-C	451	113			451				
A-D	5	1			5				
AB-CD	5	1	518	0.010	5	0.0	0.0	7.019	A
AB-C	466	116			466				
D-ABC	16	4	503	0.032	16	0.0	0.0	7.392	A
C-D	10	2			10				
C-A	707	177			707				
C-B	27	7			27				
CD-AB	27	7	614	0.044	27	0.1	0.0	6.135	A
CD-A	724	181			724				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	13	3	623	0.021	13	0.0	0.0	5.900	A
A-B	2	0.38			2				
A-C	378	94			378				
A-D	5	1			5				
AB-CD	5	1	551	0.008	5	0.0	0.0	6.588	A
AB-C	390	97			390				
D-ABC	14	3	534	0.025	14	0.0	0.0	6.914	A
C-D	8	2			8				
C-A	592	148			592				
C-B	23	6			23				
CD-AB	23	6	635	0.036	23	0.0	0.0	5.884	A
CD-A	606	152			606				

2023 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.19	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)	Run automatically
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	920	100.000
B - Daphne S		ONE HOUR	✓	43	100.000
C - Penywern S		ONE HOUR	✓	663	100.000
D - Llewellyn Avenue		ONE HOUR	✓	4	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	1	905	14
	B - Daphne S	1	0	42	0
	C - Penywern S	634	15	0	15
	D - Llewellyn Avenue	4	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	8.86	0.1	A	40	60
A-B					0.97	1
A-C					831	1246
A-D					13	19
AB-CD	0.03	7.10	0.0	A	13	19
AB-C					869	1304
D-ABC	0.00	0.00	0.0	A	0	0
C-D					14	20
C-A					582	872
C-B					14	20
CD-AB	0.04	8.14	0.0	A	14	20
CD-A					582	872

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	33	8	551	0.059	32	0.0	0.1	6.941	A
A-B	0.80	0.20			0.80				
A-C	681	170			681				
A-D	10	3			10				
AB-CD	10	3	584	0.018	10	0.0	0.0	6.273	A
AB-C	713	178			713				
D-ABC	0	0	402	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	477	119			477				
C-B	11	3			11				
CD-AB	11	3	548	0.020	11	0.0	0.0	6.703	A
CD-A	477	119			477				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	39	10	511	0.076	39	0.1	0.1	7.631	A
A-B	0.95	0.24			0.95				
A-C	814	203			814				
A-D	12	3			12				
AB-CD	12	3	558	0.022	12	0.0	0.0	6.595	A
AB-C	852	213			852				
D-ABC	0	0	357	0.000	0	0.0	0.0	0.000	A
C-D	13	3			13				
C-A	570	142			570				
C-B	13	3			13				
CD-AB	13	3	510	0.026	13	0.0	0.0	7.240	A
CD-A	570	142			570				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	454	0.105	48	0.1	0.1	8.856	A
A-B	1	0.29			1				
A-C	997	249			997				
A-D	15	4			15				
AB-CD	15	4	522	0.029	15	0.0	0.0	7.100	A
AB-C	1043	261			1043				
D-ABC	0	0	292	0.000	0	0.0	0.0	0.000	A
C-D	16	4			16				
C-A	698	174			698				
C-B	16	4			16				
CD-AB	16	4	458	0.036	16	0.0	0.0	8.142	A
CD-A	698	174			698				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	454	0.105	48	0.1	0.1	8.861	A
A-B	1	0.29			1				
A-C	997	249			997				
A-D	15	4			15				
AB-CD	15	4	522	0.029	15	0.0	0.0	7.100	A
AB-C	1043	261			1043				
D-ABC	0	0	292	0.000	0	0.0	0.0	0.000	A
C-D	16	4			16				
C-A	698	174			698				
C-B	16	4			16				
CD-AB	16	4	458	0.036	16	0.0	0.0	8.142	A
CD-A	698	174			698				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	39	10	511	0.076	39	0.1	0.1	7.636	A
A-B	0.95	0.24			0.95				
A-C	814	203			814				
A-D	12	3			12				
AB-CD	12	3	558	0.022	12	0.0	0.0	6.598	A
AB-C	852	213			852				
D-ABC	0	0	357	0.000	0	0.0	0.0	0.000	A
C-D	13	3			13				
C-A	570	142			570				
C-B	13	3			13				
CD-AB	13	3	510	0.026	13	0.0	0.0	7.244	A
CD-A	570	142			570				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	33	8	551	0.059	33	0.1	0.1	6.952	A
A-B	0.80	0.20			0.80				
A-C	681	170			681				
A-D	10	3			10				
AB-CD	10	3	584	0.018	10	0.0	0.0	6.273	A
AB-C	713	178			713				
D-ABC	0	0	402	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	477	119			477				
C-B	11	3			11				
CD-AB	11	3	548	0.020	11	0.0	0.0	6.706	A
CD-A	477	119			477				

2023 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.19	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)	Run automatically
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	540	100.000
B - Daphne S		ONE HOUR	✓	18	100.000
C - Penywern S		ONE HOUR	✓	876	100.000
D - Llewellyn Avenue		ONE HOUR	✓	19	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	2	531	6
	B - Daphne S	1	0	17	0
	C - Penywern S	833	32	0	12
	D - Llewellyn Avenue	19	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.04	6.80	0.0	A	17	25
A-B					2	3
A-C					487	731
A-D					6	9
AB-CD	0.02	7.96	0.0	A	6	9
AB-C					503	754
D-ABC	0.05	8.46	0.0	A	17	26
C-D					11	16
C-A					764	1146
C-B					29	44
CD-AB	0.06	6.65	0.1	A	29	44
CD-A					781	1172

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	14	3	616	0.022	13	0.0	0.0	5.977	A
A-B	2	0.40			2				
A-C	400	100			400				
A-D	5	1			5				
AB-CD	5	1	541	0.009	5	0.0	0.0	6.710	A
AB-C	412	103			412				
D-ABC	14	4	525	0.027	14	0.0	0.0	7.044	A
C-D	9	2			9				
C-A	627	157			627				
C-B	24	6			24				
CD-AB	24	6	628	0.038	24	0.0	0.0	5.951	A
CD-A	641	160			641				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	16	4	589	0.027	16	0.0	0.0	6.287	A
A-B	2	0.48			2				
A-C	477	119			477				
A-D	6	1			6				
AB-CD	6	1	507	0.011	6	0.0	0.0	7.182	A
AB-C	493	123			493				
D-ABC	17	4	492	0.035	17	0.0	0.0	7.578	A
C-D	10	3			10				
C-A	748	187			748				
C-B	29	7			29				
CD-AB	29	7	606	0.047	28	0.0	0.0	6.229	A
CD-A	766	191			766				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	20	5	549	0.036	20	0.0	0.0	6.797	A
A-B	2	0.58			2				
A-C	585	146			585				
A-D	7	2			7				
AB-CD	7	2	459	0.015	7	0.0	0.0	7.959	A
AB-C	603	151			603				
D-ABC	21	5	446	0.047	21	0.0	0.0	8.458	A
C-D	13	3			13				
C-A	917	229			917				
C-B	35	9			35				
CD-AB	35	9	576	0.061	35	0.0	0.1	6.653	A
CD-A	938	234			938				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	20	5	549	0.036	20	0.0	0.0	6.797	A
A-B	2	0.58			2				
A-C	585	146			585				
A-D	7	2			7				
AB-CD	7	2	459	0.015	7	0.0	0.0	7.959	A
AB-C	603	151			603				
D-ABC	21	5	446	0.047	21	0.0	0.0	8.460	A
C-D	13	3			13				
C-A	917	229			917				
C-B	35	9			35				
CD-AB	35	9	576	0.061	35	0.1	0.1	6.653	A
CD-A	938	234			938				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	16	4	589	0.027	16	0.0	0.0	6.288	A
A-B	2	0.48			2				
A-C	477	119			477				
A-D	6	1			6				
AB-CD	6	1	507	0.011	6	0.0	0.0	7.186	A
AB-C	493	123			493				
D-ABC	17	4	492	0.035	17	0.0	0.0	7.582	A
C-D	10	3			10				
C-A	748	187			748				
C-B	29	7			29				
CD-AB	29	7	606	0.047	29	0.1	0.0	6.230	A
CD-A	766	191			766				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	14	3	616	0.022	14	0.0	0.0	5.980	A
A-B	2	0.40			2				
A-C	400	100			400				
A-D	5	1			5				
AB-CD	5	1	541	0.009	5	0.0	0.0	6.710	A
AB-C	413	103			413				
D-ABC	14	4	525	0.027	14	0.0	0.0	7.048	A
C-D	9	2			9				
C-A	627	157			627				
C-B	24	6			24				
CD-AB	24	6	628	0.038	24	0.0	0.0	5.955	A
CD-A	641	160			641				

2025 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.19	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)	Run automatically
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	935	100.000
B - Daphne S		ONE HOUR	✓	44	100.000
C - Penywern S		ONE HOUR	✓	675	100.000
D - Llewellyn Avenue		ONE HOUR	✓	4	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	1	920	14
From B - Daphne S	1	0	43	0
From C - Penywern S	644	15	0	15
From D - Llewellyn Avenue	4	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	0	4	0
From B - Daphne S	0	0	0	0
From C - Penywern S	4	0	0	0
From D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	9.00	0.1	A	41	61
A-B					0.99	1
A-C					844	1267
A-D					13	19
AB-CD	0.03	7.15	0.0	A	13	19
AB-C					884	1326
D-ABC	0.00	0.00	0.0	A	0	0
C-D					14	21
C-A					591	887
C-B					14	21
CD-AB	0.04	8.24	0.0	A	14	21
CD-A					591	887

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	33	8	547	0.061	33	0.0	0.1	6.995	A
A-B	0.81	0.20			0.81				
A-C	693	173			693				
A-D	11	3			11				
AB-CD	11	3	582	0.018	10	0.0	0.0	6.299	A
AB-C	725	181			725				
D-ABC	0	0	398	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	485	121			485				
C-B	11	3			11				
CD-AB	11	3	545	0.021	11	0.0	0.0	6.746	A
CD-A	485	121			485				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	40	10	507	0.078	40	0.1	0.1	7.709	A
A-B	0.97	0.24			0.97				
A-C	827	207			827				
A-D	13	3			13				
AB-CD	13	3	555	0.023	13	0.0	0.0	6.630	A
AB-C	866	216			866				
D-ABC	0	0	352	0.000	0	0.0	0.0	0.000	A
C-D	14	3			14				
C-A	579	145			579				
C-B	14	3			14				
CD-AB	14	3	507	0.027	14	0.0	0.0	7.300	A
CD-A	579	145			579				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	49	12	449	0.108	48	0.1	0.1	8.990	A
A-B	1	0.30			1				
A-C	1013	253			1013				
A-D	15	4			15				
AB-CD	15	4	519	0.030	15	0.0	0.0	7.149	A
AB-C	1061	265			1061				
D-ABC	0	0	285	0.000	0	0.0	0.0	0.000	A
C-D	17	4			17				
C-A	709	177			709				
C-B	17	4			17				
CD-AB	17	4	454	0.037	17	0.0	0.0	8.236	A
CD-A	709	177			709				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	49	12	449	0.108	49	0.1	0.1	8.995	A
A-B	1	0.30			1				
A-C	1013	253			1013				
A-D	15	4			15				
AB-CD	15	4	519	0.030	15	0.0	0.0	7.149	A
AB-C	1061	265			1061				
D-ABC	0	0	285	0.000	0	0.0	0.0	0.000	A
C-D	17	4			17				
C-A	709	177			709				
C-B	17	4			17				
CD-AB	17	4	454	0.037	17	0.0	0.0	8.236	A
CD-A	709	177			709				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	40	10	507	0.078	40	0.1	0.1	7.717	A
A-B	0.97	0.24			0.97				
A-C	827	207			827				
A-D	13	3			13				
AB-CD	13	3	555	0.023	13	0.0	0.0	6.631	A
AB-C	866	217			866				
D-ABC	0	0	352	0.000	0	0.0	0.0	0.000	A
C-D	14	3			14				
C-A	579	145			579				
C-B	14	3			14				
CD-AB	14	3	507	0.027	14	0.0	0.0	7.301	A
CD-A	579	145			579				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	33	8	547	0.061	33	0.1	0.1	7.003	A
A-B	0.81	0.20			0.81				
A-C	693	173			693				
A-D	11	3			11				
AB-CD	11	3	582	0.018	11	0.0	0.0	6.302	A
AB-C	725	181			725				
D-ABC	0	0	398	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	485	121			485				
C-B	11	3			11				
CD-AB	11	3	545	0.021	11	0.0	0.0	6.747	A
CD-A	485	121			485				

2025 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.19	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)	Run automatically
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	548	100.000
B - Daphne S		ONE HOUR	✓	18	100.000
C - Penywern S		ONE HOUR	✓	890	100.000
D - Llewellyn Avenue		ONE HOUR	✓	19	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	2	540	6
From B - Daphne S	1	0	17	0
From C - Penywern S	846	32	0	12
From D - Llewellyn Avenue	19	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	0	4	0
From B - Daphne S	0	0	0	0
From C - Penywern S	4	0	0	0
From D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.04	6.85	0.0	A	17	25
A-B					2	3
A-C					495	743
A-D					6	9
AB-CD	0.02	8.04	0.0	A	6	9
AB-C					511	767
D-ABC	0.05	8.55	0.1	A	18	27
C-D					11	16
C-A					777	1165
C-B					30	44
CD-AB	0.06	6.69	0.1	A	30	44
CD-A					794	1192

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	14	3	613	0.022	14	0.0	0.0	6.002	A
A-B	2	0.40			2				
A-C	406	102			406				
A-D	5	1			5				
AB-CD	5	1	538	0.009	5	0.0	0.0	6.748	A
AB-C	419	105			419				
D-ABC	15	4	522	0.028	14	0.0	0.0	7.087	A
C-D	9	2			9				
C-A	637	159			637				
C-B	24	6			24				
CD-AB	24	6	627	0.039	24	0.0	0.0	5.974	A
CD-A	652	163			652				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	16	4	586	0.028	16	0.0	0.0	6.321	A
A-B	2	0.48			2				
A-C	485	121			485				
A-D	6	1			6				
AB-CD	6	1	503	0.012	6	0.0	0.0	7.235	A
AB-C	501	125			501				
D-ABC	17	4	489	0.036	17	0.0	0.0	7.637	A
C-D	11	3			11				
C-A	761	190			761				
C-B	29	7			29				
CD-AB	29	7	604	0.048	29	0.0	0.1	6.258	A
CD-A	778	195			778				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	20	5	546	0.037	20	0.0	0.0	6.849	A
A-B	2	0.59			2				
A-C	594	149			594				
A-D	7	2			7				
AB-CD	7	2	455	0.016	7	0.0	0.0	8.037	A
AB-C	613	153			613				
D-ABC	21	5	442	0.048	21	0.0	0.1	8.548	A
C-D	13	3			13				
C-A	932	233			932				
C-B	36	9			36				
CD-AB	36	9	573	0.062	35	0.1	0.1	6.694	A
CD-A	953	238			953				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	20	5	546	0.037	20	0.0	0.0	6.849	A
A-B	2	0.59			2				
A-C	594	149			594				
A-D	7	2			7				
AB-CD	7	2	455	0.016	7	0.0	0.0	8.037	A
AB-C	613	153			613				
D-ABC	21	5	442	0.048	21	0.1	0.1	8.550	A
C-D	13	3			13				
C-A	932	233			932				
C-B	36	9			36				
CD-AB	36	9	573	0.062	36	0.1	0.1	6.694	A
CD-A	953	238			953				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	16	4	586	0.028	16	0.0	0.0	6.324	A
A-B	2	0.48			2				
A-C	485	121			485				
A-D	6	1			6				
AB-CD	6	1	503	0.012	6	0.0	0.0	7.238	A
AB-C	501	125			501				
D-ABC	17	4	489	0.036	17	0.1	0.0	7.638	A
C-D	11	3			11				
C-A	761	190			761				
C-B	29	7			29				
CD-AB	29	7	604	0.048	29	0.1	0.1	6.260	A
CD-A	778	195			778				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	14	3	613	0.022	14	0.0	0.0	6.005	A
A-B	2	0.40			2				
A-C	406	102			406				
A-D	5	1			5				
AB-CD	5	1	538	0.009	5	0.0	0.0	6.748	A
AB-C	419	105			419				
D-ABC	15	4	522	0.028	15	0.0	0.0	7.090	A
C-D	9	2			9				
C-A	637	159			637				
C-B	24	6			24				
CD-AB	24	6	627	0.039	24	0.1	0.0	5.979	A
CD-A	652	163			652				

2033 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.20	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)	Run automatically
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	1008	100.000
B - Daphne S		ONE HOUR	✓	48	100.000
C - Penywern S		ONE HOUR	✓	727	100.000
D - Llewellyn Avenue		ONE HOUR	✓	5	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	1	991	15
	B - Daphne S	1	0	46	0
	C - Penywern S	694	16	0	16
	D - Llewellyn Avenue	5	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.12	9.70	0.1	A	44	66
A-B					1	2
A-C					910	1365
A-D					14	21
AB-CD	0.03	7.39	0.0	A	14	21
AB-C					952	1428
D-ABC	0.00	0.00	0.0	A	0	0
C-D					15	22
C-A					637	956
C-B					15	22
CD-AB	0.04	8.71	0.0	A	15	22
CD-A					637	956

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	36	9	531	0.067	36	0.0	0.1	7.260	A
A-B	0.87	0.22			0.87				
A-C	746	187			746				
A-D	11	3			11				
AB-CD	11	3	571	0.020	11	0.0	0.0	6.427	A
AB-C	781	195			781				
D-ABC	0	0	380	0.000	0	0.0	0.0	0.000	A
C-D	12	3			12				
C-A	523	131			523				
C-B	12	3			12				
CD-AB	12	3	530	0.023	12	0.0	0.0	6.956	A
CD-A	523	131			523				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	43	11	487	0.088	43	0.1	0.1	8.102	A
A-B	1	0.26			1				
A-C	891	223			891				
A-D	14	3			14				
AB-CD	14	3	543	0.025	14	0.0	0.0	6.800	A
AB-C	933	233			933				
D-ABC	0	0	330	0.000	0	0.0	0.0	0.000	A
C-D	15	4			15				
C-A	624	156			624				
C-B	15	4			15				
CD-AB	15	4	488	0.030	15	0.0	0.0	7.597	A
CD-A	624	156			624				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	52	13	424	0.124	52	0.1	0.1	9.689	A
A-B	1	0.32			1				
A-C	1092	273			1092				
A-D	17	4			17				
AB-CD	17	4	503	0.033	17	0.0	0.0	7.393	A
AB-C	1143	286			1143				
D-ABC	0	0	255	0.000	0	0.0	0.0	0.000	A
C-D	18	4			18				
C-A	764	191			764				
C-B	18	4			18				
CD-AB	18	4	431	0.041	18	0.0	0.0	8.704	A
CD-A	764	191			764				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	52	13	424	0.124	52	0.1	0.1	9.697	A
A-B	1	0.32			1				
A-C	1092	273			1092				
A-D	17	4			17				
AB-CD	17	4	503	0.033	17	0.0	0.0	7.393	A
AB-C	1143	286			1143				
D-ABC	0	0	255	0.000	0	0.0	0.0	0.000	A
C-D	18	4			18				
C-A	764	191			764				
C-B	18	4			18				
CD-AB	18	4	431	0.041	18	0.0	0.0	8.705	A
CD-A	764	191			764				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	43	11	487	0.088	43	0.1	0.1	8.112	A
A-B	1	0.26			1				
A-C	891	223			891				
A-D	14	3			14				
AB-CD	14	3	543	0.025	14	0.0	0.0	6.801	A
AB-C	933	233			933				
D-ABC	0	0	330	0.000	0	0.0	0.0	0.000	A
C-D	15	4			15				
C-A	624	156			624				
C-B	15	4			15				
CD-AB	15	4	488	0.030	15	0.0	0.0	7.601	A
CD-A	624	156			624				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	36	9	531	0.067	36	0.1	0.1	7.272	A
A-B	0.87	0.22			0.87				
A-C	746	187			746				
A-D	11	3			11				
AB-CD	11	3	571	0.020	11	0.0	0.0	6.430	A
AB-C	781	195			781				
D-ABC	0	0	380	0.000	0	0.0	0.0	0.000	A
C-D	12	3			12				
C-A	523	131			523				
C-B	12	3			12				
CD-AB	12	3	530	0.023	12	0.0	0.0	6.960	A
CD-A	523	131			523				

2033 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.20	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)	Run automatically
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	591	100.000
B - Daphne S		ONE HOUR	✓	20	100.000
C - Penywern S		ONE HOUR	✓	960	100.000
D - Llewellyn Avenue		ONE HOUR	✓	21	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	2	582	7
From B - Daphne S	1	0	19	0
From C - Penywern S	912	35	0	13
From D - Llewellyn Avenue	21	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From A - Penywern N	0	0	4	0
From B - Daphne S	0	0	0	0
From C - Penywern S	4	0	0	0
From D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.04	7.11	0.0	A	18	27
A-B					2	3
A-C					534	801
A-D					6	10
AB-CD	0.02	8.43	0.0	A	6	10
AB-C					551	826
D-ABC	0.05	9.01	0.1	A	19	29
C-D					12	18
C-A					837	1255
C-B					32	48
CD-AB	0.07	6.90	0.1	A	32	48
CD-A					856	1284

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	15	4	603	0.025	15	0.0	0.0	6.124	A
A-B	2	0.44			2				
A-C	438	109			438				
A-D	5	1			5				
AB-CD	5	1	524	0.010	5	0.0	0.0	6.934	A
AB-C	452	113			452				
D-ABC	16	4	509	0.031	16	0.0	0.0	7.296	A
C-D	10	2			10				
C-A	687	172			687				
C-B	26	7			26				
CD-AB	26	7	618	0.042	26	0.0	0.0	6.084	A
CD-A	702	176			702				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	18	4	572	0.031	18	0.0	0.0	6.490	A
A-B	2	0.52			2				
A-C	523	131			523				
A-D	6	2			6				
AB-CD	6	2	487	0.013	6	0.0	0.0	7.493	A
AB-C	540	135			540				
D-ABC	19	5	473	0.040	19	0.0	0.0	7.930	A
C-D	11	3			11				
C-A	820	205			820				
C-B	31	8			31				
CD-AB	31	8	593	0.053	31	0.0	0.1	6.402	A
CD-A	839	210			839				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	22	5	528	0.041	22	0.0	0.0	7.114	A
A-B	3	0.64			3				
A-C	641	160			641				
A-D	8	2			8				
AB-CD	8	2	435	0.018	8	0.0	0.0	8.432	A
AB-C	661	165			661				
D-ABC	23	6	423	0.054	23	0.0	0.1	9.003	A
C-D	14	4			14				
C-A	1004	251			1004				
C-B	38	10			38				
CD-AB	38	10	560	0.068	38	0.1	0.1	6.897	A
CD-A	1027	257			1027				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	22	5	528	0.041	22	0.0	0.0	7.115	A
A-B	3	0.64			3				
A-C	641	160			641				
A-D	8	2			8				
AB-CD	8	2	435	0.018	8	0.0	0.0	8.432	A
AB-C	661	165			661				
D-ABC	23	6	423	0.054	23	0.1	0.1	9.005	A
C-D	14	4			14				
C-A	1004	251			1004				
C-B	38	10			38				
CD-AB	38	10	560	0.068	38	0.1	0.1	6.897	A
CD-A	1027	257			1027				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	18	4	572	0.031	18	0.0	0.0	6.494	A
A-B	2	0.52			2				
A-C	523	131			523				
A-D	6	2			6				
AB-CD	6	2	487	0.013	6	0.0	0.0	7.493	A
AB-C	540	135			540				
D-ABC	19	5	473	0.040	19	0.1	0.0	7.933	A
C-D	11	3			11				
C-A	820	205			820				
C-B	31	8			31				
CD-AB	31	8	593	0.053	31	0.1	0.1	6.404	A
CD-A	839	210			839				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	15	4	603	0.025	15	0.0	0.0	6.125	A
A-B	2	0.44			2				
A-C	438	109			438				
A-D	5	1			5				
AB-CD	5	1	524	0.010	5	0.0	0.0	6.937	A
AB-C	452	113			452				
D-ABC	16	4	509	0.031	16	0.0	0.0	7.300	A
C-D	10	2			10				
C-A	687	172			687				
C-B	26	7			26				
CD-AB	26	7	618	0.042	26	0.1	0.0	6.089	A
CD-A	702	176			702				

2023 + 50 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.19	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)	Run automatically
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	931	100.000
B - Daphne S		ONE HOUR	✓	43	100.000
C - Penywern S		ONE HOUR	✓	668	100.000
D - Llewellyn Avenue		ONE HOUR	✓	4	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	1	916	14
	B - Daphne S	1	0	42	0
	C - Penywern S	639	15	0	15
	D - Llewellyn Avenue	4	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	8.94	0.1	A	40	60
A-B					0.97	1
A-C					841	1261
A-D					13	19
AB-CD	0.03	7.12	0.0	A	13	19
AB-C					880	1319
D-ABC	0.00	0.00	0.0	A	0	0
C-D					14	20
C-A					586	879
C-B					14	20
CD-AB	0.04	8.21	0.0	A	14	20
CD-A					586	879

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	33	8	548	0.060	32	0.0	0.1	6.974	A
A-B	0.80	0.20			0.80				
A-C	690	172			690				
A-D	10	3			10				
AB-CD	10	3	583	0.018	10	0.0	0.0	6.285	A
AB-C	721	180			721				
D-ABC	0	0	400	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	481	120			481				
C-B	11	3			11				
CD-AB	11	3	546	0.020	11	0.0	0.0	6.732	A
CD-A	481	120			481				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	39	10	508	0.077	39	0.1	0.1	7.679	A
A-B	0.95	0.24			0.95				
A-C	824	206			824				
A-D	13	3			13				
AB-CD	13	3	557	0.023	13	0.0	0.0	6.612	A
AB-C	862	215			862				
D-ABC	0	0	355	0.000	0	0.0	0.0	0.000	A
C-D	13	3			13				
C-A	574	144			574				
C-B	13	3			13				
CD-AB	13	3	508	0.026	13	0.0	0.0	7.281	A
CD-A	574	144			574				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	450	0.106	48	0.1	0.1	8.939	A
A-B	1	0.29			1				
A-C	1009	252			1009				
A-D	15	4			15				
AB-CD	15	4	521	0.029	15	0.0	0.0	7.123	A
AB-C	1055	264			1055				
D-ABC	0	0	288	0.000	0	0.0	0.0	0.000	A
C-D	16	4			16				
C-A	703	176			703				
C-B	16	4			16				
CD-AB	16	4	455	0.036	16	0.0	0.0	8.206	A
CD-A	703	176			703				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	450	0.106	48	0.1	0.1	8.944	A
A-B	1	0.29			1				
A-C	1009	252			1009				
A-D	15	4			15				
AB-CD	15	4	521	0.029	15	0.0	0.0	7.123	A
AB-C	1055	264			1055				
D-ABC	0	0	288	0.000	0	0.0	0.0	0.000	A
C-D	16	4			16				
C-A	703	176			703				
C-B	16	4			16				
CD-AB	16	4	455	0.036	16	0.0	0.0	8.206	A
CD-A	703	176			703				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	39	10	508	0.077	39	0.1	0.1	7.685	A
A-B	0.95	0.24			0.95				
A-C	824	206			824				
A-D	13	3			13				
AB-CD	13	3	557	0.023	13	0.0	0.0	6.615	A
AB-C	862	215			862				
D-ABC	0	0	354	0.000	0	0.0	0.0	0.000	A
C-D	13	3			13				
C-A	574	144			574				
C-B	13	3			13				
CD-AB	13	3	508	0.026	13	0.0	0.0	7.282	A
CD-A	574	144			574				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	33	8	548	0.060	33	0.1	0.1	6.985	A
A-B	0.80	0.20			0.80				
A-C	690	172			690				
A-D	10	3			10				
AB-CD	10	3	583	0.018	11	0.0	0.0	6.288	A
AB-C	722	180			722				
D-ABC	0	0	399	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	481	120			481				
C-B	11	3			11				
CD-AB	11	3	546	0.020	11	0.0	0.0	6.736	A
CD-A	481	120			481				

2023 + 50 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.19	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)	Run automatically
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	543	100.000
B - Daphne S		ONE HOUR	✓	18	100.000
C - Penywern S		ONE HOUR	✓	885	100.000
D - Llewellyn Avenue		ONE HOUR	✓	19	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	2	534	6
	B - Daphne S	1	0	17	0
	C - Penywern S	842	32	0	12
	D - Llewellyn Avenue	19	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.04	6.82	0.0	A	17	25
A-B					2	3
A-C					490	735
A-D					6	9
AB-CD	0.02	8.01	0.0	A	6	9
AB-C					506	758
D-ABC	0.05	8.51	0.0	A	17	26
C-D					11	16
C-A					772	1159
C-B					29	44
CD-AB	0.06	6.66	0.1	A	29	44
CD-A					790	1185

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	14	3	615	0.022	13	0.0	0.0	5.986	A
A-B	2	0.40			2				
A-C	402	101			402				
A-D	5	1			5				
AB-CD	5	1	539	0.009	5	0.0	0.0	6.733	A
AB-C	415	104			415				
D-ABC	14	4	523	0.027	14	0.0	0.0	7.069	A
C-D	9	2			9				
C-A	634	158			634				
C-B	24	6			24				
CD-AB	24	6	628	0.038	24	0.0	0.0	5.958	A
CD-A	648	162			648				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	16	4	588	0.028	16	0.0	0.0	6.299	A
A-B	2	0.48			2				
A-C	480	120			480				
A-D	6	1			6				
AB-CD	6	1	505	0.011	6	0.0	0.0	7.215	A
AB-C	495	124			495				
D-ABC	17	4	490	0.035	17	0.0	0.0	7.613	A
C-D	10	3			10				
C-A	757	189			757				
C-B	29	7			29				
CD-AB	29	7	606	0.047	28	0.0	0.0	6.237	A
CD-A	774	193			774				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	20	5	548	0.036	20	0.0	0.0	6.815	A
A-B	2	0.58			2				
A-C	588	147			588				
A-D	7	2			7				
AB-CD	7	2	457	0.015	7	0.0	0.0	8.007	A
AB-C	607	152			607				
D-ABC	21	5	444	0.047	21	0.0	0.0	8.511	A
C-D	13	3			13				
C-A	927	232			927				
C-B	35	9			35				
CD-AB	35	9	575	0.061	35	0.0	0.1	6.664	A
CD-A	948	237			948				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	20	5	548	0.036	20	0.0	0.0	6.815	A
A-B	2	0.58			2				
A-C	588	147			588				
A-D	7	2			7				
AB-CD	7	2	457	0.015	7	0.0	0.0	8.007	A
AB-C	607	152			607				
D-ABC	21	5	444	0.047	21	0.0	0.0	8.513	A
C-D	13	3			13				
C-A	927	232			927				
C-B	35	9			35				
CD-AB	35	9	575	0.061	35	0.1	0.1	6.664	A
CD-A	948	237			948				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	16	4	588	0.028	16	0.0	0.0	6.302	A
A-B	2	0.48			2				
A-C	480	120			480				
A-D	6	1			6				
AB-CD	6	1	505	0.011	6	0.0	0.0	7.215	A
AB-C	495	124			495				
D-ABC	17	4	490	0.035	17	0.0	0.0	7.617	A
C-D	10	3			10				
C-A	757	189			757				
C-B	29	7			29				
CD-AB	29	7	606	0.047	29	0.1	0.0	6.241	A
CD-A	774	193			774				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	14	3	615	0.022	14	0.0	0.0	5.989	A
A-B	2	0.40			2				
A-C	402	101			402				
A-D	5	1			5				
AB-CD	5	1	539	0.009	5	0.0	0.0	6.733	A
AB-C	415	104			415				
D-ABC	14	4	523	0.027	14	0.0	0.0	7.076	A
C-D	9	2			9				
C-A	634	158			634				
C-B	24	6			24				
CD-AB	24	6	628	0.038	24	0.0	0.0	5.963	A
CD-A	648	162			648				

2025 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.43	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)	Run automatically
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	969	100.000
B - Daphne S		ONE HOUR	✓	84	100.000
C - Penywern S		ONE HOUR	✓	691	100.000
D - Llewellyn Avenue		ONE HOUR	✓	4	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	9	945	14
	B - Daphne S	18	0	67	0
	C - Penywern S	655	21	0	15
	D - Llewellyn Avenue	4	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.27	14.25	0.4	B	77	116
A-B					9	13
A-C					867	1301
A-D					13	20
AB-CD	0.03	7.22	0.0	A	13	20
AB-C					929	1393
D-ABC	0.00	0.00	0.0	A	0	0
C-D					14	21
C-A					601	901
C-B					19	29
CD-AB	0.05	8.57	0.1	A	19	29
CD-A					601	901

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	63	16	474	0.134	63	0.0	0.2	8.739	A
A-B	7	2			7				
A-C	712	178			712				
A-D	11	3			11				
AB-CD	11	3	579	0.019	11	0.0	0.0	6.338	A
AB-C	761	190			761				
D-ABC	0	0	390	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	493	123			493				
C-B	16	4			16				
CD-AB	16	4	538	0.029	16	0.0	0.0	6.893	A
CD-A	493	123			493				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	76	19	423	0.179	76	0.2	0.2	10.361	B
A-B	9	2			9				
A-C	850	212			850				
A-D	13	3			13				
AB-CD	13	3	552	0.023	13	0.0	0.0	6.682	A
AB-C	910	227			910				
D-ABC	0	0	342	0.000	0	0.0	0.0	0.000	A
C-D	14	3			14				
C-A	588	147			588				
C-B	19	5			19				
CD-AB	19	5	498	0.038	19	0.0	0.0	7.510	A
CD-A	588	147			588				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	93	23	345	0.269	92	0.2	0.4	14.190	B
A-B	10	3			10				
A-C	1041	260			1041				
A-D	16	4			16				
AB-CD	16	4	514	0.031	16	0.0	0.0	7.224	A
AB-C	1114	278			1114				
D-ABC	0	0	272	0.000	0	0.0	0.0	0.000	A
C-D	17	4			17				
C-A	721	180			721				
C-B	23	6			23				
CD-AB	23	6	443	0.052	23	0.0	0.1	8.565	A
CD-A	721	180			721				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	93	23	345	0.269	93	0.4	0.4	14.252	B
A-B	10	3			10				
A-C	1041	260			1041				
A-D	16	4			16				
AB-CD	16	4	514	0.031	16	0.0	0.0	7.224	A
AB-C	1114	279			1114				
D-ABC	0	0	272	0.000	0	0.0	0.0	0.000	A
C-D	17	4			17				
C-A	721	180			721				
C-B	23	6			23				
CD-AB	23	6	443	0.052	23	0.1	0.1	8.566	A
CD-A	721	180			721				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	76	19	423	0.179	76	0.4	0.2	10.410	B
A-B	9	2			9				
A-C	850	212			850				
A-D	13	3			13				
AB-CD	13	3	552	0.023	13	0.0	0.0	6.683	A
AB-C	910	228			910				
D-ABC	0	0	342	0.000	0	0.0	0.0	0.000	A
C-D	14	3			14				
C-A	588	147			588				
C-B	19	5			19				
CD-AB	19	5	498	0.038	19	0.1	0.0	7.515	A
CD-A	588	147			588				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	63	16	474	0.134	64	0.2	0.2	8.776	A
A-B	7	2			7				
A-C	712	178			712				
A-D	11	3			11				
AB-CD	11	3	579	0.019	11	0.0	0.0	6.339	A
AB-C	762	191			762				
D-ABC	0	0	390	0.000	0	0.0	0.0	0.000	A
C-D	11	3			11				
C-A	493	123			493				
C-B	16	4			16				
CD-AB	16	4	538	0.029	16	0.0	0.0	6.899	A
CD-A	493	123			493				

2025 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.30	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)	Run automatically
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	567	100.000
B - Daphne S		ONE HOUR	✓	35	100.000
C - Penywern S		ONE HOUR	✓	929	100.000
D - Llewellyn Avenue		ONE HOUR	✓	19	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	13	547	6
	B - Daphne S	11	0	24	0
	C - Penywern S	867	50	0	12
	D - Llewellyn Avenue	19	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.09	9.84	0.1	A	32	48
A-B					12	18
A-C					502	753
A-D					6	9
AB-CD	0.02	8.25	0.0	A	6	9
AB-C					523	785
D-ABC	0.05	8.78	0.1	A	18	27
C-D					11	16
C-A					796	1193
C-B					46	69
CD-AB	0.10	7.01	0.1	A	46	69
CD-A					813	1220

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	26	7	508	0.051	26	0.0	0.1	7.463	A
A-B	10	3			10				
A-C	412	103			412				
A-D	5	1			5				
AB-CD	5	1	531	0.009	5	0.0	0.0	6.847	A
AB-C	429	107			429				
D-ABC	15	4	515	0.028	15	0.0	0.0	7.194	A
C-D	9	2			9				
C-A	653	163			653				
C-B	38	9			38				
CD-AB	38	9	623	0.060	37	0.0	0.1	6.146	A
CD-A	667	167			667				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	31	8	466	0.067	31	0.1	0.1	8.268	A
A-B	12	3			12				
A-C	492	123			492				
A-D	6	1			6				
AB-CD	6	1	494	0.012	6	0.0	0.0	7.372	A
AB-C	513	128			513				
D-ABC	17	4	480	0.036	17	0.0	0.0	7.786	A
C-D	11	3			11				
C-A	779	195			779				
C-B	45	11			45				
CD-AB	45	11	600	0.075	45	0.1	0.1	6.487	A
CD-A	797	199			797				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	38	10	404	0.094	38	0.1	0.1	9.834	A
A-B	15	4			15				
A-C	602	151			602				
A-D	7	2			7				
AB-CD	7	2	444	0.016	7	0.0	0.0	8.246	A
AB-C	628	157			628				
D-ABC	21	5	431	0.050	21	0.0	0.1	8.779	A
C-D	13	3			13				
C-A	955	239			955				
C-B	55	14			55				
CD-AB	55	14	568	0.097	55	0.1	0.1	7.011	A
CD-A	976	244			976				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	38	10	404	0.094	38	0.1	0.1	9.841	A
A-B	15	4			15				
A-C	602	151			602				
A-D	7	2			7				
AB-CD	7	2	444	0.016	7	0.0	0.0	8.246	A
AB-C	628	157			628				
D-ABC	21	5	431	0.050	21	0.1	0.1	8.781	A
C-D	13	3			13				
C-A	955	239			955				
C-B	55	14			55				
CD-AB	55	14	568	0.097	55	0.1	0.1	7.014	A
CD-A	976	244			976				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	31	8	466	0.067	31	0.1	0.1	8.278	A
A-B	12	3			12				
A-C	492	123			492				
A-D	6	1			6				
AB-CD	6	1	494	0.012	6	0.0	0.0	7.372	A
AB-C	513	128			513				
D-ABC	17	4	480	0.036	18	0.1	0.0	7.788	A
C-D	11	3			11				
C-A	779	195			779				
C-B	45	11			45				
CD-AB	45	11	600	0.075	45	0.1	0.1	6.492	A
CD-A	797	199			797				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	26	7	508	0.051	26	0.1	0.1	7.475	A
A-B	10	3			10				
A-C	412	103			412				
A-D	5	1			5				
AB-CD	5	1	531	0.009	5	0.0	0.0	6.850	A
AB-C	429	107			429				
D-ABC	15	4	515	0.028	15	0.0	0.0	7.198	A
C-D	9	2			9				
C-A	653	163			653				
C-B	38	9			38				
CD-AB	38	9	623	0.060	38	0.1	0.1	6.154	A
CD-A	667	167			667				

2033 + 200 Houses, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.48	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)	Run automatically
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	1042	100.000
B - Daphne S		ONE HOUR	✓	88	100.000
C - Penywern S		ONE HOUR	✓	743	100.000
D - Llewellyn Avenue		ONE HOUR	✓	5	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	10	1017	15
	B - Daphne S	18	0	70	0
	C - Penywern S	704	22	0	16
	D - Llewellyn Avenue	5	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.31	16.61	0.4	C	81	121
A-B					9	13
A-C					933	1399
A-D					14	21
AB-CD	0.03	7.47	0.0	A	14	21
AB-C					997	1495
D-ABC	0.00	0.00	0.0	A	0	0
C-D					15	22
C-A					646	970
C-B					20	30
CD-AB	0.06	9.08	0.1	A	20	30
CD-A					646	970

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	66	17	457	0.145	65	0.0	0.2	9.176	A
A-B	7	2			7				
A-C	765	191			765				
A-D	12	3			12				
AB-CD	12	3	568	0.021	12	0.0	0.0	6.468	A
AB-C	818	204			818				
D-ABC	0	0	372	0.000	0	0.0	0.0	0.000	A
C-D	12	3			12				
C-A	530	133			530				
C-B	17	4			17				
CD-AB	17	4	523	0.032	17	0.0	0.0	7.113	A
CD-A	530	133			530				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	401	0.197	79	0.2	0.2	11.169	B
A-B	9	2			9				
A-C	914	228			914				
A-D	14	3			14				
AB-CD	14	3	539	0.026	14	0.0	0.0	6.855	A
AB-C	977	244			977				
D-ABC	0	0	320	0.000	0	0.0	0.0	0.000	A
C-D	15	4			15				
C-A	633	158			633				
C-B	20	5			20				
CD-AB	20	5	480	0.041	20	0.0	0.0	7.826	A
CD-A	633	158			633				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	97	24	313	0.308	96	0.2	0.4	16.504	C
A-B	11	3			11				
A-C	1119	280			1119				
A-D	17	4			17				
AB-CD	17	4	499	0.034	17	0.0	0.0	7.473	A
AB-C	1196	299			1196				
D-ABC	0	0	241	0.000	0	0.0	0.0	0.000	A
C-D	18	4			18				
C-A	776	194			776				
C-B	24	6			24				
CD-AB	24	6	421	0.058	24	0.0	0.1	9.074	A
CD-A	776	194			776				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	97	24	313	0.308	97	0.4	0.4	16.614	C
A-B	11	3			11				
A-C	1119	280			1119				
A-D	17	4			17				
AB-CD	17	4	499	0.034	17	0.0	0.0	7.473	A
AB-C	1196	299			1196				
D-ABC	0	0	241	0.000	0	0.0	0.0	0.000	A
C-D	18	4			18				
C-A	776	194			776				
C-B	24	6			24				
CD-AB	24	6	421	0.058	24	0.1	0.1	9.075	A
CD-A	776	194			776				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	401	0.197	80	0.4	0.2	11.243	B
A-B	9	2			9				
A-C	914	228			914				
A-D	14	3			14				
AB-CD	14	3	539	0.026	14	0.0	0.0	6.858	A
AB-C	977	244			977				
D-ABC	0	0	319	0.000	0	0.0	0.0	0.000	A
C-D	15	4			15				
C-A	633	158			633				
C-B	20	5			20				
CD-AB	20	5	480	0.041	20	0.1	0.0	7.828	A
CD-A	633	158			633				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	66	17	457	0.145	66	0.2	0.2	9.223	A
A-B	7	2			7				
A-C	765	191			765				
A-D	12	3			12				
AB-CD	12	3	568	0.021	12	0.0	0.0	6.468	A
AB-C	818	205			818				
D-ABC	0	0	372	0.000	0	0.0	0.0	0.000	A
C-D	12	3			12				
C-A	530	133			530				
C-B	17	4			17				
CD-AB	17	4	523	0.032	17	0.0	0.0	7.117	A
CD-A	530	133			530				

2033 + 200 Houses, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Llewellyn Av/ Daphne Rd (S)	Left-Right Stagger	Two-way		0.31	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)	Run automatically
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Penywern N		ONE HOUR	✓	609	100.000
B - Daphne S		ONE HOUR	✓	36	100.000
C - Penywern S		ONE HOUR	✓	998	100.000
D - Llewellyn Avenue		ONE HOUR	✓	21	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	14	589	7
	B - Daphne S	11	0	25	0
	C - Penywern S	933	52	0	13
	D - Llewellyn Avenue	21	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Penywern N	B - Daphne S	C - Penywern S	D - Llewellyn Avenue
From	A - Penywern N	0	0	4	0
	B - Daphne S	0	0	0	0
	C - Penywern S	4	0	0	0
	D - Llewellyn Avenue	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.10	10.57	0.1	B	33	50
A-B					12	19
A-C					540	810
A-D					6	10
AB-CD	0.02	8.66	0.0	A	6	10
AB-C					563	845
D-ABC	0.06	9.26	0.1	A	19	29
C-D					12	18
C-A					856	1284
C-B					48	72
CD-AB	0.10	7.23	0.1	A	48	72
CD-A					875	1312

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	27	7	496	0.055	27	0.0	0.1	7.675	A
A-B	10	3			10				
A-C	443	111			443				
A-D	5	1			5				
AB-CD	5	1	517	0.010	5	0.0	0.0	7.040	A
AB-C	462	115			462				
D-ABC	16	4	501	0.031	16	0.0	0.0	7.409	A
C-D	10	2			10				
C-A	702	176			702				
C-B	39	10			39				
CD-AB	40	10	614	0.064	39	0.0	0.1	6.262	A
CD-A	718	179			718				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	32	8	450	0.072	32	0.1	0.1	8.616	A
A-B	12	3			12				
A-C	529	132			529				
A-D	6	2			6				
AB-CD	6	2	477	0.013	6	0.0	0.0	7.640	A
AB-C	552	138			552				
D-ABC	19	5	464	0.041	19	0.0	0.0	8.091	A
C-D	11	3			11				
C-A	838	210			838				
C-B	47	12			47				
CD-AB	47	12	589	0.080	47	0.1	0.1	6.641	A
CD-A	857	214			857				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	40	10	380	0.104	39	0.1	0.1	10.555	B
A-B	15	4			15				
A-C	648	162			648				
A-D	8	2			8				
AB-CD	8	2	423	0.018	8	0.0	0.0	8.663	A
AB-C	675	169			675				
D-ABC	23	6	412	0.056	23	0.0	0.1	9.260	A
C-D	14	4			14				
C-A	1027	257			1027				
C-B	58	14			58				
CD-AB	58	14	555	0.104	58	0.1	0.1	7.232	A
CD-A	1050	262			1050				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	40	10	380	0.104	40	0.1	0.1	10.565	B
A-B	15	4			15				
A-C	648	162			648				
A-D	8	2			8				
AB-CD	8	2	423	0.018	8	0.0	0.0	8.663	A
AB-C	676	169			676				
D-ABC	23	6	412	0.056	23	0.1	0.1	9.261	A
C-D	14	4			14				
C-A	1027	257			1027				
C-B	58	14			58				
CD-AB	58	14	555	0.104	58	0.1	0.1	7.235	A
CD-A	1050	262			1050				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	32	8	450	0.072	33	0.1	0.1	8.626	A
A-B	12	3			12				
A-C	529	132			529				
A-D	6	2			6				
AB-CD	6	2	477	0.013	6	0.0	0.0	7.644	A
AB-C	552	138			552				
D-ABC	19	5	464	0.041	19	0.1	0.0	8.093	A
C-D	11	3			11				
C-A	838	210			838				
C-B	47	12			47				
CD-AB	47	12	589	0.080	47	0.1	0.1	6.647	A
CD-A	857	214			857				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	27	7	496	0.055	27	0.1	0.1	7.687	A
A-B	10	3			10				
A-C	443	111			443				
A-D	5	1			5				
AB-CD	5	1	517	0.010	5	0.0	0.0	7.040	A
AB-C	462	116			462				
D-ABC	16	4	501	0.031	16	0.0	0.0	7.413	A
C-D	10	2			10				
C-A	702	176			702				
C-B	39	10			39				
CD-AB	40	10	614	0.064	40	0.1	0.1	6.271	A
CD-A	718	179			718				

Appendix L

Junctions 9			
ARCADY 9 - Roundabout Module			
Version: 9.5.1.7462 © Copyright TRL Limited, 2019			
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Filename: Roundabouts Modelled.02 - No mitigation (DC).j9

Path: K:\T20\Jobs\T20.143 Leiros Park\Analysis\Junctions 9

Report generation date: 23/09/2020 20:18:30

»2017 Baseline, AM
 »2017 Baseline, PM
 »2023 Baseline, AM
 »2023 Baseline, PM
 »2025 Baseline, AM
 »2025 Baseline, PM
 »2033 Baseline, AM
 »2033 Baseline, PM
 »2023 + 50 Houses, AM
 »2023 + 50 Houses, PM
 »2025 + 200 Houses, AM
 »2025 + 200 Houses, PM
 »2033 + 200 Houses, AM
 »2033 + 200 Houses, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2017 Baseline							
1 - A - 1 - Cadoxton North	D1	6.8	22.89	0.88	D2	1.8	9.12	0.64
1 - A - 2 - B4434		0.6	3.55	0.37		0.9	3.95	0.48
1 - A - 3 - Cadoxton South		1.0	4.41	0.49		3.9	12.91	0.80
2 - B - 1 - Cadoxton East		1.7	12.63	0.63		0.7	6.48	0.41
2 - B - 2 - Golwg Y Gamlas		0.2	9.58	0.18		0.4	7.16	0.29
2 - B - 3 - Cadoxton West		1.6	8.98	0.62		31.8	105.49	1.03
2 - B - 4 - Penywern Road		7.2	27.95	0.89		1.4	9.00	0.58
	2023 Baseline							
1 - A - 1 - Cadoxton North	D3	12.1	38.36	0.95	D4	2.2	10.64	0.69
1 - A - 2 - B4434		0.6	3.75	0.39		1.1	4.25	0.52
1 - A - 3 - Cadoxton South		1.1	4.76	0.52		5.9	18.77	0.86
2 - B - 1 - Cadoxton East		2.2	15.63	0.69		0.8	6.95	0.45
2 - B - 2 - Golwg Y Gamlas		0.3	10.83	0.21		0.5	7.73	0.32
2 - B - 3 - Cadoxton West		1.9	10.12	0.66		60.2	179.79	1.10
2 - B - 4 - Penywern Road		12.7	46.77	0.95		1.6	9.85	0.62
	2025 Baseline							
1 - A - 1 - Cadoxton North		14.6	45.10	0.96		2.3	11.19	0.70
1 - A - 2 - B4434		0.7	3.81	0.40		1.1	4.35	0.53
1 - A - 3 - Cadoxton South		1.1	4.88	0.53		6.8	21.64	0.88

2 - B - 1 - Cadoxton East	D5	2.4	16.72	0.71	D6	0.8	7.11	0.46
2 - B - 2 - Golwg Y Gamlas		0.3	11.23	0.22		0.5	7.93	0.33
2 - B - 3 - Cadoxton West		2.0	10.51	0.67		70.0	209.20	1.12
2 - B - 4 - Penywern Road		15.5	55.56	0.97		1.7	10.13	0.63
	2033 Baseline							
1 - A - 1 - Cadoxton North	D7	31.7	85.22	1.02	D8	3.3	14.82	0.77
1 - A - 2 - B4434		0.8	4.05	0.43		1.3	4.89	0.57
1 - A - 3 - Cadoxton South		1.4	5.51	0.58		18.7	54.21	0.98
2 - B - 1 - Cadoxton East		3.4	22.51	0.78		1.0	7.95	0.50
2 - B - 2 - Golwg Y Gamlas		0.3	12.90	0.26		0.6	8.99	0.37
2 - B - 3 - Cadoxton West		2.7	12.86	0.73		118.9	422.03	1.22
2 - B - 4 - Penywern Road		41.8	123.93	1.05		2.1	11.69	0.68
	2023 + 50 Houses							
1 - A - 1 - Cadoxton North	D9	12.9	40.49	0.95	D10	2.2	10.71	0.69
1 - A - 2 - B4434		0.6	3.77	0.39		1.1	4.28	0.52
1 - A - 3 - Cadoxton South		1.1	4.79	0.52		6.0	19.36	0.87
2 - B - 1 - Cadoxton East		2.3	16.02	0.70		0.8	6.99	0.45
2 - B - 2 - Golwg Y Gamlas		0.3	11.00	0.22		0.5	7.78	0.32
2 - B - 3 - Cadoxton West		2.0	10.26	0.67		64.4	191.01	1.11
2 - B - 4 - Penywern Road		14.4	52.03	0.96		1.6	9.90	0.62
	2025 + 200 Houses							
1 - A - 1 - Cadoxton North	D11	18.3	54.08	0.98	D12	2.4	11.49	0.71
1 - A - 2 - B4434		0.7	3.86	0.41		1.2	4.48	0.54
1 - A - 3 - Cadoxton South		1.2	4.96	0.54		7.9	25.16	0.90
2 - B - 1 - Cadoxton East		2.6	18.20	0.73		0.9	7.30	0.47
2 - B - 2 - Golwg Y Gamlas		0.3	11.80	0.23		0.5	8.16	0.34
2 - B - 3 - Cadoxton West		2.2	11.01	0.69		88.5	286.84	1.16
2 - B - 4 - Penywern Road		28.3	90.04	1.02		1.8	10.35	0.64
	2033 + 200 Houses							
1 - A - 1 - Cadoxton North	D13	33.9	90.62	1.03	D14	3.4	15.23	0.78
1 - A - 2 - B4434		0.8	4.08	0.44		1.4	5.05	0.59
1 - A - 3 - Cadoxton South		1.4	5.61	0.59		24.2	67.23	1.00
2 - B - 1 - Cadoxton East		3.6	23.45	0.79		1.1	8.19	0.51
2 - B - 2 - Golwg Y Gamlas		0.4	13.13	0.27		0.6	9.28	0.38
2 - B - 3 - Cadoxton West		2.9	13.62	0.75		146.7	509.98	1.26
2 - B - 4 - Penywern Road		65.6	181.12	1.10		2.2	11.99	0.69

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.

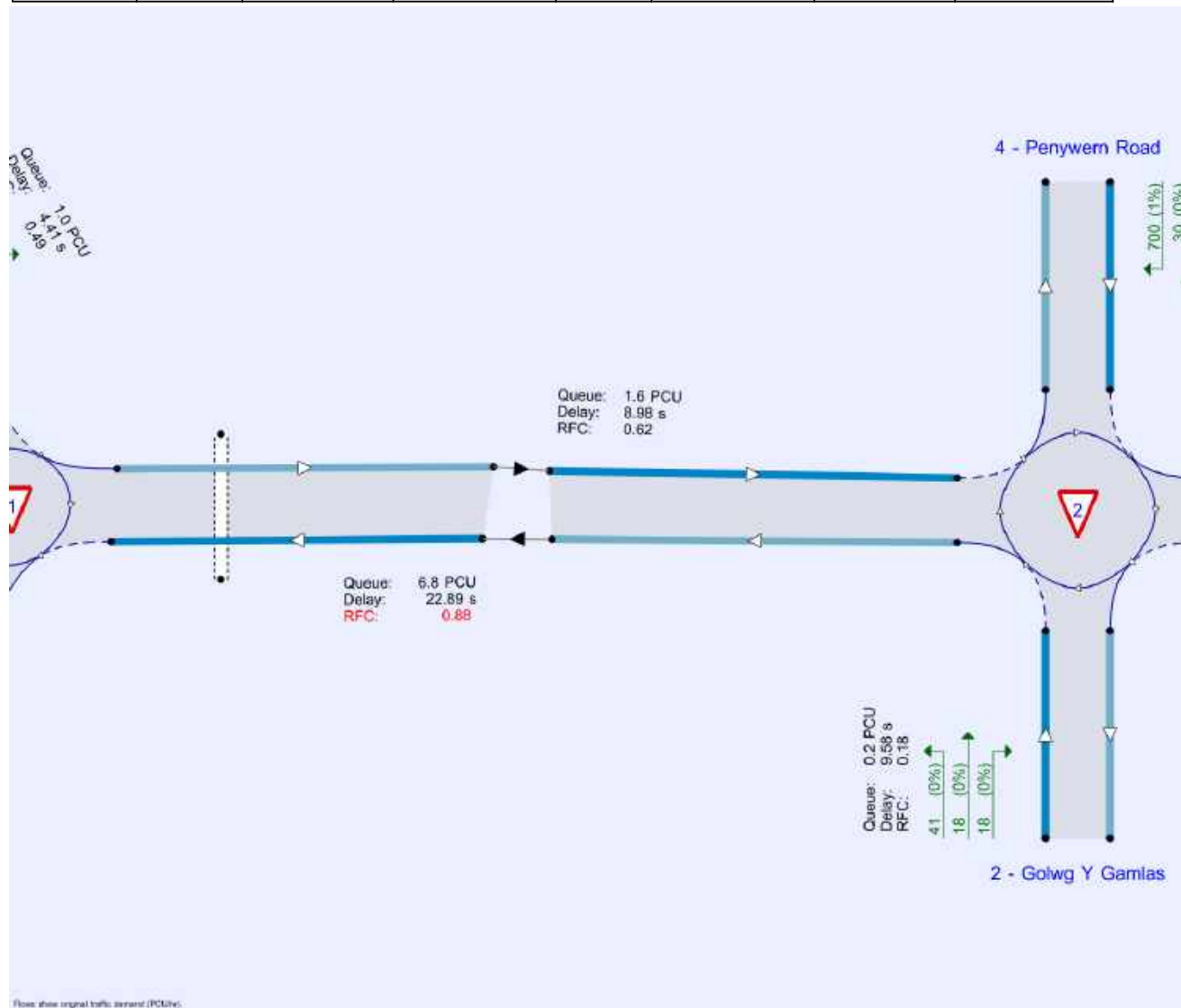
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	08/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Louie
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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	12.61	B
2	B	Standard Roundabout		1, 2, 3, 4	18.18	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1 - A	1	Cadoxton North	
	2	B4434	
	3	Cadoxton South	
2 - B	1	Cadoxton East	
	2	Golwg Y Gamlas	
	3	Cadoxton West	
	4	Penywern Road	

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A	1 - Cadoxton North	3.90	7.20	8.8	19.1	30.0	40.2	
	2 - B4434	3.20	7.80	40.0	20.0	30.0	26.5	
	3 - Cadoxton South	3.25	6.90	27.6	25.9	30.0	19.7	
2 - B	1 - Cadoxton East	3.70	4.40	2.4	23.8	25.5	19.7	
	2 - Golwg Y Gamlas	3.55	4.10	0.7	23.0	25.5	26.0	
	3 - Cadoxton West	3.70	3.70	0.0	28.7	25.5	21.3	
	4 - Penywern Road	3.70	5.00	1.1	19.9	25.5	24.6	

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - A	1 - Cadoxton North	11.00	3.00	2.00	3.00	5.00	6.00	30.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1 - A	1 - Cadoxton North	0.621	1575
	2 - B4434	0.726	2013
	3 - Cadoxton South	0.702	1844
2 - B	1 - Cadoxton East	0.590	1284
	2 - Golwg Y Gamlas	0.554	1146
	3 - Cadoxton West	0.567	1172
	4 - Penywern Road	0.570	1226

The slope and intercept shown above include any corrections and adjustments.

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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	532	100.000
	3 - Cadoxton South		ONE HOUR	✓	711	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	449	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	77	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	889	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONE HOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A

	To			
		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
From	1 - Cadoxton North	0	516	515
	2 - B4434	309	0	223
	3 - Cadoxton South	293	418	0

Demand (PCU/hr)

2 - B

	To				
		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
From	1 - Cadoxton East	0	23	296	130
	2 - Golwg Y Gamlas	18	0	41	18
	3 - Cadoxton West	157	48	0	476
	4 - Penywern Road	159	30	700	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A

	To			
		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
From	1 - Cadoxton North	0	0	2
	2 - B4434	0	0	0
	3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B

	To				
		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
From	1 - Cadoxton East	0	0	2	2
	2 - Golwg Y Gamlas	0	0	0	0
	3 - Cadoxton West	2	0	2	1
	4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.88	22.89	6.8	C	951	1426
	2 - B4434	0.37	3.55	0.6	A	488	732
	3 - Cadoxton South	0.49	4.41	1.0	A	652	979
2 - B	1 - Cadoxton East	0.63	12.63	1.7	B	412	618
	2 - Golwg Y Gamlas	0.18	9.58	0.2	A	71	106
	3 - Cadoxton West	0.62	8.98	1.6	A	552	828
	4 - Penywern Road	0.89	27.95	7.2	D	816	1224

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	775	194	314	15.06	1340	0.578	769	452	0.0	1.4	6.309	A
	2 - B4434	401	100	384		1734	0.231	399	699	0.0	0.3	2.695	A
	3 - Cadoxton South	535	134	232		1682	0.318	533	552	0.0	0.5	3.155	A
2 - B	1 - Cadoxton East	338	85	577		944	0.358	336	236	0.0	0.6	6.006	A
	2 - Golwg Y Gamlas	58	14	841		680	0.085	58	71	0.0	0.1	5.780	A
	3 - Cadoxton West	452	113	124		1101	0.410	449	775	0.0	0.7	5.560	A
	4 - Penywern Road	669	167	149		1141	0.587	664	424	0.0	1.4	7.529	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	928	232	375	17.98	1316	0.705	924	541	1.4	2.3	9.191	A
	2 - B4434	478	120	462		1678	0.285	478	838	0.3	0.4	3.001	A
	3 - Cadoxton South	639	160	278		1650	0.387	639	662	0.5	0.6	3.588	A
2 - B	1 - Cadoxton East	404	101	691		877	0.460	402	283	0.6	0.9	7.712	A
	2 - Golwg Y Gamlas	69	17	1008		587	0.118	69	85	0.1	0.1	6.942	A
	3 - Cadoxton West	541	135	149		1087	0.497	540	928	0.7	1.0	6.634	A
	4 - Penywern Road	799	200	179		1124	0.711	795	510	1.4	2.4	10.923	B

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1126	282	459	22.02	1289	0.874	1112	662	2.3	6.0	19.060	C
	2 - B4434	586	146	555		1610	0.364	585	1016	0.4	0.6	3.512	A
	3 - Cadoxton South	783	196	340		1606	0.487	782	801	0.6	0.9	4.397	A
2 - B	1 - Cadoxton East	494	124	837		791	0.625	491	344	0.9	1.6	12.105	B
	2 - Golwg Y Gamlas	85	21	1224		468	0.181	84	104	0.1	0.2	9.376	A
	3 - Cadoxton West	662	165	182		1069	0.619	659	1126	1.0	1.6	8.846	A
	4 - Penywern Road	979	245	218		1101	0.889	962	623	2.4	6.5	23.696	C

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1140	285	460	22.02	1289	0.884	1136	663	6.0	6.8	22.886	C
	2 - B4434	586	146	568		1601	0.366	586	1029	0.6	0.6	3.545	A
	3 - Cadoxton South	783	196	340		1606	0.488	783	813	0.9	1.0	4.410	A
2 - B	1 - Cadoxton East	494	124	848		784	0.630	494	347	1.6	1.7	12.628	B
	2 - Golwg Y Gamlas	85	21	1238		460	0.184	85	105	0.2	0.2	9.584	A
	3 - Cadoxton West	663	166	183		1068	0.621	663	1140	1.6	1.6	8.979	A
	4 - Penywern Road	979	245	219		1101	0.889	976	626	6.5	7.2	27.952	D

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	949	237	377	17.98	1341	0.708	966	542	6.8	2.5	10.116	B
	2 - B4434	478	120	483		1662	0.288	479	860	0.6	0.4	3.042	A
	3 - Cadoxton South	639	160	278		1649	0.388	640	683	1.0	0.6	3.601	A
2 - B	1 - Cadoxton East	404	101	710		866	0.466	407	288	1.7	0.9	8.042	A
	2 - Golwg Y Gamlas	69	17	1030		576	0.120	70	87	0.2	0.1	7.121	A
	3 - Cadoxton West	542	136	150		1086	0.499	545	949	1.6	1.0	6.753	A
	4 - Penywern Road	799	200	180		1123	0.712	817	515	7.2	2.6	12.542	B

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	785	196	315	15.06	1358	0.578	790	454	2.5	1.4	6.450	A
	2 - B4434	401	100	394		1726	0.232	401	710	0.4	0.3	2.716	A
	3 - Cadoxton South	535	134	233		1681	0.318	536	563	0.6	0.5	3.170	A
2 - B	1 - Cadoxton East	338	85	585		939	0.360	339	239	0.9	0.6	6.129	A
	2 - Golwg Y Gamlas	58	14	853		674	0.086	58	72	0.1	0.1	5.852	A
	3 - Cadoxton West	454	113	125		1100	0.412	455	785	1.0	0.7	5.651	A
	4 - Penywern Road	669	167	151		1140	0.587	674	430	2.6	1.5	7.871	A

2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	9.05	A
2	B	Standard Roundabout		1, 2, 3, 4	53.86	F

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)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	774	100.000
	3 - Cadoxton South		ONE HOUR	✓	1009	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	364	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	186	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	510	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	346	325
		2 - B4434	588	0	186
		3 - Cadoxton South	358	651	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	27	185	152
		2 - Golwg Y Gamlas	69	0	78	39
		3 - Cadoxton West	275	89	0	586
		4 - Penywern Road	105	23	382	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.64	9.12	1.8	A	591	887
	2 - B4434	0.48	3.95	0.9	A	710	1065
	3 - Cadoxton South	0.80	12.91	3.9	B	926	1389
2 - B	1 - Cadoxton East	0.41	6.48	0.7	A	334	501
	2 - Golwg Y Gamlas	0.29	7.16	0.4	A	171	256
	3 - Cadoxton West	1.03	105.49	31.8	F	868	1301
	4 - Penywern Road	0.58	9.00	1.4	A	468	702

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	483	121	488	15.06	1231	0.392	480	709	0.0	0.6	4.825	A
	2 - B4434	583	146	233		1844	0.316	581	735	0.0	0.5	2.847	A
	3 - Cadoxton South	760	190	441		1535	0.495	756	372	0.0	1.0	4.631	A
2 - B	1 - Cadoxton East	274	69	369		1067	0.257	273	333	0.0	0.3	4.609	A
	2 - Golwg Y Gamlas	140	35	538		848	0.165	139	103	0.0	0.2	5.076	A
	3 - Cadoxton West	709	177	195		1061	0.669	702	483	0.0	2.0	9.924	A
	4 - Penywern Road	384	96	320		1043	0.368	382	576	0.0	0.6	5.476	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	579	145	584	17.98	1175	0.493	577	849	0.6	1.0	6.072	A
	2 - B4434	696	174	280		1810	0.385	695	881	0.5	0.6	3.228	A
	3 - Cadoxton South	907	227	528		1474	0.616	905	447	1.0	1.6	6.344	A
2 - B	1 - Cadoxton East	327	82	442		1024	0.320	327	399	0.3	0.5	5.257	A
	2 - Golwg Y Gamlas	167	42	645		788	0.212	167	124	0.2	0.3	5.789	A
	3 - Cadoxton West	849	212	233		1039	0.817	841	579	2.0	4.1	17.603	C
	4 - Penywern Road	458	115	384		1007	0.455	457	690	0.6	0.8	6.602	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	708	177	711	22.02	1103	0.642	705	1038	1.0	1.8	9.051	A
	2 - B4434	852	213	341		1765	0.483	851	1075	0.6	0.9	3.934	A
	3 - Cadoxton South	1111	278	646		1391	0.799	1102	546	1.6	3.8	12.219	B
2 - B	1 - Cadoxton East	401	100	535		969	0.414	400	473	0.5	0.7	6.434	A
	2 - Golwg Y Gamlas	205	51	789		709	0.289	204	146	0.3	0.4	7.129	A
	3 - Cadoxton West	1038	259	286		1010	1.028	973	708	4.1	20.3	58.433	F
	4 - Penywern Road	562	140	448		970	0.579	559	810	0.8	1.4	8.802	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	710	178	716	22.02	1108	0.641	710	1041	1.8	1.8	9.124	A
	2 - B4434	852	213	344		1763	0.483	852	1083	0.9	0.9	3.951	A
	3 - Cadoxton South	1111	278	647		1390	0.799	1110	549	3.8	3.9	12.909	B
2 - B	1 - Cadoxton East	401	100	539		967	0.415	401	480	0.7	0.7	6.479	A
	2 - Golwg Y Gamlas	205	51	792		707	0.289	205	148	0.4	0.4	7.161	A
	3 - Cadoxton West	1041	260	286		1009	1.032	995	710	20.3	31.8	105.493	F
	4 - Penywern Road	562	140	457		965	0.582	561	824	1.4	1.4	8.996	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	582	145	591	17.98	1180	0.493	585	855	1.8	1.0	6.142	A
	2 - B4434	696	174	283		1807	0.385	697	893	0.9	0.6	3.246	A
	3 - Cadoxton South	907	227	530		1473	0.616	916	451	3.9	1.6	6.614	A
2 - B	1 - Cadoxton East	327	82	456		1016	0.322	328	435	0.7	0.5	5.338	A
	2 - Golwg Y Gamlas	167	42	649		787	0.213	168	135	0.4	0.3	5.824	A
	3 - Cadoxton West	855	214	234		1039	0.823	959	582	31.8	5.6	60.266	F
	4 - Penywern Road	458	115	430		981	0.467	460	764	1.4	0.9	7.011	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	487	122	492	15.06	1236	0.394	488	714	1.0	0.7	4.872	A
	2 - B4434	583	146	236		1841	0.317	583	744	0.6	0.5	2.863	A
	3 - Cadoxton South	760	190	443		1533	0.495	762	377	1.6	1.0	4.716	A
2 - B	1 - Cadoxton East	274	69	374		1064	0.258	275	342	0.5	0.4	4.649	A
	2 - Golwg Y Gamlas	140	35	543		845	0.166	140	106	0.3	0.2	5.108	A
	3 - Cadoxton West	714	178	196		1060	0.673	728	487	5.6	2.2	11.373	B
	4 - Penywern Road	384	96	331		1037	0.370	385	593	0.9	0.6	5.585	A

2023 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	19.80	C
2	B	Standard Roundabout		1, 2, 3, 4	27.53	D

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)	Run automatically
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	564	100.000
	3 - Cadoxton South		ONE HOUR	✓	754	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	476	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	82	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	942	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	547	546
		2 - B4434	328	0	236
		3 - Cadoxton South	311	443	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	24	314	138
		2 - Golwg Y Gamlas	19	0	43	19
		3 - Cadoxton West	166	51	0	505
		4 - Penywern Road	169	32	742	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.95	38.36	12.1	E	1007	1511
	2 - B4434	0.39	3.75	0.6	A	517	776
	3 - Cadoxton South	0.52	4.76	1.1	A	692	1037
2 - B	1 - Cadoxton East	0.69	15.63	2.2	C	437	655
	2 - Golwg Y Gamlas	0.21	10.83	0.3	B	75	112
	3 - Cadoxton West	0.66	10.12	1.9	B	585	878
	4 - Penywern Road	0.95	46.77	12.7	E	865	1297

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	820	205	332	15.06	1331	0.617	814	479	0.0	1.6	6.955	A
	2 - B4434	425	106	407		1718	0.247	423	740	0.0	0.3	2.779	A
	3 - Cadoxton South	567	142	246		1672	0.339	565	584	0.0	0.5	3.274	A
2 - B	1 - Cadoxton East	358	90	611		924	0.388	356	250	0.0	0.6	6.423	A
	2 - Golwg Y Gamlas	61	15	891		652	0.094	61	75	0.0	0.1	6.084	A
	3 - Cadoxton West	479	120	132		1097	0.436	476	820	0.0	0.8	5.832	A
	4 - Penywern Road	709	177	157		1136	0.624	703	450	0.0	1.6	8.271	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	983	246	398	17.98	1309	0.751	978	573	1.6	2.9	10.785	B
	2 - B4434	507	127	488		1658	0.306	506	887	0.3	0.4	3.125	A
	3 - Cadoxton South	677	169	294		1638	0.414	677	701	0.5	0.7	3.771	A
2 - B	1 - Cadoxton East	428	107	731		853	0.501	426	299	0.6	1.0	8.565	A
	2 - Golwg Y Gamlas	73	18	1067		555	0.132	73	91	0.1	0.2	7.472	A
	3 - Cadoxton West	573	143	158		1082	0.530	572	983	0.8	1.1	7.112	A
	4 - Penywern Road	847	212	189		1118	0.758	842	540	1.6	3.0	12.901	B

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1184	296	487	22.02	1272	0.930	1158	701	2.9	9.3	27.099	D
	2 - B4434	621	155	578		1593	0.390	620	1066	0.4	0.6	3.696	A
	3 - Cadoxton South	830	207	360		1592	0.521	828	838	0.7	1.1	4.744	A
2 - B	1 - Cadoxton East	524	131	877		768	0.683	520	362	1.0	2.1	14.547	B
	2 - Golwg Y Gamlas	90	22	1286		433	0.207	89	110	0.2	0.3	10.456	B
	3 - Cadoxton West	701	175	192		1063	0.660	698	1184	1.1	1.9	9.910	A
	4 - Penywern Road	1037	259	231		1094	0.948	1008	659	3.0	10.5	33.931	D

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1203	301	488	22.02	1272	0.946	1192	702	9.3	12.1	38.364	E
	2 - B4434	621	155	595		1581	0.393	621	1084	0.6	0.6	3.749	A
	3 - Cadoxton South	830	207	361		1591	0.521	830	855	1.1	1.1	4.764	A
2 - B	1 - Cadoxton East	524	131	894		757	0.692	523	367	2.1	2.2	15.633	C
	2 - Golwg Y Gamlas	90	22	1307		422	0.213	90	111	0.3	0.3	10.832	B
	3 - Cadoxton West	702	176	194		1062	0.662	702	1203	1.9	1.9	10.119	B
	4 - Penywern Road	1037	259	232		1093	0.949	1029	663	10.5	12.7	46.768	E

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1020	255	399	17.98	1327	0.769	1055	575	12.1	3.6	14.834	B
	2 - B4434	507	127	527		1630	0.311	508	927	0.6	0.5	3.208	A
	3 - Cadoxton South	677	169	295		1637	0.414	679	740	1.1	0.7	3.791	A
2 - B	1 - Cadoxton East	428	107	767		832	0.514	432	309	2.2	1.1	9.270	A
	2 - Golwg Y Gamlas	73	18	1106		533	0.138	74	93	0.3	0.2	7.847	A
	3 - Cadoxton West	575	144	160		1081	0.532	578	1020	1.9	1.2	7.278	A
	4 - Penywern Road	847	212	191		1117	0.758	884	546	12.7	3.4	17.775	C

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	834	208	334	15.06	1355	0.615	842	481	3.6	1.6	7.177	A
	2 - B4434	425	106	420		1708	0.249	425	755	0.5	0.3	2.807	A
	3 - Cadoxton South	567	142	247		1671	0.339	568	599	0.7	0.5	3.291	A
2 - B	1 - Cadoxton East	358	90	622		918	0.390	360	254	1.1	0.7	6.600	A
	2 - Golwg Y Gamlas	61	15	905		644	0.095	62	77	0.2	0.1	6.179	A
	3 - Cadoxton West	481	120	133		1096	0.439	482	834	1.2	0.8	5.949	A
	4 - Penywern Road	709	177	160		1135	0.625	716	456	3.4	1.7	8.811	A

2023 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	11.98	B
2	B	Standard Roundabout		1, 2, 3, 4	89.24	F

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)	Run automatically
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	819	100.000
	3 - Cadoxton South		ONE HOUR	✓	1067	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	385	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	197	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	540	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	366	344
		2 - B4434	622	0	197
		3 - Cadoxton South	379	689	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	29	196	161
		2 - Golwg Y Gamlas	73	0	83	41
		3 - Cadoxton West	291	94	0	620
		4 - Penywern Road	111	24	404	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.69	10.64	2.2	B	626	938
	2 - B4434	0.52	4.25	1.1	A	751	1127
	3 - Cadoxton South	0.86	18.77	5.9	C	979	1469
2 - B	1 - Cadoxton East	0.45	6.95	0.8	A	353	530
	2 - Golwg Y Gamlas	0.32	7.73	0.5	A	181	271
	3 - Cadoxton West	1.10	179.79	60.2	F	918	1377
	4 - Penywern Road	0.62	9.85	1.6	A	495	743

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	511	128	516	15.06	1215	0.420	508	750	0.0	0.7	5.120	A
	2 - B4434	616	154	246		1834	0.336	614	777	0.0	0.5	2.946	A
	3 - Cadoxton South	804	201	467		1517	0.530	799	394	0.0	1.1	5.021	A
2 - B	1 - Cadoxton East	290	72	390		1055	0.275	288	352	0.0	0.4	4.776	A
	2 - Golwg Y Gamlas	148	37	569		831	0.178	147	109	0.0	0.2	5.262	A
	3 - Cadoxton West	750	188	206		1055	0.711	741	511	0.0	2.4	11.284	B
	4 - Penywern Road	406	102	338		1033	0.393	404	608	0.0	0.6	5.753	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	612	153	617	17.98	1157	0.529	611	898	0.7	1.1	6.636	A
	2 - B4434	736	184	296		1798	0.409	735	932	0.5	0.7	3.386	A
	3 - Cadoxton South	960	240	559		1452	0.661	956	472	1.1	1.9	7.264	A
2 - B	1 - Cadoxton East	346	87	467		1009	0.343	346	421	0.4	0.5	5.522	A
	2 - Golwg Y Gamlas	177	44	682		768	0.230	177	130	0.2	0.3	6.085	A
	3 - Cadoxton West	898	224	247		1032	0.870	885	612	2.4	5.7	22.909	C
	4 - Penywern Road	485	121	404		995	0.487	484	727	0.6	0.9	7.088	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	749	187	749	22.02	1086	0.689	744	1096	1.1	2.2	10.500	B
	2 - B4434	902	225	361		1751	0.515	900	1133	0.7	1.1	4.224	A
	3 - Cadoxton South	1175	294	684		1364	0.861	1161	577	1.9	5.5	16.738	C
2 - B	1 - Cadoxton East	424	106	562		953	0.445	423	486	0.5	0.8	6.900	A
	2 - Golwg Y Gamlas	217	54	835		684	0.317	216	150	0.3	0.5	7.688	A
	3 - Cadoxton West	1096	274	302		1000	1.095	983	749	5.7	33.9	86.081	F
	4 - Penywern Road	594	149	457		966	0.615	592	828	0.9	1.6	9.651	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	751	188	757	22.02	1092	0.688	751	1101	2.2	2.2	10.642	B
	2 - B4434	902	225	364		1749	0.516	901	1145	1.1	1.1	4.249	A
	3 - Cadoxton South	1175	294	685		1364	0.862	1174	580	5.5	5.9	18.766	C
2 - B	1 - Cadoxton East	424	106	565		951	0.446	424	491	0.8	0.8	6.952	A
	2 - Golwg Y Gamlas	217	54	837		682	0.318	217	152	0.5	0.5	7.734	A
	3 - Cadoxton West	1101	275	303		1000	1.101	996	751	33.9	60.2	179.787	F
	4 - Penywern Road	594	149	462		962	0.617	594	837	1.6	1.6	9.854	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	616	154	629	17.98	1162	0.530	620	906	2.2	1.2	6.755	A
	2 - B4434	736	184	300		1795	0.410	738	949	1.1	0.7	3.411	A
	3 - Cadoxton South	960	240	560		1451	0.661	975	478	5.9	2.0	7.848	A
2 - B	1 - Cadoxton East	346	87	482		1000	0.346	347	460	0.8	0.5	5.625	A
	2 - Golwg Y Gamlas	177	44	686		766	0.231	178	143	0.5	0.3	6.129	A
	3 - Cadoxton West	906	227	248		1031	0.879	1014	616	60.2	33.3	168.529	F
	4 - Penywern Road	485	121	454		967	0.502	487	808	1.6	1.0	7.616	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	515	129	521	15.06	1220	0.422	517	755	1.2	0.7	5.179	A
	2 - B4434	616	154	250		1831	0.337	617	787	0.7	0.5	2.967	A
	3 - Cadoxton South	804	201	469		1515	0.530	807	399	2.0	1.2	5.144	A
2 - B	1 - Cadoxton East	290	72	406		1045	0.277	290	393	0.5	0.4	4.862	A
	2 - Golwg Y Gamlas	148	37	574		828	0.179	148	122	0.3	0.2	5.303	A
	3 - Cadoxton West	755	189	208		1054	0.717	877	515	33.3	2.7	34.568	D
	4 - Penywern Road	406	102	391		1003	0.405	408	694	1.0	0.7	6.120	A

2025 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	22.91	C
2	B	Standard Roundabout		1, 2, 3, 4	31.78	D

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)	Run automatically
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	573	100.000
	3 - Cadoxton South		ONE HOUR	✓	766	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	484	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	83	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	958	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	556	555
		2 - B4434	333	0	240
		3 - Cadoxton South	316	450	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	25	319	140
		2 - Golwg Y Gamlas	19	0	44	19
		3 - Cadoxton West	169	52	0	513
		4 - Penywern Road	171	32	754	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.96	45.10	14.6	E	1024	1536
	2 - B4434	0.40	3.81	0.7	A	526	789
	3 - Cadoxton South	0.53	4.88	1.1	A	703	1055
2 - B	1 - Cadoxton East	0.71	16.72	2.4	C	444	666
	2 - Golwg Y Gamlas	0.22	11.23	0.3	B	76	114
	3 - Cadoxton West	0.67	10.51	2.0	B	595	892
	4 - Penywern Road	0.97	55.56	15.5	F	879	1319

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	834	208	338	15.06	1328	0.628	827	487	0.0	1.7	7.169	A
	2 - B4434	432	108	413		1713	0.252	430	752	0.0	0.3	2.804	A
	3 - Cadoxton South	577	144	250		1669	0.346	575	594	0.0	0.5	3.311	A
2 - B	1 - Cadoxton East	364	91	621		918	0.397	362	254	0.0	0.7	6.558	A
	2 - Golwg Y Gamlas	62	16	906		644	0.097	62	77	0.0	0.1	6.179	A
	3 - Cadoxton West	487	122	134		1096	0.444	484	834	0.0	0.8	5.917	A
	4 - Penywern Road	721	180	160		1135	0.636	714	457	0.0	1.7	8.518	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	999	250	404	17.98	1308	0.764	993	583	1.7	3.1	11.343	B
	2 - B4434	515	129	496		1653	0.312	515	901	0.3	0.5	3.162	A
	3 - Cadoxton South	689	172	299		1634	0.421	688	712	0.5	0.7	3.830	A
2 - B	1 - Cadoxton East	435	109	743		846	0.514	433	304	0.7	1.1	8.852	A
	2 - Golwg Y Gamlas	75	19	1085		545	0.137	74	92	0.1	0.2	7.644	A
	3 - Cadoxton West	583	146	160		1081	0.539	581	999	0.8	1.2	7.266	A
	4 - Penywern Road	861	215	192		1116	0.772	855	549	1.7	3.2	13.617	B

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1199	300	495	22.02	1267	0.946	1168	713	3.1	10.7	30.121	D
	2 - B4434	631	158	584		1589	0.397	630	1080	0.5	0.7	3.751	A
	3 - Cadoxton South	844	211	366		1587	0.531	842	848	0.7	1.1	4.857	A
2 - B	1 - Cadoxton East	533	133	887		762	0.699	528	367	1.1	2.2	15.387	C
	2 - Golwg Y Gamlas	91	23	1303		424	0.215	91	111	0.2	0.3	10.787	B
	3 - Cadoxton West	713	178	195		1061	0.672	710	1199	1.2	2.0	10.271	B
	4 - Penywern Road	1055	264	235		1092	0.966	1019	670	3.2	12.2	38.003	E

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1220	305	496	22.02	1267	0.963	1204	714	10.7	14.6	45.096	E
	2 - B4434	631	158	601		1576	0.400	631	1098	0.7	0.7	3.808	A
	3 - Cadoxton South	844	211	367		1587	0.532	844	866	1.1	1.1	4.880	A
2 - B	1 - Cadoxton East	533	133	906		750	0.710	532	372	2.2	2.4	16.717	C
	2 - Golwg Y Gamlas	91	23	1325		412	0.222	91	113	0.3	0.3	11.227	B
	3 - Cadoxton West	714	179	197		1060	0.674	714	1220	2.0	2.0	10.511	B
	4 - Penywern Road	1055	264	236		1091	0.967	1042	674	12.2	15.5	55.559	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1045	261	406	17.98	1323	0.790	1087	584	14.6	4.1	17.763	C
	2 - B4434	515	129	543		1618	0.318	516	950	0.7	0.5	3.267	A
	3 - Cadoxton South	689	172	300		1634	0.422	690	760	1.1	0.7	3.853	A
2 - B	1 - Cadoxton East	435	109	787		820	0.530	440	315	2.4	1.2	9.766	A
	2 - Golwg Y Gamlas	75	19	1133		518	0.144	75	95	0.3	0.2	8.127	A
	3 - Cadoxton West	584	146	162		1079	0.541	588	1045	2.0	1.2	7.452	A
	4 - Penywern Road	861	215	194		1115	0.772	908	556	15.5	3.7	20.937	C

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	849	212	340	15.06	1356	0.626	858	489	4.1	1.7	7.428	A
	2 - B4434	432	108	429		1702	0.254	432	769	0.5	0.3	2.838	A
	3 - Cadoxton South	577	144	251		1668	0.346	578	610	0.7	0.5	3.329	A
2 - B	1 - Cadoxton East	364	91	633		911	0.400	366	258	1.2	0.7	6.753	A
	2 - Golwg Y Gamlas	62	16	921		636	0.098	63	78	0.2	0.1	6.288	A
	3 - Cadoxton West	489	122	135		1095	0.447	491	849	1.2	0.8	6.043	A
	4 - Penywern Road	721	180	162		1133	0.636	729	464	3.7	1.8	9.144	A

2025 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	13.35	B
2	B	Standard Roundabout		1, 2, 3, 4	103.23	F

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)	Run automatically
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	832	100.000
	3 - Cadoxton South		ONE HOUR	✓	1085	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	391	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	200	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	548	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	372	350
		2 - B4434	632	0	200
		3 - Cadoxton South	385	700	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	29	199	163
		2 - Golwg Y Gamlas	74	0	84	42
		3 - Cadoxton West	296	96	0	630
		4 - Penywern Road	113	25	411	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.70	11.19	2.3	B	636	954
	2 - B4434	0.53	4.35	1.1	A	764	1146
	3 - Cadoxton South	0.88	21.64	6.8	C	996	1494
2 - B	1 - Cadoxton East	0.46	7.11	0.8	A	359	539
	2 - Golwg Y Gamlas	0.33	7.93	0.5	A	184	275
	3 - Cadoxton West	1.12	209.20	70.0	F	933	1399
	4 - Penywern Road	0.63	10.13	1.7	B	503	755

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	519	130	524	15.06	1210	0.429	516	763	0.0	0.8	5.217	A
	2 - B4434	627	157	250		1831	0.342	625	790	0.0	0.5	2.978	A
	3 - Cadoxton South	817	204	474		1511	0.541	812	400	0.0	1.2	5.152	A
2 - B	1 - Cadoxton East	295	74	396		1051	0.280	293	358	0.0	0.4	4.830	A
	2 - Golwg Y Gamlas	151	38	579		825	0.182	150	111	0.0	0.2	5.322	A
	3 - Cadoxton West	763	191	209		1053	0.724	753	519	0.0	2.5	11.765	B
	4 - Penywern Road	413	103	344		1030	0.401	410	618	0.0	0.7	5.842	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	622	156	627	17.98	1151	0.540	621	913	0.8	1.2	6.824	A
	2 - B4434	748	187	301		1795	0.417	748	947	0.5	0.7	3.437	A
	3 - Cadoxton South	975	244	568		1446	0.675	972	480	1.2	2.0	7.596	A
2 - B	1 - Cadoxton East	352	88	475		1005	0.350	351	428	0.4	0.5	5.608	A
	2 - Golwg Y Gamlas	180	45	694		762	0.236	179	132	0.2	0.3	6.179	A
	3 - Cadoxton West	913	228	251		1029	0.887	897	622	2.5	6.4	25.044	D
	4 - Penywern Road	493	123	410		992	0.497	492	738	0.7	1.0	7.247	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	761	190	760	22.02	1082	0.703	756	1113	1.2	2.3	11.010	B
	2 - B4434	916	229	366		1747	0.525	915	1150	0.7	1.1	4.320	A
	3 - Cadoxton South	1195	299	695		1357	0.881	1178	586	2.0	6.3	18.705	C
2 - B	1 - Cadoxton East	431	108	570		949	0.454	430	490	0.5	0.8	7.053	A
	2 - Golwg Y Gamlas	220	55	848		676	0.326	220	151	0.3	0.5	7.875	A
	3 - Cadoxton West	1113	278	307		998	1.116	983	761	6.4	38.8	95.892	F
	4 - Penywern Road	604	151	458		965	0.626	601	832	1.0	1.6	9.928	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	764	191	770	22.02	1088	0.702	763	1119	2.3	2.3	11.188	B
	2 - B4434	916	229	370		1744	0.525	916	1163	1.1	1.1	4.348	A
	3 - Cadoxton South	1195	299	696		1356	0.881	1193	590	6.3	6.8	21.640	C
2 - B	1 - Cadoxton East	431	108	573		947	0.455	431	494	0.8	0.8	7.108	A
	2 - Golwg Y Gamlas	220	55	851		674	0.327	220	152	0.5	0.5	7.927	A
	3 - Cadoxton West	1119	280	308		997	1.123	995	764	38.8	70.0	205.717	F
	4 - Penywern Road	604	151	463		962	0.628	604	840	1.6	1.7	10.134	B

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	626	157	641	17.98	1157	0.541	631	922	2.3	1.2	6.969	A
	2 - B4434	748	187	305		1791	0.418	750	967	1.1	0.7	3.464	A
	3 - Cadoxton South	975	244	570		1445	0.675	994	486	6.8	2.1	8.366	A
2 - B	1 - Cadoxton East	352	88	488		996	0.353	353	462	0.8	0.6	5.710	A
	2 - Golwg Y Gamlas	180	45	698		759	0.237	180	144	0.5	0.3	6.227	A
	3 - Cadoxton West	922	231	252		1029	0.897	1014	626	70.0	47.1	209.201	F
	4 - Penywern Road	493	123	455		966	0.510	495	811	1.7	1.1	7.759	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	524	131	530	15.06	1215	0.431	525	768	1.2	0.8	5.282	A
	2 - B4434	627	157	255		1828	0.343	627	800	0.7	0.5	3.002	A
	3 - Cadoxton South	817	204	477		1510	0.541	821	405	2.1	1.2	5.290	A
2 - B	1 - Cadoxton East	295	74	417		1038	0.284	295	415	0.6	0.4	4.938	A
	2 - Golwg Y Gamlas	151	38	584		823	0.183	151	129	0.3	0.2	5.364	A
	3 - Cadoxton West	768	192	211		1052	0.730	944	524	47.1	3.1	66.497	F
	4 - Penywern Road	413	103	418		988	0.418	414	737	1.1	0.7	6.351	A

2033 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	41.39	E
2	B	Standard Roundabout		1, 2, 3, 4	63.97	F

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)	Run automatically
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	618	100.000
	3 - Cadoxton South		ONE HOUR	✓	825	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	521	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	89	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	1032	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONE HOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	599	598
		2 - B4434	359	0	259
		3 - Cadoxton South	340	485	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	27	344	151
		2 - Golwg Y Gamlas	21	0	48	21
		3 - Cadoxton West	182	56	0	553
		4 - Penywern Road	185	35	813	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	1.02	85.22	31.7	F	1103	1655
	2 - B4434	0.43	4.05	0.8	A	567	850
	3 - Cadoxton South	0.58	5.51	1.4	A	757	1136
2 - B	1 - Cadoxton East	0.78	22.51	3.4	C	478	717
	2 - Golwg Y Gamlas	0.26	12.90	0.3	B	82	123
	3 - Cadoxton West	0.73	12.86	2.7	B	641	961
	4 - Penywern Road	1.05	123.93	41.8	F	947	1421

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	897	224	364	15.06	1315	0.682	889	524	0.0	2.1	8.367	A
	2 - B4434	465	116	444		1690	0.275	463	809	0.0	0.4	2.930	A
	3 - Cadoxton South	621	155	269		1655	0.375	619	638	0.0	0.6	3.495	A
2 - B	1 - Cadoxton East	392	98	668		891	0.441	389	273	0.0	0.8	7.271	A
	2 - Golwg Y Gamlas	67	17	974		606	0.111	67	83	0.0	0.1	6.669	A
	3 - Cadoxton West	524	131	144		1090	0.481	521	897	0.0	0.9	6.356	A
	4 - Penywern Road	777	194	172		1128	0.689	768	492	0.0	2.2	9.896	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1073	268	436	17.98	1303	0.823	1064	628	2.1	4.3	14.674	B
	2 - B4434	555	139	531		1627	0.341	555	968	0.4	0.5	3.355	A
	3 - Cadoxton South	742	186	322		1618	0.459	741	764	0.6	0.8	4.133	A
2 - B	1 - Cadoxton East	469	117	798		814	0.576	466	327	0.8	1.3	10.485	B
	2 - Golwg Y Gamlas	80	20	1165		500	0.161	80	99	0.1	0.2	8.559	A
	3 - Cadoxton West	628	157	172		1074	0.584	626	1073	0.9	1.4	8.092	A
	4 - Penywern Road	928	232	207		1108	0.838	918	591	2.2	4.6	18.225	C

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1254	314	533	22.02	1244	1.008	1194	768	4.3	19.3	47.141	E
	2 - B4434	680	170	597		1580	0.430	679	1131	0.5	0.8	3.993	A
	3 - Cadoxton South	909	227	394		1568	0.580	907	881	0.8	1.4	5.474	A
2 - B	1 - Cadoxton East	574	143	918		743	0.772	567	387	1.3	3.2	20.003	C
	2 - Golwg Y Gamlas	98	25	1366		389	0.253	98	118	0.2	0.3	12.335	B
	3 - Cadoxton West	768	192	210		1053	0.730	763	1254	1.4	2.6	12.377	B
	4 - Penywern Road	1136	284	253		1082	1.050	1052	720	4.6	25.7	64.843	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	1274	318	534	22.02	1243	1.025	1224	769	19.3	31.7	85.217	F
	2 - B4434	680	170	612		1569	0.433	680	1147	0.8	0.8	4.049	A
	3 - Cadoxton South	909	227	395		1567	0.580	909	897	1.4	1.4	5.511	A
2 - B	1 - Cadoxton East	574	143	934		734	0.782	573	392	3.2	3.4	22.512	C
	2 - Golwg Y Gamlas	98	25	1387		377	0.261	98	120	0.3	0.3	12.897	B
	3 - Cadoxton West	769	192	212		1051	0.732	769	1274	2.6	2.7	12.861	B
	4 - Penywern Road	1136	284	255		1081	1.051	1072	726	25.7	41.8	123.929	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1196	299	437	17.98	1303	0.918	1260	630	31.7	15.7	71.132	F
	2 - B4434	555	139	629		1556	0.357	556	1068	0.8	0.6	3.605	A
	3 - Cadoxton South	742	186	323		1618	0.459	744	863	1.4	0.9	4.163	A
2 - B	1 - Cadoxton East	469	117	921		742	0.632	475	356	3.4	1.8	14.079	B
	2 - Golwg Y Gamlas	80	20	1291		431	0.186	81	105	0.3	0.2	10.295	B
	3 - Cadoxton West	630	157	175		1072	0.587	634	1196	2.7	1.5	8.409	A
	4 - Penywern Road	928	232	210		1106	0.839	1067	600	41.8	7.1	84.405	F

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	924	231	366	15.06	1347	0.686	978	527	15.7	2.3	11.260	B
	2 - B4434	465	116	489		1658	0.280	466	855	0.6	0.4	3.022	A
	3 - Cadoxton South	621	155	270		1655	0.376	622	684	0.9	0.6	3.518	A
2 - B	1 - Cadoxton East	392	98	691		877	0.448	396	280	1.8	0.8	7.693	A
	2 - Golwg Y Gamlas	67	17	1003		590	0.114	68	84	0.2	0.1	6.893	A
	3 - Cadoxton West	527	132	146		1089	0.484	529	924	1.5	1.0	6.533	A
	4 - Penywern Road	777	194	175		1126	0.690	796	500	7.1	2.3	11.616	B

2033 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	28.03	D
2	B	Standard Roundabout		1, 2, 3, 4	204.21	F

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)	Run automatically
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	897	100.000
	3 - Cadoxton South		ONE HOUR	✓	1169	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	422	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	216	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	591	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	401	377
		2 - B4434	681	0	216
		3 - Cadoxton South	415	754	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	31	214	176
		2 - Golwg Y Gamlas	80	0	90	45
		3 - Cadoxton West	319	103	0	679
		4 - Penywern Road	122	27	443	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.77	14.82	3.3	B	685	1028
	2 - B4434	0.57	4.89	1.3	A	823	1235
	3 - Cadoxton South	0.98	54.21	18.7	F	1073	1610
2 - B	1 - Cadoxton East	0.50	7.95	1.0	A	387	581
	2 - Golwg Y Gamlas	0.37	8.99	0.6	A	198	297
	3 - Cadoxton West	1.22	422.03	118.9	F	1005	1508
	4 - Penywern Road	0.68	11.69	2.1	B	542	814

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	559	140	564	15.06	1187	0.471	556	822	0.0	0.9	5.725	A
	2 - B4434	675	169	269		1817	0.372	673	851	0.0	0.6	3.139	A
	3 - Cadoxton South	880	220	511		1486	0.593	875	431	0.0	1.4	5.879	A
2 - B	1 - Cadoxton East	318	79	427		1033	0.307	316	385	0.0	0.4	5.101	A
	2 - Golwg Y Gamlas	162	41	623		801	0.203	161	119	0.0	0.3	5.614	A
	3 - Cadoxton West	822	205	226		1044	0.787	808	559	0.0	3.5	14.682	B
	4 - Penywern Road	445	111	369		1015	0.438	442	664	0.0	0.8	6.304	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	670	168	675	17.98	1127	0.595	668	983	0.9	1.5	7.886	A
	2 - B4434	806	202	324		1778	0.454	805	1019	0.6	0.8	3.699	A
	3 - Cadoxton South	1051	263	612		1415	0.743	1046	517	1.4	2.8	9.680	A
2 - B	1 - Cadoxton East	379	95	510		984	0.385	379	456	0.4	0.6	6.048	A
	2 - Golwg Y Gamlas	194	48	747		732	0.265	193	141	0.3	0.4	6.674	A
	3 - Cadoxton West	983	246	270		1018	0.965	949	670	3.5	11.9	40.222	E
	4 - Penywern Road	531	133	435		978	0.544	530	784	0.8	1.2	8.084	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	819	205	801	22.02	1069	0.767	813	1189	1.5	3.1	13.840	B
	2 - B4434	988	247	394		1727	0.572	986	1220	0.8	1.3	4.843	A
	3 - Cadoxton South	1287	322	749		1319	0.976	1241	630	2.8	14.3	35.023	E
2 - B	1 - Cadoxton East	464	116	606		927	0.501	463	504	0.6	1.0	7.872	A
	2 - Golwg Y Gamlas	237	59	914		640	0.371	236	155	0.4	0.6	8.905	A
	3 - Cadoxton West	1189	297	331		984	1.208	979	819	11.9	64.4	152.000	F
	4 - Penywern Road	651	163	463		962	0.677	647	847	1.2	2.0	11.425	B

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	823	206	819	22.02	1066	0.772	822	1201	3.1	3.3	14.818	B
	2 - B4434	988	247	398		1724	0.573	988	1243	1.3	1.3	4.890	A
	3 - Cadoxton South	1287	322	750		1318	0.977	1270	636	14.3	18.7	54.209	F
2 - B	1 - Cadoxton East	464	116	609		925	0.502	464	506	1.0	1.0	7.951	A
	2 - Golwg Y Gamlas	237	59	917		638	0.372	237	156	0.6	0.6	8.988	A
	3 - Cadoxton West	1201	300	332		984	1.221	983	823	64.4	118.9	340.670	F
	4 - Penywern Road	651	163	465		961	0.677	651	850	2.0	2.1	11.691	B

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	676	169	719	17.98	1122	0.602	682	1009	3.3	1.6	8.400	A
	2 - B4434	806	202	331		1773	0.455	808	1070	1.3	0.8	3.739	A
	3 - Cadoxton South	1051	263	614		1413	0.744	1114	525	18.7	3.1	14.499	B
2 - B	1 - Cadoxton East	379	95	519		978	0.388	381	474	1.0	0.7	6.149	A
	2 - Golwg Y Gamlas	194	48	753		729	0.266	195	147	0.6	0.4	6.752	A
	3 - Cadoxton West	1009	252	272		1017	0.992	1009	676	118.9	118.9	422.034	F
	4 - Penywern Road	531	133	459		964	0.551	535	822	2.1	1.3	8.521	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	564	141	572	15.06	1194	0.473	567	828	1.6	0.9	5.827	A
	2 - B4434	675	169	275		1813	0.372	676	864	0.8	0.6	3.168	A
	3 - Cadoxton South	880	220	514		1484	0.593	887	437	3.1	1.5	6.135	A
2 - B	1 - Cadoxton East	318	79	451		1018	0.312	318	452	0.7	0.5	5.244	A
	2 - Golwg Y Gamlas	162	41	629		797	0.204	163	141	0.4	0.3	5.676	A
	3 - Cadoxton West	828	207	227		1043	0.794	1034	564	118.9	67.5	326.295	F
	4 - Penywern Road	445	111	456		966	0.461	447	805	1.3	0.9	7.024	A

2023 + 50 Houses, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	20.82	C
2	B	Standard Roundabout		1, 2, 3, 4	30.05	D

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)	Run automatically
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	566	100.000
	3 - Cadoxton South		ONE HOUR	✓	755	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	477	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	82	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	953	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONE HOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	551	550
		2 - B4434	329	0	236
		3 - Cadoxton South	312	443	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	24	314	139
		2 - Golwg Y Gamlas	19	0	43	19
		3 - Cadoxton West	166	51	0	508
		4 - Penywern Road	170	32	751	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.95	40.49	12.9	E	1015	1523
	2 - B4434	0.39	3.77	0.6	A	519	779
	3 - Cadoxton South	0.52	4.79	1.1	A	693	1040
2 - B	1 - Cadoxton East	0.70	16.02	2.3	C	438	656
	2 - Golwg Y Gamlas	0.22	11.00	0.3	B	75	113
	3 - Cadoxton West	0.67	10.26	2.0	B	589	883
	4 - Penywern Road	0.96	52.03	14.4	F	875	1312

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	827	207	332	15.06	1331	0.621	820	482	0.0	1.6	7.034	A
	2 - B4434	426	106	410		1715	0.248	425	743	0.0	0.3	2.787	A
	3 - Cadoxton South	569	142	247		1671	0.340	567	587	0.0	0.5	3.282	A
2 - B	1 - Cadoxton East	359	90	617		920	0.390	356	251	0.0	0.6	6.475	A
	2 - Golwg Y Gamlas	62	15	898		648	0.095	61	76	0.0	0.1	6.126	A
	3 - Cadoxton West	482	120	132		1097	0.439	478	827	0.0	0.8	5.863	A
	4 - Penywern Road	718	179	158		1136	0.632	711	453	0.0	1.7	8.424	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	990	248	398	17.98	1310	0.756	985	576	1.6	3.0	10.987	B
	2 - B4434	509	127	492		1656	0.307	508	891	0.3	0.4	3.135	A
	3 - Cadoxton South	679	170	296		1637	0.415	678	704	0.5	0.7	3.783	A
2 - B	1 - Cadoxton East	429	107	739		848	0.505	427	301	0.6	1.0	8.677	A
	2 - Golwg Y Gamlas	73	18	1076		550	0.134	73	91	0.1	0.2	7.547	A
	3 - Cadoxton West	576	144	159		1082	0.533	575	990	0.8	1.1	7.168	A
	4 - Penywern Road	857	214	189		1118	0.767	851	544	1.7	3.1	13.339	B

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1190	298	487	22.02	1272	0.935	1163	706	3.0	9.7	28.039	D
	2 - B4434	623	156	581		1591	0.392	622	1069	0.4	0.6	3.711	A
	3 - Cadoxton South	832	208	362		1590	0.523	830	841	0.7	1.1	4.766	A
2 - B	2 - Golwg Y Gamlas	90	23	1294		429	0.210	90	110	0.2	0.3	10.589	B
	3 - Cadoxton West	706	176	194		1062	0.664	702	1190	1.1	1.9	10.039	B
	4 - Penywern Road	1050	262	231		1094	0.959	1016	665	3.1	11.5	36.407	E

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1210	303	488	22.02	1272	0.952	1198	707	9.7	12.9	40.487	E
	2 - B4434	623	156	598		1578	0.395	623	1087	0.6	0.6	3.766	A
	3 - Cadoxton South	832	208	363		1590	0.523	832	859	1.1	1.1	4.787	A
2 - B	1 - Cadoxton East	525	131	902		752	0.698	525	369	2.1	2.3	16.024	C
	2 - Golwg Y Gamlas	90	23	1315		417	0.216	90	111	0.3	0.3	10.996	B
	3 - Cadoxton West	707	177	195		1061	0.666	707	1210	1.9	2.0	10.257	B
	4 - Penywern Road	1050	262	233		1093	0.960	1038	669	11.5	14.4	52.030	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1033	258	399	17.98	1327	0.779	1070	578	12.9	3.8	15.864	C
	2 - B4434	509	127	534		1625	0.313	509	935	0.6	0.5	3.231	A
	3 - Cadoxton South	679	170	297		1636	0.415	681	747	1.1	0.7	3.803	A
2 - B	1 - Cadoxton East	429	107	780		825	0.520	433	312	2.3	1.1	9.481	A
	2 - Golwg Y Gamlas	73	18	1120		526	0.140	74	93	0.3	0.2	7.980	A
	3 - Cadoxton West	578	145	161		1080	0.535	581	1033	2.0	1.2	7.340	A
	4 - Penywern Road	857	214	191		1117	0.767	900	551	14.4	3.6	19.599	C

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	841	210	334	15.06	1357	0.620	849	484	3.8	1.7	7.272	A
	2 - B4434	426	106	424		1705	0.250	426	759	0.5	0.3	2.816	A
	3 - Cadoxton South	569	142	248		1670	0.341	570	602	0.7	0.5	3.299	A
2 - B	1 - Cadoxton East	359	90	629		913	0.393	361	255	1.1	0.7	6.662	A
	2 - Golwg Y Gamlas	62	15	913		640	0.096	62	77	0.2	0.1	6.229	A
	3 - Cadoxton West	484	121	134		1096	0.442	485	841	1.2	0.8	5.981	A
	4 - Penywern Road	718	179	160		1135	0.632	725	460	3.6	1.8	9.016	A

2023 + 50 Houses, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	12.25	B
2	B	Standard Roundabout		1, 2, 3, 4	94.66	F

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)	Run automatically
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	823	100.000
	3 - Cadoxton South		ONE HOUR	✓	1070	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	387	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	197	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	543	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	367	345
		2 - B4434	626	0	197
		3 - Cadoxton South	381	689	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	29	196	163
		2 - Golwg Y Gamlas	73	0	83	42
		3 - Cadoxton West	291	94	0	627
		4 - Penywern Road	112	24	406	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.69	10.71	2.2	B	628	942
	2 - B4434	0.52	4.28	1.1	A	755	1133
	3 - Cadoxton South	0.87	19.36	6.0	C	982	1473
2 - B	1 - Cadoxton East	0.45	6.99	0.8	A	355	533
	2 - Golwg Y Gamlas	0.32	7.78	0.5	A	181	271
	3 - Cadoxton West	1.11	191.01	64.4	F	924	1386
	4 - Penywern Road	0.62	9.90	1.6	A	498	747

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	512	128	516	15.06	1215	0.422	509	756	0.0	0.7	5.132	A
	2 - B4434	620	155	247		1834	0.338	618	778	0.0	0.5	2.955	A
	3 - Cadoxton South	806	201	470		1514	0.532	801	394	0.0	1.1	5.051	A
2 - B	1 - Cadoxton East	291	73	392		1053	0.276	290	353	0.0	0.4	4.791	A
	2 - Golwg Y Gamlas	148	37	572		829	0.179	148	109	0.0	0.2	5.278	A
	3 - Cadoxton West	756	189	208		1054	0.717	746	512	0.0	2.4	11.487	B
	4 - Penywern Road	408	102	338		1033	0.395	406	615	0.0	0.7	5.771	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	614	154	617	17.98	1157	0.531	613	904	0.7	1.1	6.657	A
	2 - B4434	740	185	297		1797	0.412	739	933	0.5	0.7	3.401	A
	3 - Cadoxton South	962	240	563		1450	0.664	959	473	1.1	1.9	7.338	A
2 - B	1 - Cadoxton East	348	87	469		1008	0.345	347	422	0.4	0.5	5.546	A
	2 - Golwg Y Gamlas	177	44	686		766	0.232	177	130	0.2	0.3	6.111	A
	3 - Cadoxton West	904	226	249		1030	0.877	890	614	2.4	6.0	23.797	C
	4 - Penywern Road	488	122	404		995	0.490	487	735	0.7	1.0	7.124	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	751	188	749	22.02	1087	0.691	747	1103	1.1	2.2	10.559	B
	2 - B4434	906	227	362		1750	0.518	905	1134	0.7	1.1	4.252	A
	3 - Cadoxton South	1178	295	689		1361	0.866	1163	578	1.9	5.7	17.158	C
2 - B	1 - Cadoxton East	426	106	564		952	0.447	425	485	0.5	0.8	6.940	A
	2 - Golwg Y Gamlas	217	54	839		681	0.319	216	150	0.3	0.5	7.737	A
	3 - Cadoxton West	1103	276	304		999	1.104	983	751	6.0	36.0	90.317	F
	4 - Penywern Road	597	149	454		967	0.618	595	833	1.0	1.6	9.701	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	754	188	757	22.02	1093	0.690	754	1109	2.2	2.2	10.707	B
	2 - B4434	906	227	365		1748	0.519	906	1146	1.1	1.1	4.277	A
	3 - Cadoxton South	1178	295	690		1360	0.866	1177	582	5.7	6.0	19.361	C
2 - B	1 - Cadoxton East	426	106	567		950	0.448	426	489	0.8	0.8	6.994	A
	2 - Golwg Y Gamlas	217	54	842		680	0.320	217	151	0.5	0.5	7.785	A
	3 - Cadoxton West	1109	277	305		998	1.111	995	754	36.0	64.4	191.005	F
	4 - Penywern Road	597	149	459		964	0.620	597	842	1.6	1.6	9.899	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	618	155	629	17.98	1162	0.532	622	913	2.2	1.2	6.782	A
	2 - B4434	740	185	301		1794	0.412	741	950	1.1	0.7	3.424	A
	3 - Cadoxton South	962	240	564		1448	0.664	978	479	6.0	2.0	7.956	A
2 - B	1 - Cadoxton East	348	87	483		999	0.348	349	458	0.8	0.5	5.648	A
	2 - Golwg Y Gamlas	177	44	690		764	0.232	178	142	0.5	0.3	6.156	A
	3 - Cadoxton West	913	228	250		1030	0.886	1014	618	64.4	39.1	185.902	F
	4 - Penywern Road	488	122	452		968	0.504	490	812	1.6	1.0	7.636	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	517	129	521	15.06	1220	0.424	519	761	1.2	0.7	5.193	A
	2 - B4434	620	155	251		1830	0.339	620	788	0.7	0.5	2.976	A
	3 - Cadoxton South	806	201	472		1513	0.532	809	399	2.0	1.2	5.175	A
2 - B	1 - Cadoxton East	291	73	410		1043	0.279	292	400	0.5	0.4	4.887	A
	2 - Golwg Y Gamlas	148	37	577		826	0.180	149	124	0.3	0.2	5.319	A
	3 - Cadoxton West	761	190	209		1053	0.722	906	517	39.1	2.9	46.103	E
	4 - Penywern Road	408	102	400		998	0.409	410	715	1.0	0.7	6.192	A

2025 + 200 Houses, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	27.33	D
2	B	Standard Roundabout		1, 2, 3, 4	48.15	E

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)	Run automatically
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	580	100.000
	3 - Cadoxton South		ONE HOUR	✓	772	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	487	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	83	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	1007	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONE HOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	575	574
		2 - B4434	339	0	240
		3 - Cadoxton South	322	450	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	25	319	143
		2 - Golwg Y Gamlas	19	0	44	20
		3 - Cadoxton West	169	52	0	525
		4 - Penywern Road	180	34	793	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.98	54.08	18.3	F	1059	1589
	2 - B4434	0.41	3.86	0.7	A	532	798
	3 - Cadoxton South	0.54	4.96	1.2	A	709	1063
2 - B	1 - Cadoxton East	0.73	18.20	2.6	C	447	671
	2 - Golwg Y Gamlas	0.23	11.80	0.3	B	77	115
	3 - Cadoxton West	0.69	11.01	2.2	B	606	909
	4 - Penywern Road	1.02	90.04	28.3	F	924	1386

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	862	215	338	15.06	1329	0.649	855	496	0.0	1.8	7.554	A
	2 - B4434	436	109	427		1703	0.256	435	766	0.0	0.3	2.837	A
	3 - Cadoxton South	581	145	255		1666	0.349	579	607	0.0	0.5	3.333	A
2 - B	1 - Cadoxton East	367	92	650		901	0.407	364	260	0.0	0.7	6.797	A
	2 - Golwg Y Gamlas	63	16	936		627	0.100	62	78	0.0	0.1	6.372	A
	3 - Cadoxton West	496	124	137		1094	0.453	493	862	0.0	0.8	6.022	A
	4 - Penywern Road	758	189	160		1134	0.668	750	469	0.0	2.0	9.276	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1031	258	404	17.98	1312	0.786	1025	594	1.8	3.5	12.359	B
	2 - B4434	521	130	512		1641	0.317	521	917	0.3	0.5	3.210	A
	3 - Cadoxton South	694	174	305		1631	0.426	693	728	0.5	0.7	3.869	A
2 - B	1 - Cadoxton East	438	109	778		826	0.530	436	312	0.7	1.1	9.370	A
	2 - Golwg Y Gamlas	75	19	1120		525	0.143	75	94	0.1	0.2	7.986	A
	3 - Cadoxton West	594	148	164		1079	0.550	592	1031	0.8	1.2	7.457	A
	4 - Penywern Road	905	226	193		1116	0.811	897	563	2.0	4.0	16.021	C

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1221	305	495	22.02	1267	0.964	1185	727	3.5	12.6	34.185	D
	2 - B4434	638	160	592		1583	0.403	637	1088	0.5	0.7	3.802	A
	3 - Cadoxton South	850	213	373		1583	0.537	848	856	0.7	1.2	4.933	A
2 - B	1 - Cadoxton East	536	134	911		747	0.718	531	373	1.1	2.4	16.567	C
	2 - Golwg Y Gamlas	92	23	1329		410	0.224	91	112	0.2	0.3	11.297	B
	3 - Cadoxton West	727	182	199		1059	0.686	723	1221	1.2	2.1	10.731	B
	4 - Penywern Road	1108	277	235		1092	1.015	1048	687	4.0	19.1	52.079	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1243	311	496	22.02	1267	0.981	1220	728	12.6	18.3	54.084	F
	2 - B4434	638	160	610		1570	0.406	638	1107	0.7	0.7	3.861	A
	3 - Cadoxton South	850	213	374		1582	0.537	850	874	1.2	1.2	4.957	A
2 - B	1 - Cadoxton East	536	134	930		736	0.729	536	378	2.4	2.6	18.197	C
	2 - Golwg Y Gamlas	92	23	1352		397	0.231	92	114	0.3	0.3	11.795	B
	3 - Cadoxton West	728	182	201		1058	0.688	728	1243	2.1	2.2	11.014	B
	4 - Penywern Road	1108	277	237		1091	1.016	1071	692	19.1	28.3	90.038	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1116	279	406	17.98	1323	0.844	1165	595	18.3	6.1	27.390	D
	2 - B4434	521	130	582		1590	0.328	522	989	0.7	0.5	3.370	A
	3 - Cadoxton South	694	174	305		1630	0.426	696	798	1.2	0.8	3.893	A
2 - B	1 - Cadoxton East	438	109	861		777	0.564	443	332	2.6	1.4	11.159	B
	2 - Golwg Y Gamlas	75	19	1207		478	0.157	75	98	0.3	0.2	8.962	A
	3 - Cadoxton West	595	149	166		1077	0.553	599	1116	2.2	1.3	7.666	A
	4 - Penywern Road	905	226	195		1115	0.812	998	570	28.3	5.0	43.638	E

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	881	220	340	15.06	1364	0.646	898	498	6.1	1.9	8.077	A
	2 - B4434	436	109	449		1687	0.259	437	789	0.5	0.4	2.880	A
	3 - Cadoxton South	581	145	256		1665	0.349	582	630	0.8	0.5	3.353	A
2 - B	1 - Cadoxton East	367	92	666		891	0.411	369	266	1.4	0.7	7.060	A
	2 - Golwg Y Gamlas	63	16	956		616	0.102	63	79	0.2	0.1	6.512	A
	3 - Cadoxton West	498	125	138		1093	0.456	500	881	1.3	0.9	6.155	A
	4 - Penywern Road	758	189	163		1133	0.669	769	476	5.0	2.1	10.291	B

2025 + 200 Houses, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	14.89	B
2	B	Standard Roundabout		1, 2, 3, 4	140.52	F

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)	Run automatically
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	850	100.000
	3 - Cadoxton South		ONE HOUR	✓	1096	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	399	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	202	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	562	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	377	354
		2 - B4434	650	0	200
		3 - Cadoxton South	396	700	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	29	199	171
		2 - Golwg Y Gamlas	74	0	84	44
		3 - Cadoxton West	296	96	0	659
		4 - Penywern Road	116	25	421	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.71	11.49	2.4	B	645	968
	2 - B4434	0.54	4.48	1.2	A	780	1170
	3 - Cadoxton South	0.90	25.16	7.9	D	1006	1509
2 - B	1 - Cadoxton East	0.47	7.30	0.9	A	366	549
	2 - Golwg Y Gamlas	0.34	8.16	0.5	A	185	278
	3 - Cadoxton West	1.16	286.84	88.5	F	959	1439
	4 - Penywern Road	0.64	10.35	1.8	B	515	773

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	526	132	524	15.06	1210	0.435	523	784	0.0	0.8	5.270	A
	2 - B4434	640	160	253		1829	0.350	638	794	0.0	0.5	3.018	A
	3 - Cadoxton South	825	206	488		1502	0.549	820	404	0.0	1.2	5.283	A
2 - B	1 - Cadoxton East	300	75	404		1046	0.287	299	360	0.0	0.4	4.894	A
	2 - Golwg Y Gamlas	152	38	592		818	0.186	151	111	0.0	0.2	5.391	A
	3 - Cadoxton West	784	196	216		1049	0.748	773	526	0.0	2.8	12.729	B
	4 - Penywern Road	423	106	344		1030	0.411	420	646	0.0	0.7	5.934	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	631	158	627	17.98	1152	0.548	629	939	0.8	1.2	6.931	A
	2 - B4434	764	191	305		1791	0.427	764	951	0.5	0.7	3.499	A
	3 - Cadoxton South	985	246	584		1434	0.687	982	484	1.2	2.2	7.939	A
2 - B	1 - Cadoxton East	359	90	484		999	0.359	358	429	0.4	0.6	5.712	A
	2 - Golwg Y Gamlas	182	45	709		753	0.241	181	132	0.2	0.3	6.291	A
	3 - Cadoxton West	939	235	259		1025	0.916	918	631	2.8	7.9	29.673	D
	4 - Penywern Road	505	126	409		993	0.509	504	769	0.7	1.0	7.407	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	772	193	758	22.02	1084	0.712	767	1143	1.2	2.4	11.284	B
	2 - B4434	936	234	371		1743	0.537	935	1153	0.7	1.1	4.444	A
	3 - Cadoxton South	1207	302	715		1343	0.899	1186	591	2.2	7.2	20.939	C
2 - B	1 - Cadoxton East	439	110	578		943	0.466	438	485	0.6	0.9	7.239	A
	2 - Golwg Y Gamlas	222	56	867		665	0.334	222	149	0.3	0.5	8.099	A
	3 - Cadoxton West	1143	286	317		992	1.153	982	772	7.9	48.2	115.595	F
	4 - Penywern Road	618	155	447		971	0.637	616	852	1.0	1.7	10.155	B

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	775	194	769	22.02	1090	0.711	774	1151	2.4	2.4	11.494	B
	2 - B4434	936	234	375		1740	0.538	936	1168	1.1	1.2	4.476	A
	3 - Cadoxton South	1207	302	716		1342	0.899	1204	595	7.2	7.9	25.156	D
2 - B	1 - Cadoxton East	439	110	581		942	0.466	439	488	0.9	0.9	7.296	A
	2 - Golwg Y Gamlas	222	56	870		664	0.335	222	150	0.5	0.5	8.156	A
	3 - Cadoxton West	1151	288	318		991	1.161	990	775	48.2	88.5	255.939	F
	4 - Penywern Road	618	155	451		969	0.638	618	857	1.7	1.8	10.354	B

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	635	159	644	17.98	1156	0.550	640	950	2.4	1.3	7.105	A
	2 - B4434	764	191	310		1788	0.428	766	974	1.2	0.8	3.531	A
	3 - Cadoxton South	985	246	586		1433	0.688	1008	490	7.9	2.3	8.957	A
2 - B	1 - Cadoxton East	359	90	495		992	0.361	360	456	0.9	0.6	5.809	A
	2 - Golwg Y Gamlas	182	45	714		750	0.242	182	141	0.5	0.3	6.343	A
	3 - Cadoxton West	950	237	261		1024	0.928	1012	635	88.5	72.9	286.841	F
	4 - Penywern Road	505	126	444		973	0.519	508	829	1.8	1.1	7.858	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	531	133	530	15.06	1216	0.437	533	790	1.3	0.8	5.337	A
	2 - B4434	640	160	258		1825	0.351	641	805	0.8	0.5	3.043	A
	3 - Cadoxton South	825	206	490		1500	0.550	829	409	2.3	1.2	5.435	A
2 - B	1 - Cadoxton East	300	75	431		1030	0.292	301	434	0.6	0.4	5.031	A
	2 - Golwg Y Gamlas	152	38	597		815	0.186	152	135	0.3	0.2	5.435	A
	3 - Cadoxton West	790	197	218		1048	0.754	1034	531	72.9	12.0	153.296	F
	4 - Penywern Road	423	106	441		974	0.434	424	811	1.1	0.8	6.623	A

2033 + 200 Houses, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	44.37	E
2	B	Standard Roundabout		1, 2, 3, 4	90.98	F

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)	Run automatically
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	624	100.000
	3 - Cadoxton South		ONE HOUR	✓	831	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	525	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	90	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	1081	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	618	617
		2 - B4434	365	0	259
		3 - Cadoxton South	346	485	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	27	344	154
		2 - Golwg Y Gamlas	21	0	48	21
		3 - Cadoxton West	182	56	0	565
		4 - Penywern Road	193	36	851	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	1.03	90.62	33.9	F	1138	1707
	2 - B4434	0.44	4.08	0.8	A	573	859
	3 - Cadoxton South	0.59	5.61	1.4	A	763	1144
2 - B	1 - Cadoxton East	0.79	23.45	3.6	C	481	722
	2 - Golwg Y Gamlas	0.27	13.13	0.4	B	82	124
	3 - Cadoxton West	0.75	13.62	2.9	B	652	978
	4 - Penywern Road	1.10	181.12	65.6	F	992	1488

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	925	231	364	15.06	1317	0.702	916	533	0.0	2.3	8.872	A
	2 - B4434	470	117	457		1681	0.279	468	822	0.0	0.4	2.965	A
	3 - Cadoxton South	626	156	274		1652	0.379	623	652	0.0	0.6	3.519	A
2 - B	1 - Cadoxton East	395	99	697		874	0.452	392	280	0.0	0.8	7.560	A
	2 - Golwg Y Gamlas	68	17	1004		589	0.115	67	84	0.0	0.1	6.887	A
	3 - Cadoxton West	533	133	147		1088	0.490	530	925	0.0	1.0	6.474	A
	4 - Penywern Road	814	203	173		1127	0.722	804	504	0.0	2.5	10.915	B

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1104	276	436	17.98	1304	0.846	1093	639	2.3	5.0	16.424	C
	2 - B4434	561	140	546		1616	0.347	560	983	0.4	0.5	3.407	A
	3 - Cadoxton South	747	187	328		1614	0.463	746	779	0.6	0.9	4.179	A
2 - B	1 - Cadoxton East	472	118	830		795	0.593	469	334	0.8	1.4	11.181	B
	2 - Golwg Y Gamlas	81	20	1199		482	0.168	80	100	0.1	0.2	8.968	A
	3 - Cadoxton West	639	160	176		1072	0.596	637	1104	1.0	1.5	8.326	A
	4 - Penywern Road	972	243	207		1108	0.877	957	605	2.5	6.0	22.330	C

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1264	316	533	22.02	1244	1.016	1200	782	5.0	21.0	50.628	F
	2 - B4434	687	172	599		1578	0.435	686	1134	0.5	0.8	4.033	A
	3 - Cadoxton South	915	229	401		1563	0.586	913	884	0.9	1.4	5.569	A
2 - B	1 - Cadoxton East	578	144	928		737	0.784	570	390	1.4	3.3	21.045	C
	2 - Golwg Y Gamlas	99	25	1379		382	0.259	98	119	0.2	0.3	12.675	B
	3 - Cadoxton West	782	195	214		1050	0.744	776	1264	1.5	2.8	13.032	B
	4 - Penywern Road	1190	297	253		1082	1.100	1065	737	6.0	37.3	86.097	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	1278	320	534	22.02	1243	1.028	1226	783	21.0	33.9	90.621	F
	2 - B4434	687	172	613		1568	0.438	687	1148	0.8	0.8	4.085	A
	3 - Cadoxton South	915	229	402		1562	0.586	915	898	1.4	1.4	5.609	A
2 - B	1 - Cadoxton East	578	144	939		731	0.790	577	393	3.3	3.6	23.447	C
	2 - Golwg Y Gamlas	99	25	1395		373	0.265	99	120	0.3	0.4	13.131	B
	3 - Cadoxton West	783	196	216		1049	0.746	783	1278	2.8	2.9	13.616	B
	4 - Penywern Road	1190	297	255		1080	1.101	1077	744	37.3	65.6	181.123	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	1214	303	438	17.98	1303	0.932	1270	641	33.9	19.8	81.161	F
	2 - B4434	561	140	635		1552	0.361	562	1073	0.8	0.6	3.637	A
	3 - Cadoxton South	747	187	329		1614	0.463	750	868	1.4	0.9	4.211	A
2 - B	1 - Cadoxton East	472	118	939		731	0.645	478	360	3.6	1.9	14.895	B
	2 - Golwg Y Gamlas	81	20	1311		419	0.193	81	106	0.4	0.2	10.660	B
	3 - Cadoxton West	641	160	179		1070	0.599	646	1214	2.9	1.5	8.692	A
	4 - Penywern Road	972	243	210		1106	0.879	1089	615	65.6	36.2	170.563	F

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1043	261	366	15.06	1347	0.774	1107	536	19.8	3.7	18.718	C
	2 - B4434	470	117	553		1611	0.292	470	920	0.6	0.4	3.156	A
	3 - Cadoxton South	626	156	275		1651	0.379	627	748	0.9	0.6	3.548	A
2 - B	1 - Cadoxton East	395	99	815		804	0.491	399	307	1.9	1.0	9.135	A
	2 - Golwg Y Gamlas	68	17	1124		523	0.129	68	90	0.2	0.1	7.916	A
	3 - Cadoxton West	536	134	149		1087	0.493	538	1043	1.5	1.0	6.666	A
	4 - Penywern Road	814	203	175		1126	0.723	947	512	36.2	2.8	35.316	E

2033 + 200 Houses, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 2 - B4434 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked Roundabout	1 - A - 1 - Cadoxton North	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - B - 3 - Cadoxton West	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	33.48	D
2	B	Standard Roundabout		1, 2, 3, 4	246.77	F

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)	Run automatically
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - B	3 - Cadoxton West	1	1	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	915	100.000
	3 - Cadoxton South		ONE HOUR	✓	1180	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	429	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	217	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	604	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	406	381
		2 - B4434	699	0	216
		3 - Cadoxton South	426	754	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	31	214	184
		2 - Golwg Y Gamlas	80	0	90	47
		3 - Cadoxton West	319	103	0	708
		4 - Penywern Road	124	27	453	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	0	2
		2 - B4434	0	0	0
		3 - Cadoxton South	2	0	2

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	2	2
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	2	0	2	1
		4 - Penywern Road	1	0	1	1

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.78	15.23	3.4	C	694	1042
	2 - B4434	0.59	5.05	1.4	A	840	1259
	3 - Cadoxton South	1.00	67.23	24.2	F	1083	1625
2 - B	1 - Cadoxton East	0.51	8.19	1.1	A	394	591
	2 - Golwg Y Gamlas	0.38	9.28	0.6	A	200	299
	3 - Cadoxton West	1.26	509.98	146.7	F	1032	1548
	4 - Penywern Road	0.69	11.99	2.2	B	555	832

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	566	142	564	15.06	1187	0.477	563	843	0.0	0.9	5.789	A
	2 - B4434	689	172	273		1815	0.380	686	854	0.0	0.6	3.184	A
	3 - Cadoxton South	889	222	525		1476	0.602	883	434	0.0	1.5	6.049	A
2 - B	1 - Cadoxton East	323	81	434		1028	0.314	321	386	0.0	0.5	5.173	A
	2 - Golwg Y Gamlas	164	41	636		793	0.206	163	119	0.0	0.3	5.699	A
	3 - Cadoxton West	843	211	233		1040	0.811	827	566	0.0	3.9	16.132	C
	4 - Penywern Road	455	114	369		1016	0.448	452	691	0.0	0.8	6.410	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	679	170	674	17.98	1127	0.602	677	1009	0.9	1.5	8.024	A
	2 - B4434	823	206	328		1775	0.463	822	1023	0.6	0.9	3.773	A
	3 - Cadoxton South	1061	265	628		1404	0.756	1055	521	1.5	3.0	10.230	B
2 - B	1 - Cadoxton East	386	96	518		979	0.394	385	455	0.5	0.7	6.167	A
	2 - Golwg Y Gamlas	196	49	763		723	0.270	195	140	0.3	0.4	6.809	A
	3 - Cadoxton West	1009	252	279		1014	0.995	963	679	3.9	15.5	48.733	E
	4 - Penywern Road	543	136	431		980	0.554	542	810	0.8	1.2	8.256	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	830	208	794	22.02	1074	0.773	823	1217	1.5	3.2	14.101	B
	2 - B4434	1007	252	399		1723	0.585	1005	1219	0.9	1.4	4.998	A
	3 - Cadoxton South	1300	325	768		1305	0.996	1242	636	3.0	17.2	40.213	E
2 - B	1 - Cadoxton East	473	118	615		922	0.513	471	499	0.7	1.1	8.102	A
	2 - Golwg Y Gamlas	239	60	932		629	0.380	239	153	0.4	0.6	9.187	A
	3 - Cadoxton West	1217	304	341		978	1.244	975	830	15.5	75.8	179.627	F
	4 - Penywern Road	665	166	452		968	0.687	662	864	1.2	2.1	11.715	B

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	834	208	813	22.02	1070	0.779	833	1229	3.2	3.4	15.231	C
	2 - B4434	1007	252	403		1720	0.586	1007	1243	1.4	1.4	5.052	A
	3 - Cadoxton South	1300	325	770		1304	0.997	1272	641	17.2	24.2	67.229	F
2 - B	1 - Cadoxton East	473	118	617		920	0.514	473	501	1.1	1.1	8.187	A
	2 - Golwg Y Gamlas	239	60	936		627	0.382	239	154	0.6	0.6	9.283	A
	3 - Cadoxton West	1229	307	342		978	1.257	977	834	75.8	138.8	398.696	F
	4 - Penywern Road	665	166	453		968	0.688	665	866	2.1	2.2	11.995	B

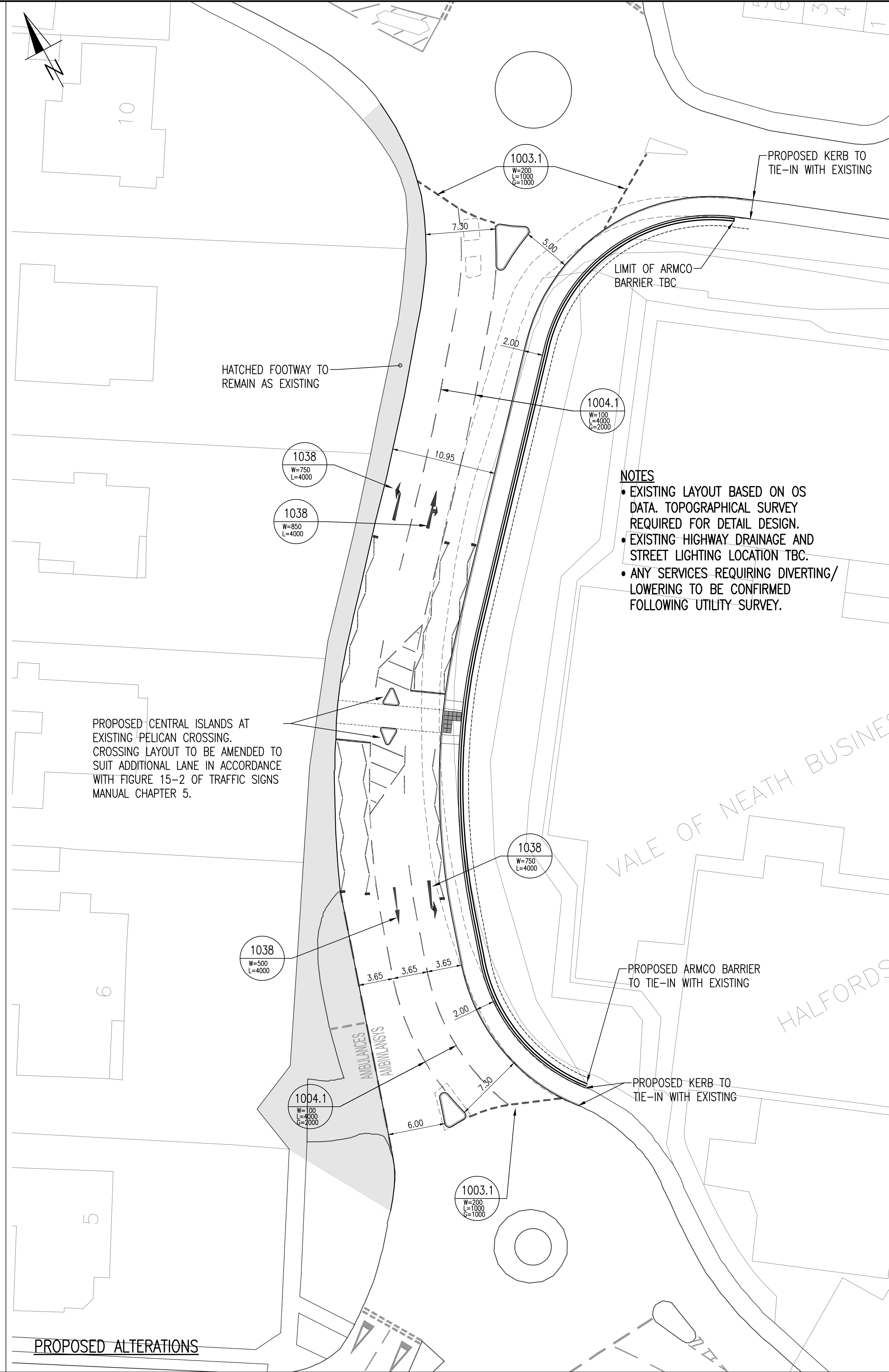
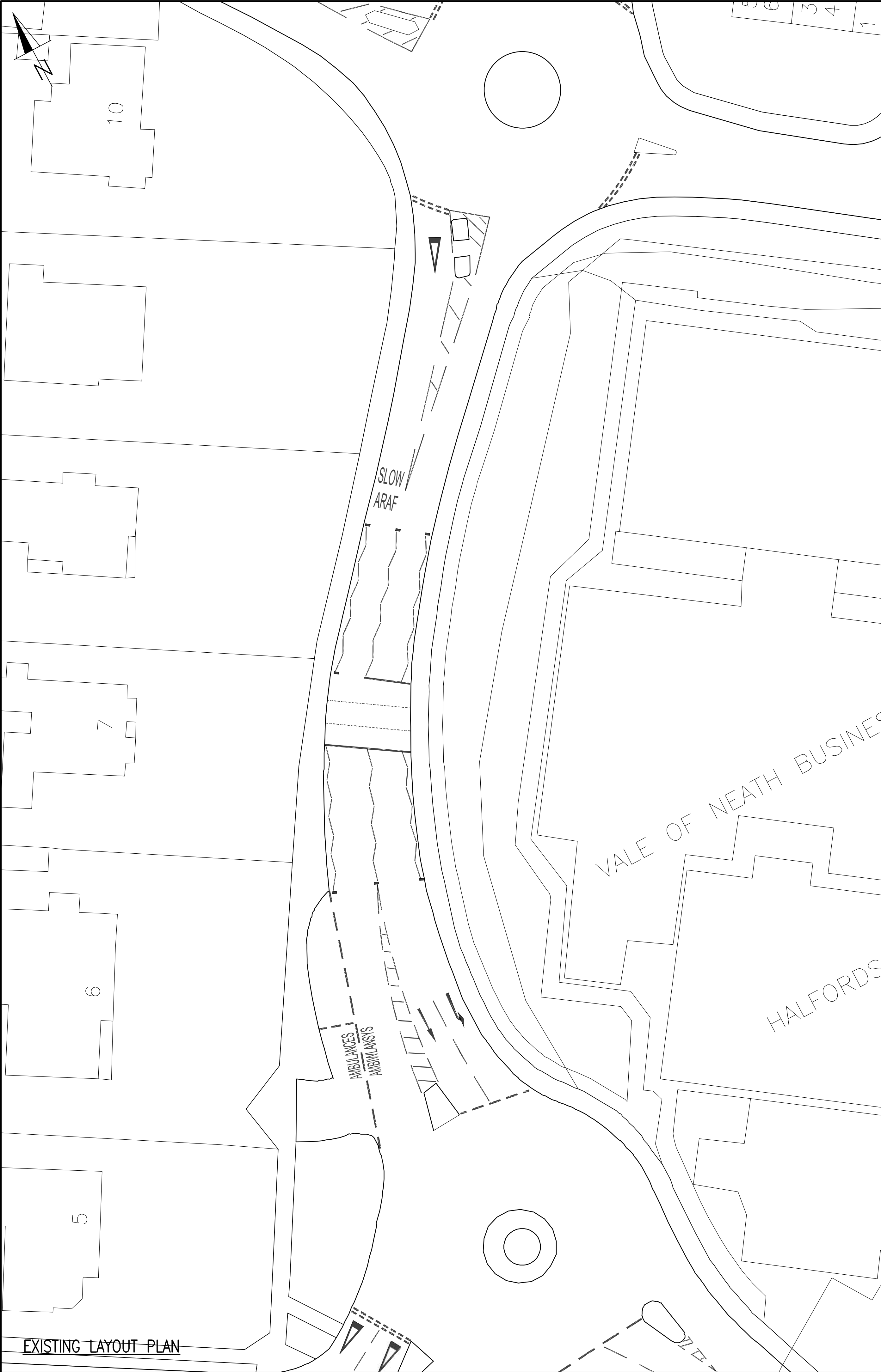
17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	685	171	732	17.98	1116	0.614	692	1043	3.4	1.6	8.713	A
	2 - B4434	823	206	335		1769	0.465	825	1088	1.4	0.9	3.817	A
	3 - Cadoxton South	1061	265	630		1402	0.757	1144	529	24.2	3.3	18.411	C
2 - B	1 - Cadoxton East	386	96	526		974	0.396	388	470	1.1	0.7	6.268	A
	2 - Golwg Y Gamlas	196	49	769		720	0.272	196	145	0.6	0.4	6.887	A
	3 - Cadoxton West	1043	261	281		1013	1.030	1011	685	138.8	146.7	509.976	F
	4 - Penywern Road	543	136	450		969	0.560	547	842	2.2	1.3	8.668	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise level of service
1 - A	1 - Cadoxton North	572	143	573	15.06	1194	0.479	575	850	1.6	0.9	5.898	A
	2 - B4434	689	172	278		1811	0.380	690	869	0.9	0.6	3.214	A
	3 - Cadoxton South	889	222	527		1474	0.603	896	441	3.3	1.6	6.342	A
2 - B	1 - Cadoxton East	323	81	457		1015	0.318	324	445	0.7	0.5	5.313	A
	2 - Golwg Y Gamlas	164	41	642		790	0.207	164	138	0.4	0.3	5.756	A
	3 - Cadoxton West	850	213	235		1039	0.819	1031	572	146.7	101.5	434.207	F
	4 - Penywern Road	455	114	445		972	0.468	457	821	1.3	0.9	7.074	A

Appendix M



GENERAL NOTES

- DO NOT SCALE THIS DRAWING.
- CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ENGINEER.
- ANY DISCREPANCY TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.

NOTES

- EXISTING LAYOUT BASED ON OS DATA. TOPOGRAPHICAL SURVEY REQUIRED FOR DETAIL DESIGN.
- EXISTING HIGHWAY DRAINAGE AND STREET LIGHTING LOCATION TBC.
- ANY SERVICES REQUIRING DIVERTING/ LOWERING TO BE CONFIRMED FOLLOWING UTILITY SURVEY.

Rev.	Detail	By	Date
Revisions			
Reinforcement schedules nos.			

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Client
HALE CONSTRUCTION

Project
RESIDENTIAL DEVELOPMENT AT LEIROS PARK NEATH

Drawing Title
SECTION 278 CADDOXTON ROAD ENGINEERING PLAN

Project No.
C0589

Drawing No.
C-S278-01

Scales
1:250

Date
21.08.18

Revision
-

Drawn
DH

Checked
DG

Sheet Size
A1

PRELIMINARY

Appendix N

Junctions 9							
ARCADY 9 - Roundabout Module							
Version: 9.5.1.7462 © Copyright TRL Limited, 2019							
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: Roundabouts Option 4B NPTC Half Way Q Limiter on June `18 (DC).j9

Path: K:\T20\Jobs\T20.143 Leiros Park\Analysis\Junctions 9

Report generation date: 23/09/2020 20:23:07

»2033 + 200 Houses, AM

»2033 + 200 Houses, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
2033 + 200 Houses								
1 - A - 1 - Cadoxton North	D13	3.9	10.61	0.80	D14	1.4	5.92	0.58
1 - A - 2 - B4434		1.0	5.29	0.49		3.4	10.21	0.78
1 - A - 3 - Cadoxton South		1.0	4.06	0.50		5.0	14.47	0.84
2 - B - 1 - Cadoxton East		2.6	16.70	0.73		0.8	6.47	0.46
2 - B - 2 - Golwg Y Gamlas		0.3	10.13	0.22		0.4	6.78	0.31
2 - B - 3 - Cadoxton West		0.7	3.03	0.39		1.8	5.20	0.64
2 - B - 4 - Penywern Road		13.1	42.22	0.95		1.6	8.75	0.62

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.

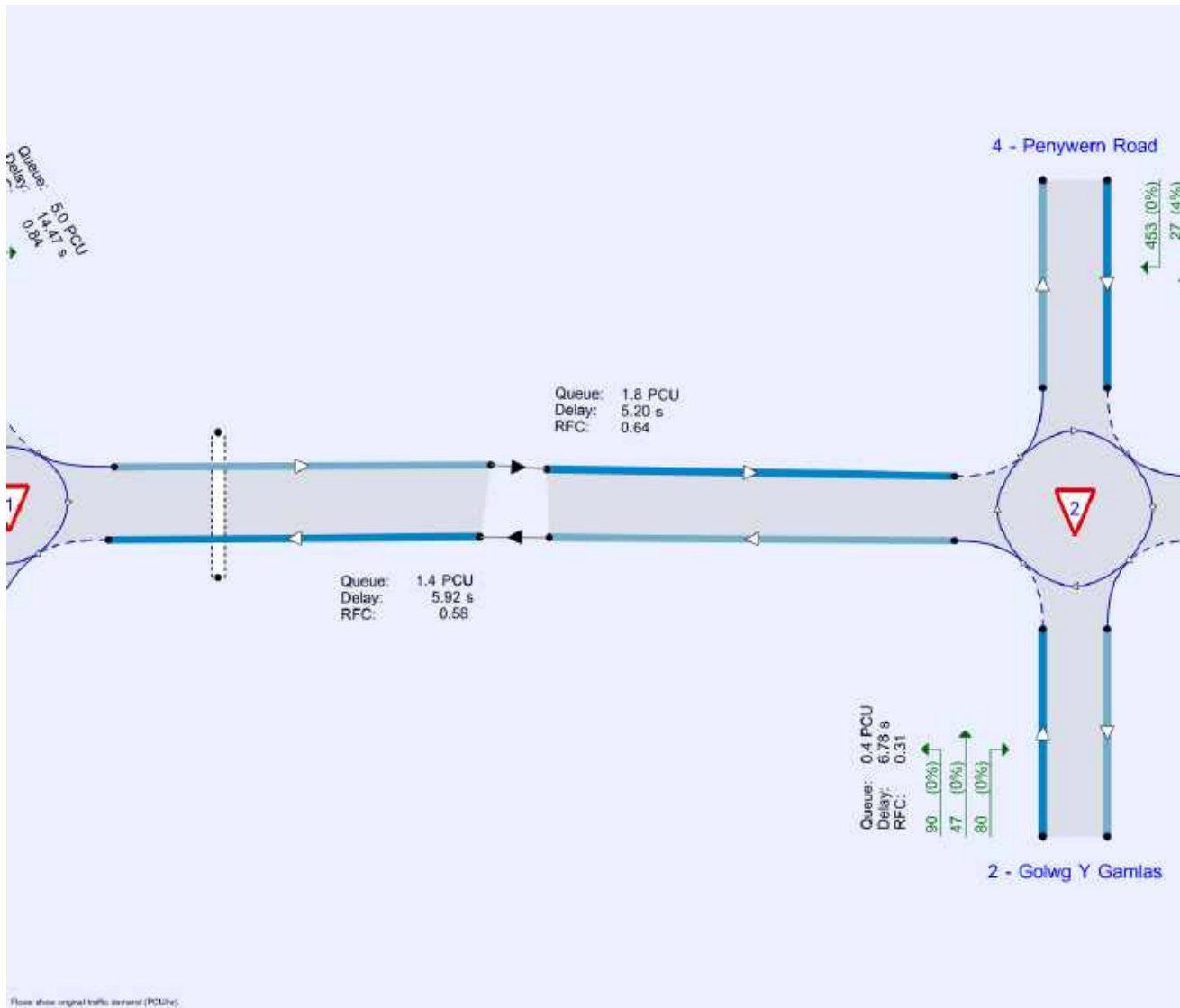
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	08/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Louie
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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	
D3	2023 Baseline	AM	ONE HOUR	07:45	09:15	15	
D4	2023 Baseline	PM	ONE HOUR	16:45	18:15	15	
D5	2025 Baseline	AM	ONE HOUR	07:45	09:15	15	
D6	2025 Baseline	PM	ONE HOUR	16:45	18:15	15	
D7	2033 Baseline	AM	ONE HOUR	07:45	09:15	15	
D8	2033 Baseline	PM	ONE HOUR	16:45	18:15	15	
D9	2023 + 50 Houses	AM	ONE HOUR	07:45	09:15	15	
D10	2023 + 50 Houses	PM	ONE HOUR	16:45	18:15	15	
D11	2025 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	
D12	2025 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	✓	100.000	100.000

2033 + 200 Houses, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 1 - Cadoxton North - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	2 - B - 3 - Cadoxton West - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	7.36	A
2	B	Standard Roundabout		1, 2, 3, 4	23.88	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1 - A	1	Cadoxton North	
	2	B4434	
	3	Cadoxton South	
2 - B	1	Cadoxton East	
	2	Golwg Y Gamlas	
	3	Cadoxton West	
	4	Penywern Road	

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A	1 - Cadoxton North	3.90	7.81	41.3	20.0	28.3	26.8	
	2 - B4434	5.20	7.88	4.6	18.8	28.3	26.5	
	3 - Cadoxton South	4.96	7.08	30.0	32.5	28.3	19.7	
2 - B	1 - Cadoxton East	4.05	5.56	2.3	20.0	28.0	19.7	
	2 - Golwg Y Gamlas	3.65	5.51	3.2	20.0	28.0	27.0	
	3 - Cadoxton West	3.90	7.80	51.3	20.5	28.0	21.3	
	4 - Penywern Road	3.60	6.00	6.1	13.8	28.0	24.6	

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - A	1 - Cadoxton North	11.00	3.00	2.00	3.00	5.00	6.00	30.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1 - A	1 - Cadoxton North	0.748	2114
	2 - B4434	0.698	1876
	3 - Cadoxton South	0.766	2137
2 - B	1 - Cadoxton East	0.615	1426
	2 - Golwg Y Gamlas	0.585	1318
	3 - Cadoxton West	0.772	2199
	4 - Penywern Road	0.599	1407

The slope and intercept shown above include any corrections and adjustments.

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)	Run automatically
D13	2033 + 200 Houses	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Queue limited	Normal	0	100.00	17.00
2 - B	3 - Cadoxton West	1	1	Queue limited	Normal	0	100.00	17.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	624	100.000
	3 - Cadoxton South		ONE HOUR	✓	831	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	525	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	90	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	1081	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONE HOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A

	To			
		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
From	1 - Cadoxton North	0	618	617
	2 - B4434	365	0	259
	3 - Cadoxton South	346	485	0

Demand (PCU/hr)

2 - B

	To				
		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
From	1 - Cadoxton East	0	27	344	154
	2 - Golwg Y Gamlas	21	0	48	21
	3 - Cadoxton West	182	56	0	565
	4 - Penywern Road	193	36	851	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A

	To			
		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
From	1 - Cadoxton North	0	1	3
	2 - B4434	5	0	5
	3 - Cadoxton South	3	3	0

Heavy Vehicle Percentages

2 - B

	To				
		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
From	1 - Cadoxton East	0	0	3	1
	2 - Golwg Y Gamlas	0	0	0	0
	3 - Cadoxton West	3	2	0	6
	4 - Penywern Road	1	0	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.80	10.61	3.9	B	1139	1708
	2 - B4434	0.49	5.29	1.0	A	573	859
	3 - Cadoxton South	0.50	4.06	1.0	A	763	1144
2 - B	1 - Cadoxton East	0.73	16.70	2.6	C	481	722
	2 - Golwg Y Gamlas	0.22	10.13	0.3	B	82	124
	3 - Cadoxton West	0.39	3.03	0.7	A	652	978
	4 - Penywern Road	0.95	42.22	13.1	E	992	1488

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	928	232	364	15.06	1784	0.520	924	534	0.0	1.1	4.249	A
	2 - B4434	470	117	461		1553	0.302	468	826	0.0	0.5	3.476	A
	3 - Cadoxton South	626	156	274		1928	0.325	624	656	0.0	0.5	2.841	A
2 - B	1 - Cadoxton East	395	99	700		996	0.397	392	281	0.0	0.7	6.074	A
	2 - Golwg Y Gamlas	68	17	1008		729	0.093	67	84	0.0	0.1	5.436	A
	3 - Cadoxton West	534	133	147		2085	0.256	532	928	0.0	0.4	2.431	A
	4 - Penywern Road	814	203	173		1304	0.624	807	506	0.0	1.7	7.288	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1111	278	436	17.98	1737	0.640	1109	639	1.1	1.8	5.819	A
	2 - B4434	561	140	554		1489	0.377	560	991	0.5	0.6	4.067	A
	3 - Cadoxton South	747	187	328		1886	0.396	747	786	0.5	0.7	3.252	A
2 - B	1 - Cadoxton East	472	118	838		911	0.518	470	336	0.7	1.1	8.317	A
	2 - Golwg Y Gamlas	81	20	1207		613	0.132	81	101	0.1	0.2	6.764	A
	3 - Cadoxton West	639	160	176		2063	0.310	638	1111	0.4	0.5	2.653	A
	4 - Penywern Road	972	243	208		1283	0.757	966	606	1.7	3.0	11.365	B

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1339	335	533	22.02	1684	0.795	1331	782	1.8	3.8	10.188	B
	2 - B4434	687	172	665		1411	0.487	686	1200	0.6	1.0	5.197	A
	3 - Cadoxton South	915	229	401		1830	0.500	914	949	0.7	1.0	4.042	A
2 - B	1 - Cadoxton East	578	144	1005		808	0.715	572	407	1.1	2.4	15.285	C
	2 - Golwg Y Gamlas	99	25	1455		467	0.212	98	122	0.2	0.3	9.745	A
	3 - Cadoxton West	782	195	215		2033	0.384	781	1339	0.5	0.7	3.017	A
	4 - Penywern Road	1190	297	254		1255	0.948	1158	741	3.0	10.9	30.841	D

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1360	340	534	22.02	1705	0.798	1360	783	3.8	3.9	10.609	B
	2 - B4434	687	172	679		1401	0.490	687	1215	1.0	1.0	5.291	A
	3 - Cadoxton South	915	229	402		1829	0.500	915	964	1.0	1.0	4.056	A
2 - B	1 - Cadoxton East	578	144	1024		796	0.726	577	412	2.4	2.6	16.696	C
	2 - Golwg Y Gamlas	99	25	1478		454	0.218	99	124	0.3	0.3	10.128	B
	3 - Cadoxton West	783	196	216		2032	0.385	783	1360	0.7	0.7	3.026	A
	4 - Penywern Road	1190	297	255		1255	0.948	1181	744	10.9	13.1	42.224	E

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	1151	288	437	17.98	1761	0.654	1159	641	3.9	2.0	6.179	A
	2 - B4434	561	140	579		1471	0.381	562	1017	1.0	0.7	4.164	A
	3 - Cadoxton South	747	187	329		1885	0.396	749	812	1.0	0.7	3.268	A
2 - B	1 - Cadoxton East	472	118	874		888	0.531	477	345	2.6	1.2	9.073	A
	2 - Golwg Y Gamlas	81	20	1249		588	0.137	81	103	0.3	0.2	7.107	A
	3 - Cadoxton West	641	160	179		2061	0.311	641	1151	0.7	0.5	2.666	A
	4 - Penywern Road	972	243	209		1282	0.758	1011	611	13.1	3.4	15.206	C

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	942	235	366	15.06	1797	0.524	945	536	2.0	1.1	4.329	A
	2 - B4434	470	117	472		1546	0.304	470	839	0.7	0.5	3.519	A
	3 - Cadoxton South	626	156	275		1926	0.325	627	667	0.7	0.5	2.853	A
2 - B	1 - Cadoxton East	395	99	711		989	0.399	397	284	1.2	0.7	6.241	A
	2 - Golwg Y Gamlas	68	17	1023		720	0.094	68	85	0.2	0.1	5.520	A
	3 - Cadoxton West	536	134	149		2084	0.257	537	942	0.5	0.4	2.445	A
	4 - Penywern Road	814	203	175		1303	0.625	820	510	3.4	1.7	7.691	A

2033 + 200 Houses, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A - 1 - Cadoxton North - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	2 - B - 3 - Cadoxton West - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A	Standard Roundabout		1, 2, 3	10.79	B
2	B	Standard Roundabout		1, 2, 3, 4	6.48	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)	Run automatically
D14	2033 + 200 Houses	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - A	1 - Cadoxton North	2	3	Queue limited	Normal	0	100.00	17.00
2 - B	3 - Cadoxton West	1	1	Queue limited	Normal	0	100.00	17.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A	1 - Cadoxton North	✓				
	2 - B4434		ONE HOUR	✓	1125	100.000
	3 - Cadoxton South		ONE HOUR	✓	1180	100.000
2 - B	1 - Cadoxton East		ONE HOUR	✓	429	100.000
	2 - Golwg Y Gamlas		ONE HOUR	✓	217	100.000
	3 - Cadoxton West	✓				
	4 - Penywern Road		ONE HOUR	✓	604	100.000

Demand overview (Pedestrians)

Junction	Am	Profile type	Average pedestrian flow (Ped/hr)
1 - A	1 - Cadoxton North	[ONEHOUR]	20.00
	2 - B4434		
	3 - Cadoxton South		
2 - B	1 - Cadoxton East		
	2 - Golwg Y Gamlas		
	3 - Cadoxton West		
	4 - Penywern Road		

Origin-Destination Data

Demand (PCU/hr)

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	406	381
		2 - B4434	699	0	426
		3 - Cadoxton South	426	754	0

Demand (PCU/hr)

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	31	214	184
		2 - Golwg Y Gamlas	80	0	90	47
		3 - Cadoxton West	319	103	0	708
		4 - Penywern Road	124	27	453	0

Vehicle Mix

Heavy Vehicle Percentages

1 - A		To			
	From		1 - Cadoxton North	2 - B4434	3 - Cadoxton South
		1 - Cadoxton North	0	1	0
		2 - B4434	1	0	1
		3 - Cadoxton South	1	1	0

Heavy Vehicle Percentages

2 - B		To				
	From		1 - Cadoxton East	2 - Golwg Y Gamlas	3 - Cadoxton West	4 - Penywern Road
		1 - Cadoxton East	0	0	1	0
		2 - Golwg Y Gamlas	0	0	0	0
		3 - Cadoxton West	0	0	1	1
		4 - Penywern Road	1	4	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A	1 - Cadoxton North	0.58	5.92	1.4	A	695	1042
	2 - B4434	0.78	10.21	3.4	B	1033	1549
	3 - Cadoxton South	0.84	14.47	5.0	B	1083	1625
2 - B	1 - Cadoxton East	0.46	6.47	0.8	A	394	591
	2 - Golwg Y Gamlas	0.31	6.78	0.4	A	200	299
	3 - Cadoxton West	0.64	5.20	1.8	A	1032	1548
	4 - Penywern Road	0.62	8.75	1.6	A	555	832

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	567	142	565	15.06	1634	0.347	565	843	0.0	0.5	3.376	A
	2 - B4434	847	212	274		1684	0.503	843	857	0.0	1.0	4.301	A
	3 - Cadoxton South	889	222	524		1736	0.512	884	593	0.0	1.0	4.250	A
2 - B	1 - Cadoxton East	323	81	436		1158	0.279	322	390	0.0	0.4	4.320	A
	2 - Golwg Y Gamlas	164	41	637		946	0.173	163	121	0.0	0.2	4.594	A
	3 - Cadoxton West	843	211	233		2019	0.418	840	567	0.0	0.7	3.064	A
	4 - Penywern Road	455	114	374		1184	0.384	452	699	0.0	0.6	4.925	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	680	170	676	17.98	1551	0.438	679	1009	0.5	0.8	4.143	A
	2 - B4434	1012	253	329		1646	0.615	1009	1026	1.0	1.6	5.689	A
	3 - Cadoxton South	1061	265	627		1657	0.640	1058	711	1.0	1.8	6.046	A
2 - B	1 - Cadoxton East	386	96	523		1105	0.349	385	468	0.4	0.5	5.026	A
	2 - Golwg Y Gamlas	196	49	763		872	0.224	195	145	0.2	0.3	5.317	A
	3 - Cadoxton West	1009	252	279		1984	0.509	1008	680	0.7	1.0	3.707	A
	4 - Penywern Road	543	136	448		1139	0.477	542	839	0.6	0.9	6.043	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	831	208	823	22.02	1444	0.576	829	1230	0.8	1.3	5.864	A
	2 - B4434	1239	310	401		1595	0.777	1232	1250	1.6	3.4	9.815	A
	3 - Cadoxton South	1300	325	766		1551	0.838	1287	868	1.8	4.8	13.239	B
2 - B	1 - Cadoxton East	473	118	638		1033	0.457	472	570	0.5	0.8	6.424	A
	2 - Golwg Y Gamlas	239	60	934		772	0.310	239	176	0.3	0.4	6.737	A
	3 - Cadoxton West	1230	308	341		1936	0.636	1227	831	1.0	1.7	5.095	A
	4 - Penywern Road	665	166	546		1080	0.616	663	1023	0.9	1.6	8.595	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	834	208	830	22.02	1445	0.577	834	1238	1.3	1.4	5.924	A
	2 - B4434	1239	310	404		1594	0.777	1239	1260	3.4	3.4	10.214	B
	3 - Cadoxton South	1300	325	770		1548	0.840	1299	873	4.8	5.0	14.467	B
2 - B	1 - Cadoxton East	473	118	641		1031	0.458	473	574	0.8	0.8	6.473	A
	2 - Golwg Y Gamlas	239	60	937		771	0.311	239	177	0.4	0.4	6.776	A
	3 - Cadoxton West	1238	310	342		1935	0.640	1238	834	1.7	1.8	5.198	A
	4 - Penywern Road	665	166	550		1078	0.617	665	1030	1.6	1.6	8.753	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	684	171	686	17.98	1551	0.441	686	1021	1.4	0.8	4.192	A
	2 - B4434	1012	253	332		1644	0.615	1019	1040	3.4	1.6	5.883	A
	3 - Cadoxton South	1061	265	633		1652	0.642	1074	718	5.0	1.8	6.421	A
2 - B	1 - Cadoxton East	386	96	527		1102	0.350	387	473	0.8	0.5	5.072	A
	2 - Golwg Y Gamlas	196	49	768		869	0.225	196	146	0.4	0.3	5.354	A
	3 - Cadoxton West	1021	255	280		1983	0.515	1023	684	1.8	1.1	3.786	A
	4 - Penywern Road	543	136	454		1135	0.478	546	849	1.6	0.9	6.156	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A	1 - Cadoxton North	572	143	570	15.06	1637	0.349	573	850	0.8	0.5	3.405	A
	2 - B4434	847	212	277		1682	0.504	850	865	1.6	1.0	4.382	A
	3 - Cadoxton South	889	222	528		1733	0.513	892	599	1.8	1.1	4.338	A
2 - B	1 - Cadoxton East	323	81	440		1155	0.280	324	394	0.5	0.4	4.356	A
	2 - Golwg Y Gamlas	164	41	642		943	0.174	164	122	0.3	0.2	4.625	A
	3 - Cadoxton West	850	212	234		2018	0.421	851	572	1.1	0.7	3.109	A
	4 - Penywern Road	455	114	378		1181	0.385	456	707	0.9	0.6	4.993	A