Carmarthen County Council

Machynys Hotel

Transport Assessment

9591

Issue 1 | 16 December 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1 Introduction

1.1 Context

This Transport Assessment (TA) has been prepared by Ove Arup and Partners Ltd ('Arup') and accompanies an application for outline planning permission for a new 140-bed hotel, located on land to the west of Nicklaus Avenue, Machynys, Llanelli, Carmarthenshire. The application is submitted to Camarthenshire County Council (CCC) on behalf of the Applicant, Camarthenshire County Council.

The proposed development is described as follows:

"*140-bed hotel with associated car parking, access roads, landscape and infrastructure works, including the importation of material for infilling of land to raise level for the development*."

Previous relevant planning applications submitted within the Machynys area include:

- TA for the full planning application of the Llanelli Wellness and Life Sciences Village (LWLV) located north of the Delta Lakes Roundabout and proposed hotel site. The proposal was granted outline planning consent in June 2019 (application ref: S/36948);
- Transport Statement (TS) for the Machynys Central Residential Development (35 residential units) located to the west of the proposed hotel site. The proposal is being prepared by Arup and still under review. The application will be submitted in 2021; and
- A previous TA for the proposed Machynys hotel development (125 beds) prepared by Waterman Civils which was granted full planning permission in 2010 (application ref: S/22367) but no subsequent application has been submitted to extend the permission and therefore this expired in March 2015.

This TA provides an update on the previous TA prepared by Waterman (as detailed above) in support of the development of a 140-bed hotel. The TA considers the transport implications of the proposed hotel development on the surrounding area and provides detail of measures which can be taken to encourage the uptake of sustainable transport by future visitors, employees, and deliveries associated with the proposal.

Whilst all matters are reserved, it is assumed the proposed hotel development will include the following for the purposes of this TA:

- 140 hotel rooms over up to four floors;
- office/conferencing facilities;
- a hotel restaurant/bar;
- Landscaped grounds;
- visitors and employee car park and;
- a pond/new reen for rainwater attenuation.

Note that all proposals apart including access are reserved matters and therefore details within this TA are indicative and subject to change within the parameters approved under the outline planning application.

1.2 Scoping

The content of the previous TA prepared by Waterman in 2008 was informed by a scoping exercise agreed by Carmarthenshire County Council (CCC).

In light of the intervening period this scoping exercise has been repeated to ensure that CCC agree the approach to assessment. Following discussion with CCC Highways and Transport Division it was agreed that an updated outline TA would be appropriate for a development of this scale making use of background knowledge from recent planning applications and associated TAs for neighbouring developments. Scoping correspondence (via e-mail and a videoconference) with CCC Highways is included as Appendix A.

1.3 Report Structure

This report is structured as follows:

- Chapter 2 sets out the transport and planning policy framework;
- Chapter 3 describes the site location and existing transport network;
- Chapter 4 outlines the development proposals;
- Chapter 5 presents the projected travel demand from the Machynys Hotel development;
- Chapter 6 presents the Transport Implementation Strategy (TIS);
- Chapter 7 assesses the impact on surrounding junctions against the TIS;
- Chapter 8 identifies the potential impacts of construction traffic on the surrounding area;
- Chapter 9 presents the Framework Travel Plan; and
- Chapter 10 summarises key conclusions of the Transport Assessment.

2 Legislation and Policy Context

2.1 National Policy

2.1.1 Taking Wales Forward 2016-2021

Taking Wales Forward is the current Programme for Government and sets out how the Welsh Government will deliver more and better jobs through a stronger, fairer economy, improve and reform its public services to build a united, connected and sustainable Wales.

It emphasises that the UK withdrawal from the European Union creates some uncertainty and challenges, but the Welsh Government's mandate is clear: The Welsh Government's relentless focus will be on driving improvement in the economy and public services. To create a prosperous and secure Wales, Welsh Government will support rural transport, and invest in transport to ensure that people can travel easily to jobs.

2.1.2 Planning Policy Wales: Edition 10 (December 2018)

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs). The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

Chapter 2 (People and Places: Achieving Well-being through Placemaking) indicates all development decisions should contribute towards the making of Sustainable Places and improved well-being. Five Key Principles are presented in PPW which should be embraced to ensue planning facilitates the right development in the right place. These are listed below alongside a summary of how the project is considered to positively contribute to these goals:

- *Growing our economy in a sustainable manner* – development should contribute to long-term economic well-being, making the best use of existing infrastructure and planning for new supporting infrastructure and services;
- *Making best use of resources* – using resources efficiently, development should be resilient to climate change and contribute towards decarbonising society;
- *Facilitating accessible and healthy environments* – development should support healthy lives, providing high-quality places that are barrier-free and inclusive to all members of society;
- *Creating and sustaining communities* – places should have the right mix of good homes, job, services, infrastructure and facilities, creating urban and rural communities where people want to be and interact with others; and

- *Maximising environmental protection and limiting environmental impact* – natural, historic and cultural assets should be protected and enhanced whilst negative environmental impacts should be avoided in the wider public interest.

Chapter 3 (Strategic and Spatial Choices) identifies five key aspects of good design, as summarised in Figure 1. It states good design is inclusive design, placing people at the heart of the design process. It must reduce inequality of access to essential services, education and employment and design measures with design measures improving accessibility by walking, cycling and public transport.

Figure 1: Five Aspects of Good Design (PPW 10)

It is also noted that good design should avoid the creation of car-based developments by maximising opportunities for people to make sustainable and healthy travel choices for their daily journeys. To maximise accessibility by sustainable non-car modes, infrastructure proposed within the site should be integrated with existing infrastructure such as the strategic cycling network.

Chapter 4 (Active and Social Places) discusses the *well-connected cohesive communities' components of placemaking*, covering transport, housing retail and commercial development including hotels, community facilities and recreational spaces. With regards to transport, it states people should have access to jobs and services through more efficient and sustainable journeys, by walking, cycling and public transport.

It is also noted land use and transport planning should be integrated, including:

- 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.

The sustainable transport hierarchy presented in Figure 2, which prioritises walking, cycling and public transport ahead of the private motor vehicles, 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.

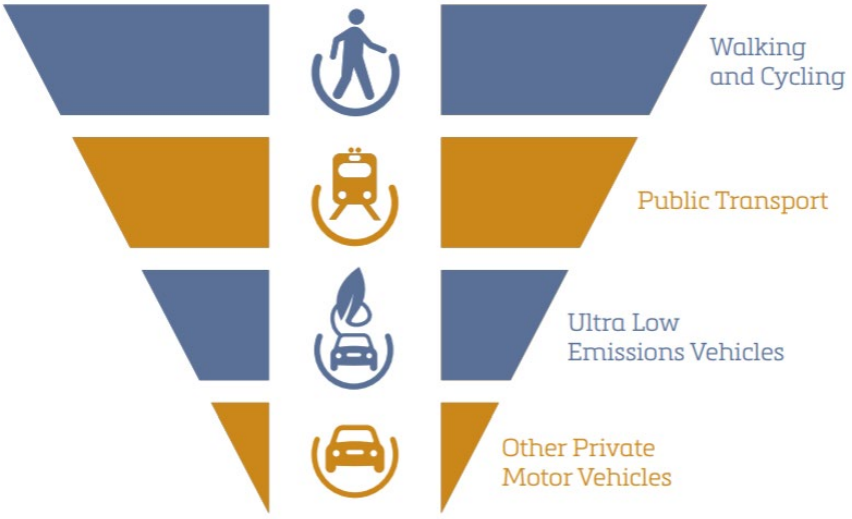

Figure 2: Sustainable Transport Hierarchy (PPW Edition 10)

Chapter 5 (Productive and Enterprising Places) considers the economic theme of place-making. It states *the provision of sustainable transport infrastructure is essential in order to build prosperity, tackle climate change, reduce airborne pollution and to improve the social, economic, environmental and cultural well-being of Wales*.

2.1.3 Active Travel Act (2013) and Interactive Mapping

The Active Travel (Wales) Act 2013 makes it a legal requirement for Local Authorities in Wales to map and plan for suitable routes for Active Travel and to build and improve their infrastructure for walking and cycling every year. It creates new duties for highways authorities to consider the needs of walkers and cyclists and make better provision for them. It also requires both the Welsh Government and local authorities to promote walking and cycling as a mode of transport so that local communities rely less on cars when making short journeys.

In the context of transport schemes and improvements, there is significant opportunity to reconfigure existing infrastructure so that it better meets the needs of existing and new settlements and facilitates active travel. For example, bypass

road schemes can address settlement severance and in doing so provide opportunities for active travel because pedestrians and cyclists would no longer need to compete with significant volumes of vehicular traffic for short journeys in the locality.

2.1.4 Technical Advice Note 18: Transport

The Advice Note elaborates on the relationship between land use planning and transport infrastructure by outlining a range of key principles that should be adopted in new development. These include:

- Ensuring new development is located where there is, or will be, good access by public transport, walking and cycling, thereby minimising the need for travel and fostering social inclusion;
- Managing parking provision;
- Ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;
- Encouraging the location of development near other related uses to encourage multi-purpose trips; and
- Promoting cycling and walking and supporting the provision of high quality, inclusive public transport.

2.1.5 Wales Spatial Plan (2008)

The 2008 update to the Wales Spatial Plan (WSP) sets out the planning agenda at a spatial level. There are five guiding themes which underpin the national vision:

- Building sustainable communities;
- Promoting a sustainable economy;
- Valuing our environment;
- Achieving sustainable accessibility; and
- Respecting distinctiveness.

Machynys falls within the 'Swansea Bay – Waterfront and Western Valleys' region of South Wales.

2.1.6 The Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act (2015) requires public bodies in Wales to consider the long-term impacts of decision making and improve working with local communities to prevent persistent problems in Wales such as poverty, health inequalities and climate change. Seven well-being goals have been identified within the Act to ensure public bodies are working towards the same goals:

- **A prosperous Wales** that has an innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately;
- **A resilient Wales** that maintains and enhances a biodiverse natural environment which has the capacity to adapt to change;
- **A healthier Wales** in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood;
- **A more equal Wales** where people can achieve their full potential regardless of their background or circumstances;
- **A Wales of cohesive communities** which are attractive, viable, safe and well-connected;
- **A Wales of vibrant culture and Welsh language**; and
- **A globally responsible Wales** which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

2.1.7 Wales Transport Strategy: One Wales – Connecting the Nation (April 2008)

In informing the strategic priorities of the National Transport Plan (NTP), the Wales Transport Strategy identifies a range of outcomes that should be achieved over the longer term. These include the need for improved connectivity and reliability across networks. The following key principles are identified as critical to the future transport policy agenda:

- achieving a more effective and efficient transport system;
- achieving greater use of the more sustainable and healthy forms of travel;
- minimising demands on the transport system; and
- reducing the impact of transport on greenhouse gas emissions.

2.1.8 National Transport Plan (July 2009)

The NTP provides a basis for taking forward the delivery of the integrated transport strategy proposed with the Wales Transport Strategy. The NTP includes several aims that are intended to maximise the benefits associated with improving transport. Those relevant to the east-west corridor in south Wales include the following:

- to improve the reliability, quality and frequency of east-west rail; and
- to improve reliability, journey time and safety along the east-west road corridor.

2.1.9 Welcome to Wales 2020 - 2025

Welcome to Wales is the current plan which outlines the vision for the future tourism economy and the priorities for Visit Wales. Visit Wales is the team within

Welsh Government that is responsible for the development and promotion of the visitor economy in Wales. The ambition is to delight visitors and locals in equal measures, improving the quality of the visitor experience across Wales in a way that also benefits the local people.

The development of iconic products must align directly with a purposeful place-making approach which provide the attractions, facilities and basic infrastructure that visitors look for. Visit Wales will lead on driving forward integrated place-making programmes in destinations where tourism is either the main or a key economic sector.

This will be achieved by investing in tourism products and events that deliver wider social, environmental, cultural and health benefits. Figure 3 below, shows the four key priorities for Visit Wales to deliver this plan.

Figure 3: Visit Wales key priorities and actions in the Welcome to Wales plan

Visit Wales recognise that visitors also need good transport connections, vibrant destinations that are open for business and well managed natural and cultural resources. Therefore, infrastructure and transport are major factors affecting the future of tourism in Wales. Visit Wales will work with transport bodies and stakeholders to ensure major infrastructure programmes are delivered with tourism front in mind.

The *Low Carbon Action Plan* looks to reduce the transport sector of emissions by encouraging the use of public transport and active travel. Visit Wales recognise that international flights are still an issue in meeting the 2030 low carbon targets but note that international visitors make an important long-term contribution to jobs and spend in Wales, and therefore will investigate new approaches to carbon offsetting, that benefits Wales.

2.2 Regional Policy

2.2.1 Joint transport plan for South West Wales (2015-2020)

The joint Transport Plan for South West Wales (JTP) is between four local authorities comprising of Carmarthenshire, Neath Port Talbot, Swansea and Pembroke. The Plan influences transport policy in the region for the period 2015-2020 and beyond.

The vision of the JTP is to improve transport and access within and beyond the region to facilitate economic regeneration, reduce deprivation and support the development and use of more sustainable and healthier mode of transport.

Carmarthenshire County Council Schemes (2015-2020) include the Llanelli Integrated Transport Interchange scheme. The Station Road/Copperworks Road areas of Llanelli are a key focal point for transport interchange between a number of modes including the railway station, key commercial bus routes and a park and ride (rail) facility. Unfortunately, this area has suffered in terms of accessibility and substandard facilities leading to a less than satisfactory transport offer. A number of studies have been undertaken investigating potential solutions to the issues of interchange, accessibility, safety and security; this scheme would take forward the recommendations arising from these pieces of work.

The JTP also look at medium- and long-term programmes (2020-2030). Schemes which could impact the Machynys hotel site are listed below;

- Llanelli Park and Ride: This is the development of a Park & Ride facility to promote sustainable transport at site to be determined;
- South Llanelli JV - Transport Infrastructure: Implementing mitigation measures at potential Air Quality Management Areas derived from traffic congestion;
- Transport Masterplans - Llanelli, Carmarthen and Ammanford: The three main urban centres in Carmarthenshire are currently the subject of economic development and regeneration studies in line with the Swansea Bay Economic Regeneration Strategy, the outcomes of this work will inevitably include requirements to improve the transport offer to from in and around the centres; and
- Dualling the A4138: This is a longer-term aspiration for the stretch of highway linking the M4 to the important regional urban centre of Llanelli.

2.3 Local Policy

2.3.1 Local Development Plan 2014 (Adopted)

The development plan for the area is the Carmarthenshire County Council's (CCC) Local Development Plan (LDP), adopted in 2014 for the period 2006-2021. The plan supports sustainable development, encouraging an integrated and sustainable transport system.

Section 6.5 of the LDP relates to Transport and Accessibility and includes four policies relevant to the proposed development:

Policy TR1 Primary and Core Road Networks: proposals which do not restrict traffic movement and/or compromise the safety of the primary road network and core network will, where appropriate be supported.

Policy TR2 Location of Development – Transport Considerations: proposals which have a potential for significant trip generation will be permitted where:

- It is in a manner consistent with the plans strategic objectives, its settlement framework and its policies and proposals;
- It is accessible to non-car modes of transport including public transport, cycling and walking;
- Provision is made for the non-car modes of transport and for those with mobility difficulties in the design of the proposal and the provision of onsite facilities; and
- Travel Plans have been considered and where appropriate incorporated.

Policy TR3 Highways in Developments - Design Considerations: the design and layout of all development proposals will, where appropriate, be required to include:

- An integrated network of convenient and safe pedestrian and cycle routes (within and from the site) which promotes the interests of pedestrians, cyclists and public transport;
- Suitable provision for access by public transport;
- Appropriate parking and where applicable, servicing space in accordance with required standards;
- Infrastructure and spaces allowing safe and easy access for those with mobility difficulties;
- Required access standards reflective of the relevant class of road and speed restrictions including visibility splays and design features and calming measures necessary to ensure highway safety and the ease of movement is maintained, and where required enhanced;
- Provision for Sustainable Urban Drainage Systems to allow for the disposal of surface water runoff from the highway.

It also states that proposals which do not generate unacceptable levels of traffic on the surrounding road network and would not be detrimental to highway safety or cause significant harm to the amenity of residents will be permitted.

In addition to this, the policy refers to the fact that proposals which will not result in offsite congestion in terms of parking or service provision or where the capacity of the network is enough to serve the development will be permitted.

Policy TR4 Cycling and Walking: land required to facilitate the following improvements to the cycle network will be safeguarded. Proposed routes where

known are shown on the proposals map. The potential opportunity for horse riding should where appropriate be considered.

Developments should, where appropriate seek to incorporate, or where acceptable, facilitate links to the cycle, rights of way and bridleway network to ensure an integrated sustainable approach in respect of any site.

Section 6.10 of the adopted LDP relates to Tourism. The Tourism Vision for Carmarthenshire 2005-2015 outlines some key values that express the potential social and economic benefits of tourism related development. It also confirms the importance of conserving and enhancing the environment.

In terms of challenges, the vision states that the area's activity/wet weather and natural environment potential is unfulfilled. The challenges for the sector include facilitating diversity and augmenting the quality and variety of accommodation and enhancing the County's "all year round" destination offer.

Tourism has a spatial dimension within Carmarthenshire, with the post-industrial coastal area (including access to the All Wales Coastal Path) being home to large scale regional attractions such as the Millennium Coastal Park and further inland, Ffos Las Racecourse and the northern rural areas such as the Brechfa Forest renowned for outdoor activity offers such as mountain biking. The merits of tourism related proposals should therefore be considered in the context of the County's rich and diverse attractions.

Clear national guidance in respect of this topic is contained within PPW: Edition 7: Tourism, Sport and Recreation and TAN13: - Tourism, TAN6: Agriculture and Rural Development, TAN16: Sport, Recreation and Open Space. Consequently, the following matters do not require LDP policies as they are adequately covered by the aforementioned national guidance:

- Farm Diversification and re use/adaptation of rural buildings (see also policies H5 and EMP4);
- Off road recreation;
- Golf Courses; and
- Leisure facilities being incorporated into tourism development.

2.3.2 Local Development Plan 2018-2033 (Deposit)

The Revised LDP 2018 – 2033 will replace the current adopted Plan which is currently scheduled for adoption in December 2021.

Strategic Policy SP 17 relates to Transport and Accessibility. This states that sustainable and deliverable development requires an integrated, accessible, reliable, efficient, safe and sustainable transport network to underpin delivery. The Plan therefore contributes to the delivery of a sustainable transport system and associated infrastructure through:

1. Reducing the need to travel, particularly by private motor car;

2. Addressing social inclusion through increased accessibility to employment, services and facilities;
3. Supporting and, where applicable, enhancing alternatives to the motor car, such as public transport (including park and ride facilities and encouraging the adoption of travel plans) and active travel through cycling and walking;
4. Re-enforcing the function and role of settlements in accordance with the settlement framework;
5. Promoting the efficient use of the transport network;
6. Enhancing accessibility to places of employment, homes, services, facilities and other significant trip generating proposals at locations with access to appropriate transport infrastructure;
7. The incorporation of design and access solutions within developments to promote accessibility;
8. Providing walking and cycling routes, linking in with active travel and green infrastructure networks;
9. Providing for new technological solutions through Ultra Low Emission Vehicles Charging Points in new developments; and
10. Adopting a sustainable approach to the design, function and layout of new development, including providing appropriate levels of parking.

2.3.3 South Llanelli Planning and Development Brief 2014

The Supplementary Planning Guidance (SPG) South Llanelli Planning and Development Brief includes further guidance and elaborates on the proposals and policies of the CCC LDP to provide additional clarity to assist developers understanding the core requirements for the area.

The South Llanelli Strategic Zone is comprised of the following sites which are expected to contribute to the regeneration aspirations of South Llanelli: Delta Lakes; Machynys; The Avenue; North Dock and Old Castle Works.

The Brief indicates that south Llanelli is well serviced by strategic and sustainable transport links however specific/localised capacity issues may need to be evaluated.

2.4 Summary

The chapter has set out the policy context against which this TA should be considered. Key policy documents have been found to be relevant to the proposed development are likely to influence the way people access the site in future. The main points and relevance are:

- The site must plan for successful transport by public transport, walking and cycling and prioritise design for these modes over the needs of the private car;

- The development should encourage the use of ULEVs and the provision of charging points;
- The development should look to connect with the All Wales Coastal Path;
- The development should look to improve the experience of Llanelli for visitors whilst also benefitting local people; and
- The TA should consider measures required for all modes to minimise and mitigate the effects of development.

3 Existing Conditions

3.1 Introduction

This section presents the findings of an audit that was undertaken to assess current movement patterns and the provision of existing transport networks serving the site.

3.2 Site Location

The Machynys hotel site is situated to the south of Llanelli town centre, adjacent to the Machynys Roundabout which serves the B4304, The Avenue and access to the golf course south of the site. The site boundary is depicted by the red line boundary shown in Figure 4.The blue line boundary represents the proposed Machynys Residential Development.

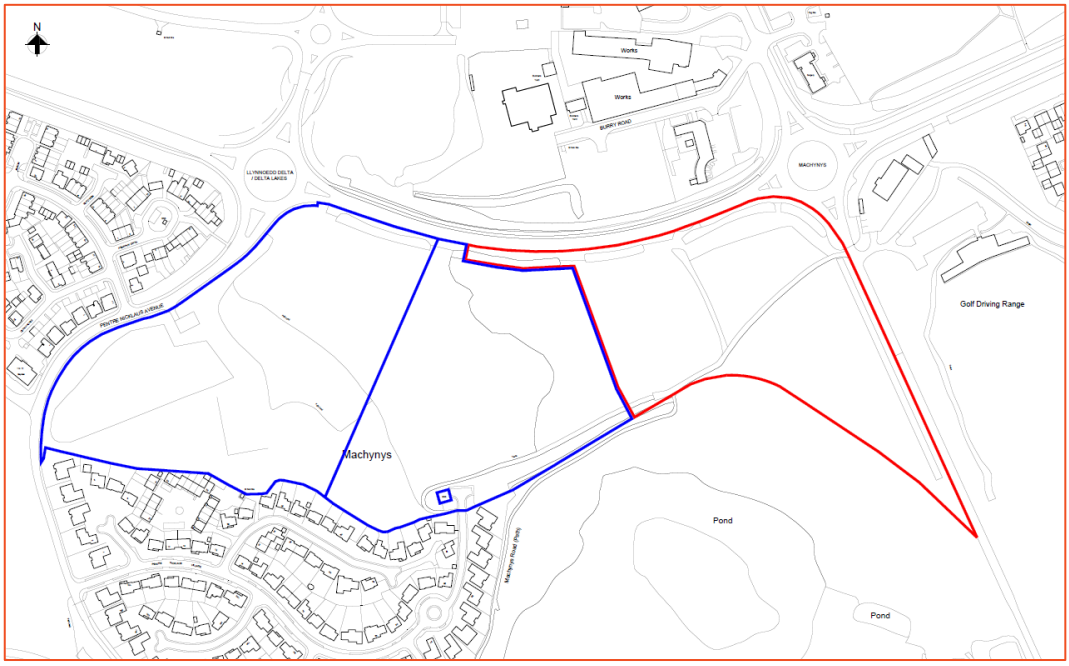

Figure 4: Site Location

The site is located approximately 2km to the south of Llanelli town centre on the edge of the existing built-up area and adjacent to the B4304 Coastal Road. There is no existing access to the site area.

3.3 Existing and surrounding Land uses

The hotel site is currently an area of open land consisting of rough grass and scrubland. The site is generally flat with some localised raised areas of ground close to the B4304 and located between the Delta Lakes roundabout.

Surrounding the site are several recently constructed or planned development sites. The Machynys South residential site phases 1 and 2 (415 units) lies south west of the hotel site and is accessed via the Delta Lakes roundabout.

Close to the site is the Machynys West residential development accessed from the Delta Lakes roundabout consists of 205 residential units.

The area of land between the B4304 and The Avenue, known as Delta Lakes, is proposed to be developed as a health-led mixed-use development named the Llanelli Wellness and Life sciences Village (LWLV). The proposals have been granted outline planning consent and it is understood that a reserved matters application is being prepared for Phase 1. As part of this scheme, improvements are proposed to the local transport network including footways, cycleways, bus stop and service improvements and highway mitigation.

3.4 Active Travel

The site is bounded to the north by the B4304 Coastal Road. To the north of this road there is an existing shared cycleway/footway which runs parallel to the road to the east and west and is approximately 2.8m wide. At the nearby Delta Lakes and Machynys roundabouts to the east and west respectively there are uncontrolled pedestrian crossings with dropped kerbs and tactile paving. There are no pedestrian or cycle facilities on the southern side of the road; this is also the case for significant lengths of the Coastal Road. In the wider area most roads do not have specific cycle facilities.

The footway/cycleway adjacent to the Coastal Road connects into the wider pedestrian network. Pedestrians in Llanelli are generally well provided for both by footways adjacent to roads and public footpaths. There has been a programme of improvements throughout Llanelli to provide dropped kerbs and appropriate tactile pavement facilities at pedestrian crossing points to ensure accessibility for the disabled and mobility impaired.

Improvements to the existing pedestrian and cycle network are proposed as part of the LWLV development, including the following:

- High quality pedestrian and cycle routes through the site;
- Footway provision on the north and east side of the B4304 Coastal Link road;
- Signal-controlled crossings on the B4304 Coastal Link Road; and
- Contribution towards pedestrian and cycle improvements of Copperworks Road.

The CIHT guidance Providing for Journeys on Foot (2000) suggests for journeys to school and commutes to work, the preferred maximum walking distance is 2,000m equating to a 25-minute walk. Whereas other local facilities should be within 1,200m walking distance of a site which equates to a 15-minute walk.

Figure 5 presents the existing infrastructure for pedestrians and cyclists including several Public Right of Ways (PROWs) and cycle routes. The plan also illustrates local facilities within the vicinity of the development site including a public house/club/bars, parks and retail.

Figure 6 illustrates the walking accessibility of the Machynys site. Within ten minutes' walk of the site there are local shops and schools, the railway station is

located within 20 minutes' walk and the Llanelli town centre and Parc Trostre retail area within 30 minutes.

Figure 7 illustrates the cycling accessibility of the Machynys site. Within five minutes' cycle there are local shops and schools. Within 10 minutes cycle ride most of the town centre can be reached as well as the Trostre Retail Park. Within 15 minutes cycle a large proportion of the urban area can be reached. The topography and scale of Llanelli are well suited to cycling however at present levels of cycling in Llanelli are low, particularly cycling journeys made for utility purposes such as shopping or commuting to work.

Since the completion of the Millennium Coastal Path, as illustrated on Figure 5, Llanelli has become a destination for leisure cycling; the Millennium Coastal Path is a seven-kilometre section of the long distance National Cycle Network (NCN) Route 4, Celtic Trail West and is a traffic free route. Near Llanelli, the route runs along the coastline and provides links to Burry Port and Gowerton.

Photograph 1: Millennium Coastal Path (NCN Route 4)

The provision of cycle parking, a pre-requisite to encouraging utility cycling journeys, appears to be minimal around Llanelli. There is cycle parking at the Millennium Coastal Park Discovery Centre and covered stands at the railway station but elsewhere there are few facilities.

A3

A B C D E F G

1 2 3 4 5 6

Legend:

- Site Border
- LLanelli Train Station
- Bus Stops
- Cycle Routes
- Public Right of Ways
- Future Pedestrian Links Associated with the LWLV Proposals
- Schools
- Public House / Club / Bar
- Retail
- Parks / Recriational Grounds
- Doctor / GP
- Doctor / GP

Issue	Date	By	Chkd	Appd
P01	15/12/2020	OL	AI	AI

Preliminary

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Client

Carmarthenshire County Council

Job Title

Machynys Hotel Development

Drawing Title

Figure 5: Machynys Hotel Sustainable Travel Plan of study area

Scale at A3 NTS

Discipline Highways

Drawing Status

Preliminary

Job No	Drawing No	Issue
278688	CH-MCH-001	P01

Do not scale

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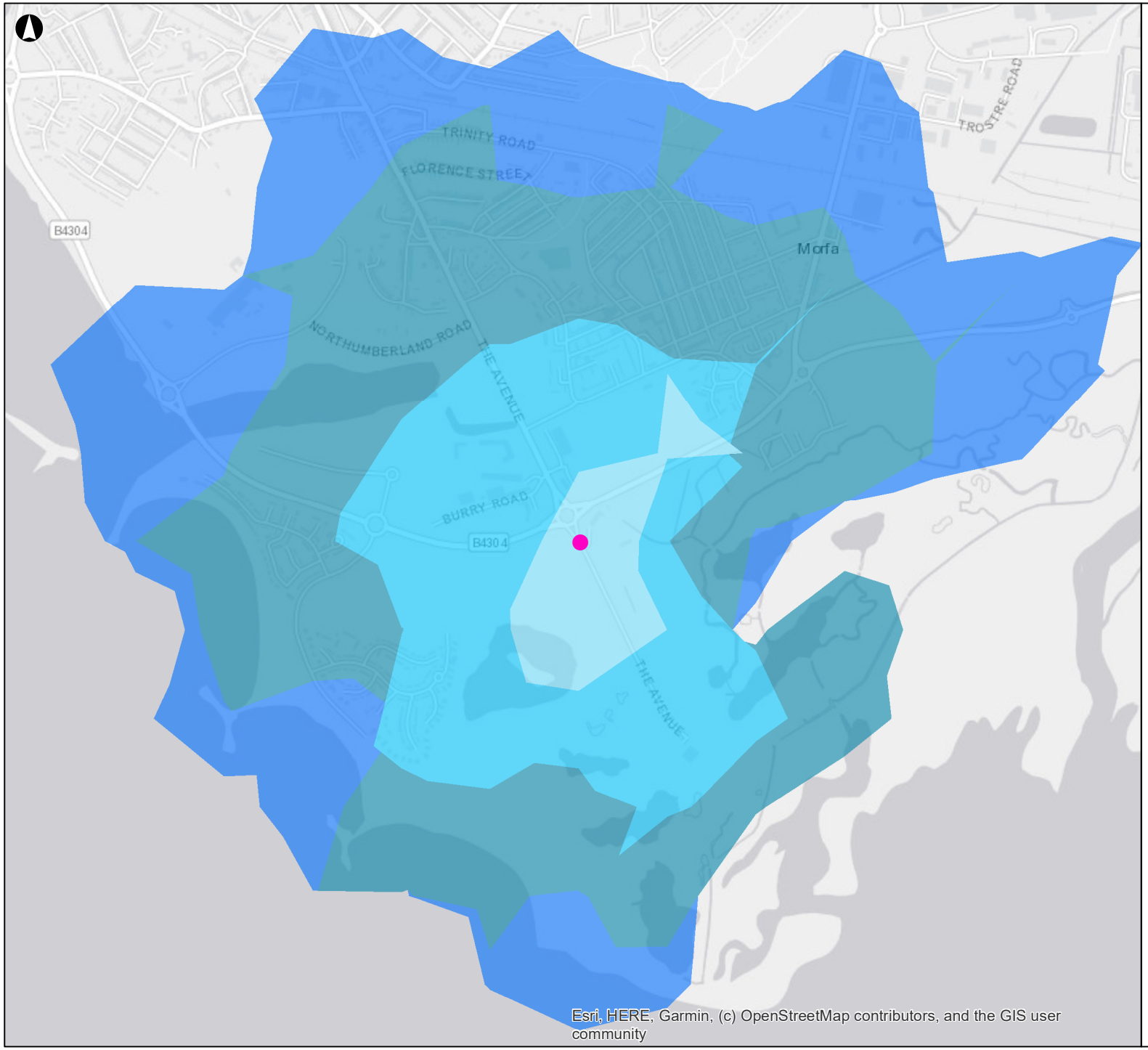
\\globa\europe\Cardiff\Jobs\246000\246235-004 Internal Project Data\4-30 Drawings\4-33 Civil\CH_Highways\CH-MCH-001.dgn

A4



Site

Traveltime

- Under 5 mins
- 5 - 10 mins
- 10 - 15 mins
- 15 - 20 mins

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

Metres

0 260 520 1,040

Rev	Date	By	Chkd	Appd
P0	2020-12-07	LS	AI	AW

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Carmarthenshire County Council

Project Title

Machynys Hotel

Drawing Title

Figure 6: Walking Accessibility

Scale at A4

1:20,000

Role

Suitability

Preliminary

Arup Job No	Rev
246235-00	**P0**

Name

002

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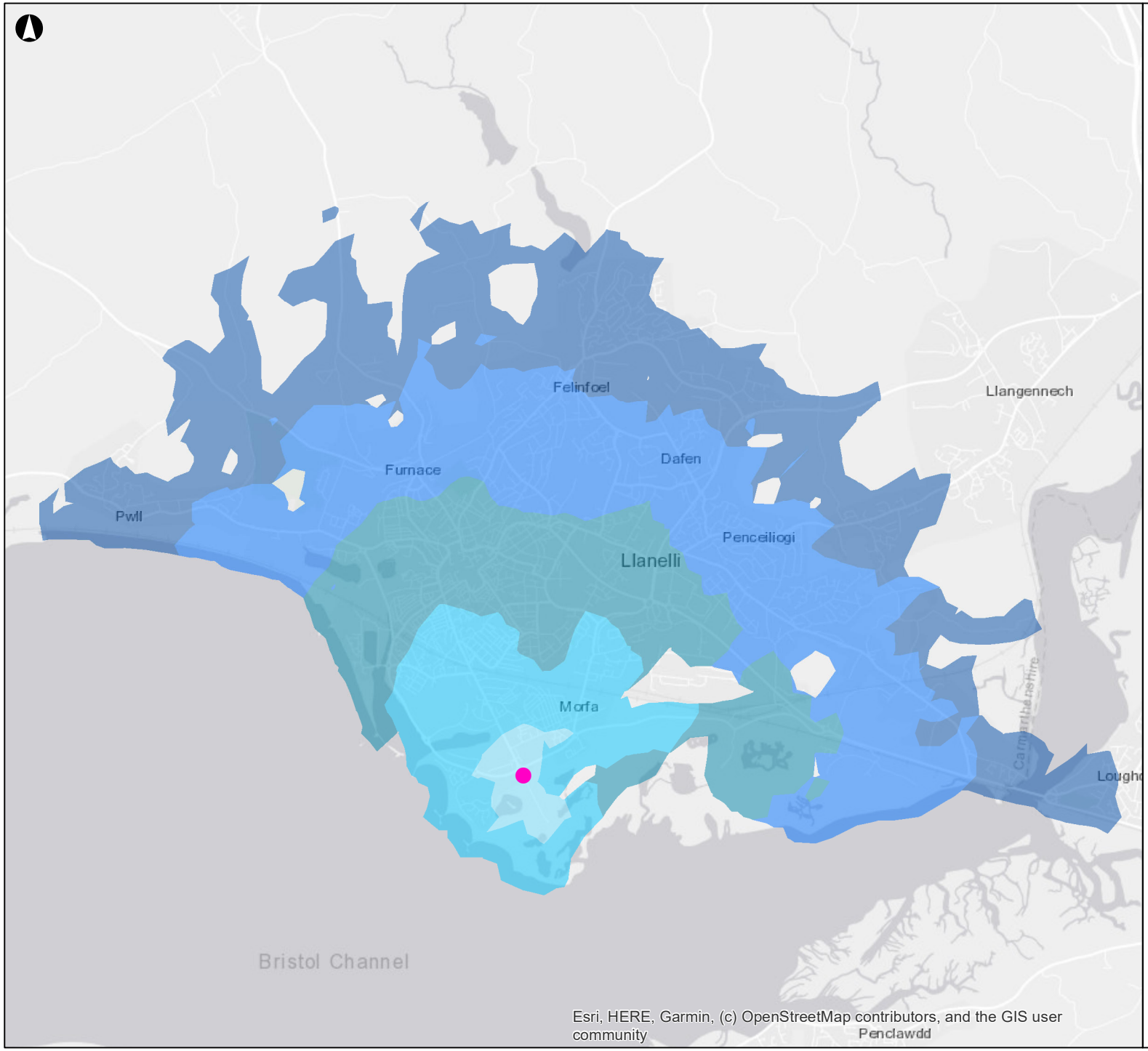
A4



Site

Traveltime

- Under 5 mins
- 5 - 10 mins
- 10 - 15 mins
- 15 - 20 mins
- 20 - 25 mins

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

Metres

0 1,100 2,200 4,400

Rev	Date	By	Chkd	Appd
P0	2020-12-07	LS	AI	AW

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Client
Carmarthenshire County Council

Project Title
Machynys Hotel

Drawing Title
Figure 7: Cycling Accessibility

Scale at A4
1:85,000

Role

Suitability
Preliminary

Arup Job No
246235-00

Rev
P0

Name
001

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3.5 Public Transport

3.5.1 Bus

The closest bus stops to the site are located on both sides of New Street, approximately 700/750m from the centre of the site, as shown on Figure 5. The stop is extremely basic in nature and lacks facilities such as a flag, timetable information or shelter.

The bus stops are served by the circular L1 service, see Figure 8, which originates and terminates at Llanelli Bus Station via the Trostre Retail Park. The details of the route are set out in Table 1 below. The route operates in both a clockwise and anticlockwise rotation, combining to provide an hourly service to Llanelli Bus Station where interchange to other local and regional services is possible.

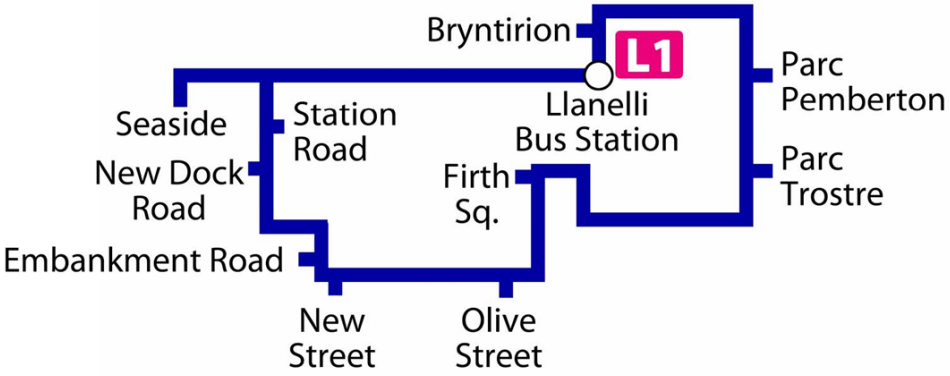


Figure 8: First Cymru L1 Bus Service Map

Table 1: Local Bus Service

Service	Route	Operator	Service Frequency daytime/evening (minutes)	
			Monday-Saturday	Sunday & Bank Holidays
L1	Llanelli – Penyfan - Morfa	First Cymru	120/-	No service

It is understood that there will be improvements to the local bus service provision as part of the LWLV proposals, including a bus stop within the Delta Lakes site and potential improvements/alterations to existing bus services.

3.5.2 Rail

Llanelli railway station is located some 1.5km north of the Machynys site. The railway station is served by the South Wales Mainline and is the southern end of the Heart of Wales Lines. The station building, located adjacent to the eastbound platform is staffed during weekdays (1000-1240) and Saturdays (0700-1330) and has facilities which include a waiting room/seating area, toilets, cycle storage, car parking and a taxi rank.

It is understood that Llanelli will be upgraded as part of Transport for Wales' Station Improvements Plan with work scheduled to begin in 2021. Whilst the detail of the work is yet to be confirmed, it is expected that this will include accessible toilets for all, improved or new shelters and additional seating, help points and CCTV.

Photograph 2: Llanelli Railway Station

Train services are operated by Transport for Wales. The services and approximate frequency of direct trains calling at Llanelli are summarised in Table 2.

Table 2: Direct Rail Services and Frequencies from Llanelli

Destination	Frequency			Operator
	Mon-Fri	Sat	Sun	
Milford Haven	120 mins	120 mins	7 a day	Transport for Wales
Pembroke	5 a day*	5 a day*	5 a day*	Transport for Wales
Carmarthen	60 mins	60 mins	60 mins	Transport for Wales
Swansea	60 mins	60 mins	60 mins	Transport for Wales
Cardiff	30-60 mins	30-60 mins	60 mins	Transport for Wales / Great Western Railway

*Some services require a change

The Plus Bus[1] scheme operates in Llanelli, funded as a partnership between public transport operators. PlusBus enables passengers to add connecting bus travel to their rail ticket at a reduced cost for bus services to and from the rail station and around the urban area thus encouraging integration between public transport modes. A Llanelli PlusBus ticket gives unlimited bus travel on participating operators' services around Llanelli. Daily PlusBus prices are as follows:

- Adult - £2.50;
- Child - £1.25; and
- Railcard holder - £1.65.

[1] https://www.plusbus.info/llanelli

There are two level crossings located directly east (Photograph 3) and west of Llanelli station. A pedestrian footbridge adjacent to Llanelli East level crossing to allow pedestrians to cross the railway.

Photograph 3: Llanelli East Level Crossing

The most direct route to Llanelli Railway Station from the site is via a combination of New Dock Road and Great Western Crescent.

3.6 Local Highway Network

Figure 9 shows the highway within the study area and junctions assessed, which are detailed in Sections 3.6.1.

The Machynys site is located adjacent to the B4304 Coastal Road which defines a southern edge to Llanelli and acts as a peripheral distributor connecting to the A484 to the east and west of Llanelli. The B4304 is a wide single carriageway road with a 40mph speed limit and at-grade roundabout junctions at regular intervals providing access to surrounding development. The Machynys roundabout is located around 180m to the east of the site whilst the Delta Lakes roundabout is located around 280m to the west. At present there is no access from the Coastal Road to the Machynys site. To the east the Coastal Road provides a route to the Parc Trostre retail area and the A4138 which is the route to M4 Junction 38. The Morfa to Berwick Link road provides a further link to the A484 and an alternative route to Swansea crossing the Loughor Estuary.

The Avenue and New Dock Road provide a direct route to Llanelli railway station and the continuation of this route, Station Road, provides access to the town centre. This route crosses the railway lines at a level crossing which is often subject to delay as a result of trains and the current practise of keeping the crossing gates down to allow more than one train to pass at a time.

Site visits indicate that highway conditions in Llanelli are generally good with congestion having a minimal impact on vehicle movements except for short periods in the AM and PM peak hours and more localised issues resulting from narrow streets, frontage activity and inconsiderate parking. On New Dock

Road/B4304 there is a barrier presented by the railway line and associated crossing.

3.6.1 Existing Traffic flows

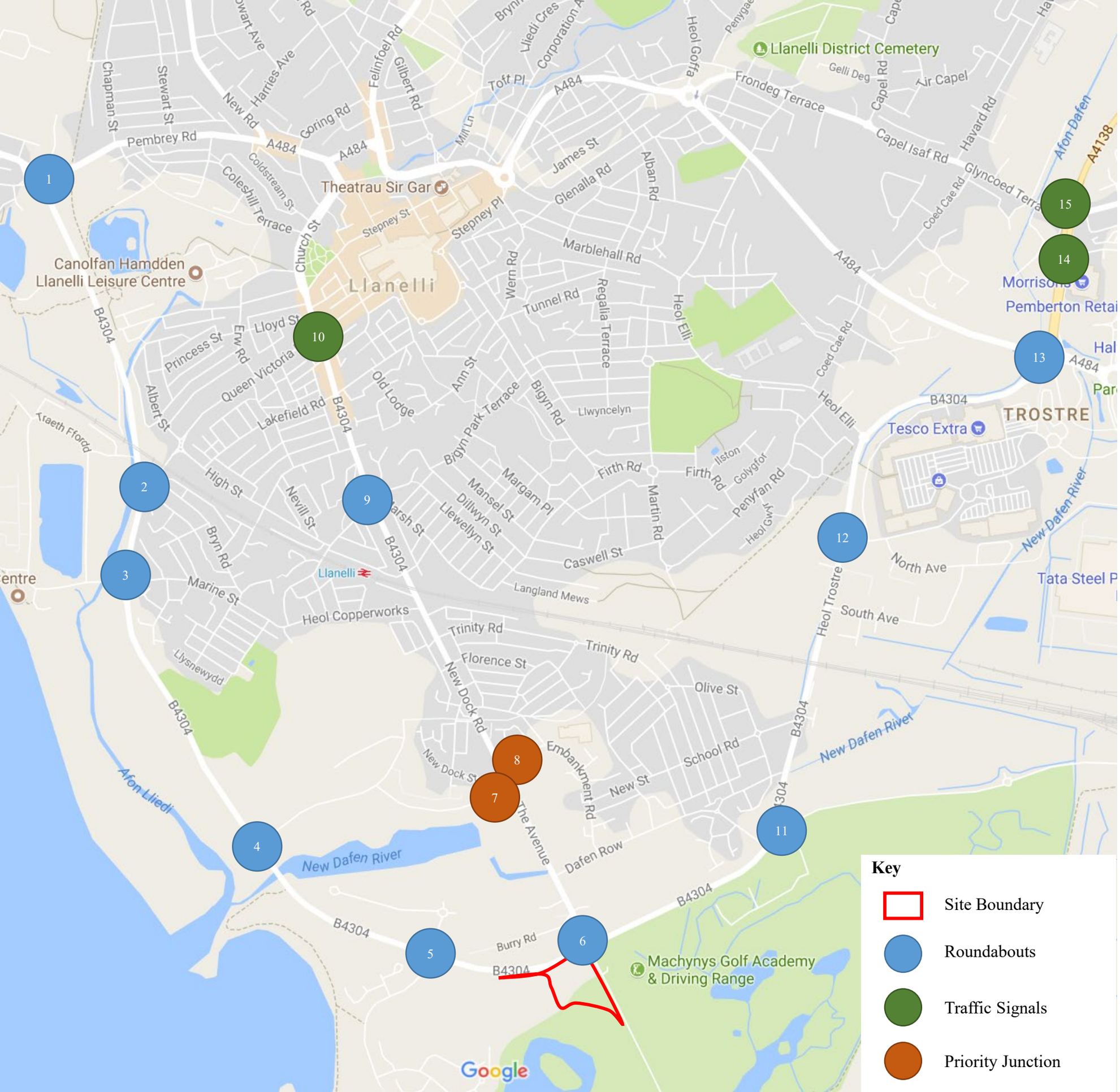
Due to the impact of Covid-19, a traffic survey was deemed inappropriate at the time of this assessment. It is assumed that the traffic pattern and flows are likely to gradually return back to levels prior to the onset of Covid-19. As agreed with CCC classified turning counts were used from the LWLV planning application. The surveys were completed on Wednesday 5th July 2017. In addition, a seven-day Automatic Traffic Count (ATC) survey was undertaken for the period 5th-11th July 2017.

on analysis of the ATC the AM network peak hour has been identified as 08:00-09:00 and the PM peak hour has been identified as 16:30-17:30.

The study area includes fifteen junctions have been surveyed in order to assess the impact of the proposed development. These junctions are listed below, and the locations are illustrated in Figure 9.

1. A484/Coastal Link Road/Sandpiper Road, Sandy Roundabout;
2. Coastal Link Road/Queen Victoria Way, Seaside Roundabout;
3. Coastal Link Road/Marine Street/North Dock, Lleida Roundabout;
4. Coastal Link Road/Copperhouse Road, Copperhouse Roundabout;
5. Coastal Link Road/Delta Lakes/Pentre Nicklaus, Delta Lakes Roundabout;
6. Coastal Link Road/The Avenue/Nicklaus Avenue, Machynys Roundabout;
7. The Avenue/Northumberland Road priority junction;
8. The Avenue/Embankment Road/North Dock Road priority junction;
9. B4304 Station Road/Glanmor Road/Marsh Street mini roundabout;
10. B4304 Station Road/Queen Victoria/Murray Street signalised junction;
11. Coastal Link Road/Lower Trostre Road, Morfa Roundabout;
12. Trostre Road/Trostre Park roundabout;
13. A484/Trostre Road/A4138, Trostre Roundabout;
14. A4138/Pemberton Park signals; and
15. A4138/Llandafen Road/Glyncoed Road signalised crossroads.

In agreement with CCC, these peak periods have been used to inform the traffic impact assessment for the development proposals. Traffic flows in the AM and PM peak hours are presented diagrammatically on Figure 10 and Figure 11 respectively.



Junctions surveyed:

1. A484 / Coastal Link Road / Sandpiper Road Sandy Roundabout
2. Coastal Link Road / Queen Victoria Way Seaside Roundabout
3. Coastal Link Road / Marine Street / North Dock, Lliedi Roundabout
4. Coastal Link Road / Copperhouse Road Copperhouse Roundabout
5. Coastal Link Road/Delta Lakes/Pentre Nicklaus, Delta Lakes Roudnabout
6. Coastal Link Road / The Avenue / Nicklaus Avenue Machynys Roundabout
7. The Avenue / Northumberland Road priority junction
8. The Avenue / Embankment Road / North Dock Road priority junction
9. B4304 Station Road/Glanmor Road/Marsh Street mini-roundabout
10. B4304 Station Road/Queen Victoria/Murray Street signalised junction
11. Coastal Link Road / Lower Trostre Road Morfa Roundabout
12. Trostre Road/Trostre Parc
13. A484/Trostre Road/A4138 Trostre Roundabout
14. A4138/Pemberton Access signals
15. A4138/Llandafen Road/Glyncoed Road signalised crossroads

Key

- Site Boundary
- Roundabouts
- Traffic Signals
- Priority Junction

Machynys Hotel	
Figure 9: Study Area	
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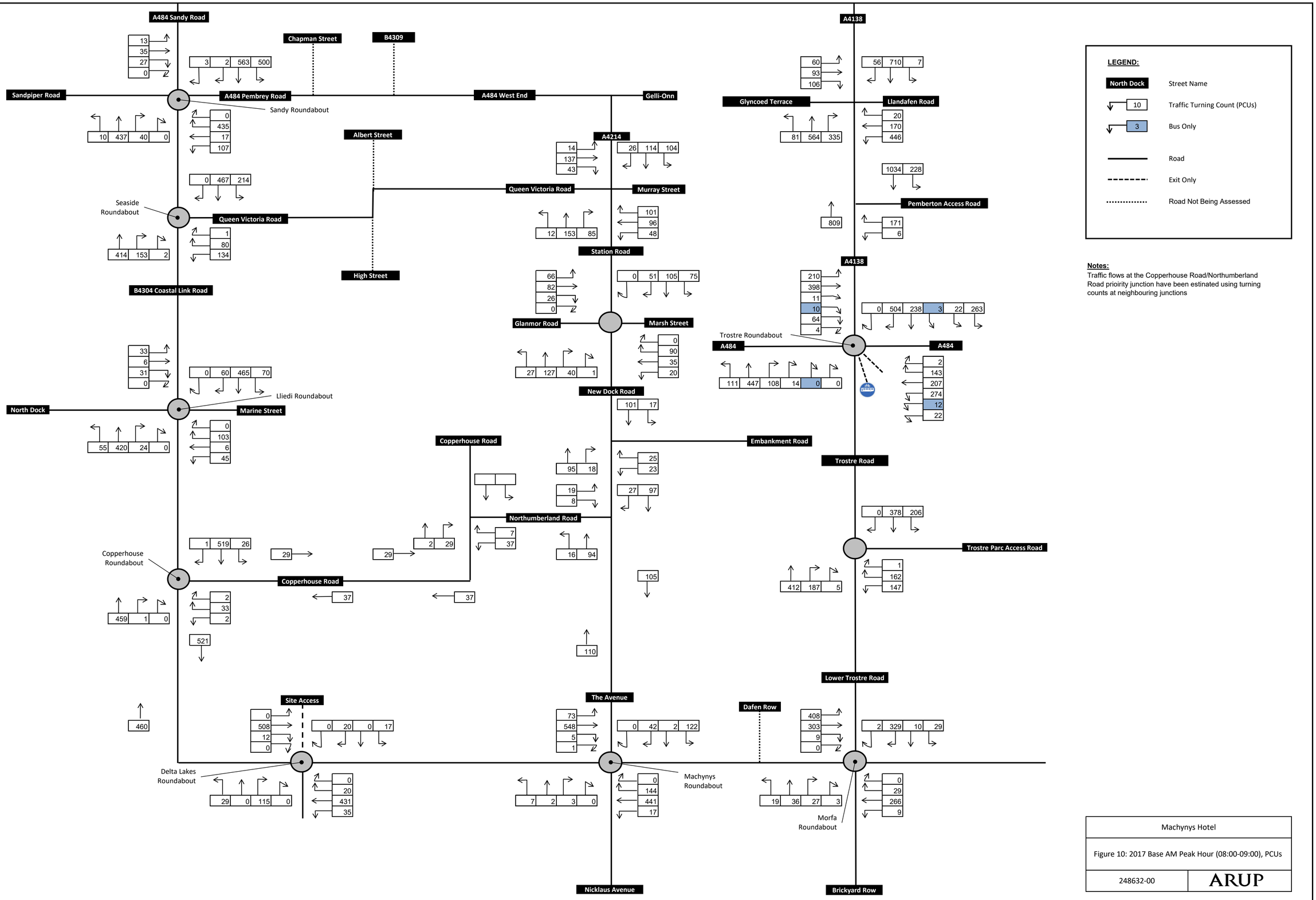
A484 Sandy Road
Chapman Street
B4309
Sandpiper Road
A484 Pembrey Road
A484 West End
Gelli-Onn
Sandy Roundabout
Albert Street
A4214
Queen Victoria Road
Murray Street
Seaside Roundabout
Queen Victoria Road
Station Road
High Street
B4304 Coastal Link Road
Glanmor Road
Marsh Street
New Dock Road
North Dock
Marine Street
Lliedi Roundabout
Embankment Road
Copperhouse Road
Northumberland Road
Copperhouse Roundabout
Copperhouse Road
A4138
Glyncoed Terrace
Llandafen Road
Pemberton Access Road
A4138
Trostre Roundabout
A484
A484
Trostre Road
Trostre Parc Access Road
Lower Trostre Road
Site Access
The Avenue
Dafen Row
Delta Lakes Roundabout
Machynys Roundabout
Morfa Roundabout
Nicklaus Avenue
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
3
Bus Only
Road
Exit Only
Road Not Being Assessed
Notes:
Traffic flows at the Copperhouse Road/Northumberland Road prioirity junction have been estinated using turning counts at neighbouring junctions
Machynys Hotel
Figure 10: 2017 Base AM Peak Hour (08:00-09:00), PCUs
248632-00
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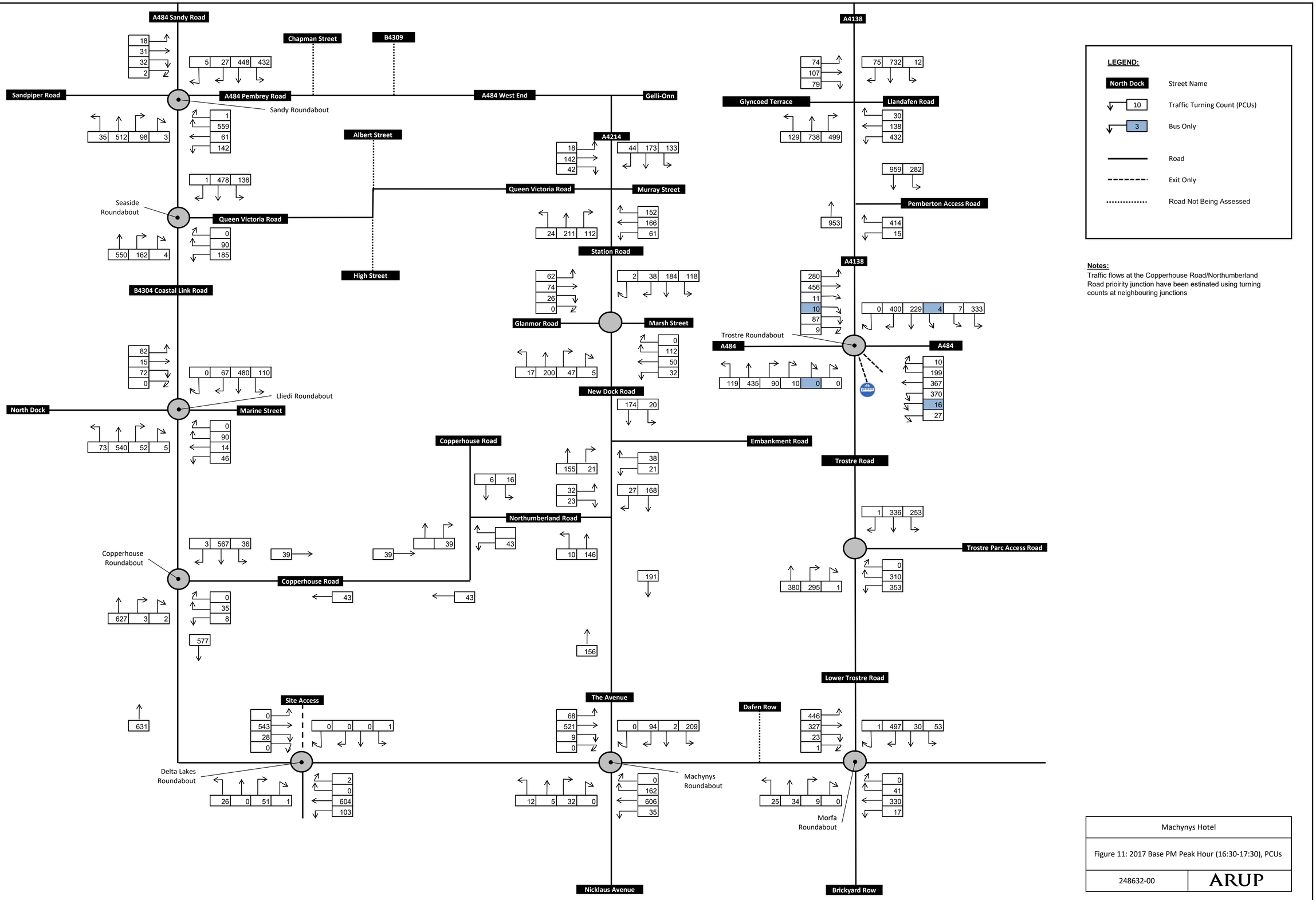

A484 Sandy Road
Chapman Street
B4309
Sandpiper Road
A484 Pembrey Road
A484 West End
Gelli-Onn
Sandy Roundabout
Albert Street
A4214
Queen Victoria Road
Murray Street
Seaside Roundabout
Queen Victoria Road
Station Road
High Street
B4304 Coastal Link Road
Glanmor Road
Marsh Street
New Dock Road
North Dock
Marine Street
Lliedi Roundabout
Embankment Road
Copperhouse Road
Northumberland Road
Copperhouse Roundabout
Copperhouse Road
A4138
Glyncoed Terrace
Llandafen Road
Pemberton Access Road
A4138
Trostre Roundabout
A484
A484
Trostre Road
Trostre Parc Access Road
Lower Trostre Road
Site Access
The Avenue
Dafen Row
Delta Lakes Roundabout
Machynys Roundabout
Morfa Roundabout
Nicklaus Avenue
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
3
Bus Only
Road
Exit Only
Road Not Being Assessed
Notes:
Traffic flows at the Copperhouse Road/Northumberland Road prioirity junction have been estinated using turning counts at neighbouring junctions
Machynys Hotel
Figure 11: 2017 Base PM Peak Hour (16:30-17:30), PCUs
248632-00
ARUP

3.7 Road Traffic Collision Data

Accident data for the most recent available five-year period (2015 – 2019) has been obtained from the Carshmap (www.crashmap.co.uk) for the surrounding highway network. Road accident data is recorded by police when they attend the scene of an accident and medical assistance is required by one or more parties, therefore damage only accidents are omitted.

Accidents are categorised according to their severity:

- Slight – medical attention was required but no hospital stay way necessary;
- Serious – medical attention involving a hospital stay was required; and
- Fatal.

Table 3 and Table 4 summarise the main highway links/junctions within the study area and the number and nature of recorded accidents.

Table 3: Link Accident Summary by Severity

Road	Number of accidents 2011-2015			
	Slight	Serious	Fatal	Total
B4304 Coastal Road (south of railway)	4	1	0	5
The Avenue and New Dock Road (south of railway)	7	1	0	8
Heol Copperworks and Marine Street	1	0	0	1

Table 4: Junction Accident Summary by Severity

Junction	Number of accidents 2011-2015			
	Slight	Serious	Fatal	Total
The Avenue/B4304 Roundabout	1	0	0	1
Cambrian St/B4304 Roundabout	2	1	0	3
Lliedi Roundabout	1	0	0	1

No accident trend has been identified near to the proposed development. It is therefore considered, that additional traffic associated with the proposed development is unlikely to have a significant impact on the safety of the local highway network.

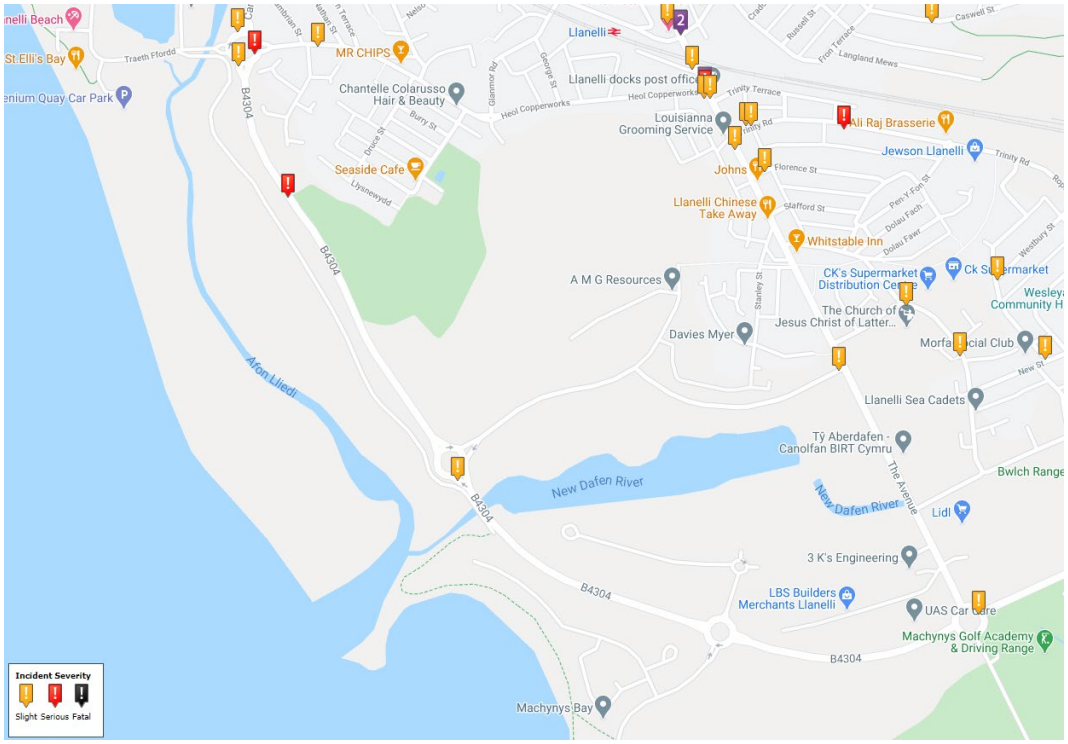


Figure 12: Road Traffic Collision (source: Crashmap)

3.8 Summary

The site is located close to existing facilities including a railway station and a local convenience store. From the assessment and investigation of existing conditions, the following are considered key priorities in creating a development with successful transport provision:

- Improved pedestrian and cycle facilities along the Coastal Road and The Avenue;
- Provision of improved quality bus stops either within or near to the development site; and
- Integrating the development proposals with nearby recent and approved future developments neighbouring the site.

4 Development Proposals

4.1 Introduction

This chapter provides an overview of the proposals and identifies the components of the new development.

4.2 Proposed Land Use

For the purposes of this TA, it is assumed that the proposed development consists of the following facilities:

- Up to four floors of hotel accommodation (up to 10,000 m^2);
- External hard landscaping including roadways, paths and parking (approx. 8,400 m^2); and
- A total of 140 bedrooms.

Other facilities such as a dining room/buffet area, bar and lounge area, reception and office area, meeting/conference rooms, vehicle access and vehicle parking will also be provided. Details of these elements will be agreed within the reserved matters process.

An indicative Masterplan for the site is included as Appendix B.

4.3 Pedestrian/Cycle Access

A pedestrian and cycle access to the proposed hotel will be provided as part of the development. This could be delivered by a potential uncontrolled crossing with central refuge island to the footway/cycleway to the north of the site across the B4304 near Machynys roundabout. Improvements to the existing facility will be agreed during the reserved matters stage.

Within the site zebra crossings will be provided across the internal road network providing a direct access through the car park straight to the hotel entrance to provide a 'pedestrian prioritised street' principle with limited delineation between vehicular, pedestrian and cycle provisions. These areas are expected to experience low levels of traffic movement and encourage low speeds which will make them attractive for walking and cycling.

As part of the LWLV proposals, there will be several positive revisions to the existing local pedestrian and cycle network that will also impact the Machynys Hotel, providing better infrastructure for pedestrian crossings between Coopers roundabout and the Delta Lakes Roundabout, located north west of the proposed hotel.

CCC Highways and Transport have indicated that it would be appropriate for this development to contribute towards elements of the Integrated Network Map

(INM) prepared as part of their responsibilities detailed by the Active Travel (Wales) Act (2013). The INM for Llanelli is included as Appendix C, showing both existing and proposed active travel routes.

Discussion on contributions on the wider active travel network will take place in the reserved matters process. It is expected that any improvements to the existing crossing of the B4304 at Machynys roundabout will be the subject of a section 278 agreement.

4.4 Public Transport

4.4.1 Bus

As part of the LWLV proposals, a new bus stop is proposed to the north of the Delta Lakes roundabout to serve the existing L1 service and any proposed improved services. First Bus have been approached to discuss potential improvements to the existing route and this discussion will continue in the next planning phase of the LWLV proposal. There is the opportunity to include the hotel proposals within these discussions where applicable.

Comments from CCC note that these agreements will need to be developed and confirmed during the relevant reserved matters stage. It is agreed that a joint approach with LWLV would be a beneficial approach for service improvements in the area.

4.4.2 Coach

It is anticipated that coach parking will not be provided for the hotel. However appropriate space will be allocated to enable larger vehicles, including coaches, to turn safely.

4.4.3 Rail

Whilst no improvements are proposed to Llanelli railway station or the associated services are proposed in relation to the hotel planning application, it is considered that the pedestrian and cycle proposals will improve the accessibility to the station for future occupiers of LWLV and existing residents to the south of the site with associated positive impacts for the Machynys hotel development.

Consideration should also be given to the implementation of an on demand shuttle style bus service between the railway station and the hotel.

4.5 Vehicular Access

There are multiple vehicle access options for the site, as set out below:

- A vehicular access junction off the B4304 Coastal Road providing access to the west of the hotel. The road design that will be submitted under Machynys Central Resident Development Planning Application in Appendix D; or

- A new vehicular access east of the site off the road which leads to the golf course: or
- A combination of both utilising access junction off the B4304 Coastal Road providing access to the west of the hotel for staff and service vehicles and a new vehicular access east of the site off the road which leads to the golf course for visitors.

The vehicle access strategy together with the detailed design of these site junctions will form part of the reserved matters application and will subject to a Road Safety Audit. The preliminary designs of the potential site access arrangements are described below.

Via Nicklaus Avenue

The proposed access provides direct access to the Machynys roundabout onto Nicklaus Avenue at the western boundary of the site. The road leads to the golf course located south of the site which is considered to have relatively low trip generation particularly during peak network periods. This is shown on the Masterplan included in Appendix B.

Via the planned residential junction

The proposed junction provides direct access to the hotel site and service area via a left in/left out priority T junction with a ghost island right turn lane. A preliminary junction design is included in Appendix D.

Full movement junctions typically have a lower traffic capacity as a result of opposed turning movements however the provision of a right turn ghost island on the B4304 will avoid delay to through traffic on the B4304 and traffic speeds and volumes are considered sufficiently low to allow safe gaps for right turning traffic.

Traffic volumes generated from the site will be relatively low and it is therefore considered that local traffic volumes and speeds will give adequate opportunity for traffic to turn.

The proposed junction leading straight into the hotel site area is suitable for a large three-axle refuse vehicle which will be able to manoeuvre within the service access area to be provided. Internal circulation around the car park will be confirmed as part of the reserved matters process.

4.6 Parking

Carmarthenshire County Council have adopted the "*County Surveyors' Society (CSS) Wales Parking Standards 2014*" to determine the level of parking provision. This provides maximum parking standards according to land use, type and location of development.

The CSS standards recommend that the parking zone criteria to be applied on a site by site basis. Having reviewed the zoning criteria, the proposed development is considered to fall within "*Zone 4 -Suburban or near Urban".*

The CSS standards include a means of accounting for the sustainability of a development's location through the assessment and award of sustainability points. A site qualifies for sustainability points if it meets set criteria for its proximity, in terms of walking distance to local facilities, public transport, cycle routes and frequent public transport. Achieving different levels of sustainability points can result in a reduction in parking requirements.

The CSS standards apply a standard which is illustrated in Table 5, it is considered appropriate to provide a minimum total of 141 off carriageway parking spaces for visitors and one commercial parking space. Total number of parking spaces and parking for non-resident staff will be determined within the reserved matters process.

The requirements also set out one cycle stand per five bedrooms for long stays and one stand per 40m^2 of public floor space for short stays. This results in a total of 28 cycle parking spaces for visitors. Cycle parking spaces for the development are likely to be provided near the hotel entrance or within proximity to the car parking facilities. More detailed information will be dealt with at reserved matters process.

The parking standards adopted by Carmarthenshire County Council (CSS 2014) predate important legislation and policy documents from Welsh Government, namely Planning Policy Wales 10 (2018).

It's therefore reasonable to suggest that when the adopted parking standards were drafted, they were not cognisant of recent policy which promotes a reduction in parking to encourage a modal shift towards sustainable modes of transport.

Parking facilities for electric vehicles will be included as part of the hotel development proposal. It is noted that all parking elements including quantum, drop-off and electric vehicle charging will form part of the reserved matters application.

Planning Policy Wales 10 was drafted in the context of the Wellbeing of Future Generations Act and embodies its objectives. It states that: "*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*"[2].

Table 5 details car parking provision based on the CSS 2014 standards.

Table 5: Summary of proposed spaces for car and cycle parking based on CSS 2014

Land Use	Vehicle Factor	Quantum	Car Parking Requirements
Hotel and Public Houses: **Operation use**	1 commercial space	0	1

[2] Planning Policy Wales 10, 2018, 4.1.51

Hotel and Public Houses: **Non-Operational use**	1 space per 3 non-resident staff and 1 space per bedroom	Data not available for staff requirements. 140 bedrooms	140 car parking spaces

5 Future Travel Demand

5.1 Introduction

This chapter presents the future travel demand expected to be generated by the proposed hotel development. This forms the basis for understanding the impact of the proposed development on the transport network. The vehicle trip generation forecasts will also enable the impact of the proposed development at each of the key junctions to be quantified.

Travel demand has been estimated from average trip rates and scale of the proposed development. The average trip rates used have been taken from the previous 2010 Transport Assessment for the hotel produced by Watermans which used the TRICS database. TRICS provides recent traffic surveys from developments in the UK and Ireland. The database is widely used in the Transport Assessment process to provide insight into the transport impacts of new developments.

5.2 Key Methodology Assumptions

Given the outline nature of the planning application, and potential for change to the proposed masterplan at subsequent planning stages, a robust approach has been taken in forecasting development related vehicular trips which can therefore be considered a worst-case scenario for junction assessment. The key assumptions include:

- AM and PM peak hours for the hotel correspond with surrounding highway network peak hours of 08:00-09:00 and 16:30-17:30 respectively;
- hotel trips generated using TRICs rates from the previous Watermans TA and include employee trips;
- All trips generated will travel by car for a worst-case assessment;
- Committed development sites, taken from the LWLV TA, and detailed in Section 6.3;
- All hotel deliveries will be made outside of the AM and PM peak hours, and therefore have not been included in the peak hour forecast.

Traffic flows for with and without development scenarios have been calculated for the following future year scenarios using TEMPro traffic growth factors:

- 2021 Base Year;
- 2021 with Committed Development;
- 2021 with Committed Development and Hotel Development; and
- 2026 Future Year Assessment.

5.3 Committed Developments

Following consultation with CCC as the local planning authority and the local highway authority, the following committed development sites are included within the traffic impact assessment:

- Machynys East Residential Development (213 residential units of which 180 were occupied at the time of the 2017 traffic surveys);
- Machynys Central Residential Development and Eco Park (35 Units);
- Seaside Primary School (up to 420 pupils plus 60 nursery places); and
- Stradey Park Residential Development (355 residential units of which 200 were occupied at the time of the traffic surveys).

Information about these developments has been taken from the approved LWLV planning application which in turn used the CCC website and online planning portal. A TA or Transport Statement has been obtained for each of the above sites with the resulting traffic impacts included within the Percentage Impact Assessment detailed in Chapter 7 of this TA.

Below is a summary of the additional trips expected after the time of the 2017 survey and the forecasted trips predicted to be generated from the LWLV Mix Use Development.

Table 6: Committed Development Trips

Development	AM Peak Hour			PM Peak Hour		
	In	Out	Two way	In	Out	Two Way
Machynys East Residential Development (33 units)	8	24	32	18	8	25
Machynys Central Residential Development (35 units)	9	25	34	19	8	27
Seaside Primary School	113	61	174	5	11	16
Stradey Park Residential Development (155 units)	21	66	87	62	36	98
Wellness and Life Science Village Mix Use Development	406	105	511	183	396	579

5.4 Background Traffic Growth

Due to Covid-19 and timescales of the outline planning application it was deemed that a survey would not be appropriate at this time, and it is assumed that the traffic pattern is likely to return back to pre-covid trends in future. The uptake in active travel and public transport may increase as a result of infrastructure upgrades and potential new bus services to the area but for a robust assessment, the 2017 surveyed data which was used for LWLV TA 2018 application will be utilised. As agreed with CCC a growth factor has been applied to represent a 2021 base year for traffic flows.

Background traffic growth factors have been derived from the Department for Transport (DfT) Trip End Model Presentation Program (TEMPro v7.2). To account for the quantum of committed and proposed development already incorporated within the traffic analysis, use of a standard TEMPro factor would result in significant double counting of future development trips and over estimation of potential traffic growth.

It is possible to modify the TEMPro planning assumptions by removing the committed development and proposed development households and jobs from the traffic growth estimates in order to eliminate the effect of double counting. Given the quantum of proposed development and inclusion of a number of committed development sites, it is considered reasonable to remove these from the TEMPro planning assumptions

The TEMPro growth factors based on these alternative assumptions are set out in Table 7.

Table 7: TEMPro Traffic Growth Factors

	Growth Factors	
Period	AM Peak	PM Peak
2017-2021	1.0615	1.0596
2021-2026	1.1202	1.1337

The factors set out in the above table have been applied to the 2017 Base traffic flows in order to create future year assessment scenarios.

5.5 Trip Generation

Trip rates have been taken from the Transport Assessment for the previous 125 bed Machynys hotel planning application which was granted full planning application in 2010. TRICS was used compare trip rates in the current database but since these would have been lower than those in the 2010 application the higher trip rates have been used as part of the robust assessment for the proposed 140 bed hotel. Trip Generation may be revisited/revised to a lower level as part of the reserved matters process.

The vehicle trip rates for the proposed development are presented in Table 8.

Table 8: Proposed Trip Rate and Trip Generation for Machynys Hotel (140 bed)

	Trip Rates (per bed)			Vehicular Trip Generation		
	In	Out	Two-way	In	Out	Two-way
AM Peak	0.15	0.24	0.39	21	34	55
PM Peak	0.27	0.16	0.43	38	22	60

The development is forecast to generate about 55 to 60 vehicle trips during each peak hour.

The trips generated reflect the proportion of 'business as usual' trips made by car only (with additional trips to be made by other transport modes) but do not

consider the potential mode shift (and hence reduction in car traffic) that might arise from the implementation of a Travel Plan.

5.5.1 Trip Distribution

The distribution of trips on the local highway network has been agreed with CCC and is based on a 70/30 split; with 70% travelling to/from the northeast along Trostre Road, and 30% travelling to/from the northwest from Sandy Roundabout.

Distribution of all committed developments are taken from the LWLV application which used information from the CCC website and online planning portal.

All distributions are illustrated within Appendix E.

5.5.2 Mode Share

Using TRICs data, a mode share split can be identified for similar UK hotel sites. Although it is assumed that all traffic in this assessment will be made via car to represent a worst-case scenario, it is unlikely to be the case in real time and an estimate of 13% of total trips will be made by sustainable modes of transport or other. The typical mode share for a hotel development based on TRICs analysis is presented in Table 9.

Table 9: Mode share of hotel trips

Mode	Percentage
Car	**87%**
Public transport (Bus/coach/train)	1%
Cycling	1%
Walking	6%
Taxi	5%
Total	**100%**

5.6 Summary

This section provides a forecast of the future travel demand associated with the development of the Machynys Hotel site and the following conclusions can be drawn:

- The methodology for projecting travel demand has been agreed through a scoping exercise with CCC;
- Development trips for committed development sites have been added to the future year traffic flows, and as a result the planning assumptions for background TEMPro traffic growth have been modified to avoid double counting; and
- The proposed development is forecast to generate around 55 two-way vehicle trips in the AM peak hour and around 60 in the PM peak hour.

6 Transport Implementation Strategy

6.1 Introduction

In accordance with TAN 18, this chapter is intended to draw together the elements of a Transport Implementation Strategy as part of demonstrating how the development will contribute positively to overarching policy objectives.

6.2 Context

The policy context in Chapter 2 highlighted the importance of sustainability in national, regional and local policy. This has provided a key guiding principle in the overall concept and design of the Machynys Hotel development in how the proposals aim to minimise the need to travel. As a result from the LWLV commitments, inclusion of local employment facilities and the establishment of new pedestrian and cycle links to the neighbouring areas and facilities of Llanelli, forms a critical component of the vision for the hotel as a sustainable development for which walking, cycling and public transport are often the most convenient and quickest forms of transport to local destinations.

6.3 Objectives

Sections 3 (Transport Evaluation) and 4 (Development Proposals) have highlighted the relevance of the proposals to a range of overarching objectives, ranging from the day-to-day efficiency of the development to broader planning and transport aspirations towards more sustainable travel patterns.

The Transport Implementation Strategy is therefore underpinned by the following over-arching objectives;

Objective 1 to reduce the need to travel locally within Llanelli via single car occupancy;

Objective 2 to achieve accessibility and convenience by walking, cycling and public transport within Llanelli to reduce carbon emissions associated with the site;

Objective 3 to provide necessary supporting infrastructure to support the operation of the proposed development;

Objective 4 to promote cohesive communities and social inclusion, including integration with existing communities;

Objective 5 to promote healthy lifestyles to maximise physical and mental well-being; and

Objective 6 to create conditions that provide safety and security for all including the surrounding communities.

6.4 Measures of Mitigation

This section sets out the mitigation measures that will be implemented for each mode of transport for the operation of the hotel.

The transport related measures proposed in relation to the hotel are:

- Connection to a network of footways and shared footway/cycleways that intersect and border the site, improving connectivity for pedestrians and cyclists;
- Provision of pedestrian access points and internal traffic-free routes contributing to a high-quality public realm;
- Provide pedestrian and cycle links to the Millennium Coastal Path;
- Provision of cycle parking spaces around the site and at a level that meets CCC guidance;
- Potential for the partial subsidy funding to support a new of bus service or extend an existing service into the site in line with and in proportion to the commitment given by neighbouring developments;
- Provision of local employment to reduce the need to travel via car;
- To provide supporting infrastructure for electric vehicle charging provisions on site; and
- Commitment to prepare and implement a full Travel Plan for the proposed hotel.

7 Assessment of Transport Implementation Strategy

The assessment measures of the transport impact strategy and the key objectives are set out in detail in Sections 7. The mitigation measures are taken forward for appraisal against the baseline conditions of current infrastructure for the operation of Machynys Hotel.

A qualitative assessment using a seven-point assessment scale presented in chapter 8.1 has been used to assess the impact for public transport, active travel and car parking.

A quantitative assessment has been carried out for highways based on junction capacity using modelling software and is presented in chapter 8.2.

7.1 Active Travel, Public transport, and Car Parking

The mitigation measures for walking, cycling, bus, rail and car parking are taken forward for appraisal against the baseline conditions of current infrastructure for the operation of Machynys Hotel.

The impact of measures against the objectives has been assessed according to a seven-point scale as set out in Figure 13.

Figure 13: Seven Point Assessment Scale of Transport Implementation Strategy Impact

Large Beneficial Impact	+++
Moderate Beneficial Impact	++
Slight Beneficial Impact	+
Neutral	0
Slight Adverse Impact	-
Moderate Adverse Impact	- -
Large Adverse Impact	- - -

The appraisal assesses all mitigation measures that are identified to ensure that the site aligns with TAN18, as defined in the TIS. The impact of these measures ranges from having a neutral to large beneficial impact against the objectives set out in the TIS, with the exception of car parking facilities which has a potential large adverse impact. Although the objectives of the Machynys Hotel are to enable travel options via sustainable modes of transport, car parking facilities will need to be provided given the location of the site and the expectation that workforce may not all be locally based and that guests are expected from a variety of regional, national and international origins.

The number of available parking spaces should be determined by applying local parking standards to the nature of the proposed facilities within the site and ensure there is enough provision for the operation purposes of the hotel. These should be reviewed on a regular basis as part of the Hotel Travel Plan.

Table 10: Assessment summary for Transport Implementation Strategy - Operation

	Transport Implementation Strategy: Mitigation Measures	Objective 1 Reduce the need to travel via car locally	Objective 2 Achieve accessibility and convenience	Objective 3 Provide supporting infrastructure	Objective 4 Promote community and inclusion	Objective 5 Promote a healthy lifestyle	Objective 6 Provide safety and security
Walking	Connection to a network of footways and shared footway/cycleways that intersect and border the site, improving connectivity for pedestrians and cyclists	0	+	0	+	++	+++
	Provision of pedestrian access points and internal traffic-free routes contributing to a high-quality public realm	0	+++	+++	0	0	+++
	Provide pedestrian and cycle links to the Millennium Coastal Path	++	++	+	+++	+++	+
Cycle	Connection to a network of footways and shared footway/cycleways that intersect and border the site, improving connectivity for pedestrians and cyclists	0	+	0	+	++	+++
	Provision of pedestrian access points and internal traffic-free routes contributing to a high-quality public realm	0	+++	+++	0	0	+++
	Provide pedestrian and cycle links to the Millennium Coastal Path	++	++	+	+++	+++	+
	Provision of cycle parking spaces around the site and at a level that meets CCC guidance	++	+++	+++	++	+++	++
Bus	Potential for the partial subsidy funding to support a new of bus service or extend an existing service into the site in line with and in proportion to the commitment given by neighbouring developments	+++	+++	+++	+++	+++	0
Car parking	Provision of local employment to reduce the need to travel via car	0	0	0	+++	+	0
	Commitment to prepare and implement a full Travel Plan for the proposed hotel	+	0	0	+	+++	0
	To provide support infrastructure for electric vehicle charging provisions on site	---	---	+++	0	--	0

7.2 Highways

This section presents the capacity assessments undertaken at each of the junctions within the assessed network agreed with CCC. These assessments provide the basis for determining whether the additional traffic generated by the development proposals can be accommodated without detriment to the highway network.

The junction models used in this assessment are equivalent to those used for the LWLV application with updated flows used to represent the estimated trips generated from the 140-bed hotel in addition to existing traffic flows and those forecast for committed developments in the area.

7.2.1 Percentage Impact Assessment

A percentage impact assessment has been undertaken to identify the proportional increase in traffic resulting from the development proposals on the junctions. This has been calculated using the 2021 Base traffic flows for robustness. Two options for the hotel access were assessed separately:

- **Option 1 via Nicklaus Avenue** – A new vehicular access east of the site off the road which leads to the golf course; and
- **Option 2 via the planned residential junction** – A vehicular access junction off the B4304 Coastal Road providing access to the west of the hotel.

In agreement with CCC, the results of the percentage impact assessment will influence which junctions within the study area will be assessed further using junction capacity modelling. The results of the percentage impact assessment are summarised in Table 11.

Table 11: Percentage Impact Assessment

Junction	Option 1		Option 2	
	AM	PM	AM	PM
1. Sandy Roundabout (A484/Coastal Link Road/Sandpiper Road)	0.6%	0.6%	0.6%	0.6%
2. Seaside Roundabout (Coastal Link Road/Queen Victoria Way)	0.9%	1.0%	0.9%	1.0%
3. Lliedi Roundabout (Coastal Link Road/Marine Street/North Dock)	1.0%	0.9%	1.0%	0.9%
4. Copperhouse Roundabout (Coastal Link Road/Copperhouse Road)	0.8%	1.5%	0.8%	1.5%
5. Delta Lakes Roundabout (Coastal Link Road/Delta Lakes/Access Road)	0.9%	0.9%	2.2%	1.7%
6. Machynys Roundabout (Coastal Link Road/The Avenue/Nicklaus Avenue)	3.0%	2.7%	2.1%	1.9%
7. The Avenue/Northumberland Road Priority Junction	0.0%	0.0%	0.0%	0.0%
8. The Avenue/Embankment Road/North Dock Road Priority Junction	0.0%	0.0%	0.0%	0.0%
9. B4304 Station Road/Glanmor Road/Marsh Street Mini-Roundabout	0.0%	0.0%	0.0%	0.0%
10. B4304 Station Road/Queen Victoria/Murray Street Signalised Junction	0.0%	0.0%	0.0%	0.0%

Junction	Option 1		Option 2	
	AM	PM	AM	PM
11. Morfa Roundabout (Coastal Link Road/Lower Trostre Road)	2.0%	1.9%	1.9%	1.6%
12. Trostre Road/Trostre Parc Roundabout	1.7%	0.9%	1.7%	0.9%
13. Trostre Roundabout (A484/Trostre Road/A4138)	0.9%	0.9%	0.9%	0.9%
14. A4138/Pemberton Access Signalised Junction	1.2%	1.1%	1.2%	1.1%
15. A4138/ Llandafen Road/Glyncoed Road Signalised Crossroads	1.0%	1.0%	1.0%	1.0%
16. Proposed Machynys Central Residential Access	4.4%	4.4%	17.9%	11.5%

7.2.2 Junction Modelling

7.2.2.1 Method of Assessment

Junction assessments have been undertaken for five junctions using Junctions 9 ARCADY module for roundabouts and Junctions 9 PICADY software for priority junctions.

Junction capacity in the above software packages is measured as the Ratio of Flow to Capacity (RFC). RFC is a measure of the volume of traffic making a turning movement at the junction, divided by the capacity of that movement; ascertained from the geometric measurements of the junction. The generally agreed operational capacity of a junction is at a ratio of 0.85 for roundabouts and priority junctions. Junctions can still operate within capacity with an RFC value of up to 1, however as practical capacity is approached traffic delays and queues will increase.

These parameters have been used to summarise the operational effectiveness of individual junctions in accordance with the following pre-determined thresholds:

	Within Practical Capacity – *junctions with an RFC below 0.85 have been deemed to operate within practical capacity.*
	Over Practical Capacity, Approaching Theoretical Capacity – *junctions with an RFC of between 0.85-0.99*
	Over Theoretical Capacity - *junctions with an RFC over 1.00 have been deemed to operate over theoretical capacity with substantial queuing/delays.*

Interaction between the junctions has been considered as a result of the predicted queues; some of the junctions are located close to one another, as a result of which excessive queues may affect the operation of adjacent junctions 'blocking back'. The mean maximum queue forecast to occur on each arm of the junction has been monitored for this reason.

The geometric parameters used for the junction models have been measured from OS mapping data and proposed access drawing. Queue lengths predicted by the model have been compared with observed queue lengths which were measured at each of the junctions on Wednesday 5th July 2017, the same day traffic flows were surveyed.

Differences between model and survey queue lengths were adjusted by calibrating model junction arms which involved applying a capacity adjustment. The

percentage applied considers site specific conditions once all geometric features have been calculated for a junction arm.

7.2.2.2 Assessment Scenarios

As per the CCC Transport Assessment Guidelines, the traffic impacts of the development proposals will be assessed against the assumed opening year of development and a future horizon year. In agreement with CCC, the opening year of development will inform any potential mitigation proposals whilst the horizon year is provided as a sensitivity test only.

In agreement with CCC, it is proposed to assess the following future year scenarios in order to forecast the traffic impacts of the development proposals on the surrounding highway network:

- 2021 with committed development;
- 2021 with committed development and Machynys Hotel; and
- 2026 with committed development and Machynys Hotel.

7.2.2.3 Junction Assessment Results

As a result of the percentage impact analysis and in agreement with CCC, junction modelling has been undertaken for:

- Machynys Roundabout,
- Delta Lakes Roundabout,
- Morfa Roundabout,
- Copperhouse Roundabout; and
- the proposed Machynys Central Residential access from the B4304

All geometries were measured using OS mapping data and the proposed Machynys Central Access drawing in Appendix D.

Below summarise the junction capacity assessments and Table 13 presents a summary of the junction delay. Full modelling reports can be found in Appendix G.

Machynys Roundabout

Modelling results indicate that RFC ratios for all arms are below 0.62, and that delays are negligible, as shown in Table 13. Therefore, Machynys Roundabout is forecast to operate comfortably with the forecasted traffic in all future year assessment scenarios.

Delta Lakes Roundabout

Modelling results indicate that RFC ratios for all arms are below 0.60, and that delays are negligible, as shown in Table 13. Therefore, Delta Lakes Roundabout is forecast to operate comfortably with the forecasted traffic in all future year assessment scenarios.

Morfa Roundabout

Table 12 presents the capacity adjustments that were made in order for the forecast queues to better reflect the observed queue lengths.

Table 12: Morfa Roundabout ARCADY Model Capacity Adjustments

Arm		Capacity Adjustment
1	Lower Trostre Road	90%
2	B4303 Link Road	48%
3	Brickyard Row	No adjustment
4	B4304 Coastal Link Road	No adjustment

Morfa Roundabout is forecast to operate within practical capacity in the future year assessment scenario 2021 with Committed Development and Machynys Hotel trips in the peak hours. All RFC ratios for each arm are under 0.81, and overall junction delay is negligible as shown in Table 13. It is therefore demonstrated that the development trips associated with Machynys Hotel can be accommodated without any mitigation.

In the horizon assessment scenario 2026 with Committed Development and Machynys Hotel, the junction is forecast to just exceed practical capacity and approach theoretical capacity in the PM peak hour, with an RFC of 0.86 for access via Nicklaus Avenue, and 0.85 via the Machynys Central access on the link Road eastern arm. Given this is a sensitivity test, and overall junction delay is minimal no mitigation is proposed.

Junction 9 modelling reports contain further details of the modelling results showing RFC's and delay for each arm of Morfa roundabout and is within Appendix F.

Copperhouse Roundabout

Copperhouse Roundabout is forecast to operate comfortably within practical capacity in all future year assessment scenarios with all RFC ratios for each arm under 0.47.

Proposed Machynys Central Residential Access

The preliminary drawing of the proposed access can be found in Appendix B. Junction capacity modelling indicates that RFC ratios on all arms are below 0.1, and delay is negligible, as shown in Table 13.

7.2.2.4 Summary

Based on the results of the junction capacity assessments for junctions where the traffic associated with the Machynys hotel would increase traffic volumes by more than 2% presented in this section, no mitigation is proposed for the junctions assessed.

It is also noted that junction mitigation measures identified in the LWLV application will further reduce the overall impact on the local network.

Table 13: Summary of the Junction Capacity Assessment Results, Junction Delay (s) with hotel access via Nicklaus Avenue

Junction	2017 Survey		2021 Base		2021 with Committed Development		2021 with Committed Development and Machynys Hotel				2026 with Committed Development and Machynys Hotel			
							Option 1 via Nicklaus Avenue		Option 2 via Machynys Central		Option 1 via Nicklaus Avenue		Option 2 via Machynys Central	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1. Machynys Roundabout (Coastal Link Road/The Avenue/Nicklaus Avenue)	3.08	3.31	3.20	3.48	3.78	4.28	3.84	4.42	4.01	4.72	3.86	4.40	4.03	4.64
2. Morfa Roundabout (Coastal Link Road/Lower Trostre Road)	5.75	8.10	6.11	9.24	7.99	12.43	8.20	13.48	8.96	17.11	8.15	13.15	8.90	16.55
3. Proposed Machynys Central Residential Access	N/A	N/A	N/A	N/A	0.14	0.06	N/A	N/A	0.35	0.22	N/A	N/A	0.35	0.22
4. Copperhouse Roundabout (Coastal Link Road/Copperhouse Road)	2.41	2.58	2.46	2.66	2.71	2.95	2.72	2.97	2.72	2.97	2.72	3.08	2.72	3.08
5. Delta Lakes Roundabout (Coastal Link Road/Delta Lakes/Access Road)	2.95	3.30	3.04	3.43	4.06	4.13	4.11	4.18	4.20	4.26	4.11	4.40	4.20	4.49

8 Management of Construction Traffic

The traffic related to the construction phase of development will comprise:

- the transport of personnel engaged in the works; and
- the delivery of materials and equipment.

The development site can be accessed directly from the B4304 Coastal Link Road which acts as a ring road around Llanelli. This road is used by HGVs and is therefore considered appropriate for the use by construction vehicles. The impact of construction vehicles on severance, pedestrian amenity and fear and intimidation will be assessed within the reserved matters process and future documentation.

It is anticipated that majority of the vehicular activity would occur outside the highway peak periods and could be reduced by the earthworks utilising site material, rather than requiring deliveries by road.

Heavy loads, potentially including dumper trucks and cranes will need to be brought to the site. In addition, quantities of building materials will need to be delivered to the site throughout the construction period.

The number of deliveries of building materials is expected to vary during the construction programme. In general, heavy goods vehicles associated with the proposed construction are not expected to present any traffic capacity problems on the road network due to the minimal trips per hour made by such vehicles in comparison to future traffic capacity modelling undertaken. The associated vehicles are therefore expected to have a limited impact on local communities during the construction of the proposed development.

The impact of construction traffic on the network is not expected to cause undue inconvenience to other road users given the proximity of the site to the strategic road network. However, in order to ensure that construction activity is minimised it is recommended that the contractor(s) produces a Construction Traffic Management Plan (CTMP) in consultation with CCC.

It is anticipated that a contractor will be appointed for the overall development of the site. As such, there could be benefit in a Framework CTMP being developed that set out the general principles and standards that should be adopted for the individual CTMPs.

This Framework CTMP and subsequent plot specific CTMPs will address the following:

- traffic signage and signalling necessary for the direction and control of approaches to the site;
- suitable routes for materials and for the transport of employees to and from the site. The emphasis here will be to limit the use of the private car;
- details of any operations, which will obstruct public roads in a way that restricts the free passage of vehicles; and

- timing of operations and procedures will be discussed with CCC prior to the commencement of construction works.

With the appropriate traffic management procedures in place, the impacts arising from construction of the proposed development will be reduced. This will be further addressed in the reserved matters process.

9 Framework Travel Plan

9.1 What is a Travel Plan?

A Travel Plan (TP) provides a site occupier with the opportunity to actively commit towards creating a development that encourages modal shift towards sustainable transport.

A TP sets achievable targets for applicants and occupiers to pursue within a defined timescale. The most successful TPs are live documents that evolve with a development and in which several stakeholders including the developer, management company, tenants and local authority have a role in developing and monitoring.

Where an 'end user' or 'users' are not known a Framework Travel Plan (FTP) is produced which sets out the above in an outline format which will be used to devise subsequent individual plans for each element of the development. This type of Plan is primarily used for large scale developments which could have a significant impact on travel behaviours once occupied.

An FTP represents the first stage in sustainable travel planning. Whilst it has a format similar to a site-specific plan, this FTP will consider the strategic objectives and targets, propose site wide measures and set out monitoring proposals and strategy, which in turn will be used to inform the individual plans.

9.2 Benefits of a Travel Plan

The UK and Welsh Government recognise Travel Plans as an important tool in reducing the number of single occupancy car trips, made to and from a business, organisation, or facility, in favour of more sustainable modes of transport, such as public transport, cycling or walking.

Figure 14 provides examples of some of the benefits of implementing a Travel Plan to different groups.

Figure 14: Benefits of a Travel Plan

The overall objective of the TP will seek to achieve a situation where employees and visitors can make informed travel decisions based on comprehensive information about a range of transport modes.

Those travelling to and from the site can be categorised as either employees (at the site or nearby businesses) or visitors.

All site-occupants will work in conjunction to meet the strategic Travel Plan objectives.

9.3 Measures

In addition to the proposals outlined within Section 4. it will be necessary to implement several Travel Plan measures to ensure employees and visitors to the site are informed about their travel options and are encouraged to travel by sustainable modes.

It is not possible at this stage to fully define which measures are most appropriate for the site, as the measures need to be tailored to the needs and aspirations of

future occupiers. The most appropriate measures will be selected following the initial Travel Plan surveys.

9.4 Site Wide Measures

The site wide measures presented below could be implemented in advance of opening for employees.

9.4.1 Walking

In order to encourage walking, the following measures are recommended:

- Provide maps presenting recommended walking routes to the site from key locations. Maps could include indications of walking distances, times and the potential number of calories that could be burned. This map could be displayed on all central notice boards across all sites and provided to new starters;
- Ensure footways are maintained, well-lit and kept clear. Suitable wayfinding and signposting should also be installed to guide pedestrians;
- Raise awareness of the health benefits of walking through the provision of leaflets and notice boards; and
- Circulation of a bi-annual newsletter to all site employees, which would detail Travel (Plan) information and updates; and
- Introduce awareness campaigns such as walk to work week.

9.4.2 Cycling

Site wide initiatives which could encourage cycling include:

- Provision of an onsite Cycle Hub for both staff and visitors to the site, offering repairs and new part services, information relevant to the site and potentially a cycle hire scheme;
- Enrolment on the Government's Cycle to Work Scheme[3] using the salary sacrifice process which enables employees to purchase cycles and cycle equipment as a tax-free benefit;
- Free bike loans for up to one month for staff from the Cycle Hub. Users of the free bike loan would pay a deposit and be able to try commuting to work with reduced hassle and no commitment to buy until they know if it will suit them;
- A bike/e-bike share scheme could be introduced at the site with potential docking station also located at Llanelli Railway Station; and
- Introduce awareness of cycling for transport through campaigns such as cycle to work week.

3

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/845725/cycle-to-work-guidance.pdf

9.4.3 Public Transport

To maximise the use of public transport, employees should be aware of the local public transport network and the benefits of using it. The following initiatives could be implemented to encourage travel by public transport:

- To improve the accessibility to the site by bus, discussions will be progressed with First Bus to investigate opportunities to improve local bus services;
- Displaying a map of the local bus network, stops, journey durations and frequency of services in central notice boards and within individual buildings to increase awareness of public transport for travel to the site;
- Highlight the location of Llanelli railway station and areas which are accessible by rail from the station, alongside walking and cycle travel times to/from the site in order to encourage travel by rail and bike;
- Potential scope to introduce a hotel shuttle to and from the train station for visitors;
- Offer an interest-free season ticket loan scheme for staff to purchase season tickets for public transport; and
- Include public transport information on the staff intranet and publicise national public transport guidance services such as Traveline Cymru.

9.4.4 Cars

To encourage more sustainable use of cars, several measures can be pursued for the site:

- Provision of electric vehicle charging facilities;
- Electric or hybrid pool cars could be provided so that staff who need to travel for work purposes during the day are not required to drive to work;
- Establish a Machynys Hotel car share database to enable staff who live close to one another to share transport (subject to shift times);
- Publicising car sharing websites such as ShareCymru.com or Liftshare.com where users can match up with local drivers or passengers in the area undertaking similar journeys;
- Advertising the cost savings of car sharing on notice boards in addition to the positive environmental impacts in order to raise awareness of the benefits;
- Priority parking for car sharers;
- Potential scope to introduce a hotel shuttle to and from the train station for visitors; and
- Provide a taxi pick up/drop off area to allow accessibility for group airport transfers for long-haul visitors.

9.4.5 Personalised Travel Planning (PTP)

Personal Travel Planning (PTP) could be offered to all employees within the first year of the site being occupied and ideally as part of their staff induction process. This would ensure that staff are aware of the travel choices available to them from the outset and are made aware of the benefits of active travel modes and public transport as alternatives to the private car.

9.5 Implementation and Management

To be successful, a Travel Plan will need to facilitate an understanding of the travel patterns relating to each site through individual Travel Surveys and co-ordinate individual and overarching transport measures which contribute to increasing sustainable travel of employees. An example of hotel Travel Survey is included in Appendix H. In addition, to maximise the chances of success, it is important to have a clear implementation strategy identifying roles and responsibilities for stakeholders within each site to maintain the momentum of the Travel Plan.

It is important that the Travel Plan is a living document managed by a Travel Plan Co-ordinator (see 8.5.1). Travel patterns will change, and new measures will become available. It is therefore encouraged that the Travel Plan is reviewed on a frequent basis to ensure that the objectives are up to date, and targets are being achieved.

9.5.1 Travel Plan Co-ordinator

Quantitative, realistic and achievable targets will be set for the site, based upon individual Travel Surveys undertaken by the occupiers. As such, a Travel Plan Coordinator (TPC) will be appointed. The TPC should periodically undertake reviews of targets and ensure they reflect the targets set out in relevant planning policy guidance.

The TPC appointed for the site would be responsible for:

- Implementation and day-to-day running of the Travel Plan;
- Establishing a Travel Plan Steering Group to assist in taking initiatives forward;
- Promoting and encouraging the use of travel modes other than the car to all staff;
- Taking ownership of the Travel Plan targets and implementing the necessary measures;
- Maintaining a list of travel plan representatives for individual departments/parts of the site;
- Providing a point of contact for travel information for staff;
- Developing and disseminating appropriate Travel Plan marketing information, and to ensure that all relevant and up to date material is clearly displayed on Travel Plan notice boards around the site they are responsible for;
- Arranging for travel surveys to be undertaken when necessary;

- Updating the key milestones, deliverables and the programme outlined in the Travel Plan Action Plan;
- Periodically reviewing the Travel Plan and updating the document as necessary; and
- Organising meetings of the related working groups.

9.5.2 Travel Plan Steering Group

A Travel Plan Steering Group will be formed to coordinate the ongoing review and development of site wide targets towards the overarching goal of increasing sustainable travel to the site. The steering group will likely be formed of the site TPC, senior hotel management and a representative for CCC. The group would work to identify and agree appropriate measures in response to monitor and achieve agreed Travel Plan targets. The Steering Group would be responsible for overall delivery of the Travel Plan, setting targets and agreeing any appropriate mitigation measures.

9.6 Targets, Monitoring and Review

9.6.1 Targets

To meet the overarching aim of maximising sustainable travel to and from the hotel development, a set of outline targets have been developed. These targets are derived from modal split data collected as part of the 2011 Census.

Going forward, additional site-specific targets will be developed. These site-specific targets will be informed by initial travel surveys. It should be recognised that for the targets to be effective in reducing unsustainable travel, they need to be 'SMART' as set out in Figure 15 below.

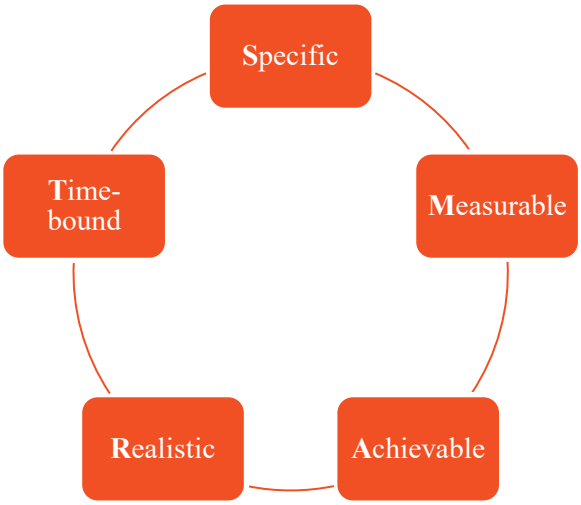


Figure 15: SMART Targets

Existing Travel Patterns

The existing mode share for those travelling to the area can be estimated based on 2011 Census Data journey to work, which is presented in Table 14. Whilst the census data gives an indication of current mode share for journeys to work in the area the intention is that the hotel site achieves a better mode share. Mode share targets will be set following initial travel surveys of employees, residents and visitors. It is proposed that future staggered targets of increasing sustainable travel mode share over time are set targeting a reduction of trips made by single car occupancy journeys.

Considering the existing sustainable transport infrastructure in the vicinity of the site, in particular active travel improvements as well as the Travel Plan measures set out within this document, there should be potential to reduce the proportion of single occupancy car trips.

Baseline Targets

It is important to set realistic targets to measure the success of travel plans. Developing modal share targets for employees ensures that the travel plan is monitored and reviewed and there is a benchmark on which to judge its success. At this stage, only outline targets have been set for the development overall. Comprehensive targets will be set once the first travel surveys have been completed and analysed as a greater understanding of the travel behaviour of the occupants is obtained. This also give final users and TPCs ownership of the targets set.

A target of a reduction of 12% over five years in the number of trips made to and from the site by private car is proposed for the site. This is considered achievable as a result of the following interventions:

- No increase has been made for car passenger journeys since in the 2011 census car-share mode share was 16%, which is already considered to be a significant proportion, when compared against the national average of around 4%;
- An increase of 3% in the proportion of journeys made by public transport (combined bus and rail) through raising awareness of local bus services and of Ebbw Vale Town station as a potential option, which is an approximate five-kilometre cycle away. This could be increased in future depending on whether a staff shuttle bus is implemented;
- A 7% increase in the number trips made by cycle reflecting the potential to provide bike loans and awareness campaigns such a cycle/walk to work week; and
- A 2% increase in walking trips reflecting as a result of proposed good quality links around the site and awareness campaigns such a cycle/walk to work week.

Table 14 shows the targets for other modes.

Table 14: Target Modal Split per Travel Plan Year

Mode	Travel Plan Year

	2011 Census Mode Split	1	2	3	4	5	Target Modal Split
Car driver	84	82	80	78	76	74	72
Car passenger	6	6	6	6	6	6	6
Public transport (Bus/coach/train)	2	3	4	5	6	7	8
Cycling	2%	2%	3%	5%	6%	7%	8%
Walking	2	3	3	4	4	5	5
Motorcycle	5	6	6	7	7	8	8
Taxi	1	1	1	1	1	1	1
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

9.6.2 Monitoring

An important part of any Travel Plan document is monitoring and review. It is essential that a Travel Plan document is not a one-off event but evolves over time. Regular monitoring and review led by the TPC will help to gauge progress towards targets and objectives and evidence proposals made to the Travel Plan Steering Group in order to improve performance against targets. It is proposed that the Travel Plan is reviewed at least annually.

Monitoring should include:

- Travel patterns (via a travel survey) - comprehensive travel surveys will be undertaken with a commitment to review the Travel Plan targets at the conclusion of each monitoring phase. This review will identify elements of the Plan that are not working as well as others, and inform changes in the measures;
- Full site audit – undertaken by the Travel Plan Steering Group, the audit will identify any barriers that obstruct walking, cycling and using public transport and make recommendations for improvements; and
- Parking counts (all vehicles including bicycles and motorcycles) to check for the balance of supply and demand.

Following monitoring the findings should be set out in a monitoring report. The report will summarise the monitoring data collected, performance against targets, report on progress of measures that have been implemented and suggest any changes to existing measures or new measures required.

The monitoring report will be discussed at the Travel Plan Steering Group with required changes to measures and targets agreed.

10 Conclusion

The proposed Machynys Hotel development consists of 140 beds to the south of the town centre and adjacent to the strategic B4304 Coastal Road. In addition to the well-stablished highway routes, the site is located close to a combined footway/cycleway which connects to the National Cycle Network. The wider planned network for Llanelli will establish several useful routes for utility and leisure journeys.

The concept masterplan for the Llanelli Wellness and Life Science Village (LWLV) proposal is designed to 'knit' together the surrounding developments to create a sustainable community of mixed land-uses. This has been used as the basis to inform this transport assessment which has included a number of committed developments forecasted trips.

The hotel will be developed as a separate site but would retain potential to provide a vehicular link to the adjacent residential development to the west. The access road from the residential development could provide access to the proposed hotel development adjacent. The access is a proposed all-movement priority T-junction with a ghost island. Another potential access would be via a separate access from the Machynys Roundabout/Nicklaus Avenue that is lightly trafficked from the existing golf course. Either access or a combination of the two access will be further assessed within the reserved matters process.

The development is forecast to generate 55 two-way vehicle trips in the AM peak hour and 60 two-way vehicle trips in the PM peak hour. The development is therefore not considered to have a significant impact on the local highway network.

In agreement with CCC, five junctions have been assessed using Junctions 9 for roundabouts (ARCADY module) and priority junctions (PICADY module). Junction assessment shows that the proposed hotel would have relatively little impact on the surrounding road network. As a result, no mitigation is proposed.

Several proposals from the neighbouring developments are expected to have a positive impact on the hotel site such as the pedestrian crossings proposed in the vicinity of the LWLV site which will improve connectivity and create a safe environment for all road users, and a bus strategy that is being developed for the site in consultation with CCC and First Bus as the local service operator. In addition to potential service improvements, a bus stop is proposed within the LWLV site directly north of the Delta Lakes roundabout as part of the LWLV proposals.

A framework Travel Plan has also been prepared in support of the hotel development proposal and is within this report. It includes a number of physical and behavioural measures intended to encourage travel by sustainable modes and reduce the number of vehicle trips associated with the proposed Machynys Hotel.

It is concluded that the site is suitable for the type and scale of development proposed and that there are no transportation reasons why the site should not be developed, providing that the following transport measures are implemented:

(i) Cycle parking provision for a minimum of 28 cycle parking spaces to encourage use of sustainable modes;

(ii) Provision of an uncontrolled crossing with central refuge island to enable access across to the footway/cycleway to the north of the B4304;

(iii) Provision of footways throughout the proposed development site on either side of the carriageway apart from those areas of the development which will adopt 'pedestrian prioritised street' principles;

(iv) Provision of appropriate levels of car parking, sufficient for a development of this size whilst also ensuring that sustainable travel modes are prioritised; and

(v) A new all movement vehicular access junction off the B4304 Coastal Road.

Appendix A

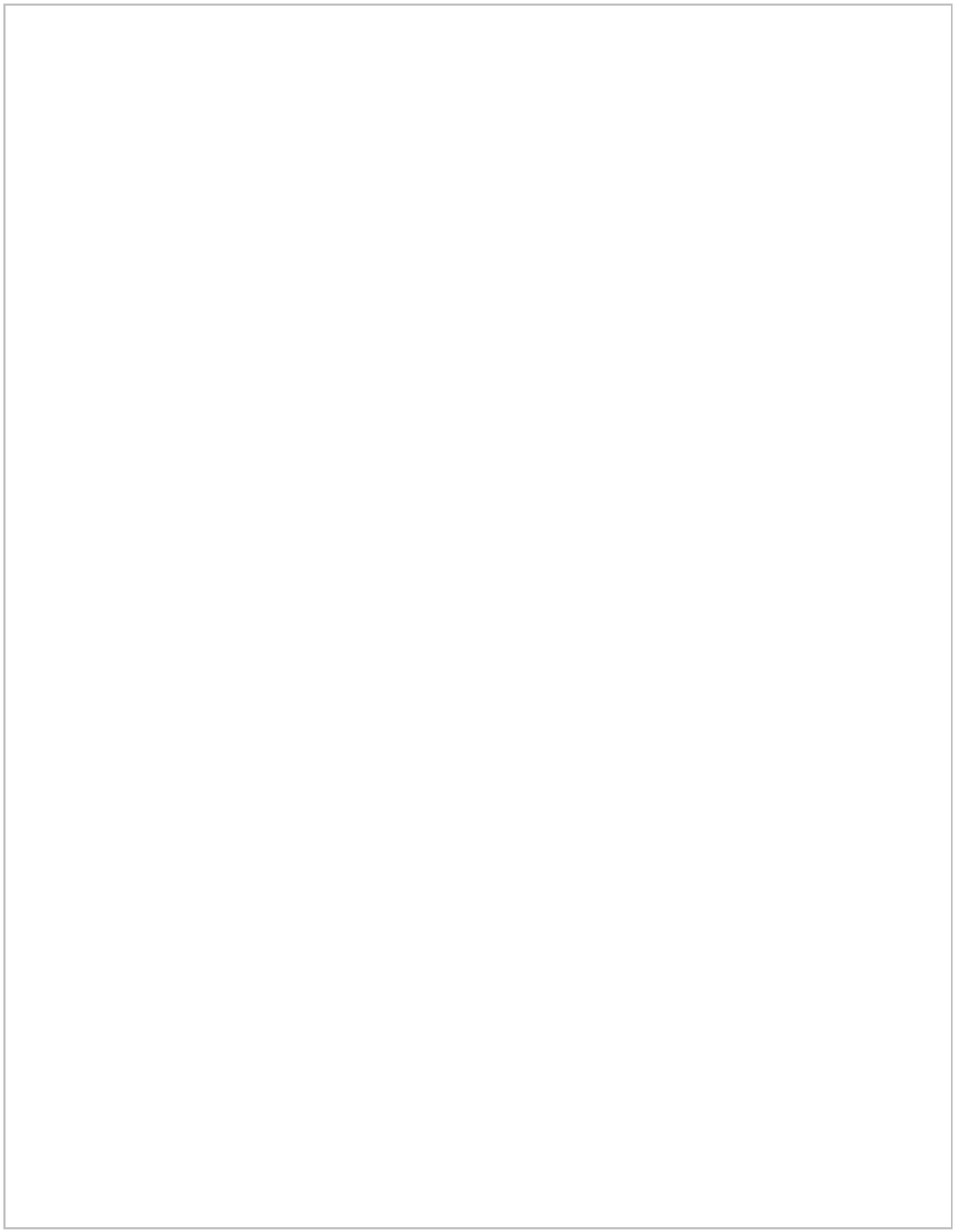
Correspondence with Carmarthen County Council

From:	Morgan, Geraint
To:	Aneesah Irshad; technicalservices@carmarthenshire.gov.uk; Aaron Z Evans
Cc:	Alex Welch
Subject:	[External] RE: Machynys Hotel Scoping
Date:	14 December 2020 16:52:42
Attachments:	image001.jpg image004.jpg

Hi Aneesah

Thanks for your email.

Please find below the applicable parking standards:



In terms of active travel, Samara and Tom's email addresses are as follows:

Thomas J Evans TJEvans@carmarthenshire.gov.uk
Samara Hicks SHicks@carmarthenshire.gov.uk

I can also confirm that we are content with your proposed Trip Gen and Assessment Scope (including committed developments list). Given that you are pressed for time on this assessment (and depending on the results of the assessments that you present in the TA), should any additional analysis need to be presented we can request this during the determination of application period.

Kind Regards

Geraint Morgan *MTCP*
Principal Transport Planner
UK & Europe
Engineering, Design and Project Management

+44 (0)2920 35 8049

2 Capital Quarter, Tyndall Street, Cardiff, CF10 4BZ

Main Banner Image

Company

From: Aneesah Irshad <Aneesah.Irshad@arup.com>
Sent: 14 December 2020 15:40
To: technicalservices@carmarthenshire.gov.uk; Aaron Z Evans <ZAEvans@carmarthenshire.gov.uk>; Morgan, Geraint <Geraint.Morgan@atkinsglobal.com>
Cc: Alex Welch <Alex.Welch@arup.com>
Subject: RE: Machynys Hotel Scoping

Hi All,

Hope you had a good weekend!

Do you have any comments on the below approach taken to assess the traffic impact from Machynys Hotel?

Kind Regards,
Aneesah

From: Aneesah Irshad
Sent: 09 December 2020 14:22
To: technicalservices@carmarthenshire.gov.uk; Aaron Z Evans <ZAEvans@carmarthenshire.gov.uk>; Morgan, Geraint <Geraint.Morgan@atkinsglobal.com>
Cc: Alex Welch <Alex.Welch@arup.com>
Subject: Machynys Hotel Scoping

Hi Both,

Thank you for the phone call Monday 07th. As discussed we are currently undertaking an assessment for an outline planning application for a 140 bed hotel in the Machynys area. This is an update to the previous Watermans TA application approved in 2010. Please could you provide the CSS 2014 if available, the Llanelli Active Travel Masterplan and contact details for your colleagues Samara and Tom who you mentioned could help to inform us on the proposed improvements in the area.

The below sets out the scope which we would like to agree with you on how to assess the predicted flows generated from the hotel and assessment of the development. Please could you review and get back to us as soon as you can as we would like to submit before Christmas.

Trip Gen and Assessment scope:

Vehicle Access:

The proposed hotel access will remain as the previous 2010 application using;

- the proposed Machynys Central residential entrance off the B4304 for staff and service vehicles, and
- a visitor access off the road leading to the golf course

Junction assessments, road safety audits, Swept Path Analysis and design detail will be carried out in a more detailed applications upon approval of this outline application.

Forecasted Trips:

Below is an updated forecasted trip rate generated from the proposed hotel from the 2010 application, using TRICS. The following traffic flows generated for the 140 bed hotel is: (updated TRICS report attached). For robustness, we will continue to use the Watermans trip rates as these are higher to represent a 'worst case'.

Due to Covid-19 and timescales for submitting the outline planning application a survey would not be appropriate at this time, and it is assumed that the traffic pattern is likely to turn back to pre-covid trends in the future. The uptake in active travel and public transport may increase with the active travel masterplan and possible new bus services to the developed area but for a robust assessment, we propose to use the 2017 surveyed data which was collected and included as part of the Llanelli Wellness TA application. We will apply an uplift factor from TEMPro to get a 2021 base year. Our assessment will look at the 2021 base year and the development + 5 years (2026) and only assess the AM (0800-0900) and PM peak (1630-1730) hours.

Distribution assumption of hotel trips:

- Survey data from the updated TRICS rates was used to estimate the number of employees working a standard 9-5 hour shift or similar. Therefore it can be assumed that those employees would travel during both the AM (0800-0900) and PM (1630-1730) peak hours, and therefore will be travelling via the Machynys Central Residential proposed access, with an assumed car occupancy of 1.5.
- Visitor Distribution to the hotel is based on the 2017 traffic survey
- Employee Distribution to the hotel is based on a 70/30 split, with 70% travelling north along Trostre Road, and 30% towards Sandy Roundabout on all outbound journeys as discussed on the phone call.
- All distribution leaving the hotel site is based on a 70/30 split, with 70% travelling north along Trostre Road, and 30% towards Sandy Roundabout on all outbound journeys as discussed on the phone call;
- Based on the current proposed access to the hotel all deliveries will enter via the Machynys Central Residential proposed access, and assumed outside of the AM and PM peak hours, and therefore have not been included in the impact assessment and will be carried out in a more

detailed applications upon approval of this outline application.

Assessment:
We have included a percentage impact assessment on the following junctions surveyed from Llanelli Wellness and

1. Sandy Roundabout (A484/Coastal Link Road/Sandpiper Road)
2. Seaside Roundabout (Coastal Link Road/Queen Victoria Way)
3. Lliedi Roundabout (Coastal Link Road/Marine Street/North Dock)
4. Copperhouse Roundabout (Coastal Link Road/Copperhouse Road)
5. Delta Lakes Roundabout (Coastal Link Road/Delta Lakes/Access Road)
6. Machynys Roundabout (Coastal Link Road/The Avenue/Nicklaus Avenue)
7. The Avenue/Northumberland Road Priority Junction
8. The Avenue/Embankment Road/North Dock Road Priority Junction
9. B4304 Station Road/Glanmor Road/Marsh Street Mini-Roundabout
10. B4304 Station Road/Queen Victoria/Murray Street Signalised Junction
11. Morfa Roundabout (Coastal Link Road/Lower Trostre Road)
12. Trostre Road/Trostre Parc Roundabout
13. Trostre Roundabout (A484/Trostre Road/A4138)
14. A4138/Pemberton Access Signalised Junction
15. A4138/ Llandafen Road/Glyncoed Road Signalised Crossroads

As a result of the PIA (please see attached), using 2021 with all committed developments as the base flow, we propose that junction modelling is undertaken for Machynys Roundabout, the new potential ghost island priority serving the proposed residential site, and Morfa roundabout will be undertaken.

Like Llanelli Wellness, the other committed developments included in the assessment are:

- Machynys East residential;
- Machynys Central residential;
- Seaside Primary School;
- Stradey Park Residential development; and
- Llanelli Wellness.

Can you please confirm that these are still applicable, and if there any further sites that warrant inclusion.

Our assessment will tie in with the Llanelli Wellness application which proposed physical mitigation on roundabouts that could potentially be over capacity (including sandy roundabout). The assessment included the hotel as a 125 bed development. And this 140 bed hotel assessment only proposes an additional 7 and 8 vehicles on the network in the AM and PM peak respectively due to the increase in hotel rooms.

We look forward to your response, do not hesitate to call on the below number to discuss any queries.

Thanks,
Aneesah Irshad
Consultant | Transport
MEng
Arup
4 Pierhead Street Capital Waterside Cardiff CF10 4QP United Kingdom
d: +44 29 2005 4173
www.arup.com

Rethinking Urban Mobility – join the debate at Arup Thoughts
Connect with me on LinkedIn
Follow me on Twitter @AneesahIrshad

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Appendix B

Illustrative Site Layout Plan

Illustrative Site Layout

Notes:

1. Illustrative masterplan layout only to define development quantum.
2. All matters are reserved, final design/layout is subject to design development.
3. Highway access is subject to development and agreement with the Local Authority as a reserved matters application or to be developed by the adjacent housing development.

Issue	Date	By	Chkd	Appd
P01	18/12/20	PB	AP	ME
Issued for Planning Purposes				

ARUP
4 Pierhead St, Capital Waterside
Cardiff, CF10 4QP
T +44(0)29 20473727 F +44(0)29 20472277
www.arup.com

Client: Carmarthenshire County Council

Job Title: Proposed Hotel at Machynys East, Llanelli

Drawing Title: Illustrative Site Layout

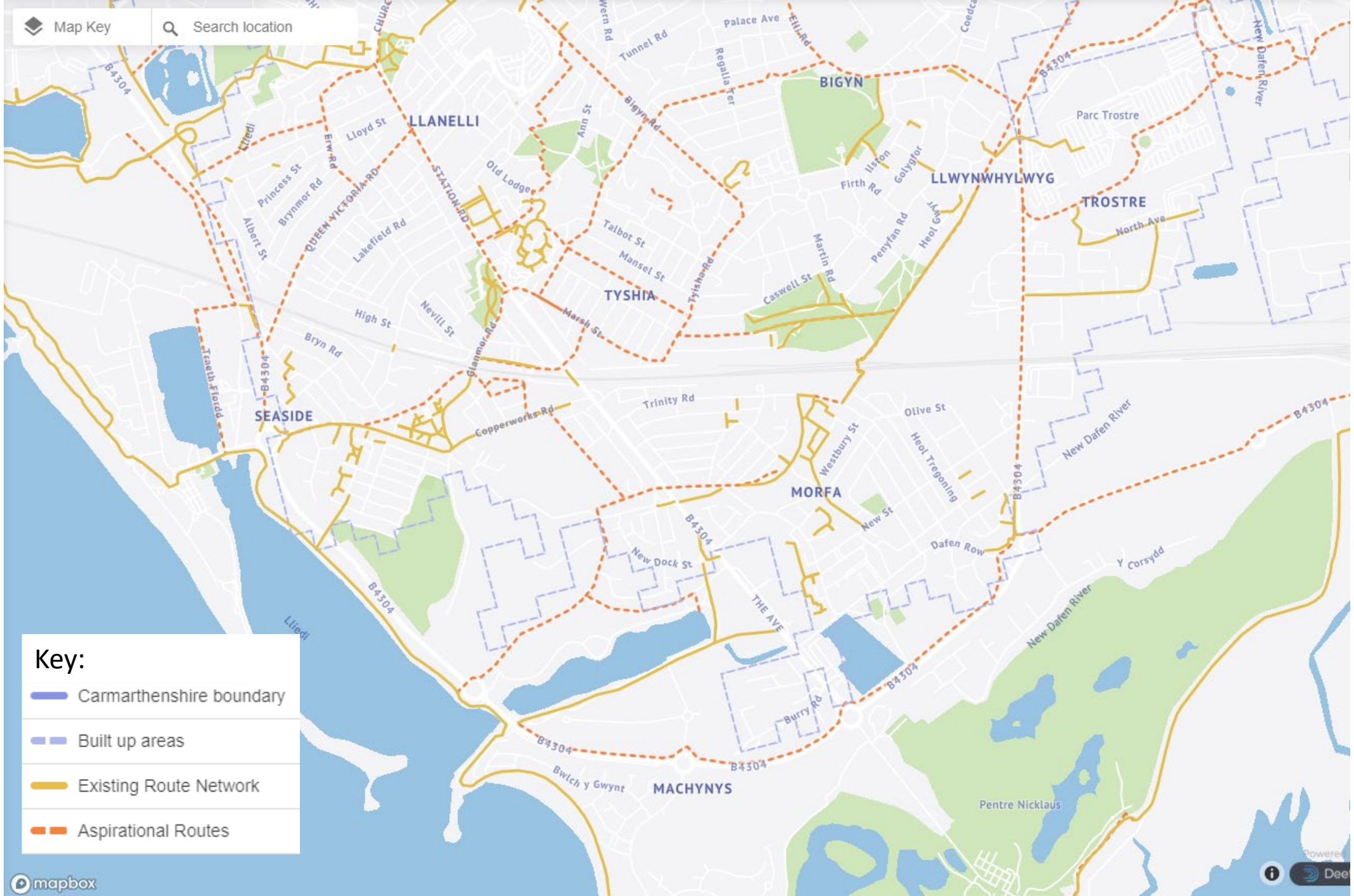
Scale at A1: 1:500
Discipline: Architectural
Job No: 278688
Drawing Status: Outline Planning
Drawing No: AL-0-02
Issue: P01

Do not scale
© Arup

J:\278000\278688-0004 Internal Project Data\4-30 Drawings\4-32 Architect\AL-0-02.dwg 16 Dec 2020 17:03:27

Appendix C

Interactive Network Map, Active Travel


Map Key
Search location
Key:
Carmarthenshire boundary
Built up areas
Existing Route Network
Aspirational Routes
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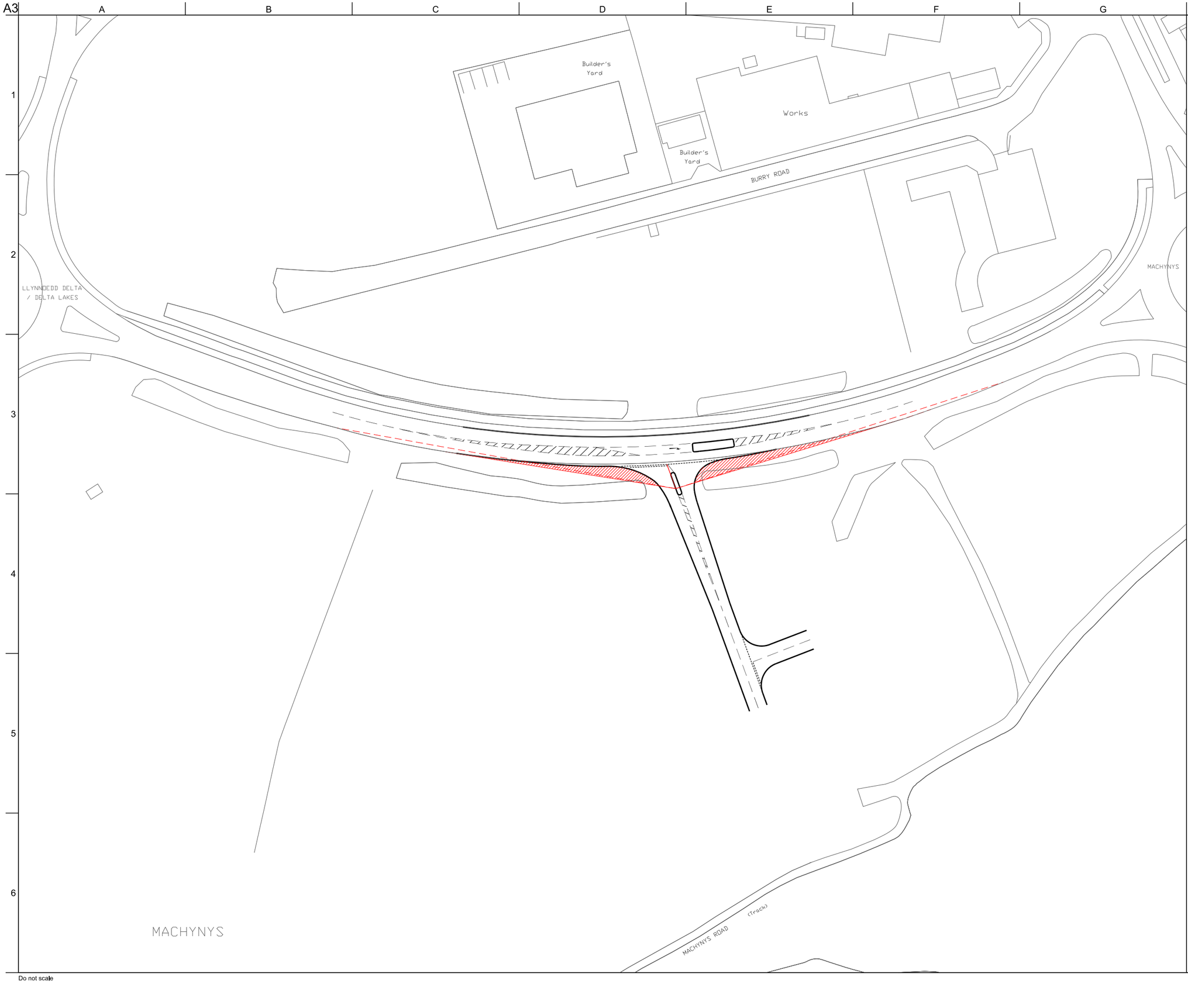
BIGYN
LLWYNWHYLWYG
TROSTRE
TYSHIA
SEASIDE
MORFA
MACHYNYS
Parc Trostre
Pentre Nicklaus
Palace Ave
Tunnel Rd
Regalia Ter
Bigyn Rd
Ann St
Old Lodge
Lloyd St
Princess St
Brynmor Rd
Albert St
QUEEN VICTORIA RD
Lakefield Rd
STATION RD
Talbot St
Mansel St
Tyisha Rd
Firth Rd
Ilston
Golygfor
Penyfan Rd
Heol Gwyr
Martin Rd
Caswell St
North Ave
High St
Nevill St
Bryn Rd
Glanmor Rd
Marsh St
Traeth Ffordd
Copperworks Rd
Trinity Rd
Olive St
Westbury St
Heol Tregoning
New Dafen River
New St
Dafen Row
Y Corsydd
New Dock St
THE AVE
Burry Rd
Bwlch y Gwynt
Lliedi
B4304
Powered
mapbox

Appendix D

Proposed Machynys Central Residential Access



Area of visibility to be retained shown in red in accordance with DMRB.
120m left / right splay 9m set back from giveway line based on 40mph mainline speed.

Issue	Date	By	Chkd	Appd

ARUP

4 Pierhead St, Capital Waterside
Cardiff, CF10 4QP
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www.arup.com

Client

Cyngor Sir Gâr Carmarthenshire County Council

Job Title

Machynys Central Residential Site

Drawing Title

Proposed Access Junction

Scale at A3 1:1250

Discipline Transportation

Drawing Status

Job No	Drawing No	Issue
218610	Figure 4.2	

\Global\Europe\Cardiff\Jobs\218000\218610-00\4 Internal Project Data\4-30 Drawings\4-33 Civil\Transport\tghm03_SiteAccess.dgn

Do not scale

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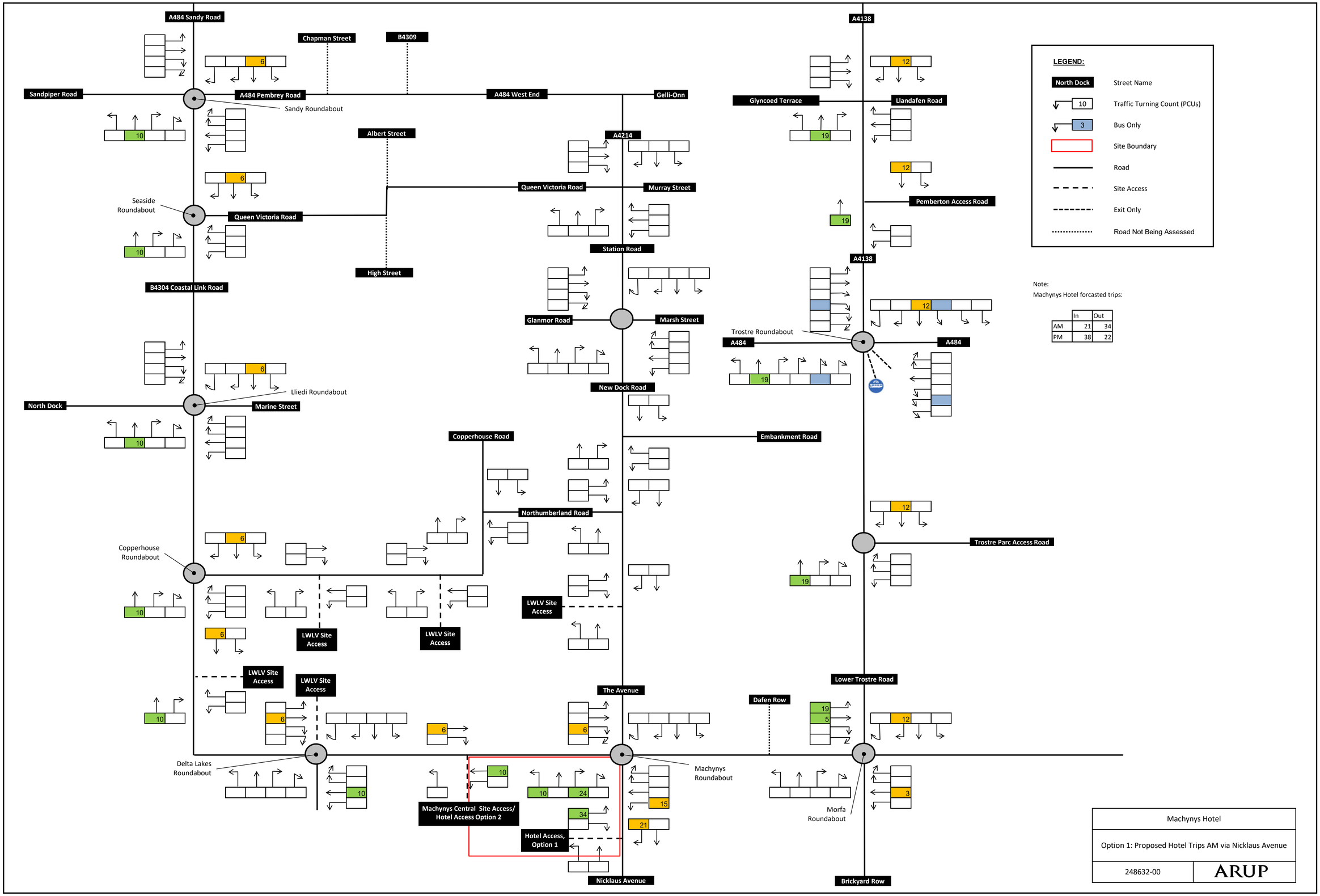
Appendix E

Trip Generation and Distribution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Queen Victoria Road
Murray Street
Seaside Roundabout
Queen Victoria Road
Station Road
High Street
B4304 Coastal Link Road
Glanmor Road
Marsh Street
Lliedi Roundabout
North Dock
Marine Street
New Dock Road
Copperhouse Road
Embankment Road
Northumberland Road
Copperhouse Roundabout
LWLV Site Access
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LWLV Site Access
LWLV Site Access
LWLV Site Access
The Avenue
Delta Lakes Roundabout
Machynys Roundabout
Machynys Central Site Access/ Hotel Access Option 2
Hotel Access, Option 1
Nicklaus Avenue
A4138
Glyncoed Terrace
Llandafen Road
Pemberton Access Road
A4138
Trostre Roundabout
A484
A484
Trostre Parc Access Road
Dafen Row
Lower Trostre Road
Morfa Roundabout
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
3
Bus Only
Site Boundary
Road
Site Access
Exit Only
Road Not Being Assessed
Note:
Machynys Hotel forcasted trips:
In
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AM
21
34
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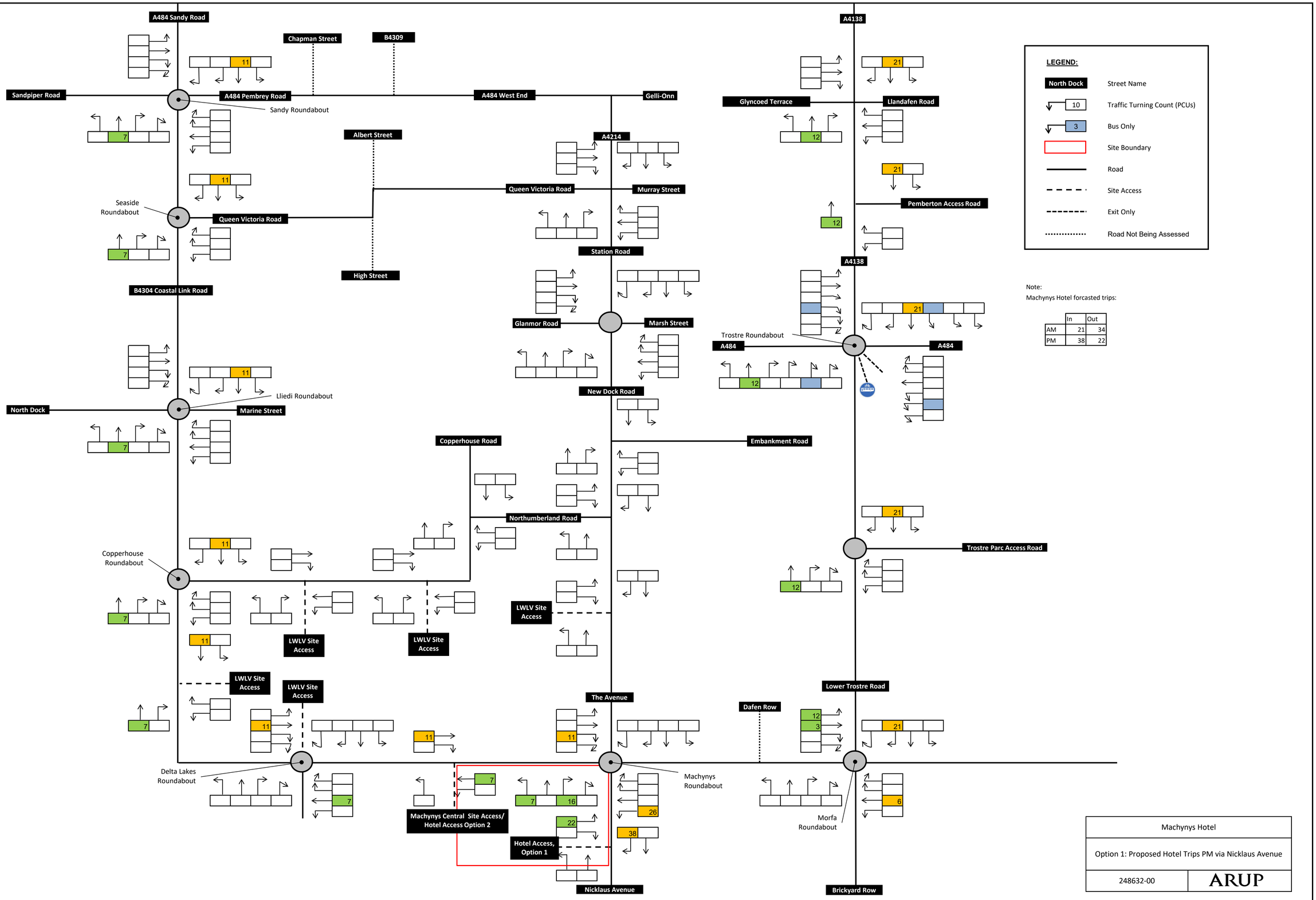
Machynys Hotel
Option 1: Proposed Hotel Trips AM via Nicklaus Avenue
248632-00
ARUP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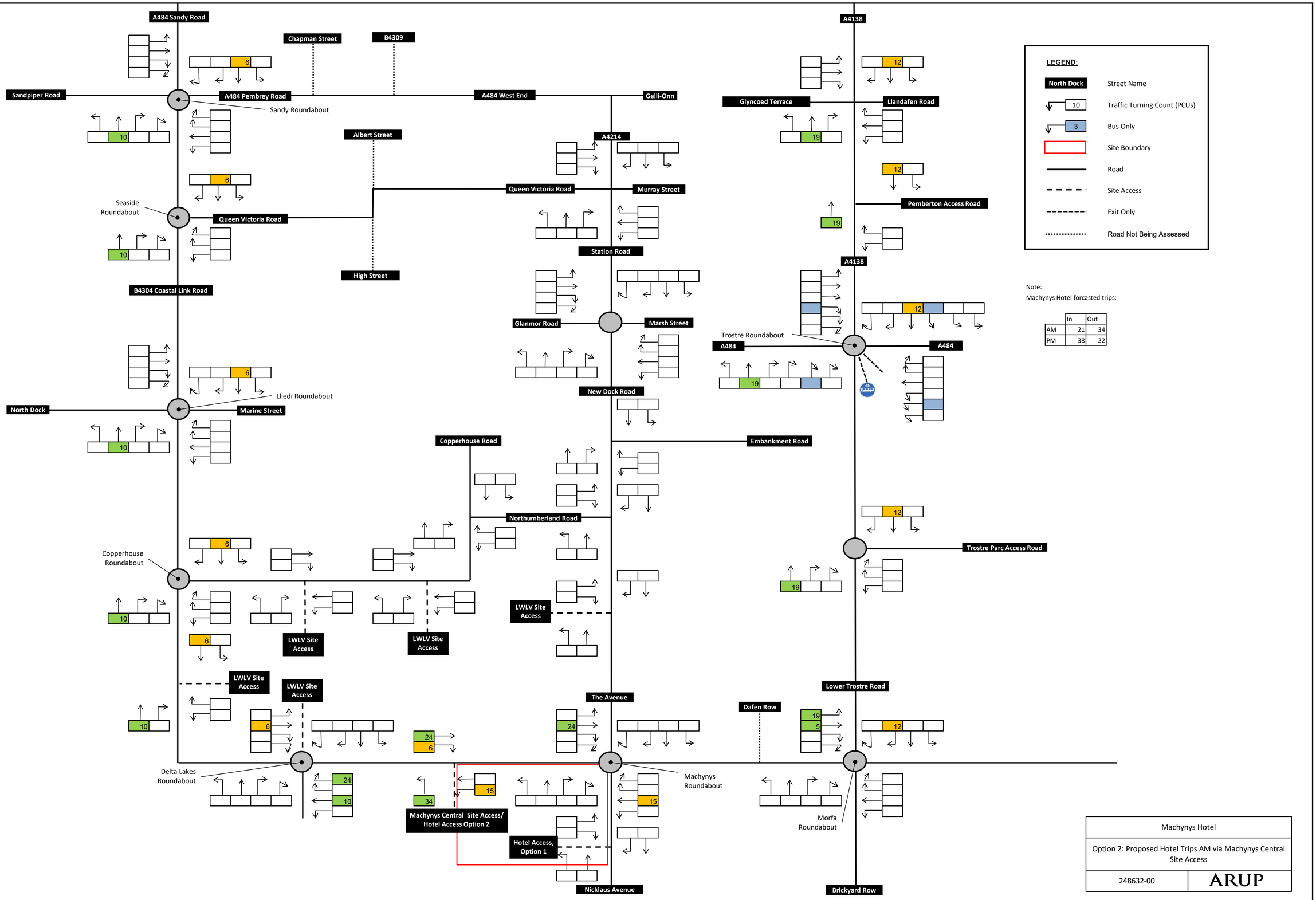
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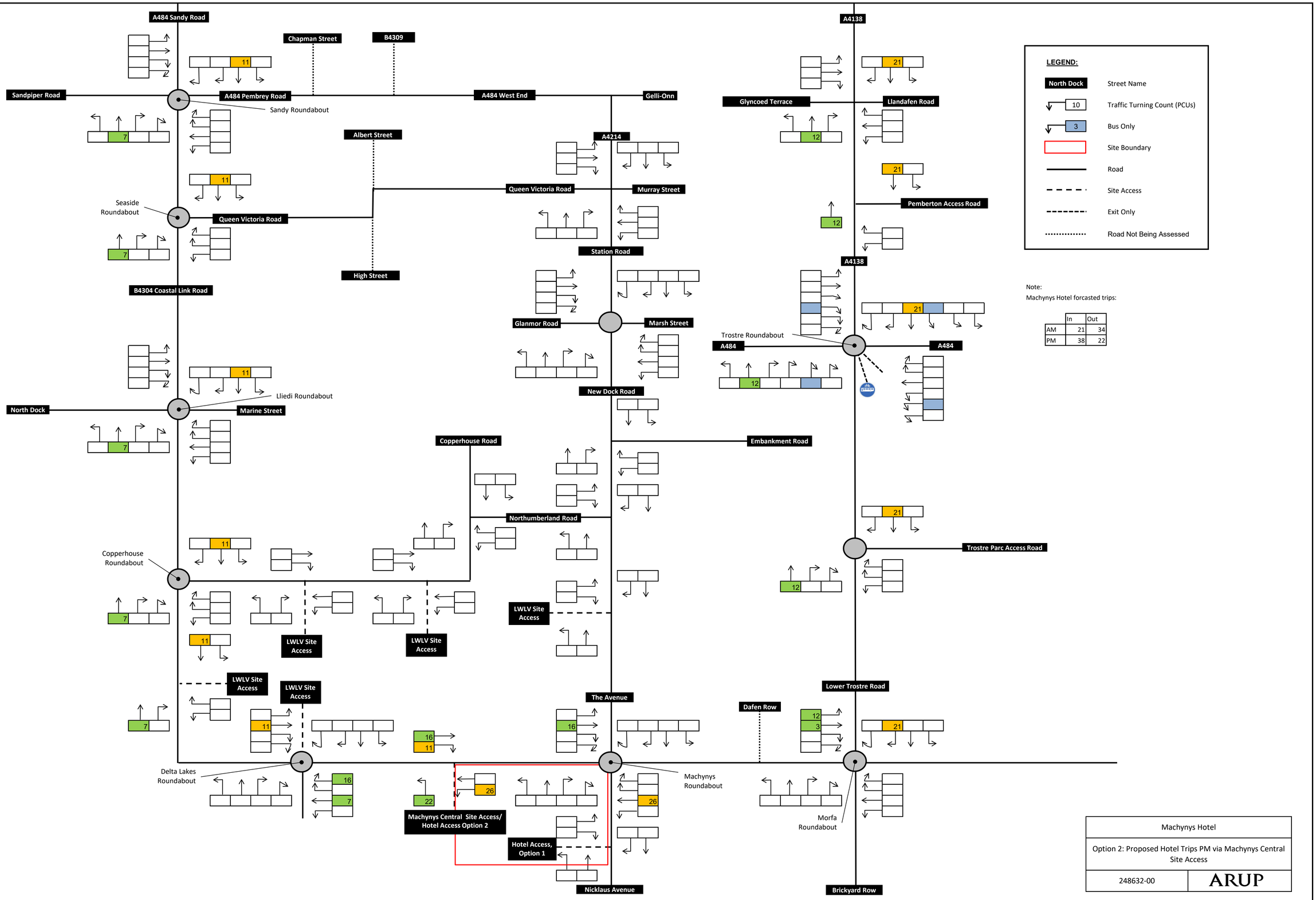
248632-00
ARUP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248632-00
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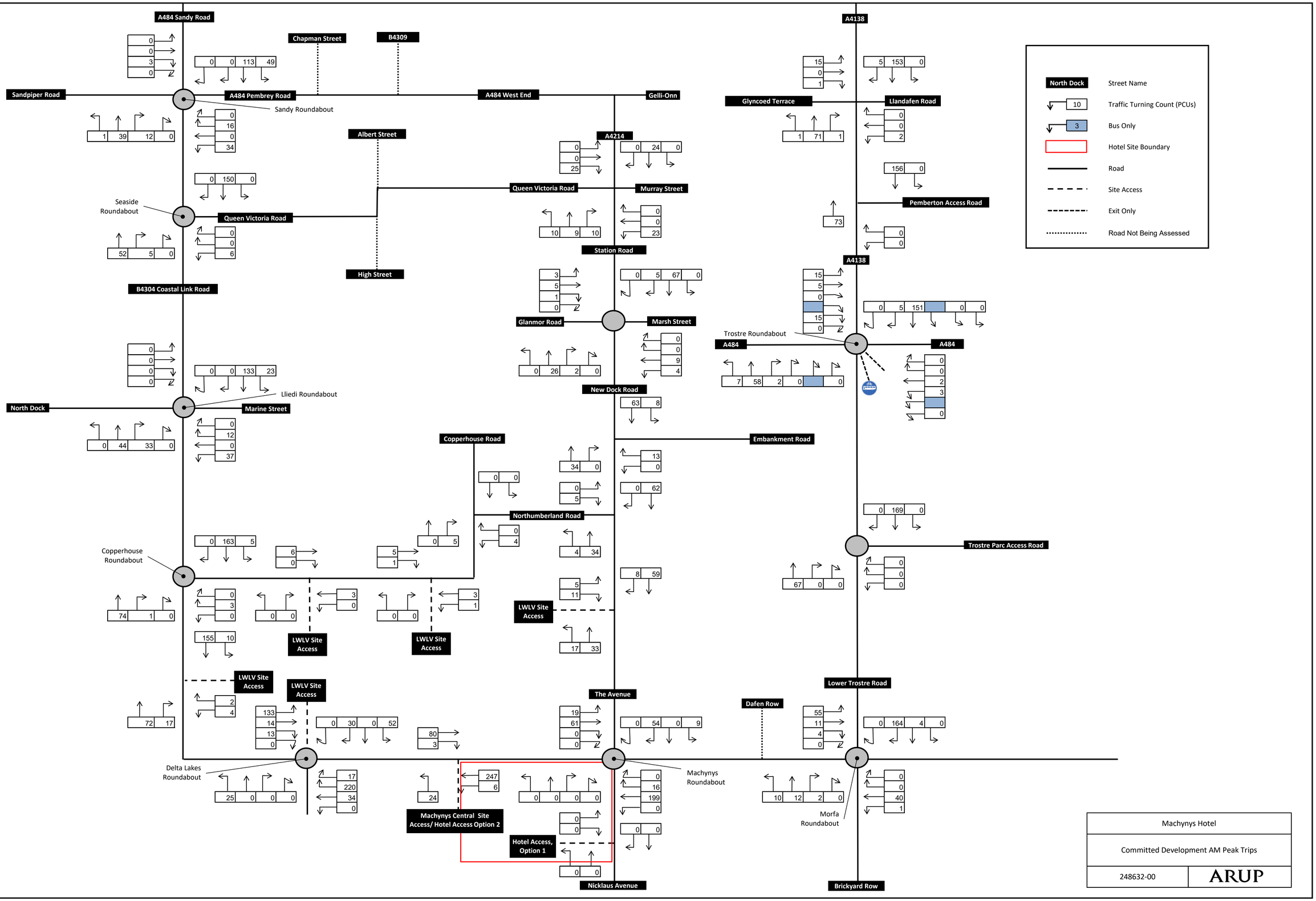

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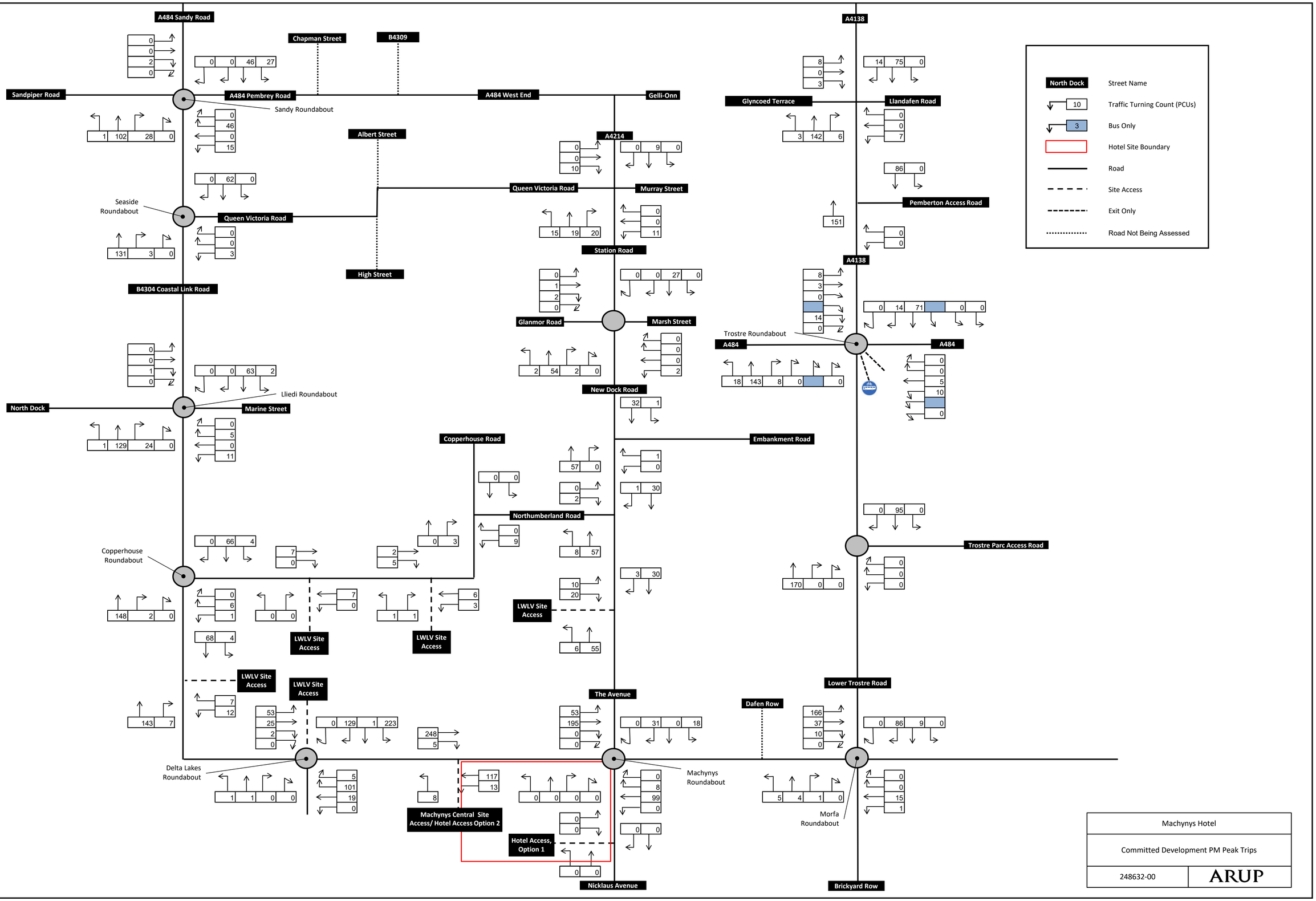
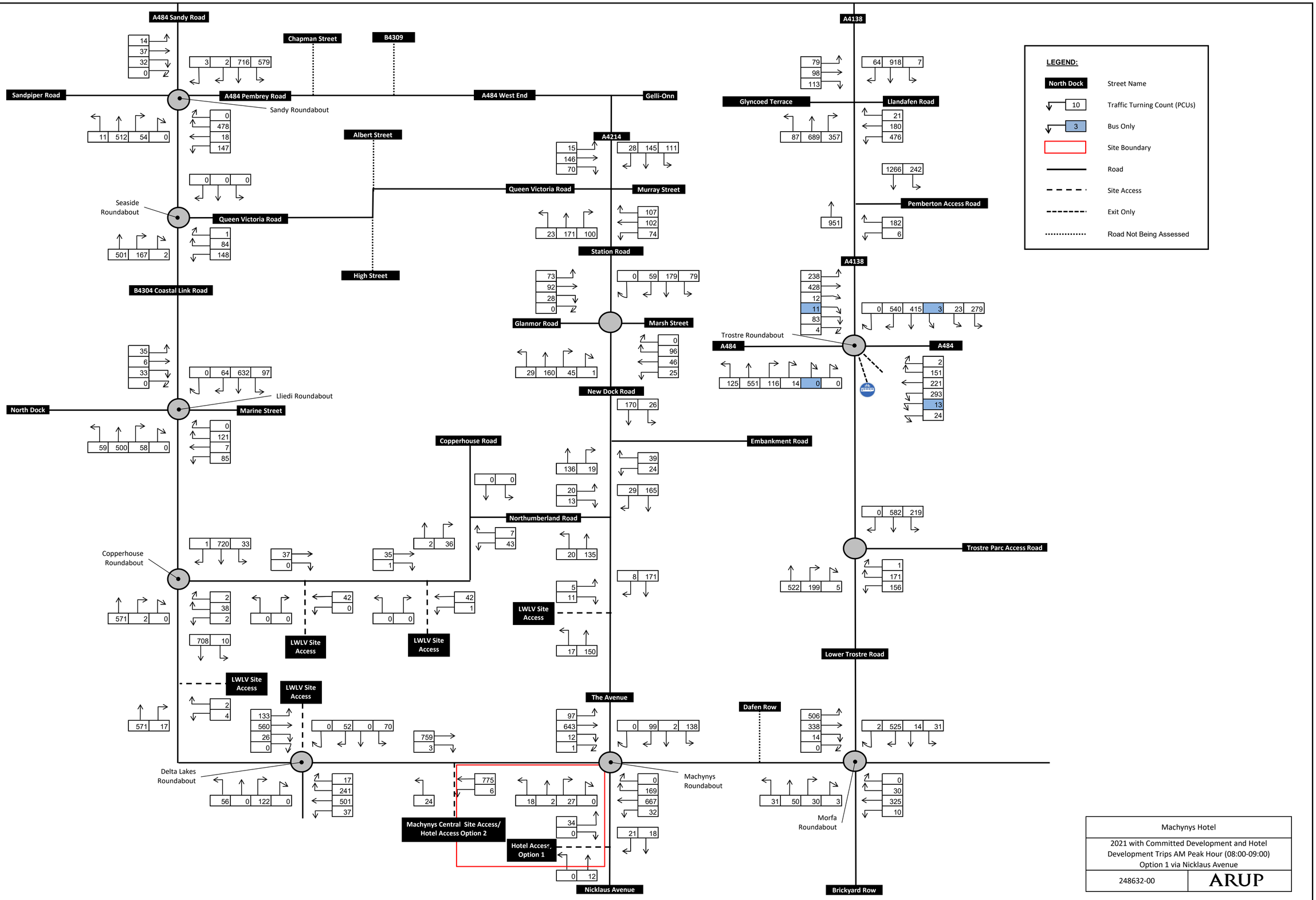
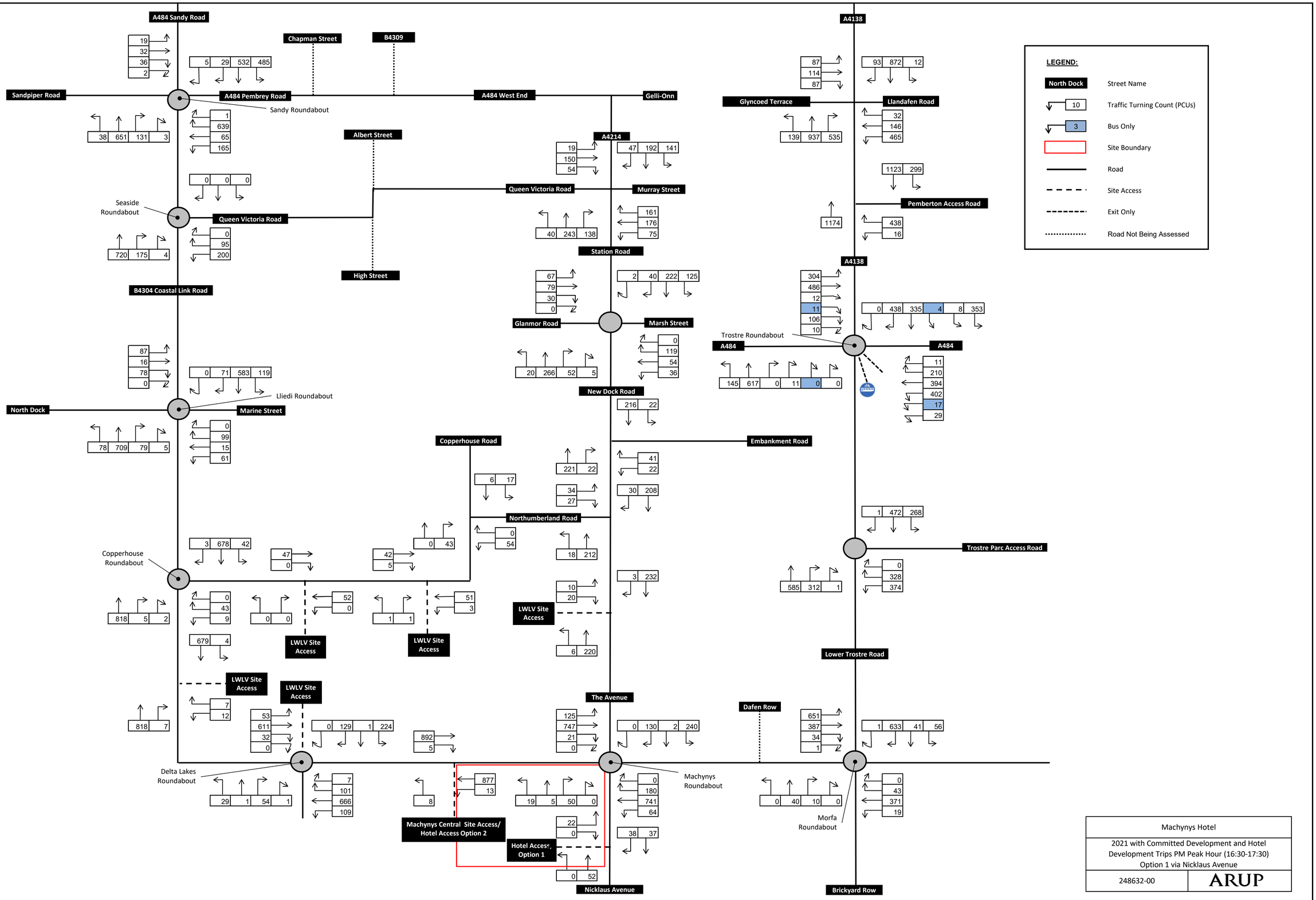
Committed Development AM Peak Trips	
248632-00	ARUP



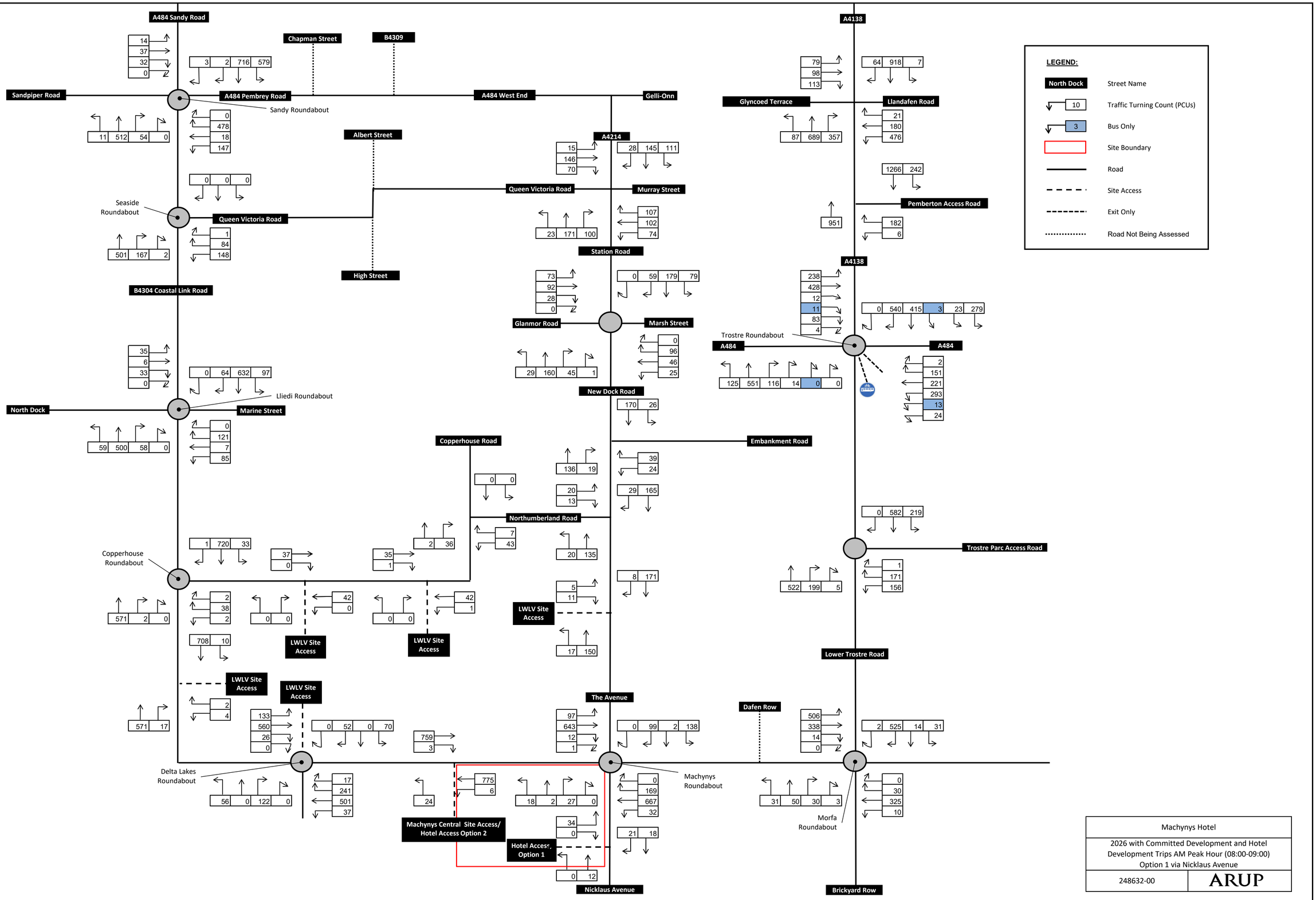
Machynys Hotel	
Committed Development PM Peak Trips	
248632-00	ARUP



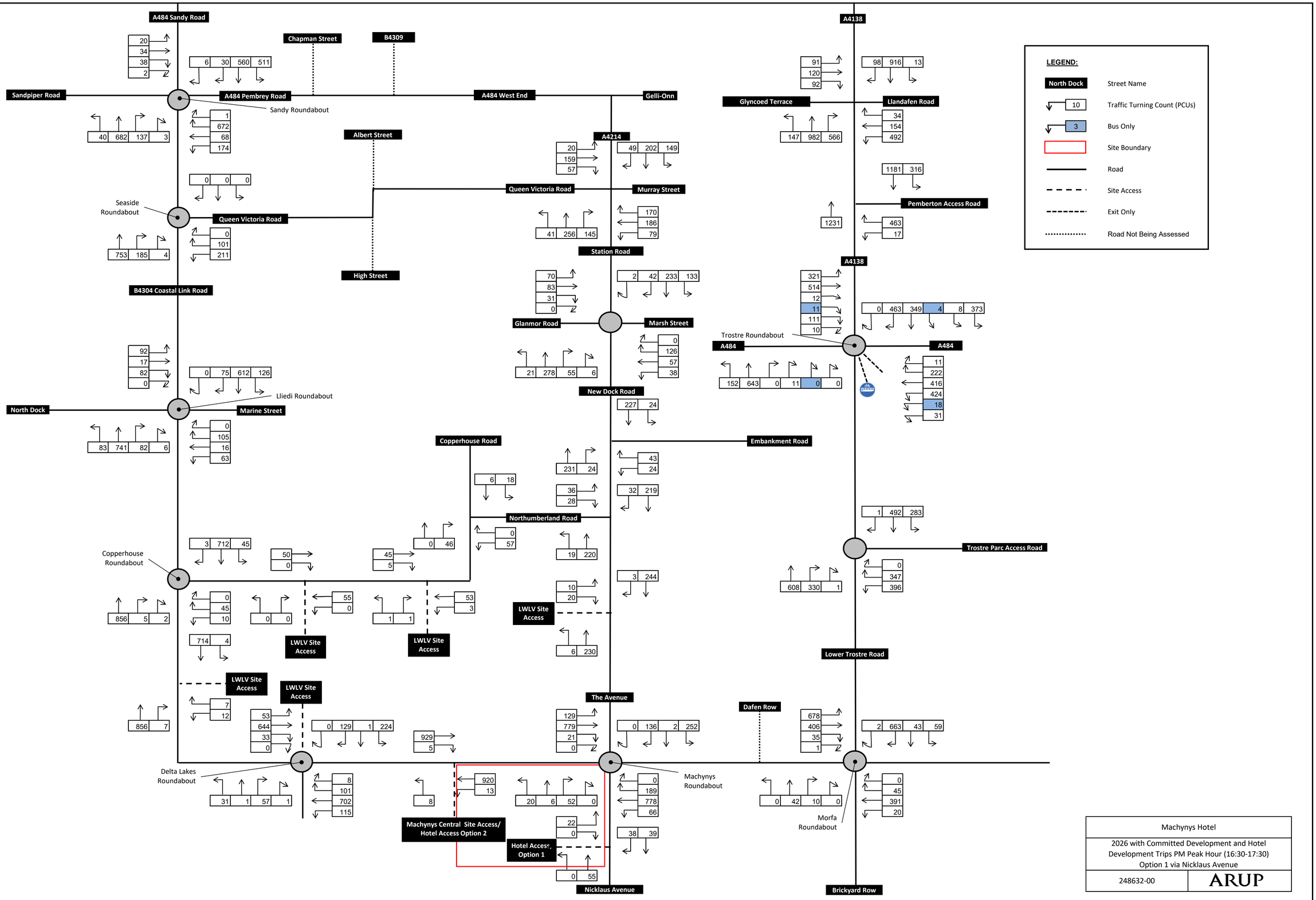
Machynys Hotel	
2021 with Committed Development and Hotel Development Trips AM Peak Hour (08:00-09:00) Option 1 via Nicklaus Avenue	
248632-00	ARUP

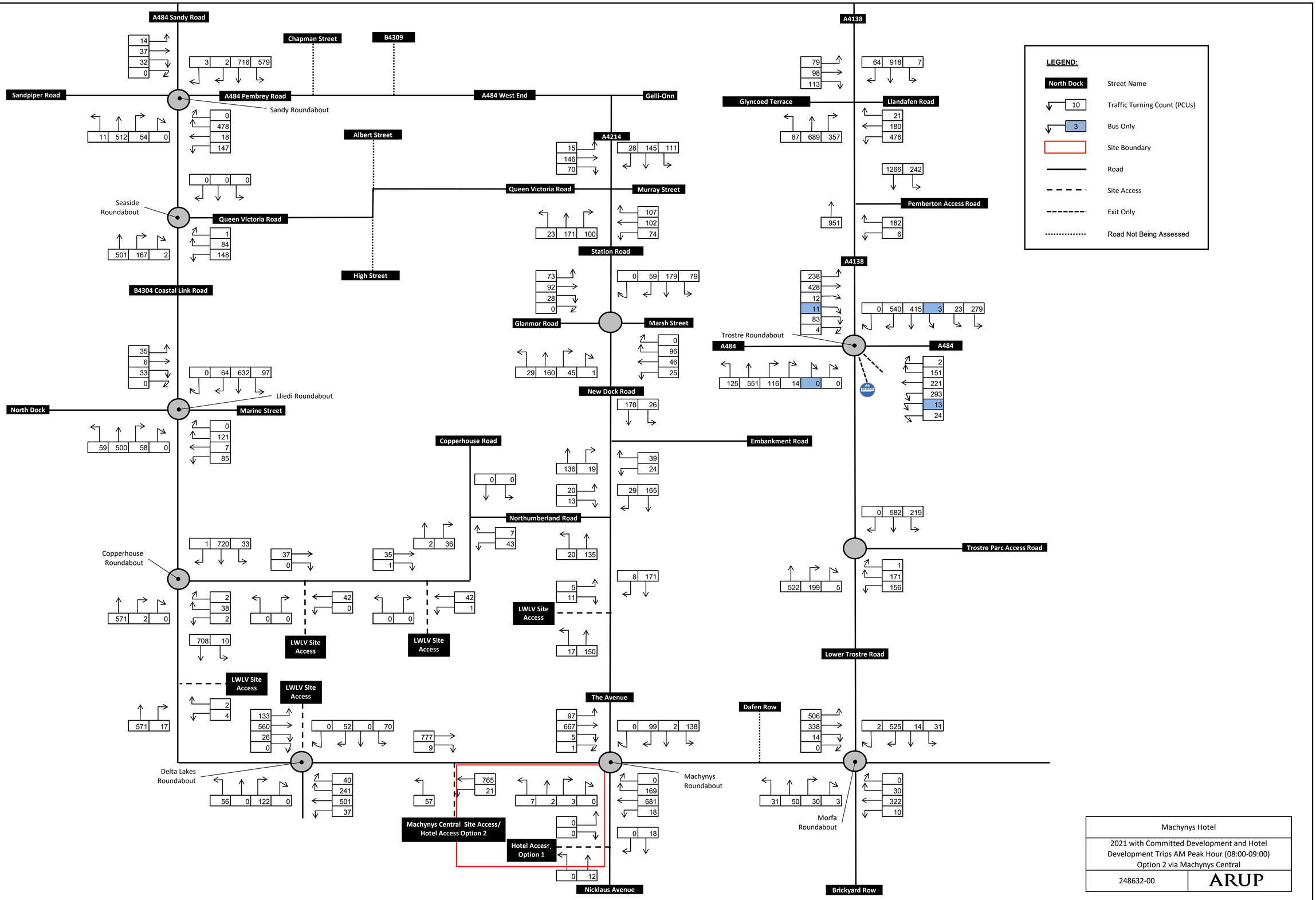


Machynys Hotel	
2021 with Committed Development and Hotel Development Trips PM Peak Hour (16:30-17:30) Option 1 via Nicklaus Avenue	
248632-00	ARUP

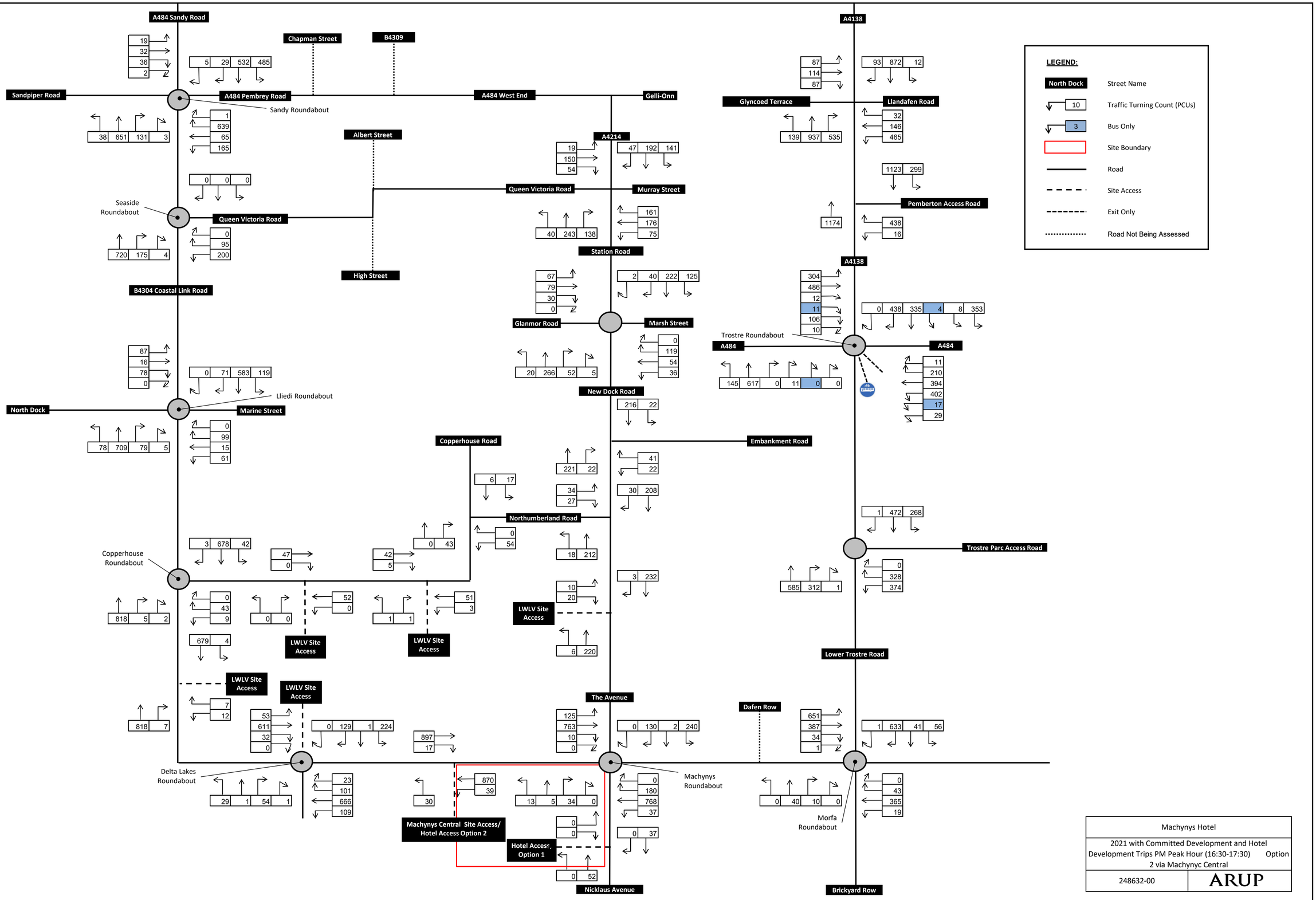


Machynys Hotel	
2026 with Committed Development and Hotel Development Trips AM Peak Hour (08:00-09:00) Option 1 via Nicklaus Avenue	
248632-00	ARUP

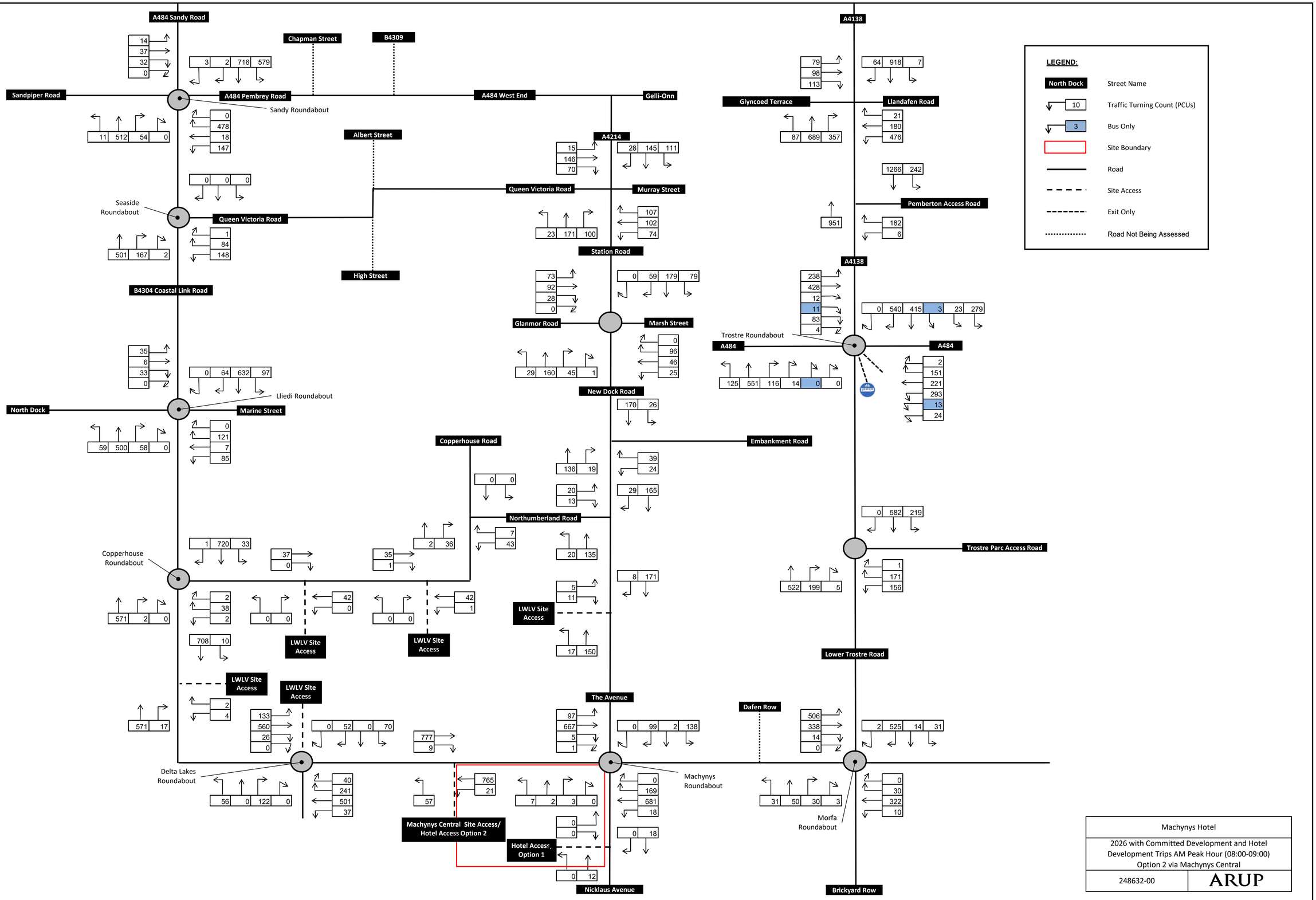

A484 Sandy Road
Chapman Street
B4309
Sandpiper Road
A484 Pembrey Road
A484 West End
Gelli-Onn
Sandy Roundabout
Albert Street
A4214
Queen Victoria Road
Murray Street
Seaside Roundabout
Station Road
High Street
B4304 Coastal Link Road
Glanmor Road
Marsh Street
New Dock Road
North Dock
Marine Street
Lliedi Roundabout
Copperhouse Road
Embankment Road
Northumberland Road
Copperhouse Roundabout
LWLV Site Access
LWLV Site Access
LWLV Site Access
LWLV Site Access
LWLV Site Access
The Avenue
Delta Lakes Roundabout
Machynys Roundabout
Machynys Central Site Access/ Hotel Access Option 2
Hotel Access Option 1
Nicklaus Avenue
A4138
Glyncoed Terrace
Llandafen Road
Pemberton Access Road
A4138
Trostre Roundabout
A484
A484
Trostre Parc Access Road
Lower Trostre Road
Dafen Row
Morfa Roundabout
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
3
Bus Only
Site Boundary
Road
Site Access
Exit Only
Road Not Being Assessed
Machynys Hotel
2026 with Committed Development and Hotel Development Trips PM Peak Hour (16:30-17:30)
Option 1 via Nicklaus Avenue
248632-00
ARUP



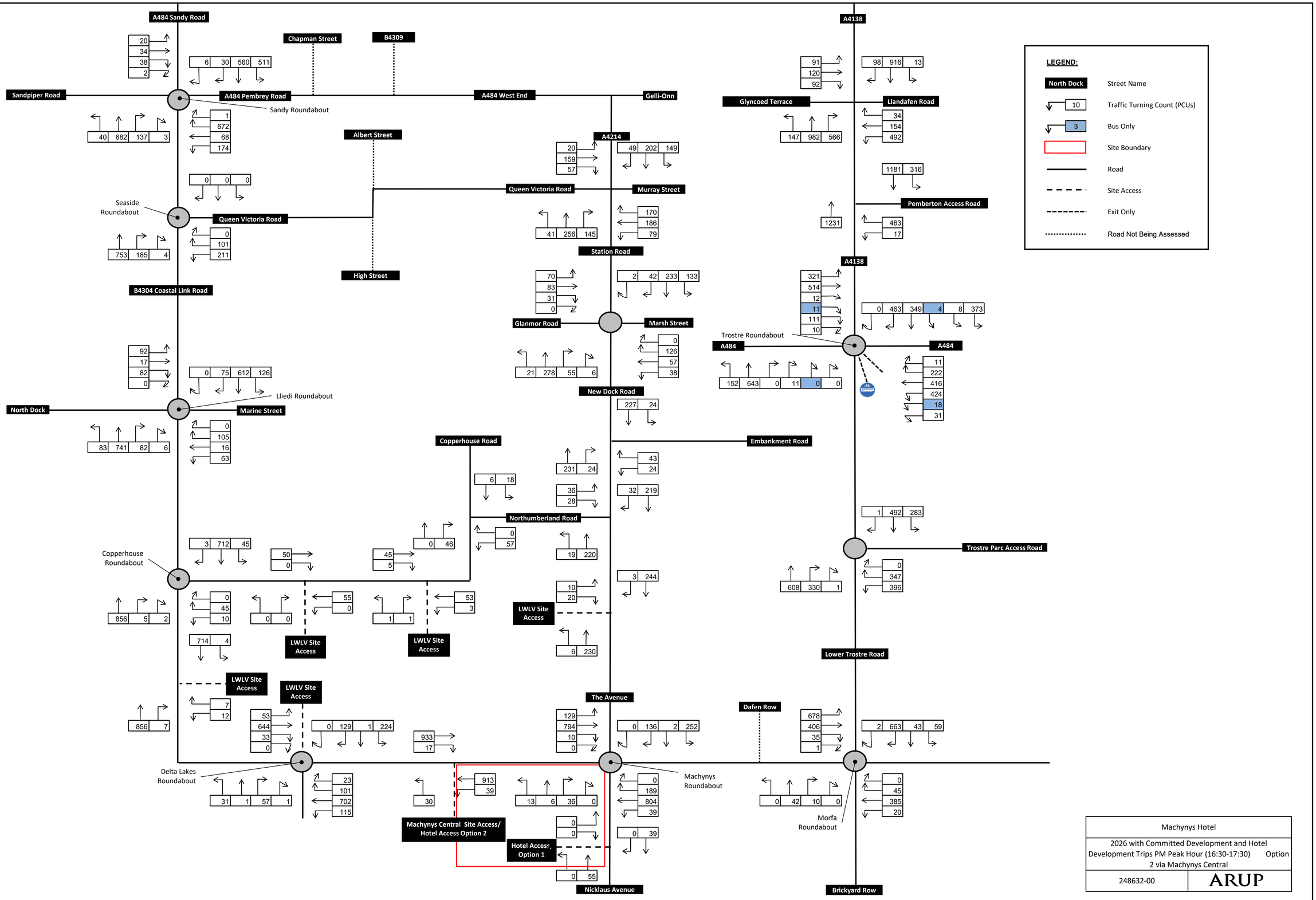
Machynys Hotel	
2021 with Committed Development and Hotel Development Trips AM Peak Hour (08:00-09:00) Option 2 via Machynys Central	
248632-00	ARUP



Machynys Hotel	
2021 with Committed Development and Hotel Development Trips PM Peak Hour (16:30-17:30) Option 2 via Machynyc Central	
248632-00	ARUP



Machynys Hotel	
2026 with Committed Development and Hotel Development Trips AM Peak Hour (08:00-09:00) Option 2 via Machynys Central	
248632-00	ARUP


A484 Sandy Road
Chapman Street
B4309
Sandpiper Road
A484 Pembrey Road
A484 West End
Gelli-Onn
Sandy Roundabout
Albert Street
A4214
Queen Victoria Road
Murray Street
Seaside Roundabout
Station Road
High Street
B4304 Coastal Link Road
Glanmor Road
Marsh Street
New Dock Road
North Dock
Marine Street
Lliedi Roundabout
Copperhouse Road
Embankment Road
Northumberland Road
Copperhouse Roundabout
LWLV Site Access
LWLV Site Access
LWLV Site Access
LWLV Site Access
LWLV Site Access
The Avenue
Delta Lakes Roundabout
Machynys Roundabout
Machynys Central Site Access/ Hotel Access Option 2
Hotel Access Option 1
Nicklaus Avenue
A4138
Glyncoed Terrace
Llandafen Road
Pemberton Access Road
A4138
Trostre Roundabout
A484
A484
Trostre Parc Access Road
Lower Trostre Road
Dafen Row
Morfa Roundabout
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
3
Bus Only
Site Boundary
Road
Site Access
Exit Only
Road Not Being Assessed
Machynys Hotel
2026 with Committed Development and Hotel Development Trips PM Peak Hour (16:30-17:30) Option 2 via Machynys Central
248632-00
ARUP

Appendix F

Percentage Impact Assessment

Percentage Impact Assessment: Option 1 via Nicklaus Avenue

Ref	Junction	Arm	AM Peak Hour			PM Peak Hour		
			2021 Base + Com Dev	Development Trips	% Impact	2021 Base + Com Dev	Development Trips	% Impact
1	Sandy Roundabout	A484 Sandy Road	1295	6	0.5%	1040	11	1.1%
		Pembrey Road	643	0	0.0%	869	0	0.0%
		Coastal Link Road	568	10	1.8%	816	7	0.8%
		Sandpiper Road	83	0	0.0%	89	0	0.0%
		Total	**2588**	**16**	**0.6%**	**2815**	**18**	**0.6%**
2	Seaside Roundabout	Coastal Link Road (North)	873	6	0.7%	713	11	1.6%
		Queen Victoria Way	233	0	0.0%	295	0	0.0%
		Coastal Link Road (South)	660	10	1.5%	892	7	0.8%
		Total	**1765**	**16**	**0.9%**	**1900**	**18**	**1.0%**
3	Lliedi Roundabout	Coastal Link Road (North)	787	6	0.8%	761	11	1.5%
		Marine Street	212	0	0.0%	175	0	0.0%
		Coastal Link Road (South)	606	10	1.7%	864	7	0.8%
		North dock	74	0	0.0%	181	0	0.0%
		Total	**1681**	**16**	**1.0%**	**1981**	**18**	**0.9%**
4	Copperhouse Roundabout	Coastal Link Road (North)	747	6	0.8%	712	11	1.6%
		Copperhouse Road	42	0	0.0%	52	0	0.0%
		Coastal Link Road (South)	563	10	1.8%	819	7	0.8%
		Total	**790**	**6**	**0.8%**	**764**	**11**	**1.5%**
5	Delta Lakes Roundabout	Site Access	122	0	0.0%	354	0	0.0%
		Coastal Link Road (East)	786	10	1.3%	876	7	0.8%
		Pentre Nicklous	179	0	0.0%	86	0	0.0%
		Coastal Link Road (West)	712	6	0.9%	685	11	1.7%
		Total	**1799**	**16**	**0.9%**	**2001**	**18**	**0.9%**
6	Machynys Roundabout	The Avenue	239	0	0.0%	372	0	0.0%
		Coastal Link Road (East)	853	15	1.7%	958	26	2.8%
		Nicklaus Avenue	12	34	275.2%	52	22	43.1%
		Coastal Link Road (West)	746	6	0.8%	882	11	1.3%
		Total	**1850**	**55**	**3.0%**	**2263**	**60**	**2.7%**
7	Priority Junction	The Avenue (North)	194	0	0.0%	238	0	0.0%
		Northumberland Road	34	0	0.0%	61	0	0.0%
		The Avenue (South)	155	0	0.0%	230	0	0.0%
		Total	**383**	**0**	**0.0%**	**529**	**0**	**0.0%**
8	Priority Junction	North Dock Road	196	0	0.0%	238	0	0.0%
		Embankment Road	63	0	0.0%	63	0	0.0%
		The Avenue	155	0	0.0%	244	0	0.0%
		Total	**414**	**0**	**0.0%**	**545**	**0**	**0.0%**
9	Mini-Roundabout	Station Road	317	0	0.0%	389	0	0.0%
		Marsh Street	167	0	0.0%	209	0	0.0%
		North Dock Road	235	0	0.0%	343	0	0.0%
		Glanmor Road	193	0	0.0%	175	0	0.0%
		Total	**911**	**0**	**0.0%**	**1116**	**0**	**0.0%**
10	Traffic Signals	Church Street	283	0	0.0%	379	0	0.0%
		Murray Street	283	0	0.0%	412	0	0.0%
		Station Road	294	0	0.0%	422	0	0.0%
		Queen Victoria Avenue	231	0	0.0%	224	0	0.0%
		Total	**1091**	**0**	**0.0%**	**1437**	**0**	**0.0%**
11	Morfa Roundabout	Lower Trostre Road	561	12	2.1%	711	21	2.9%
		Coastal Link Road (East)	362	3	0.9%	427	6	1.3%
		Brickyard Row	113	0	0	49	0	0%
		Coastal Link Road (West)	834	24	2.8%	1057	16	1.5%
		Total	**1871**	**38**	**2.0%**	**2244**	**42**	**1.9%**
12	Trostre Park Access Roundabout	Trostre Road	790	12	1.5%	719	21	3.0%
		Trostre Park Access	328	0	0.0%	702	0	0.0%
		Lower Trostre Road	708	19	2.6%	886	12	1.4%
		Total	**1825**	**30**	**1.7%**	**2307**	**34**	**1.5%**
13	Trostre Roundabout	A4138	1248	12	0.9%	1117	21	1.9%
		A484 (East)	704	0	0.0%	1062	0	0.0%
		Trostre Road	788	19	2.4%	759	12	1.6%
		A484 (West)	775	0	0.0%	929	0	0.0%
		Total	**3516**	**30**	**0.9%**	**3868**	**34**	**0.9%**
14	Pemberton Park Signals	A4138 (North)	1496	12	0.8%	1401	21	1.5%
		Pemberton Park Access	188	0	0.0%	454	0	0.0%
		A4138 (South)	932	19	2.0%	1161	12	1.1%
		Total	**2616**	**30**	**1.2%**	**3016**	**34**	**1.1%**
15	Halfway Traffic Signals	A4138 (North)	978	12	1.2%	956	21	2.2%
		Lladafen Road	677	0	0.0%	643	0	0.0%
		A4138 (South)	1114	19	1.7%	1599	12	0.8%
		Glyncoed Terrace	291	0	0.0%	288	0	0.0%
		Total	**3059**	**30**	**1.0%**	**3486**	**34**	**1.0%**
16	Machynys Central Access	Coastal Link Road (East)	781	10	1%	889	7	1%
		Coastal Link Road (West)	762	6	1%	898	11	1%
		Residential Access	24	0	0%	8	0	0%
		Total	**1567**	**16**	**1%**	**1795**	**18**	**1%**

Percentage Impact Assessment: Option 1 via Nicklaus Avenue

Ref	Junction	Arm	AM Peak Hour			PM Peak Hour		
			2026 Base + Com Dev	Development Trips	% Impact	2026 Base + Com Dev	Development Trips	% Impact
1	Sandy Roundabout	A484 Sandy Road	1295	6	0.5%	1095	11	1.0%
		Pembrey Road	643	0	0.0%	916	0	0.0%
		Coastal Link Road	568	10	1.8%	855	7	0.8%
		Sandpiper Road	83	0	0.0%	94	0	0.0%
		Total	**2588**	**16**	**0.6%**	**2960**	**18**	**0.6%**
2	Seaside Roundabout	Coastal Link Road (North)	0	6	#DIV/0!	0	11	#DIV/0!
		Queen Victoria Way	233	0	0.0%	312	0	0.0%
		Coastal Link Road (South)	660	10	1.5%	935	7	0.7%
		Total	**893**	**16**	**1.8%**	**1247**	**18**	**1.4%**
3	Lliedi Roundabout	Coastal Link Road (North)	787	6	0.8%	801	11	1.4%
		Marine Street	212	0	0.0%	184	0	0.0%
		Coastal Link Road (South)	606	10	1.7%	905	7	0.7%
		North dock	74	0	0.0%	191	0	0.0%
		Total	**1681**	**16**	**1.0%**	**2081**	**18**	**0.9%**
4	Copperhouse Roundabout	Coastal Link Road (North)	747	6	0.8%	749	11	1.5%
		Copperhouse Road	42	0	0.0%	55	0	0.0%
		Coastal Link Road (South)	563	10	1.8%	857	7	0.8%
		Total	**790**	**6**	**0.8%**	**803**	**11**	**1.4%**
5	Delta Lakes Roundabout	Site Access	122	0	0.0%	354	0	0.0%
		Coastal Link Road (East)	786	10	1.3%	919	7	0.7%
		Pentre Nicklous	179	0	0.0%	90	0	0.0%
		Coastal Link Road (West)	712	6	0.9%	719	11	1.6%
		Total	**1799**	**16**	**0.9%**	**2083**	**18**	**0.9%**
6	Machynys Roundabout	The Avenue	239	0	0.0%	390	0	0.0%
		Coastal Link Road (East)	853	15	1.7%	1006	26	2.6%
		Nicklaus Avenue	12	34	275.2%	55	22	40.8%
		Coastal Link Road (West)	746	6	0.8%	918	11	1.2%
		Total	**1850**	**55**	**3.0%**	**2370**	**60**	**2.5%**
7	Priority Junction	The Avenue (North)	194	0	0.0%	250	0	0.0%
		Northumberland Road	34	0	0.0%	64	0	0.0%
		The Avenue (South)	155	0	0.0%	240	0	0.0%
		Total	**383**	**0**	**0.0%**	**554**	**0**	**0.0%**
8	Priority Junction	North Dock Road	196	0	0.0%	250	0	0.0%
		Embankment Road	63	0	0.0%	66	0	0.0%
		The Avenue	155	0	0.0%	254	0	0.0%
		Total	**414**	**0**	**0.0%**	**571**	**0**	**0.0%**
9	Mini-Roundabout	Station Road	317	0	0.0%	410	0	0.0%
		Marsh Street	167	0	0.0%	221	0	0.0%
		North Dock Road	235	0	0.0%	359	0	0.0%
		Glanmor Road	193	0	0.0%	185	0	0.0%
		Total	**911**	**0**	**0.0%**	**1175**	**0**	**0.0%**
10	Traffic Signals	Church Street	283	0	0.0%	401	0	0.0%
		Murray Street	283	0	0.0%	435	0	0.0%
		Station Road	294	0	0.0%	443	0	0.0%
		Queen Victoria Avenue	231	0	0.0%	236	0	0.0%
		Total	**1091**	**0**	**0.0%**	**1515**	**0**	**0.0%**
11	Morfa Roundabout	Lower Trostre Road	561	12	2.1%	746	21	2.8%
		Coastal Link Road (East)	362	3	0.9%	451	6	1.2%
		Brickyard Row	113	0	0	52	0	0%
		Coastal Link Road (West)	834	24	2.8%	1105	16	1.4%
		Total	**1871**	**38**	**2.0%**	**2354**	**42**	**1.8%**
12	Trostre Park Access Roundabout	Trostre Road	790	12	1.5%	755	21	2.8%
		Trostre Park Access	328	0	0.0%	742	0	0.0%
		Lower Trostre Road	708	19	2.6%	927	12	1.3%
		Total	**1825**	**30**	**1.7%**	**2424**	**34**	**1.4%**
13	Trostre Roundabout	A4138	1248	12	0.9%	1176	21	1.8%
		A484 (East)	704	0	0.0%	1122	0	0.0%
		Trostre Road	788	19	2.4%	794	12	1.6%
		A484 (West)	775	0	0.0%	980	0	0.0%
		Total	**3516**	**30**	**0.9%**	**4073**	**34**	**0.8%**
14	Pemberton Park Signals	A4138 (North)	1496	12	0.8%	1476	21	1.4%
		Pemberton Park Access	188	0	0.0%	480	0	0.0%
		A4138 (South)	932	19	2.0%	1219	12	1.0%
		Total	**2616**	**30**	**1.2%**	**3175**	**34**	**1.1%**
15	Halfway Traffic Signals	A4138 (North)	978	12	1.2%	1006	21	2.1%
		Lladafen Road	677	0	0.0%	680	0	0.0%
		A4138 (South)	1114	19	1.7%	1682	12	0.7%
		Glyncoed Terrace	291	0	0.0%	304	0	0.0%
		Total	**3059**	**30**	**1.0%**	**3671**	**34**	**0.9%**
16	Machynys Central Access	Coastal Link Road (East)	781	10	1%	932	7	1%
		Coastal Link Road (West)	762	6	1%	934	11	1%
		Residential Access	24	0	0%	8	0	0%
		Total	**1567**	**16**	**1%**	**1874**	**18**	**1%**

Percentage Impact Assessment: Option 2 via Machynys Central

Ref	Junction	Arm	AM Peak Hour			PM Peak Hour		
			2021 Base + Com Dev	Development Trips	% Impact	2021 Base + Com Dev	Development Trips	% Impact
1	Sandy Roundabout	A484 Sandy Road	1295	6	0.5%	1040	11	1.1%
		Pembrey Road	643	0	0.0%	869	0	0.0%
		Coastal Link Road	568	10	1.8%	816	7	0.8%
		Sandpiper Road	83	0	0.0%	89	0	0.0%
		Total	**2588**	**16**	**0.6%**	**2815**	**18**	**0.6%**
2	Seaside Roundabout	Coastal Link Road (North)	873	6	0.7%	713	11	1.6%
		Queen Victoria Way	233	0	0.0%	295	0	0.0%
		Coastal Link Road (South)	660	10	1.5%	892	7	0.8%
		Total	**1765**	**16**	**0.9%**	**1900**	**18**	**1.0%**
3	Lliedi Roundabout	Coastal Link Road (North)	787	6	0.8%	761	11	1.5%
		Marine Street	212	0	0.0%	175	0	0.0%
		Coastal Link Road (South)	606	10	1.7%	864	7	0.8%
		North dock	74	0	0.0%	181	0	0.0%
		Total	**1681**	**16**	**1.0%**	**1981**	**18**	**0.9%**
4	Copperhouse Roundabout	Coastal Link Road (North)	747	6	0.8%	712	11	1.6%
		Copperhouse Road	42	0	0.0%	52	0	0.0%
		Coastal Link Road (South)	563	10	1.8%	819	7	0.8%
		Total	**790**	**6**	**0.8%**	**764**	**11**	**1.5%**
5	Delta Lakes Roundabout	Site Access	122	0	0.0%	354	0	0.0%
		Coastal Link Road (East)	786	34	4.3%	876	22	2.6%
		Pentre Nicklous	179	0	0.0%	86	0	0.0%
		Coastal Link Road (West)	712	6	0.9%	685	11	1.7%
		Total	**1799**	**40**	**2.2%**	**2001**	**34**	**1.7%**
6	Machynys Roundabout	The Avenue	239	0	0.0%	372	0	0.0%
		Coastal Link Road (East)	853	15	1.7%	958	26	2.8%
		Nicklaus Avenue	12	0	0.0%	52	0	0.0%
		Coastal Link Road (West)	746	24	3.2%	882	16	1.8%
		Total	**1850**	**38**	**2.1%**	**2263**	**42**	**1.9%**
7	Priority Junction	The Avenue (North)	194	0	0.0%	238	0	0.0%
		Northumberland Road	34	0	0.0%	61	0	0.0%
		The Avenue (South)	155	0	0.0%	230	0	0.0%
		Total	**383**	**0**	**0.0%**	**529**	**0**	**0.0%**
8	Priority Junction	North Dock Road	196	0	0.0%	238	0	0.0%
		Embankment Road	63	0	0.0%	63	0	0.0%
		The Avenue	155	0	0.0%	244	0	0.0%
		Total	**414**	**0**	**0.0%**	**545**	**0**	**0.0%**
9	Mini-Roundabout	Station Road	317	0	0.0%	389	0	0.0%
		Marsh Street	167	0	0.0%	209	0	0.0%
		North Dock Road	235	0	0.0%	343	0	0.0%
		Glanmor Road	193	0	0.0%	175	0	0.0%
		Total	**911**	**0**	**0.0%**	**1116**	**0**	**0.0%**
10	Traffic Signals	Church Street	283	0	0.0%	379	0	0.0%
		Murray Street	283	0	0.0%	412	0	0.0%
		Station Road	294	0	0.0%	422	0	0.0%
		Queen Victoria Avenue	231	0	0.0%	224	0	0.0%
		Total	**1091**	**0**	**0.0%**	**1437**	**0**	**0.0%**
11	Morfa Roundabout	Lower Trostre Road	561	12	2.1%	711	21	2.9%
		Coastal Link Road (East)	362	0	0.0%	427	0	0.0%
		Brickyard Row	113	0	0	49	0	0%
		Coastal Link Road (West)	834	24	2.8%	1057	16	1.5%
		Total	**1871**	**35**	**1.9%**	**2244**	**37**	**1.6%**
12	Trostre Park Access Roundabout	Trostre Road	790	12	1.5%	719	21	3.0%
		Trostre Park Access	328	0	0.0%	702	0	0.0%
		Lower Trostre Road	708	19	2.6%	886	12	1.4%
		Total	**1825**	**30**	**1.7%**	**2307**	**34**	**1.5%**
13	Trostre Roundabout	A4138	1248	12	0.9%	1117	21	1.9%
		A484 (East)	704	0	0.0%	1062	0	0.0%
		Trostre Road	788	19	2.4%	759	12	1.6%
		A484 (West)	775	0	0.0%	929	0	0.0%
		Total	**3516**	**30**	**0.9%**	**3868**	**34**	**0.9%**
14	Pemberton Park Signals	A4138 (North)	1496	12	0.8%	1401	21	1.5%
		Pemberton Park Access	188	0	0.0%	454	0	0.0%
		A4138 (South)	932	19	2.0%	1161	12	1.1%
		Total	**2616**	**30**	**1.2%**	**3016**	**34**	**1.1%**
15	Halfway Traffic Signals	A4138 (North)	978	12	1.2%	956	21	2.2%
		Lladafen Road	677	0	0.0%	643	0	0.0%
		A4138 (South)	1114	19	1.7%	1599	12	0.8%
		Glyncoed Terrace	291	0	0.0%	288	0	0.0%
		Total	**3059**	**30**	**1.0%**	**3486**	**34**	**1.0%**
16	Machynys Central Access	Coastal Link Road (East)	786	15	2%	909	26	3%
		Coastal Link Road (West)	785	30	4%	913	27	3%
		Residential Access	57	34	59%	30	0	0%
		Total	**1629**	**78**	**5%**	**1852**	**53**	**3%**

Percentage Impact Assessment: Option 2 via Machynys Central

Ref	Junction	Arm	AM Peak Hour			PM Peak Hour		
			2026 Base + Com Dev	Development Trips	% Impact	2026 Base + Com Dev	Development Trips	% Impact
1	Sandy Roundabout	A484 Sandy Road	1295	6	0.5%	1095	11	1.0%
		Pembrey Road	643	0	0.0%	916	0	0.0%
		Coastal Link Road	568	10	1.8%	855	7	0.8%
		Sandpiper Road	83	0	0.0%	94	0	0.0%
		Total	**2588**	**16**	**0.6%**	**2960**	**18**	**0.6%**
2	Seaside Roundabout	Coastal Link Road (North)	0	6	#DIV/0!	0	11	#DIV/0!
		Queen Victoria Way	233	0	0.0%	312	0	0.0%
		Coastal Link Road (South)	660	10	1.5%	935	7	0.7%
		Total	**893**	**16**	**1.8%**	**1247**	**18**	**1.4%**
3	Lliedi Roundabout	Coastal Link Road (North)	787	6	0.8%	801	11	1.4%
		Marine Street	212	0	0.0%	184	0	0.0%
		Coastal Link Road (South)	606	10	1.7%	905	7	0.7%
		North dock	74	0	0.0%	191	0	0.0%
		Total	**1681**	**16**	**1.0%**	**2081**	**18**	**0.9%**
4	Copperhouse Roundabout	Coastal Link Road (North)	747	6	0.8%	749	11	1.5%
		Copperhouse Road	42	0	0.0%	55	0	0.0%
		Coastal Link Road (South)	563	10	1.8%	857	7	0.8%
		Total	**790**	**6**	**0.8%**	**803**	**11**	**1.4%**
5	Delta Lakes Roundabout	Site Access	122	0	0.0%	354	0	0.0%
		Coastal Link Road (East)	786	34	4.3%	919	22	2.4%
		Pentre Nicklous	179	0	0.0%	90	0	0.0%
		Coastal Link Road (West)	712	6	0.9%	719	11	1.6%
		Total	**1799**	**40**	**2.2%**	**2083**	**34**	**1.6%**
6	Machynys Roundabout	The Avenue	239	0	0.0%	390	0	0.0%
		Coastal Link Road (East)	853	15	1.7%	1006	26	2.6%
		Nicklaus Avenue	12	0	0.0%	55	0	0.0%
		Coastal Link Road (West)	746	24	3.2%	918	16	1.7%
		Total	**1850**	**38**	**2.1%**	**2370**	**42**	**1.8%**
7	Priority Junction	The Avenue (North)	194	0	0.0%	250	0	0.0%
		Northumberland Road	34	0	0.0%	64	0	0.0%
		The Avenue (South)	155	0	0.0%	240	0	0.0%
		Total	**383**	**0**	**0.0%**	**554**	**0**	**0.0%**
8	Priority Junction	North Dock Road	196	0	0.0%	250	0	0.0%
		Embankment Road	63	0	0.0%	66	0	0.0%
		The Avenue	155	0	0.0%	254	0	0.0%
		Total	**414**	**0**	**0.0%**	**571**	**0**	**0.0%**
9	Mini-Roundabout	Station Road	317	0	0.0%	410	0	0.0%
		Marsh Street	167	0	0.0%	221	0	0.0%
		North Dock Road	235	0	0.0%	359	0	0.0%
		Glanmor Road	193	0	0.0%	185	0	0.0%
		Total	**911**	**0**	**0.0%**	**1175**	**0**	**0.0%**
10	Traffic Signals	Church Street	283	0	0.0%	401	0	0.0%
		Murray Street	283	0	0.0%	435	0	0.0%
		Station Road	294	0	0.0%	443	0	0.0%
		Queen Victoria Avenue	231	0	0.0%	236	0	0.0%
		Total	**1091**	**0**	**0.0%**	**1515**	**0**	**0.0%**
11	Morfa Roundabout	Lower Trostre Road	561	12	2.1%	746	21	2.8%
		Coastal Link Road (East)	362	0	0.0%	451	0	0.0%
		Brickyard Row	113	0	0	52	0	0%
		Coastal Link Road (West)	834	24	2.8%	1105	16	1.4%
		Total	**1871**	**35**	**1.9%**	**2354**	**37**	**1.6%**
12	Trostre Park Access Roundabout	Trostre Road	790	12	1.5%	755	21	2.8%
		Trostre Park Access	328	0	0.0%	742	0	0.0%
		Lower Trostre Road	708	19	2.6%	927	12	1.3%
		Total	**1825**	**30**	**1.7%**	**2424**	**34**	**1.4%**
13	Trostre Roundabout	A4138	1248	12	0.9%	1176	21	1.8%
		A484 (East)	704	0	0.0%	1122	0	0.0%
		Trostre Road	788	19	2.4%	794	12	1.6%
		A484 (West)	775	0	0.0%	980	0	0.0%
		Total	**3516**	**30**	**0.9%**	**4073**	**34**	**0.8%**
14	Pemberton Park Signals	A4138 (North)	1496	12	0.8%	1476	21	1.4%
		Pemberton Park Access	188	0	0.0%	480	0	0.0%
		A4138 (South)	932	19	2.0%	1219	12	1.0%
		Total	**2616**	**30**	**1.2%**	**3175**	**34**	**1.1%**
15	Halfway Traffic Signals	A4138 (North)	978	12	1.2%	1006	21	2.1%
		Lladafen Road	677	0	0.0%	680	0	0.0%
		A4138 (South)	1114	19	1.7%	1682	12	0.7%
		Glyncoed Terrace	291	0	0.0%	304	0	0.0%
		Total	**3059**	**30**	**1.0%**	**3671**	**34**	**0.9%**
16	Machynys Central Access	Coastal Link Road (East)	786	15	2%	952	26	3%
		Coastal Link Road (West)	785	30	4%	949	27	3%
		Residential Access	57	34	59%	30	0	0%
		Total	**1629**	**78**	**5%**	**1932**	**53**	**3%**

Appendix G

Junction 9 Outputs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: 04.Coastal Link Road_Copperhouse Roundabout Cal.j9
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling
Report generation date: 17/12/2020 14:35:10

»2017 Base, AM
»2017 Base, PM
»2021 with Committed Development, AM
»2021 with Committed Development, PM
»Option 1: 2021 with Committed Development and Machynys Hotel, AM
»Option 1: 2021 with Committed Development and Machynys Hotel, PM
»Option 1: 2026 with Committed Development and Machynys Hotel, AM
»Option 1: 2026 with Committed Development and Machynys Hotel, PM
»2021 Base, AM
»2021 Base, PM
»Option 2: 2021 with Committed Development and Machynys Hotel, AM
»Option 2: 2021 with Committed Development and Machynys Hotel, PM
»Option 2: 2026 with Committed Development and Machynys Hotel, AM
»Option 2: 2026 with Committed Development and Machynys Hotel, PM

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2017 Base									
1 - Coastal Link N	0.4	2.34	0.28	2.41	A	0.5	2.45	0.31	2.58	A
2 - Copperhouse Road	0.0	2.61	0.03			0.0	2.49	0.03		
3 - Coastal Link S	0.3	2.47	0.25			0.5	2.72	0.34		
	2021 with Committed Development									
1 - Coastal Link N	0.6	2.72	0.38	2.71	A	0.6	2.66	0.36	2.95	A
2 - Copperhouse Road	0.0	2.86	0.03			0.0	2.62	0.04		
3 - Coastal Link S	0.5	2.67	0.30			0.8	3.23	0.44		
	Option 1: 2021 with Committed Development and Machynys Hotel									
1 - Coastal Link N	0.6	2.74	0.38	2.72	A	0.6	2.68	0.37	2.97	A
2 - Copperhouse Road	0.0	2.87	0.03			0.0	2.63	0.04		
3 - Coastal Link S	0.5	2.70	0.31			0.8	3.25	0.45		
	Option 1: 2026 with Committed Development and Machynys Hotel									
1 - Coastal Link N	0.6	2.74	0.38	2.72	A	0.6	2.76	0.39	3.08	A
2 - Copperhouse Road	0.0	2.87	0.03			0.0	2.69	0.04		
3 - Coastal Link S	0.5	2.70	0.31			0.9	3.38	0.47		
	2021 Base									
1 - Coastal Link N	0.4	2.39	0.29	2.46	A	0.5	2.51	0.32	2.66	A
2 - Copperhouse Road	0.0	2.64	0.03			0.0	2.53	0.03		
3 - Coastal Link S	0.4	2.52	0.26			0.6	2.81	0.36		
	Option 2: 2021 with Committed Development and Machynys Hotel									
1 - Coastal Link N	0.6	2.74	0.38	2.72	A	0.6	2.68	0.37	2.97	A
2 - Copperhouse Road	0.0	2.87	0.03			0.0	2.63	0.04		
3 - Coastal Link S	0.5	2.70	0.31			0.8	3.25	0.45		
	Option 2: 2026 with Committed Development and Machynys Hotel									
1 - Coastal Link N	0.6	2.74	0.38	2.72	A	0.6	2.76	0.39	3.08	A
2 - Copperhouse Road	0.0	2.87	0.03			0.0	2.69	0.04		
3 - Coastal Link S	0.5	2.70	0.31			0.9	3.38	0.47		

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Coastal Link Road_Copperhouse Roundabout
Location	Machynys
Site number	4
Date	16/12/2020
Version	1
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Aneesah Irshad
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 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2021 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D5	Option 1: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D6	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D7	Option 1: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D8	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D9	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D10	2021 Base	PM	ONE HOUR	16:15	17:45	15	✓
D13	Option 2: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D14	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D15	Option 2: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D16	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2017 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Coastal Link N	
2	Copperhouse Road	
3	Coastal Link S	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Coastal Link N	3.86	8.60	21.5	46.3	60.0	14.3	
2 - Copperhouse Road	3.53	7.90	21.6	51.4	60.0	21.6	
3 - Coastal Link S	3.71	8.04	22.2	41.9	60.0	18.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Coastal Link N	0.661	2175
2 - Copperhouse Road	0.621	1984
3 - Coastal Link S	0.637	2061

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 Base	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 (%)
1 - Coastal Link N		ONE HOUR	✓	546	100.000
2 - Copperhouse Road		ONE HOUR	✓	37	100.000
3 - Coastal Link S		ONE HOUR	✓	460	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	26	519
	2 - Copperhouse Road	33	2	2
	3 - Coastal Link S	459	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.28	2.34	0.4	1.1	A	501	752
2 - Copperhouse Road	0.03	2.61	0.0	0.5	A	34	51
3 - Coastal Link S	0.25	2.47	0.3	1.4	A	422	633

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	411	103	2	2174	0.189	410	370	0.0	0.2	2.082	A
2 - Copperhouse Road	28	7	391	1741	0.016	28	22	0.0	0.0	2.413	A
3 - Coastal Link S	346	87	27	2044	0.169	345	391	0.0	0.2	2.224	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	491	123	3	2174	0.226	491	443	0.2	0.3	2.183	A
2 - Copperhouse Road	33	8	467	1693	0.020	33	26	0.0	0.0	2.491	A
3 - Coastal Link S	414	103	32	2041	0.203	413	468	0.2	0.3	2.322	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	601	150	3	2173	0.277	601	542	0.3	0.4	2.337	A
2 - Copperhouse Road	41	10	572	1628	0.025	41	32	0.0	0.0	2.605	A
3 - Coastal Link S	506	127	40	2036	0.249	506	573	0.3	0.3	2.470	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	601	150	3	2173	0.277	601	543	0.4	0.4	2.337	A
2 - Copperhouse Road	41	10	573	1628	0.025	41	32	0.0	0.0	2.605	A
3 - Coastal Link S	506	127	40	2036	0.249	506	574	0.3	0.3	2.470	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	491	123	3	2174	0.226	491	444	0.4	0.3	2.184	A
2 - Copperhouse Road	33	8	468	1693	0.020	33	26	0.0	0.0	2.493	A
3 - Coastal Link S	414	103	32	2041	0.203	414	469	0.3	0.3	2.323	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	411	103	2	2174	0.189	411	371	0.3	0.2	2.084	A
2 - Copperhouse Road	28	7	392	1740	0.016	28	22	0.0	0.0	2.415	A
3 - Coastal Link S	346	87	27	2044	0.169	347	392	0.3	0.2	2.228	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.24	0.00	0.00	0.24	0.24			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.21	0.00	0.00	0.21	0.21			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - Copperhouse Road	0.02	0.02	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.27	0.00	0.00	0.27	0.27			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.39	0.03	0.26	0.46	0.49			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.35	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.39	0.03	0.34	1.07	1.07			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.35	0.03	0.34	1.15	1.40			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.27	0.00	0.00	0.27	0.27			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.24	0.00	0.00	0.24	0.24			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.21	0.00	0.00	0.21	0.21			N/A	N/A

2017 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	606	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	632	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	36	567
	2 - Copperhouse Road	35	0	8
	3 - Coastal Link S	627	3	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.31	2.45	0.5	1.8	A	556	834
2 - Copperhouse Road	0.03	2.49	0.0	0.5	A	39	59
3 - Coastal Link S	0.34	2.72	0.5	2.4	A	580	870

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	456	114	4	2173	0.210	455	499	0.0	0.3	2.144	A
2 - Copperhouse Road	32	8	430	1717	0.019	32	29	0.0	0.0	2.286	A
3 - Coastal Link S	476	119	29	2043	0.233	475	433	0.0	0.3	2.322	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	545	136	4	2173	0.251	545	597	0.3	0.3	2.263	A
2 - Copperhouse Road	39	10	514	1664	0.023	39	35	0.0	0.0	2.369	A
3 - Coastal Link S	568	142	34	2040	0.279	568	518	0.3	0.4	2.474	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	667	167	6	2172	0.307	667	732	0.3	0.5	2.449	A
2 - Copperhouse Road	47	12	629	1593	0.030	47	43	0.0	0.0	2.492	A
3 - Coastal Link S	696	174	42	2035	0.342	695	635	0.4	0.5	2.717	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	667	167	6	2172	0.307	667	732	0.5	0.5	2.449	A
2 - Copperhouse Road	47	12	630	1592	0.030	47	43	0.0	0.0	2.493	A
3 - Coastal Link S	696	174	42	2035	0.342	696	635	0.5	0.5	2.719	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	545	136	4	2173	0.251	545	598	0.5	0.3	2.266	A
2 - Copperhouse Road	39	10	515	1664	0.023	39	35	0.0	0.0	2.370	A
3 - Coastal Link S	568	142	34	2040	0.279	569	519	0.5	0.4	2.476	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	456	114	4	2173	0.210	457	501	0.3	0.3	2.147	A
2 - Copperhouse Road	32	8	431	1716	0.019	32	29	0.0	0.0	2.289	A
3 - Coastal Link S	476	119	29	2043	0.233	476	435	0.4	0.3	2.325	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.31	0.00	0.00	0.31	0.31			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.39	0.00	0.00	0.39	0.39			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.45	0.03	0.26	0.46	0.49			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.52	0.03	0.25	0.52	0.52			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.45	0.03	0.33	1.41	1.79			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.52	0.03	0.31	1.41	2.41			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.39	0.00	0.00	0.39	0.39			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.31	0.00	0.00	0.31	0.31			N/A	N/A

2021 with Committed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.71	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	2021 with Committed Development	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 (%)
1 - Coastal Link N		ONE HOUR	✓	747	100.000
2 - Copperhouse Road		ONE HOUR	✓	42	100.000
3 - Coastal Link S		ONE HOUR	✓	563	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	33	713
	2 - Copperhouse Road	38	2	2
	3 - Coastal Link S	561	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.38	2.72	0.6	2.7	A	685	1028
2 - Copperhouse Road	0.03	2.86	0.0	0.5	A	39	58
3 - Coastal Link S	0.30	2.67	0.5	1.8	A	517	775

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	562	141	3	2173	0.259	561	451	0.0	0.4	2.277	A
2 - Copperhouse Road	32	8	536	1650	0.019	32	28	0.0	0.0	2.559	A
3 - Coastal Link S	424	106	31	2042	0.208	423	537	0.0	0.3	2.333	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	672	168	4	2173	0.309	671	539	0.4	0.5	2.447	A
2 - Copperhouse Road	38	9	641	1585	0.024	38	33	0.0	0.0	2.678	A
3 - Coastal Link S	506	127	37	2038	0.248	506	642	0.3	0.3	2.466	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	822	206	4	2173	0.379	822	660	0.5	0.6	2.719	A
2 - Copperhouse Road	46	12	786	1495	0.031	46	41	0.0	0.0	2.859	A
3 - Coastal Link S	620	155	45	2033	0.305	619	787	0.3	0.5	2.674	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	822	206	4	2173	0.379	822	661	0.6	0.6	2.721	A
2 - Copperhouse Road	46	12	786	1495	0.031	46	41	0.0	0.0	2.860	A
3 - Coastal Link S	620	155	45	2033	0.305	620	787	0.5	0.5	2.674	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	672	168	4	2173	0.309	672	540	0.6	0.5	2.449	A
2 - Copperhouse Road	38	9	642	1584	0.024	38	33	0.0	0.0	2.681	A
3 - Coastal Link S	506	127	37	2038	0.248	507	643	0.5	0.3	2.470	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	562	141	3	2173	0.259	563	452	0.5	0.4	2.281	A
2 - Copperhouse Road	32	8	538	1649	0.019	32	28	0.0	0.0	2.563	A
3 - Coastal Link S	424	106	31	2042	0.208	424	539	0.3	0.3	2.336	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.27	0.00	0.00	0.27	0.27			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.35	0.00	0.00	0.35	0.35			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.62	0.03	0.26	0.62	0.62			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.46	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.62	0.03	0.29	1.16	2.75			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.46	0.03	0.33	1.44	1.82			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.35	0.00	0.00	0.35	0.35			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

2021 with Committed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.95	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	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	712	100.000
2 - Copperhouse Road		ONE HOUR	✓	52	100.000
3 - Coastal Link S		ONE HOUR	✓	819	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	42	667
	2 - Copperhouse Road	43	0	9
	3 - Coastal Link S	812	5	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.36	2.66	0.6	2.7	A	653	980
2 - Copperhouse Road	0.04	2.62	0.0	0.5	A	48	72
3 - Coastal Link S	0.44	3.23	0.8	1.9	A	752	1127

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	536	134	5	2172	0.247	535	644	0.0	0.3	2.248	A
2 - Copperhouse Road	39	10	505	1670	0.023	39	35	0.0	0.0	2.355	A
3 - Coastal Link S	617	154	35	2039	0.302	615	509	0.0	0.4	2.554	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	640	160	6	2171	0.295	640	771	0.3	0.4	2.406	A
2 - Copperhouse Road	47	12	604	1608	0.029	47	42	0.0	0.0	2.459	A
3 - Coastal Link S	736	184	41	2035	0.362	736	609	0.4	0.6	2.802	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	784	196	8	2170	0.361	783	944	0.4	0.6	2.655	A
2 - Copperhouse Road	57	14	739	1524	0.038	57	52	0.0	0.0	2.618	A
3 - Coastal Link S	902	225	51	2029	0.444	901	746	0.6	0.8	3.225	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	784	196	8	2170	0.361	784	945	0.6	0.6	2.657	A
2 - Copperhouse Road	57	14	740	1524	0.038	57	52	0.0	0.0	2.619	A
3 - Coastal Link S	902	225	51	2029	0.444	902	746	0.8	0.8	3.231	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	640	160	6	2171	0.295	641	772	0.6	0.4	2.408	A
2 - Copperhouse Road	47	12	605	1608	0.029	47	42	0.0	0.0	2.462	A
3 - Coastal Link S	736	184	41	2035	0.362	737	610	0.8	0.6	2.808	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	536	134	5	2172	0.247	536	647	0.4	0.3	2.255	A
2 - Copperhouse Road	39	10	506	1669	0.023	39	35	0.0	0.0	2.358	A
3 - Coastal Link S	617	154	35	2039	0.302	617	511	0.6	0.4	2.564	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.33	0.00	0.00	0.33	0.33			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.44	0.00	0.00	0.44	0.44			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.57	0.08	0.77	1.37	1.44			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.58	0.03	0.26	0.58	0.58			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.80	0.03	0.26	0.80	0.80			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.58	0.03	0.30	1.34	2.70			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.81	0.03	0.28	0.81	1.90			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.58	0.56	1.01	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.44	0.00	0.00	0.44	0.44			N/A	N/A

Option 1: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.72	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	Option 1: 2021 with Committed Development and Machynys Hotel	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 (%)
1 - Coastal Link N		ONE HOUR	✓	754	100.000
2 - Copperhouse Road		ONE HOUR	✓	42	100.000
3 - Coastal Link S		ONE HOUR	✓	573	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	33	720
	2 - Copperhouse Road	38	2	2
	3 - Coastal Link S	571	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.38	2.74	0.6	2.7	A	692	1038
2 - Copperhouse Road	0.03	2.87	0.0	0.5	A	39	58
3 - Coastal Link S	0.31	2.70	0.5	1.9	A	526	789

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	566	458	0.0	0.4	2.284	A
2 - Copperhouse Road	32	8	541	1647	0.019	32	28	0.0	0.0	2.565	A
3 - Coastal Link S	431	108	31	2042	0.211	430	542	0.0	0.3	2.344	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	677	548	0.4	0.5	2.457	A
2 - Copperhouse Road	38	9	648	1581	0.024	38	33	0.0	0.0	2.685	A
3 - Coastal Link S	515	129	37	2038	0.253	515	649	0.3	0.4	2.481	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	671	0.5	0.6	2.734	A
2 - Copperhouse Road	46	12	793	1491	0.031	46	41	0.0	0.0	2.868	A
3 - Coastal Link S	631	158	45	2033	0.310	630	794	0.4	0.5	2.695	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	672	0.6	0.6	2.737	A
2 - Copperhouse Road	46	12	794	1490	0.031	46	41	0.0	0.0	2.869	A
3 - Coastal Link S	631	158	45	2033	0.310	631	795	0.5	0.5	2.695	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	678	549	0.6	0.5	2.461	A
2 - Copperhouse Road	38	9	649	1580	0.024	38	33	0.0	0.0	2.688	A
3 - Coastal Link S	515	129	37	2038	0.253	516	650	0.5	0.4	2.483	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	568	460	0.5	0.4	2.291	A
2 - Copperhouse Road	32	8	543	1646	0.019	32	28	0.0	0.0	2.566	A
3 - Coastal Link S	431	108	31	2042	0.211	432	544	0.4	0.3	2.347	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.35	0.00	0.00	0.35	0.35			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.29	1.12	2.74			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.33	1.46	1.92			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.36	0.00	0.00	0.36	0.36			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

Option 1: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.97	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	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	723	100.000
2 - Copperhouse Road		ONE HOUR	✓	52	100.000
3 - Coastal Link S		ONE HOUR	✓	825	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	42	678
	2 - Copperhouse Road	43	0	9
	3 - Coastal Link S	818	5	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.37	2.68	0.6	2.7	A	663	995
2 - Copperhouse Road	0.04	2.63	0.0	0.5	A	48	72
3 - Coastal Link S	0.45	3.25	0.8	1.8	A	757	1136

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	544	136	5	2172	0.251	543	649	0.0	0.3	2.260	A
2 - Copperhouse Road	39	10	513	1665	0.024	39	35	0.0	0.0	2.362	A
3 - Coastal Link S	621	155	35	2039	0.305	619	517	0.0	0.4	2.562	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	650	162	6	2171	0.299	650	776	0.3	0.4	2.422	A
2 - Copperhouse Road	47	12	614	1602	0.029	47	42	0.0	0.0	2.469	A
3 - Coastal Link S	742	185	41	2035	0.364	741	619	0.4	0.6	2.814	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	796	199	8	2170	0.367	795	950	0.4	0.6	2.678	A
2 - Copperhouse Road	57	14	751	1517	0.038	57	52	0.0	0.0	2.632	A
3 - Coastal Link S	908	227	51	2029	0.448	907	758	0.6	0.8	3.244	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	796	199	8	2170	0.367	796	951	0.6	0.6	2.681	A
2 - Copperhouse Road	57	14	752	1516	0.038	57	52	0.0	0.0	2.632	A
3 - Coastal Link S	908	227	51	2029	0.448	908	759	0.8	0.8	3.250	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	650	162	6	2171	0.299	651	778	0.6	0.4	2.425	A
2 - Copperhouse Road	47	12	615	1602	0.029	47	42	0.0	0.0	2.470	A
3 - Coastal Link S	742	185	41	2035	0.364	743	620	0.8	0.6	2.820	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	544	136	5	2172	0.251	545	651	0.4	0.3	2.266	A
2 - Copperhouse Road	39	10	515	1664	0.024	39	35	0.0	0.0	2.366	A
3 - Coastal Link S	621	155	35	2039	0.305	622	519	0.6	0.4	2.570	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.44	0.00	0.00	0.44	0.44			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.58	0.08	0.78	1.37	1.45			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.59	0.03	0.26	0.59	0.59			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.81	0.03	0.26	0.81	0.81			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.59	0.03	0.30	1.29	2.73			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.82	0.03	0.28	0.82	1.84			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.58	0.56	1.01	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.45	0.00	0.00	0.45	0.45			N/A	N/A

Option 1: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.72	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	Option 1: 2026 with Committed Development and Machynys Hotel	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 (%)
1 - Coastal Link N		ONE HOUR	✓	754	100.000
2 - Copperhouse Road		ONE HOUR	✓	42	100.000
3 - Coastal Link S		ONE HOUR	✓	573	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	33	720
	2 - Copperhouse Road	38	2	2
	3 - Coastal Link S	571	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.38	2.74	0.6	2.7	A	692	1038
2 - Copperhouse Road	0.03	2.87	0.0	0.5	A	39	58
3 - Coastal Link S	0.31	2.70	0.5	1.9	A	526	789

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	566	458	0.0	0.4	2.284	A
2 - Copperhouse Road	32	8	541	1647	0.019	32	28	0.0	0.0	2.565	A
3 - Coastal Link S	431	108	31	2042	0.211	430	542	0.0	0.3	2.344	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	677	548	0.4	0.5	2.457	A
2 - Copperhouse Road	38	9	648	1581	0.024	38	33	0.0	0.0	2.685	A
3 - Coastal Link S	515	129	37	2038	0.253	515	649	0.3	0.4	2.481	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	671	0.5	0.6	2.734	A
2 - Copperhouse Road	46	12	793	1491	0.031	46	41	0.0	0.0	2.868	A
3 - Coastal Link S	631	158	45	2033	0.310	630	794	0.4	0.5	2.695	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	672	0.6	0.6	2.737	A
2 - Copperhouse Road	46	12	794	1490	0.031	46	41	0.0	0.0	2.869	A
3 - Coastal Link S	631	158	45	2033	0.310	631	795	0.5	0.5	2.695	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	678	549	0.6	0.5	2.461	A
2 - Copperhouse Road	38	9	649	1580	0.024	38	33	0.0	0.0	2.688	A
3 - Coastal Link S	515	129	37	2038	0.253	516	650	0.5	0.4	2.483	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	568	460	0.5	0.4	2.291	A
2 - Copperhouse Road	32	8	543	1646	0.019	32	28	0.0	0.0	2.566	A
3 - Coastal Link S	431	108	31	2042	0.211	432	544	0.4	0.3	2.347	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.35	0.00	0.00	0.35	0.35			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.29	1.12	2.74			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.33	1.46	1.92			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.36	0.00	0.00	0.36	0.36			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

Option 1: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.08	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	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	760	100.000
2 - Copperhouse Road		ONE HOUR	✓	55	100.000
3 - Coastal Link S		ONE HOUR	✓	863	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	45	712
	2 - Copperhouse Road	45	0	10
	3 - Coastal Link S	856	5	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.39	2.76	0.6	2.7	A	697	1046
2 - Copperhouse Road	0.04	2.69	0.0	0.5	A	50	76
3 - Coastal Link S	0.47	3.38	0.9	1.5	A	792	1188

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	572	143	5	2172	0.263	571	679	0.0	0.4	2.299	A
2 - Copperhouse Road	41	10	538	1649	0.025	41	38	0.0	0.0	2.393	A
3 - Coastal Link S	650	162	36	2038	0.319	648	544	0.0	0.5	2.616	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	683	171	6	2171	0.315	683	812	0.4	0.5	2.476	A
2 - Copperhouse Road	49	12	644	1583	0.031	49	45	0.0	0.0	2.508	A
3 - Coastal Link S	776	194	43	2034	0.381	775	650	0.5	0.6	2.892	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	837	209	8	2170	0.386	836	994	0.5	0.6	2.760	A
2 - Copperhouse Road	61	15	789	1493	0.041	61	55	0.0	0.0	2.685	A
3 - Coastal Link S	950	238	53	2028	0.469	949	796	0.6	0.9	3.374	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	837	209	8	2170	0.386	837	995	0.6	0.6	2.763	A
2 - Copperhouse Road	61	15	789	1493	0.041	61	55	0.0	0.0	2.686	A
3 - Coastal Link S	950	238	53	2028	0.469	950	797	0.9	0.9	3.380	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	683	171	6	2171	0.315	684	814	0.6	0.5	2.480	A
2 - Copperhouse Road	49	12	645	1583	0.031	49	45	0.0	0.0	2.510	A
3 - Coastal Link S	776	194	43	2034	0.381	777	652	0.9	0.6	2.902	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	572	143	5	2172	0.263	573	681	0.5	0.4	2.304	A
2 - Copperhouse Road	41	10	540	1648	0.025	41	38	0.0	0.0	2.397	A
3 - Coastal Link S	650	162	36	2038	0.319	650	545	0.6	0.5	2.627	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.47	0.00	0.00	0.47	0.47			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.62	0.09	0.81	1.38	1.45			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.64	0.03	0.26	0.64	0.64			N/A	N/A
2 - Copperhouse Road	0.05	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.89	0.03	0.26	0.89	0.89			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.64	0.03	0.29	1.07	2.73			N/A	N/A
2 - Copperhouse Road	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3 - Coastal Link S	0.89	0.03	0.27	0.89	1.40			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.63	0.56	1.01	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.48	0.00	0.00	0.48	0.48			N/A	N/A

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.46	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	2021 Base	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 (%)
1 - Coastal Link N		ONE HOUR	✓	579	100.000
2 - Copperhouse Road		ONE HOUR	✓	38	100.000
3 - Coastal Link S		ONE HOUR	✓	488	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	28	550
	2 - Copperhouse Road	34	2	2
	3 - Coastal Link S	487	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.29	2.39	0.4	1.5	A	531	797
2 - Copperhouse Road	0.03	2.64	0.0	0.5	A	35	52
3 - Coastal Link S	0.26	2.52	0.4	1.5	A	448	672

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	436	109	2	2174	0.201	435	392	0.0	0.3	2.112	A
2 - Copperhouse Road	29	7	414	1726	0.017	29	23	0.0	0.0	2.436	A
3 - Coastal Link S	367	92	28	2044	0.180	366	415	0.0	0.2	2.252	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	521	130	3	2174	0.239	520	469	0.3	0.3	2.222	A
2 - Copperhouse Road	34	9	495	1676	0.020	34	28	0.0	0.0	2.519	A
3 - Coastal Link S	439	110	33	2040	0.215	438	496	0.2	0.3	2.359	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	637	159	3	2173	0.293	637	574	0.3	0.4	2.392	A
2 - Copperhouse Road	42	10	606	1607	0.026	42	34	0.0	0.0	2.643	A
3 - Coastal Link S	537	134	41	2035	0.264	537	607	0.3	0.4	2.522	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	637	159	3	2173	0.293	637	575	0.4	0.4	2.392	A
2 - Copperhouse Road	42	10	607	1607	0.026	42	34	0.0	0.0	2.643	A
3 - Coastal Link S	537	134	41	2035	0.264	537	608	0.4	0.4	2.522	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	521	130	3	2174	0.239	521	470	0.4	0.3	2.225	A
2 - Copperhouse Road	34	9	496	1676	0.020	34	28	0.0	0.0	2.520	A
3 - Coastal Link S	439	110	33	2040	0.215	439	497	0.4	0.3	2.360	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	436	109	2	2174	0.201	436	393	0.3	0.3	2.114	A
2 - Copperhouse Road	29	7	415	1726	0.017	29	23	0.0	0.0	2.437	A
3 - Coastal Link S	367	92	28	2044	0.180	368	416	0.3	0.2	2.256	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.26	0.00	0.00	0.26	0.26			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.23	0.00	0.00	0.23	0.23			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2 - Copperhouse Road	0.02	0.02	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.29	0.00	0.00	0.29	0.29			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.42	0.03	0.26	0.46	0.49			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.38	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.42	0.03	0.33	1.36	1.52			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.38	0.03	0.34	1.24	1.51			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.29	0.00	0.00	0.29	0.29			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.26	0.00	0.00	0.26	0.26			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.23	0.00	0.00	0.23	0.23			N/A	N/A

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.66	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	2021 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	641	100.000
2 - Copperhouse Road		ONE HOUR	✓	45	100.000
3 - Coastal Link S		ONE HOUR	✓	669	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	38	600
	2 - Copperhouse Road	37	0	8
	3 - Coastal Link S	664	3	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.32	2.51	0.5	2.1	A	588	882
2 - Copperhouse Road	0.03	2.53	0.0	0.5	A	41	62
3 - Coastal Link S	0.36	2.81	0.6	2.7	A	614	921

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	483	121	4	2173	0.222	481	529	0.0	0.3	2.178	A
2 - Copperhouse Road	34	8	454	1701	0.020	34	31	0.0	0.0	2.306	A
3 - Coastal Link S	504	126	30	2042	0.247	502	458	0.0	0.3	2.362	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	576	144	4	2173	0.265	576	632	0.3	0.4	2.308	A
2 - Copperhouse Road	40	10	544	1646	0.025	40	37	0.0	0.0	2.395	A
3 - Coastal Link S	601	150	36	2038	0.295	601	548	0.3	0.4	2.533	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	706	176	6	2172	0.325	705	774	0.4	0.5	2.513	A
2 - Copperhouse Road	50	12	666	1570	0.032	50	45	0.0	0.0	2.528	A
3 - Coastal Link S	737	184	44	2033	0.362	736	671	0.4	0.6	2.805	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	706	176	6	2172	0.325	706	775	0.5	0.5	2.513	A
2 - Copperhouse Road	50	12	666	1570	0.032	50	45	0.0	0.0	2.529	A
3 - Coastal Link S	737	184	44	2033	0.362	737	672	0.6	0.6	2.807	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	576	144	4	2173	0.265	577	633	0.5	0.4	2.311	A
2 - Copperhouse Road	40	10	544	1645	0.025	40	37	0.0	0.0	2.397	A
3 - Coastal Link S	601	150	36	2038	0.295	602	549	0.6	0.4	2.535	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	483	121	4	2173	0.222	483	530	0.4	0.3	2.182	A
2 - Copperhouse Road	34	8	456	1700	0.020	34	31	0.0	0.0	2.309	A
3 - Coastal Link S	504	126	30	2042	0.247	504	460	0.4	0.3	2.369	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.33	0.00	0.00	0.33	0.33			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.42	0.00	0.00	0.42	0.42			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.49	0.03	0.26	0.49	0.49			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.57	0.03	0.25	0.57	0.57			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.49	0.03	0.32	1.45	2.08			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.57	0.03	0.30	1.31	2.67			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.43	0.00	0.00	0.43	0.43			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.33	0.00	0.00	0.33	0.33			N/A	N/A

Option 2: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.72	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	Option 2: 2021 with Committed Development and Machynys Hotel	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 (%)
1 - Coastal Link N		ONE HOUR	✓	754	100.000
2 - Copperhouse Road		ONE HOUR	✓	42	100.000
3 - Coastal Link S		ONE HOUR	✓	573	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	33	720
	2 - Copperhouse Road	38	2	2
	3 - Coastal Link S	571	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.38	2.74	0.6	2.7	A	692	1038
2 - Copperhouse Road	0.03	2.87	0.0	0.5	A	39	58
3 - Coastal Link S	0.31	2.70	0.5	1.9	A	526	789

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	566	458	0.0	0.4	2.284	A
2 - Copperhouse Road	32	8	541	1647	0.019	32	28	0.0	0.0	2.565	A
3 - Coastal Link S	431	108	31	2042	0.211	430	542	0.0	0.3	2.344	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	677	548	0.4	0.5	2.457	A
2 - Copperhouse Road	38	9	648	1581	0.024	38	33	0.0	0.0	2.685	A
3 - Coastal Link S	515	129	37	2038	0.253	515	649	0.3	0.4	2.481	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	671	0.5	0.6	2.734	A
2 - Copperhouse Road	46	12	793	1491	0.031	46	41	0.0	0.0	2.868	A
3 - Coastal Link S	631	158	45	2033	0.310	630	794	0.4	0.5	2.695	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	672	0.6	0.6	2.737	A
2 - Copperhouse Road	46	12	794	1490	0.031	46	41	0.0	0.0	2.869	A
3 - Coastal Link S	631	158	45	2033	0.310	631	795	0.5	0.5	2.695	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	678	549	0.6	0.5	2.461	A
2 - Copperhouse Road	38	9	649	1580	0.024	38	33	0.0	0.0	2.688	A
3 - Coastal Link S	515	129	37	2038	0.253	516	650	0.5	0.4	2.483	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	568	460	0.5	0.4	2.291	A
2 - Copperhouse Road	32	8	543	1646	0.019	32	28	0.0	0.0	2.566	A
3 - Coastal Link S	431	108	31	2042	0.211	432	544	0.4	0.3	2.347	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.35	0.00	0.00	0.35	0.35			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.29	1.12	2.74			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.33	1.46	1.92			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.36	0.00	0.00	0.36	0.36			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

Option 2: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.97	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
D14	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	723	100.000
2 - Copperhouse Road		ONE HOUR	✓	52	100.000
3 - Coastal Link S		ONE HOUR	✓	825	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	42	678
	2 - Copperhouse Road	43	0	9
	3 - Coastal Link S	818	5	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.37	2.68	0.6	2.7	A	663	995
2 - Copperhouse Road	0.04	2.63	0.0	0.5	A	48	72
3 - Coastal Link S	0.45	3.25	0.8	1.8	A	757	1136

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	544	136	5	2172	0.251	543	649	0.0	0.3	2.260	A
2 - Copperhouse Road	39	10	513	1665	0.024	39	35	0.0	0.0	2.362	A
3 - Coastal Link S	621	155	35	2039	0.305	619	517	0.0	0.4	2.562	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	650	162	6	2171	0.299	650	776	0.3	0.4	2.422	A
2 - Copperhouse Road	47	12	614	1602	0.029	47	42	0.0	0.0	2.469	A
3 - Coastal Link S	742	185	41	2035	0.364	741	619	0.4	0.6	2.814	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	796	199	8	2170	0.367	795	950	0.4	0.6	2.678	A
2 - Copperhouse Road	57	14	751	1517	0.038	57	52	0.0	0.0	2.632	A
3 - Coastal Link S	908	227	51	2029	0.448	907	758	0.6	0.8	3.244	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	796	199	8	2170	0.367	796	951	0.6	0.6	2.681	A
2 - Copperhouse Road	57	14	752	1516	0.038	57	52	0.0	0.0	2.632	A
3 - Coastal Link S	908	227	51	2029	0.448	908	759	0.8	0.8	3.250	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	650	162	6	2171	0.299	651	778	0.6	0.4	2.425	A
2 - Copperhouse Road	47	12	615	1602	0.029	47	42	0.0	0.0	2.470	A
3 - Coastal Link S	742	185	41	2035	0.364	743	620	0.8	0.6	2.820	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	544	136	5	2172	0.251	545	651	0.4	0.3	2.266	A
2 - Copperhouse Road	39	10	515	1664	0.024	39	35	0.0	0.0	2.366	A
3 - Coastal Link S	621	155	35	2039	0.305	622	519	0.6	0.4	2.570	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.44	0.00	0.00	0.44	0.44			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.58	0.08	0.78	1.37	1.45			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.59	0.03	0.26	0.59	0.59			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.81	0.03	0.26	0.81	0.81			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.59	0.03	0.30	1.29	2.73			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.82	0.03	0.28	0.82	1.84			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.58	0.56	1.01	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.45	0.00	0.00	0.45	0.45			N/A	N/A

Option 2: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.72	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
D15	Option 2: 2026 with Committed Development and Machynys Hotel	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 (%)
1 - Coastal Link N		ONE HOUR	✓	754	100.000
2 - Copperhouse Road		ONE HOUR	✓	42	100.000
3 - Coastal Link S		ONE HOUR	✓	573	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	1	33	720
	2 - Copperhouse Road	38	2	2
	3 - Coastal Link S	571	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	4	2
	2 - Copperhouse Road	17	0	0
	3 - Coastal Link S	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.38	2.74	0.6	2.7	A	692	1038
2 - Copperhouse Road	0.03	2.87	0.0	0.5	A	39	58
3 - Coastal Link S	0.31	2.70	0.5	1.9	A	526	789

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	566	458	0.0	0.4	2.284	A
2 - Copperhouse Road	32	8	541	1647	0.019	32	28	0.0	0.0	2.565	A
3 - Coastal Link S	431	108	31	2042	0.211	430	542	0.0	0.3	2.344	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	677	548	0.4	0.5	2.457	A
2 - Copperhouse Road	38	9	648	1581	0.024	38	33	0.0	0.0	2.685	A
3 - Coastal Link S	515	129	37	2038	0.253	515	649	0.3	0.4	2.481	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	671	0.5	0.6	2.734	A
2 - Copperhouse Road	46	12	793	1491	0.031	46	41	0.0	0.0	2.868	A
3 - Coastal Link S	631	158	45	2033	0.310	630	794	0.4	0.5	2.695	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	830	208	4	2173	0.382	830	672	0.6	0.6	2.737	A
2 - Copperhouse Road	46	12	794	1490	0.031	46	41	0.0	0.0	2.869	A
3 - Coastal Link S	631	158	45	2033	0.310	631	795	0.5	0.5	2.695	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	678	169	4	2173	0.312	678	549	0.6	0.5	2.461	A
2 - Copperhouse Road	38	9	649	1580	0.024	38	33	0.0	0.0	2.688	A
3 - Coastal Link S	515	129	37	2038	0.253	516	650	0.5	0.4	2.483	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	568	142	3	2173	0.261	568	460	0.5	0.4	2.291	A
2 - Copperhouse Road	32	8	543	1646	0.019	32	28	0.0	0.0	2.566	A
3 - Coastal Link S	431	108	31	2042	0.211	432	544	0.4	0.3	2.347	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.29	0.52	0.55			N/A	N/A
3 - Coastal Link S	0.35	0.00	0.00	0.35	0.35			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.26	0.48	0.50			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.63	0.03	0.29	1.12	2.74			N/A	N/A
2 - Copperhouse Road	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.47	0.03	0.33	1.46	1.92			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.36	0.00	0.00	0.36	0.36			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.02	0.00	0.00	0.02	0.02			N/A	N/A
3 - Coastal Link S	0.28	0.00	0.00	0.28	0.28			N/A	N/A

Option 2: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
4	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.08	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
D16	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Coastal Link N		ONE HOUR	✓	760	100.000
2 - Copperhouse Road		ONE HOUR	✓	55	100.000
3 - Coastal Link S		ONE HOUR	✓	863	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	3	45	712
	2 - Copperhouse Road	45	0	10
	3 - Coastal Link S	856	5	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Coastal Link N	2 - Copperhouse Road	3 - Coastal Link S
From	1 - Coastal Link N	0	9	2
	2 - Copperhouse Road	3	0	29
	3 - Coastal Link S	1	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Coastal Link N	0.39	2.76	0.6	2.7	A	697	1046
2 - Copperhouse Road	0.04	2.69	0.0	0.5	A	50	76
3 - Coastal Link S	0.47	3.38	0.9	1.5	A	792	1188

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	572	143	5	2172	0.263	571	679	0.0	0.4	2.299	A
2 - Copperhouse Road	41	10	538	1649	0.025	41	38	0.0	0.0	2.393	A
3 - Coastal Link S	650	162	36	2038	0.319	648	544	0.0	0.5	2.616	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	683	171	6	2171	0.315	683	812	0.4	0.5	2.476	A
2 - Copperhouse Road	49	12	644	1583	0.031	49	45	0.0	0.0	2.508	A
3 - Coastal Link S	776	194	43	2034	0.381	775	650	0.5	0.6	2.892	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	837	209	8	2170	0.386	836	994	0.5	0.6	2.760	A
2 - Copperhouse Road	61	15	789	1493	0.041	61	55	0.0	0.0	2.685	A
3 - Coastal Link S	950	238	53	2028	0.469	949	796	0.6	0.9	3.374	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	837	209	8	2170	0.386	837	995	0.6	0.6	2.763	A
2 - Copperhouse Road	61	15	789	1493	0.041	61	55	0.0	0.0	2.686	A
3 - Coastal Link S	950	238	53	2028	0.469	950	797	0.9	0.9	3.380	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	683	171	6	2171	0.315	684	814	0.6	0.5	2.480	A
2 - Copperhouse Road	49	12	645	1583	0.031	49	45	0.0	0.0	2.510	A
3 - Coastal Link S	776	194	43	2034	0.381	777	652	0.9	0.6	2.902	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Coastal Link N	572	143	5	2172	0.263	573	681	0.5	0.4	2.304	A
2 - Copperhouse Road	41	10	540	1648	0.025	41	38	0.0	0.0	2.397	A
3 - Coastal Link S	650	162	36	2038	0.319	650	545	0.6	0.5	2.627	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.47	0.00	0.00	0.47	0.47			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.62	0.09	0.81	1.38	1.45			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.64	0.03	0.26	0.64	0.64			N/A	N/A
2 - Copperhouse Road	0.05	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.89	0.03	0.26	0.89	0.89			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.64	0.03	0.29	1.07	2.73			N/A	N/A
2 - Copperhouse Road	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3 - Coastal Link S	0.89	0.03	0.27	0.89	1.40			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.63	0.56	1.01	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - Coastal Link N	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Copperhouse Road	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3 - Coastal Link S	0.48	0.00	0.00	0.48	0.48			N/A	N/A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: 05. CLR_Delta Lakes Rdt.j9
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling
Report generation date: 17/12/2020 14:48:20

»2021 with Committed Development, AM
»2021 with Committed Development, PM
»Option 1: 2021 with Committed Development and Machynys Hotel , AM
»Option 1: 2021 with Committed Development and Machynys Hotel, PM
»Option 1: 2026 with Committed Development and Machynys Hotel, AM
»Option 1: 2026 with Committed Development and Machynys Hotel, PM
»2017 Survey, AM
»2017 Survey, PM
»2021 Base, AM
»2021 Base, PM
»Option 2: 2021 with Committed Development and Machynys Hotel, AM
»Option 2: 2021 with Committed Development and Machynys Hotel, PM
»Option 2: 2026 with Committed Development and Machynys Hotel, AM
»Option 2: 2026 with Committed Development and Machynys Hotel, PM

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2021 with Committed Development									
Arm 1	0.1	2.85	0.10	4.06	A	0.4	3.52	0.28	4.13	A
Arm 2	1.0	4.10	0.49			1.3	4.82	0.56		
Arm 3	0.2	2.91	0.14			0.1	2.86	0.07		
Arm 4	1.0	4.52	0.49			0.8	3.73	0.43		
	Option 1: 2021 with Committed Development and Machynys Hotel									
Arm 1	0.1	2.86	0.10	4.11	A	0.4	3.54	0.28	4.18	A
Arm 2	1.0	4.15	0.49			1.3	4.87	0.57		
Arm 3	0.2	2.92	0.14			0.1	2.87	0.07		
Arm 4	1.0	4.56	0.50			0.8	3.78	0.44		
	Option 1: 2026 with Committed Development and Machynys Hotel									
Arm 1	0.1	2.86	0.10	4.11	A	0.4	3.63	0.28	4.40	A
Arm 2	1.0	4.15	0.49			1.5	5.20	0.59		
Arm 3	0.2	2.92	0.14			0.1	2.94	0.07		
Arm 4	1.0	4.56	0.50			0.9	3.95	0.46		
	2017 Survey									
Arm 1	0.0	2.55	0.03	2.95	A	0.0	0.00	0.00	3.30	A
Arm 2	0.4	2.98	0.30			0.8	3.54	0.43		
Arm 3	0.1	2.40	0.09			0.1	2.46	0.05		
Arm 4	0.5	3.10	0.33			0.5	3.11	0.35		
	2021 Base									
Arm 1	0.0	2.60	0.03	3.04	A	0.0	0.00	0.00	3.43	A
Arm 2	0.5	3.06	0.32			0.8	3.71	0.46		
Arm 3	0.1	2.45	0.10			0.1	2.51	0.06		
Arm 4	0.5	3.21	0.35			0.6	3.22	0.37		
	Option 2: 2021 with Committed Development and Machynys Hotel									
Arm 1	0.1	2.89	0.10	4.20	A	0.4	3.58	0.28	4.26	A
Arm 2	1.1	4.27	0.51			1.4	4.99	0.58		
Arm 3	0.2	2.96	0.14			0.1	2.90	0.07		
Arm 4	1.0	4.65	0.50			0.8	3.82	0.44		
	Option 2: 2026 with Committed Development and Machynys Hotel									
Arm 1	0.1	2.89	0.10	4.20	A	0.4	3.67	0.28	4.49	A
Arm 2	1.1	4.27	0.51			1.5	5.33	0.60		
Arm 3	0.2	2.96	0.14			0.1	2.97	0.07		
Arm 4	1.0	4.65	0.50			0.9	3.99	0.47		

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/09/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	GLOBAL\Alastair.Young
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
D5	2021 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D7	Option 1: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D8	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D9	Option 1: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D10	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D13	2017 Survey	AM	ONE HOUR	07:45	09:15	15	✓
D14	2017 Survey	PM	ONE HOUR	16:15	17:45	15	✓
D15	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D16	2021 Base	PM	ONE HOUR	16:15	17:45	15	✓
D17	Option 2: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D18	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D19	Option 2: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D20	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2021 with Committed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Site Access	
2	Coastal Link Road E	
3	Pentre Nicklaus	
4	Coastal Link Road W	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.66	7.81	14.0	40.0	60.0	17.0	
2	3.74	7.83	11.0	41.0	60.0	16.0	
3	3.62	7.64	22.0	38.0	60.0	15.0	
4	3.77	7.64	12.0	40.0	60.0	16.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.606	1876
2	0.598	1824
3	0.630	2006
4	0.601	1845

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
D5	2021 with Committed Development	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 (%)
1		ONE HOUR	✓	122	100.000
2		ONE HOUR	✓	786	100.000
3		ONE HOUR	✓	178	100.000
4		ONE HOUR	✓	712	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	70	0	52
	2	241	17	37	491
	3	0	122	0	56
	4	133	553	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.10	2.85	0.1	0.5	A	112	168
2	0.49	4.10	1.0	1.5	A	721	1082
3	0.14	2.91	0.2	0.5	A	163	245
4	0.49	4.52	1.0	1.5	A	653	980

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	539	1550	0.059	92	281	0.0	0.1	2.468	A
2	592	148	59	1789	0.331	590	572	0.0	0.5	3.096	A
3	134	34	601	1627	0.082	134	47	0.0	0.1	2.443	A
4	536	134	285	1673	0.320	534	449	0.0	0.5	3.203	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	645	1486	0.074	110	336	0.1	0.1	2.615	A
2	707	177	70	1782	0.396	706	684	0.5	0.7	3.455	A
3	160	40	719	1553	0.103	160	57	0.1	0.1	2.619	A
4	640	160	341	1640	0.390	639	538	0.5	0.6	3.653	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	789	1398	0.096	134	411	0.1	0.1	2.848	A
2	865	216	86	1773	0.488	864	838	0.7	1.0	4.089	A
3	196	49	881	1451	0.135	196	69	0.1	0.2	2.906	A
4	784	196	418	1594	0.492	783	659	0.6	1.0	4.500	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	791	1397	0.096	134	412	0.1	0.1	2.849	A
2	865	216	86	1773	0.488	865	839	1.0	1.0	4.099	A
3	196	49	882	1450	0.135	196	69	0.2	0.2	2.908	A
4	784	196	418	1593	0.492	784	659	1.0	1.0	4.515	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	647	1485	0.074	110	337	0.1	0.1	2.620	A
2	707	177	70	1782	0.396	708	686	1.0	0.7	3.468	A
3	160	40	721	1552	0.103	160	57	0.2	0.1	2.624	A
4	640	160	342	1639	0.390	641	539	1.0	0.7	3.667	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	541	1548	0.059	92	282	0.1	0.1	2.471	A
2	592	148	59	1789	0.331	592	574	0.7	0.5	3.110	A
3	134	34	604	1626	0.082	134	47	0.1	0.1	2.448	A
4	536	134	286	1673	0.320	537	451	0.7	0.5	3.221	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.51	0.00	0.00	0.51	0.51			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.48	0.00	0.00	0.48	0.48			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.46	0.48			N/A	N/A
2	0.67	0.10	0.86	1.41	1.48			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.65	0.09	0.83	1.39	1.45			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.26	0.47	0.49			N/A	N/A
2	0.98	0.03	0.26	0.98	0.98			N/A	N/A
3	0.16	0.03	0.26	0.47	0.49			N/A	N/A
4	0.97	0.03	0.26	0.97	0.97			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	0.98	0.03	0.28	0.98	1.20			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	0.98	0.03	0.27	0.98	1.53			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.68	0.57	1.03	1.45	1.50			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.65	0.56	1.02	1.42	1.47			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.51	0.00	0.00	0.51	0.51			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.48	0.04	0.40	1.24	1.38			N/A	N/A

2021 with Committed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.13	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	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	354	100.000
2		ONE HOUR	✓	876	100.000
3		ONE HOUR	✓	85	100.000
4		ONE HOUR	✓	685	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	224	1	129
	2	101	7	109	659
	3	1	54	1	29
	4	53	600	32	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.28	3.52	0.4	1.1	A	325	487
2	0.56	4.82	1.3	1.6	A	804	1206
3	0.07	2.86	0.1	0.5	A	78	117
4	0.43	3.73	0.8	2.3	A	629	943

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	521	1561	0.171	266	116	0.0	0.2	2.778	A
2	659	165	122	1751	0.377	657	664	0.0	0.6	3.308	A
3	64	16	672	1582	0.040	64	107	0.0	0.0	2.431	A
4	516	129	123	1771	0.291	514	613	0.0	0.4	2.915	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	623	1499	0.212	318	139	0.2	0.3	3.049	A
2	788	197	146	1737	0.453	787	795	0.6	0.8	3.814	A
3	76	19	805	1499	0.051	76	128	0.0	0.1	2.595	A
4	616	154	147	1756	0.351	615	734	0.4	0.5	3.214	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	763	1414	0.276	389	170	0.3	0.4	3.511	A
2	964	241	179	1717	0.562	963	973	0.8	1.3	4.796	A
3	94	23	985	1386	0.068	94	157	0.1	0.1	2.857	A
4	754	189	180	1737	0.434	753	898	0.5	0.8	3.728	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	764	1413	0.276	390	171	0.4	0.4	3.516	A
2	964	241	179	1717	0.562	964	974	1.3	1.3	4.819	A
3	94	23	986	1385	0.068	94	157	0.1	0.1	2.860	A
4	754	189	181	1736	0.434	754	900	0.8	0.8	3.735	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	625	1498	0.212	319	140	0.4	0.3	3.055	A
2	788	197	147	1737	0.454	789	797	1.3	0.8	3.838	A
3	76	19	807	1497	0.051	76	129	0.1	0.1	2.600	A
4	616	154	148	1756	0.351	617	736	0.8	0.6	3.222	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	523	1559	0.171	267	117	0.3	0.2	2.787	A
2	659	165	123	1751	0.377	660	667	0.8	0.6	3.328	A
3	64	16	675	1580	0.040	64	108	0.1	0.0	2.437	A
4	516	129	124	1771	0.291	516	616	0.6	0.4	2.928	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.61	0.55	1.01	1.41	1.46			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.42	0.00	0.00	0.42	0.42			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.83	0.08	0.84	1.05	1.58			N/A	N/A
3	0.05	0.03	0.26	0.46	0.49			N/A	N/A
4	0.55	0.55	1.02	1.43	1.48			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.03	0.25	0.45	0.48			N/A	N/A
2	1.28	0.03	0.26	1.28	1.28			N/A	N/A
3	0.07	0.03	0.27	0.48	0.51			N/A	N/A
4	0.78	0.03	0.26	0.78	0.78			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.03	0.33	1.10	1.10			N/A	N/A
2	1.28	0.03	0.27	1.28	1.28			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.78	0.03	0.28	0.78	2.28			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.84	0.44	0.98	1.41	1.47			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.55	0.55	1.02	1.43	1.48			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.61	0.07	0.75	1.36	1.44			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.42	0.00	0.00	0.42	0.42			N/A	N/A

Option 1: 2021 with Committed Development and Machynys Hotel , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.11	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	Option 1: 2021 with Committed Development and Machynys Hotel	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 (%)
1		ONE HOUR	✓	122	100.000
2		ONE HOUR	✓	796	100.000
3		ONE HOUR	✓	178	100.000
4		ONE HOUR	✓	719	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	70	0	52
	2	241	17	37	501
	3	0	122	0	56
	4	133	560	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.10	2.86	0.1	0.5	A	112	168
2	0.49	4.15	1.0	1.5	A	730	1096
3	0.14	2.92	0.2	0.5	A	163	245
4	0.50	4.56	1.0	1.5	A	660	990

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	544	1547	0.059	92	281	0.0	0.1	2.473	A
2	599	150	59	1789	0.335	597	577	0.0	0.5	3.116	A
3	134	34	608	1623	0.083	134	47	0.0	0.1	2.450	A
4	541	135	285	1673	0.323	539	457	0.0	0.5	3.218	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	651	1482	0.074	110	336	0.1	0.1	2.623	A
2	716	179	70	1782	0.401	715	691	0.5	0.7	3.484	A
3	160	40	728	1547	0.103	160	57	0.1	0.1	2.630	A
4	646	162	341	1640	0.394	646	547	0.5	0.7	3.676	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	797	1393	0.096	134	411	0.1	0.1	2.858	A
2	876	219	86	1773	0.494	875	845	0.7	1.0	4.139	A
3	196	49	892	1444	0.136	196	69	0.1	0.2	2.922	A
4	792	198	418	1594	0.497	790	670	0.7	1.0	4.543	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	798	1393	0.096	134	412	0.1	0.1	2.860	A
2	876	219	86	1773	0.494	876	847	1.0	1.0	4.150	A
3	196	49	893	1443	0.136	196	69	0.2	0.2	2.924	A
4	792	198	418	1593	0.497	792	671	1.0	1.0	4.559	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	653	1481	0.074	110	337	0.1	0.1	2.625	A
2	716	179	70	1782	0.402	717	693	1.0	0.7	3.498	A
3	160	40	730	1546	0.104	160	57	0.2	0.1	2.635	A
4	646	162	342	1639	0.394	648	548	1.0	0.7	3.691	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	546	1545	0.059	92	282	0.1	0.1	2.478	A
2	599	150	59	1789	0.335	600	580	0.7	0.5	3.130	A
3	134	34	611	1621	0.083	134	47	0.1	0.1	2.456	A
4	541	135	286	1673	0.324	542	459	0.7	0.5	3.236	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.52	0.52	1.03	1.45	1.50			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.48	0.00	0.00	0.48	0.48			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.46	0.48			N/A	N/A
2	0.69	0.10	0.86	1.42	1.49			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.66	0.10	0.83	1.39	1.46			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.26	0.47	0.49			N/A	N/A
2	1.00	0.03	0.26	1.00	1.00			N/A	N/A
3	0.16	0.03	0.26	0.47	0.49			N/A	N/A
4	0.99	0.03	0.26	0.99	0.99			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	1.01	0.03	0.28	1.01	1.06			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	1.00	0.03	0.27	1.00	1.45			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.70	0.57	1.03	1.45	1.50			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.67	0.56	1.02	1.42	1.47			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.52	0.52	1.03	1.45	1.50			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.49	0.04	0.42	1.27	1.39			N/A	N/A

Option 1: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.18	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
D8	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	354	100.000
2		ONE HOUR	✓	883	100.000
3		ONE HOUR	✓	85	100.000
4		ONE HOUR	✓	696	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	224	1	129
	2	101	7	109	666
	3	1	54	1	29
	4	53	611	32	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.28	3.54	0.4	1.1	A	325	487
2	0.57	4.87	1.3	1.6	A	810	1215
3	0.07	2.87	0.1	0.5	A	78	117
4	0.44	3.78	0.8	2.1	A	639	958

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	529	1556	0.171	266	116	0.0	0.2	2.789	A
2	665	166	122	1751	0.380	662	672	0.0	0.6	3.324	A
3	64	16	677	1579	0.041	64	107	0.0	0.0	2.437	A
4	524	131	123	1771	0.296	522	618	0.0	0.4	2.935	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	633	1493	0.213	318	139	0.2	0.3	3.064	A
2	794	198	146	1737	0.457	793	805	0.6	0.8	3.838	A
3	76	19	811	1495	0.051	76	128	0.0	0.1	2.602	A
4	626	156	147	1756	0.356	625	740	0.4	0.6	3.242	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	775	1407	0.277	389	170	0.3	0.4	3.536	A
2	972	243	179	1717	0.566	970	985	0.8	1.3	4.846	A
3	94	23	992	1381	0.068	94	157	0.1	0.1	2.868	A
4	766	192	180	1737	0.441	765	906	0.6	0.8	3.775	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	776	1406	0.277	390	171	0.4	0.4	3.541	A
2	972	243	179	1717	0.566	972	987	1.3	1.3	4.869	A
3	94	23	994	1380	0.068	94	157	0.1	0.1	2.871	A
4	766	192	181	1736	0.441	766	907	0.8	0.8	3.781	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	635	1492	0.213	319	140	0.4	0.3	3.069	A
2	794	198	147	1737	0.457	796	807	1.3	0.9	3.862	A
3	76	19	814	1493	0.051	76	129	0.1	0.1	2.606	A
4	626	156	148	1756	0.356	627	742	0.8	0.6	3.253	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	531	1554	0.171	267	117	0.3	0.2	2.797	A
2	665	166	123	1751	0.380	666	675	0.9	0.6	3.347	A
3	64	16	681	1577	0.041	64	108	0.1	0.0	2.440	A
4	524	131	124	1771	0.296	525	621	0.6	0.4	2.945	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.61	0.55	1.01	1.41	1.46			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.84	0.08	0.84	1.15	1.64			N/A	N/A
3	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4	0.56	0.08	0.77	1.38	1.45			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.03	0.25	0.45	0.48			N/A	N/A
2	1.30	0.03	0.26	1.30	1.30			N/A	N/A
3	0.07	0.03	0.27	0.48	0.51			N/A	N/A
4	0.80	0.03	0.26	0.80	0.80			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.03	0.33	1.15	1.15			N/A	N/A
2	1.31	0.03	0.27	1.31	1.31			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.80	0.03	0.28	0.80	2.14			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.85	0.41	0.98	1.42	1.47			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.57	0.56	1.02	1.43	1.48			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.62	0.07	0.75	1.36	1.44			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

Option 1: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.11	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	Option 1: 2026 with Committed Development and Machynys Hotel	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 (%)
1		ONE HOUR	✓	122	100.000
2		ONE HOUR	✓	796	100.000
3		ONE HOUR	✓	178	100.000
4		ONE HOUR	✓	719	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	70	0	52
	2	241	17	37	501
	3	0	122	0	56
	4	133	560	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.10	2.86	0.1	0.5	A	112	168
2	0.49	4.15	1.0	1.5	A	730	1096
3	0.14	2.92	0.2	0.5	A	163	245
4	0.50	4.56	1.0	1.5	A	660	990

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	544	1547	0.059	92	281	0.0	0.1	2.473	A
2	599	150	59	1789	0.335	597	577	0.0	0.5	3.116	A
3	134	34	608	1623	0.083	134	47	0.0	0.1	2.450	A
4	541	135	285	1673	0.323	539	457	0.0	0.5	3.218	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	651	1482	0.074	110	336	0.1	0.1	2.623	A
2	716	179	70	1782	0.401	715	691	0.5	0.7	3.484	A
3	160	40	728	1547	0.103	160	57	0.1	0.1	2.630	A
4	646	162	341	1640	0.394	646	547	0.5	0.7	3.676	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	797	1393	0.096	134	411	0.1	0.1	2.858	A
2	876	219	86	1773	0.494	875	845	0.7	1.0	4.139	A
3	196	49	892	1444	0.136	196	69	0.1	0.2	2.922	A
4	792	198	418	1594	0.497	790	670	0.7	1.0	4.543	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	798	1393	0.096	134	412	0.1	0.1	2.860	A
2	876	219	86	1773	0.494	876	847	1.0	1.0	4.150	A
3	196	49	893	1443	0.136	196	69	0.2	0.2	2.924	A
4	792	198	418	1593	0.497	792	671	1.0	1.0	4.559	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	653	1481	0.074	110	337	0.1	0.1	2.625	A
2	716	179	70	1782	0.402	717	693	1.0	0.7	3.498	A
3	160	40	730	1546	0.104	160	57	0.2	0.1	2.635	A
4	646	162	342	1639	0.394	648	548	1.0	0.7	3.691	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	546	1545	0.059	92	282	0.1	0.1	2.478	A
2	599	150	59	1789	0.335	600	580	0.7	0.5	3.130	A
3	134	34	611	1621	0.083	134	47	0.1	0.1	2.456	A
4	541	135	286	1673	0.324	542	459	0.7	0.5	3.236	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.52	0.52	1.03	1.45	1.50			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.48	0.00	0.00	0.48	0.48			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.46	0.48			N/A	N/A
2	0.69	0.10	0.86	1.42	1.49			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.66	0.10	0.83	1.39	1.46			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.26	0.47	0.49			N/A	N/A
2	1.00	0.03	0.26	1.00	1.00			N/A	N/A
3	0.16	0.03	0.26	0.47	0.49			N/A	N/A
4	0.99	0.03	0.26	0.99	0.99			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	1.01	0.03	0.28	1.01	1.06			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	1.00	0.03	0.27	1.00	1.45			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.70	0.57	1.03	1.45	1.50			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.67	0.56	1.02	1.42	1.47			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.52	0.52	1.03	1.45	1.50			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.49	0.04	0.42	1.27	1.39			N/A	N/A

Option 1: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.40	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	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	354	100.000
2		ONE HOUR	✓	926	100.000
3		ONE HOUR	✓	90	100.000
4		ONE HOUR	✓	730	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	224	1	129
	2	101	8	115	702
	3	1	57	1	31
	4	53	644	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.28	3.63	0.4	1.3	A	325	487
2	0.59	5.20	1.5	1.9	A	850	1275
3	0.07	2.94	0.1	0.5	A	83	124
4	0.46	3.95	0.9	1.8	A	670	1005

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	558	1539	0.173	266	116	0.0	0.2	2.827	A
2	697	174	123	1751	0.398	694	700	0.0	0.7	3.425	A
3	68	17	705	1562	0.043	68	113	0.0	0.0	2.472	A
4	550	137	126	1769	0.311	548	647	0.0	0.5	3.001	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	667	1472	0.216	318	139	0.2	0.3	3.119	A
2	832	208	147	1736	0.479	831	838	0.7	0.9	4.005	A
3	81	20	844	1474	0.055	81	135	0.0	0.1	2.650	A
4	656	164	151	1754	0.374	656	774	0.5	0.6	3.339	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	817	1381	0.282	389	170	0.3	0.4	3.626	A
2	1020	255	180	1716	0.594	1017	1026	0.9	1.5	5.174	A
3	99	25	1033	1355	0.073	99	165	0.1	0.1	2.940	A
4	804	201	185	1734	0.464	803	947	0.6	0.9	3.937	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	818	1381	0.282	390	171	0.4	0.4	3.632	A
2	1020	255	181	1716	0.594	1020	1027	1.5	1.5	5.205	A
3	99	25	1035	1354	0.073	99	165	0.1	0.1	2.943	A
4	804	201	185	1734	0.464	804	949	0.9	0.9	3.945	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	669	1471	0.216	319	140	0.4	0.3	3.127	A
2	832	208	148	1736	0.480	835	840	1.5	0.9	4.033	A
3	81	20	847	1472	0.055	81	135	0.1	0.1	2.654	A
4	656	164	151	1754	0.374	657	777	0.9	0.6	3.348	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	560	1537	0.173	267	117	0.3	0.2	2.836	A
2	697	174	124	1750	0.398	698	703	0.9	0.7	3.452	A
3	68	17	709	1559	0.043	68	113	0.1	0.0	2.476	A
4	550	137	127	1769	0.311	550	650	0.6	0.5	3.012	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.66	0.55	1.01	1.41	1.46			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.92	0.07	0.84	1.56	1.93			N/A	N/A
3	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4	0.61	0.09	0.82	1.39	1.46			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2	1.45	0.03	0.26	1.45	1.45			N/A	N/A
3	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4	0.87	0.03	0.26	0.87	0.87			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.33	1.28	1.28			N/A	N/A
2	1.46	0.03	0.27	1.46	1.46			N/A	N/A
3	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4	0.88	0.03	0.28	0.88	1.76			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.94	0.27	0.99	1.30	1.30			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.61	0.56	1.02	1.43	1.48			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.67	0.07	0.75	1.38	1.46			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

2017 Survey, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.95	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	2017 Survey	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 (%)
1		ONE HOUR	✓	37	100.000
2		ONE HOUR	✓	486	100.000
3		ONE HOUR	✓	144	100.000
4		ONE HOUR	✓	520	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	17	0	20
	2	20	0	35	431
	3	0	115	0	29
	4	0	508	12	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.03	2.55	0.0	0.5	A	34	51
2	0.30	2.98	0.4	1.7	A	446	669
3	0.09	2.40	0.1	0.5	A	132	198
4	0.33	3.10	0.5	2.1	A	477	716

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	28	7	477	1588	0.018	28	15	0.0	0.0	2.307	A
2	366	91	24	1810	0.202	365	480	0.0	0.3	2.611	A
3	108	27	354	1783	0.061	108	35	0.0	0.1	2.183	A
4	391	98	101	1784	0.219	390	360	0.0	0.3	2.631	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	33	8	570	1531	0.022	33	18	0.0	0.0	2.403	A
2	437	109	29	1807	0.242	437	575	0.3	0.3	2.754	A
3	129	32	423	1739	0.074	129	42	0.1	0.1	2.271	A
4	467	117	121	1772	0.264	467	431	0.3	0.4	2.812	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	41	10	699	1453	0.028	41	22	0.0	0.0	2.548	A
2	535	134	35	1803	0.297	535	704	0.3	0.4	2.976	A
3	159	40	518	1679	0.094	158	52	0.1	0.1	2.404	A
4	573	143	149	1756	0.326	572	528	0.4	0.5	3.099	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	41	10	699	1453	0.028	41	22	0.0	0.0	2.549	A
2	535	134	35	1803	0.297	535	705	0.4	0.4	2.976	A
3	159	40	519	1679	0.094	159	52	0.1	0.1	2.404	A
4	573	143	149	1756	0.326	573	528	0.5	0.5	3.101	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	33	8	571	1530	0.022	33	18	0.0	0.0	2.406	A
2	437	109	29	1807	0.242	437	576	0.4	0.3	2.756	A
3	129	32	424	1739	0.074	130	42	0.1	0.1	2.274	A
4	467	117	121	1772	0.264	468	432	0.5	0.4	2.817	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	28	7	478	1586	0.018	28	15	0.0	0.0	2.309	A
2	366	91	24	1810	0.202	366	482	0.3	0.3	2.616	A
3	108	27	355	1782	0.061	108	35	0.1	0.1	2.184	A
4	391	98	102	1784	0.219	392	362	0.4	0.3	2.636	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.26	0.00	0.00	0.26	0.26			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.29	0.00	0.00	0.29	0.29			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.02	0.25	0.45	0.48			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.08	0.03	0.26	0.46	0.49			N/A	N/A
4	0.36	0.00	0.00	0.36	0.36			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.44	0.03	0.26	0.48	0.50			N/A	N/A
3	0.11	0.03	0.26	0.47	0.50			N/A	N/A
4	0.49	0.03	0.26	0.49	0.49			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.44	0.03	0.34	1.41	1.71			N/A	N/A
3	0.11	0.00	0.00	0.11	0.11			N/A	N/A
4	0.49	0.03	0.31	1.43	2.14			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.34	0.00	0.00	0.34	0.34			N/A	N/A
3	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4	0.37	0.00	0.00	0.37	0.37			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.27	0.00	0.00	0.27	0.27			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.29	0.00	0.00	0.29	0.29			N/A	N/A

2017 Survey, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	3.30	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
D14	2017 Survey	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	1	100.000
2		ONE HOUR	✓	709	100.000
3		ONE HOUR	✓	78	100.000
4		ONE HOUR	✓	571	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	1	0	0
	2	0	2	103	604
	3	0	51	1	26
	4	0	543	28	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.00	0.00	0.0	~1	A	0	0
2	0.43	3.54	0.8	2.2	A	651	976
3	0.05	2.46	0.1	0.5	A	72	107
4	0.35	3.11	0.5	2.5	A	524	786

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	469	1592	0.000	0	0	0.0	0.0	0.000	A
2	534	133	22	1811	0.295	532	447	0.0	0.4	2.834	A
3	59	15	455	1719	0.034	59	99	0.0	0.0	2.222	A
4	430	107	41	1821	0.236	429	473	0.0	0.3	2.638	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	561	1536	0.000	0	0	0.0	0.0	0.000	A
2	637	159	26	1809	0.352	637	535	0.4	0.5	3.096	A
3	70	18	544	1663	0.042	70	119	0.0	0.0	2.316	A
4	513	128	49	1816	0.283	513	566	0.3	0.4	2.821	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	688	1460	0.000	0	0	0.0	0.0	0.000	A
2	781	195	32	1805	0.432	780	656	0.5	0.8	3.537	A
3	86	21	666	1586	0.054	86	145	0.0	0.1	2.460	A
4	629	157	59	1809	0.347	628	693	0.4	0.5	3.110	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	688	1459	0.000	0	0	0.0	0.0	0.000	A
2	781	195	32	1805	0.432	781	656	0.8	0.8	3.542	A
3	86	21	667	1586	0.054	86	145	0.1	0.1	2.460	A
4	629	157	59	1809	0.347	629	694	0.5	0.5	3.112	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	562	1536	0.000	0	0	0.0	0.0	0.000	A
2	637	159	26	1809	0.352	638	536	0.8	0.6	3.106	A
3	70	18	546	1662	0.042	70	119	0.1	0.0	2.319	A
4	513	128	49	1816	0.283	514	567	0.5	0.4	2.826	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	471	1591	0.000	0	0	0.0	0.0	0.000	A
2	534	133	22	1811	0.295	534	449	0.6	0.4	2.843	A
3	59	15	457	1718	0.034	59	99	0.0	0.0	2.225	A
4	430	107	41	1820	0.236	430	475	0.4	0.3	2.643	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.31	0.00	0.00	0.31	0.31			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.55	0.07	0.74	1.36	1.44			N/A	N/A
3	0.05	0.03	0.26	0.46	0.49			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.76	0.03	0.26	0.76	0.76			N/A	N/A
3	0.06	0.03	0.26	0.47	0.50			N/A	N/A
4	0.54	0.03	0.26	0.54	0.54			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.77	0.03	0.28	0.77	2.16			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.54	0.03	0.30	1.38	2.53			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.55	0.55	1.01	1.41	1.46			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.32	0.00	0.00	0.32	0.32			N/A	N/A

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	3.04	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
D15	2021 Base	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 (%)
1		ONE HOUR	✓	39	100.000
2		ONE HOUR	✓	516	100.000
3		ONE HOUR	✓	153	100.000
4		ONE HOUR	✓	553	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	18	0	21
	2	21	0	37	458
	3	0	122	0	31
	4	0	540	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.03	2.60	0.0	0.5	A	36	54
2	0.32	3.06	0.5	2.0	A	473	710
3	0.10	2.45	0.1	0.5	A	140	211
4	0.35	3.21	0.5	2.5	A	507	761

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	29	7	507	1569	0.019	29	16	0.0	0.0	2.337	A
2	388	97	26	1809	0.215	387	510	0.0	0.3	2.652	A
3	115	29	375	1769	0.065	115	38	0.0	0.1	2.210	A
4	416	104	107	1780	0.234	415	383	0.0	0.3	2.685	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	35	9	606	1509	0.023	35	19	0.0	0.0	2.442	A
2	464	116	31	1806	0.257	464	611	0.3	0.4	2.812	A
3	138	34	449	1723	0.080	137	45	0.1	0.1	2.306	A
4	497	124	128	1768	0.281	497	458	0.3	0.4	2.888	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	43	11	743	1426	0.030	43	23	0.0	0.0	2.601	A
2	568	142	37	1802	0.315	568	748	0.4	0.5	3.056	A
3	168	42	550	1659	0.102	168	55	0.1	0.1	2.452	A
4	609	152	157	1750	0.348	608	561	0.4	0.5	3.212	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	43	11	743	1426	0.030	43	23	0.0	0.0	2.602	A
2	568	142	37	1802	0.315	568	749	0.5	0.5	3.059	A
3	168	42	551	1659	0.102	168	55	0.1	0.1	2.452	A
4	609	152	157	1750	0.348	609	562	0.5	0.5	3.214	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	35	9	607	1508	0.023	35	19	0.0	0.0	2.445	A
2	464	116	31	1806	0.257	464	612	0.5	0.4	2.814	A
3	138	34	450	1722	0.080	138	45	0.1	0.1	2.309	A
4	497	124	129	1768	0.281	498	459	0.5	0.4	2.893	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	29	7	509	1568	0.019	29	16	0.0	0.0	2.340	A
2	388	97	26	1809	0.215	389	512	0.4	0.3	2.658	A
3	115	29	377	1769	0.065	115	38	0.1	0.1	2.213	A
4	416	104	108	1780	0.234	417	384	0.4	0.3	2.691	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.31	0.00	0.00	0.31	0.31			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.02	0.25	0.45	0.48			N/A	N/A
2	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3	0.09	0.03	0.26	0.48	0.50			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.48	0.03	0.26	0.48	0.50			N/A	N/A
3	0.11	0.03	0.26	0.47	0.50			N/A	N/A
4	0.54	0.03	0.26	0.54	0.54			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.48	0.03	0.33	1.45	2.01			N/A	N/A
3	0.11	0.00	0.00	0.11	0.11			N/A	N/A
4	0.54	0.03	0.30	1.39	2.53			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.31	0.00	0.00	0.31	0.31			N/A	N/A

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	3.43	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
D16	2021 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	1	100.000
2		ONE HOUR	✓	751	100.000
3		ONE HOUR	✓	83	100.000
4		ONE HOUR	✓	604	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	1	0	0
	2	0	2	109	640
	3	0	54	1	28
	4	0	575	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.00	0.00	0.0	~1	A	0	0
2	0.46	3.71	0.8	1.7	A	689	1034
3	0.06	2.51	0.1	0.5	A	76	114
4	0.37	3.22	0.6	2.7	A	554	831

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	496	1576	0.000	0	0	0.0	0.0	0.000	A
2	565	141	23	1811	0.312	564	474	0.0	0.5	2.907	A
3	62	16	482	1702	0.037	62	104	0.0	0.0	2.251	A
4	455	114	43	1819	0.250	453	501	0.0	0.3	2.688	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	594	1517	0.000	0	0	0.0	0.0	0.000	A
2	675	169	27	1808	0.373	675	567	0.5	0.6	3.201	A
3	75	19	577	1643	0.045	75	125	0.0	0.0	2.354	A
4	543	136	51	1814	0.299	543	600	0.3	0.4	2.890	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	727	1436	0.000	0	0	0.0	0.0	0.000	A
2	827	207	33	1805	0.458	826	694	0.6	0.8	3.706	A
3	91	23	706	1561	0.059	91	153	0.0	0.1	2.511	A
4	665	166	63	1807	0.368	664	735	0.4	0.6	3.214	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	728	1435	0.000	0	0	0.0	0.0	0.000	A
2	827	207	33	1804	0.458	827	695	0.8	0.8	3.712	A
3	91	23	707	1561	0.059	91	153	0.1	0.1	2.512	A
4	665	166	63	1807	0.368	665	735	0.6	0.6	3.217	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	595	1516	0.000	0	0	0.0	0.0	0.000	A
2	675	169	27	1808	0.373	676	568	0.8	0.6	3.209	A
3	75	19	578	1642	0.045	75	125	0.1	0.0	2.357	A
4	543	136	51	1814	0.299	544	601	0.6	0.4	2.893	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	0	0	498	1575	0.000	0	0	0.0	0.0	0.000	A
2	565	141	23	1811	0.312	566	475	0.6	0.5	2.919	A
3	62	16	484	1701	0.037	63	105	0.0	0.0	2.253	A
4	455	114	43	1819	0.250	455	503	0.4	0.3	2.694	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.60	0.09	0.82	1.37	1.44			N/A	N/A
3	0.05	0.03	0.26	0.46	0.49			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.85	0.03	0.26	0.85	0.85			N/A	N/A
3	0.06	0.03	0.27	0.48	0.50			N/A	N/A
4	0.59	0.03	0.26	0.59	0.59			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.85	0.03	0.27	0.85	1.70			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.59	0.03	0.30	1.25	2.71			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.60	0.55	1.01	1.41	1.46			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

Option 2: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.20	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
D17	Option 2: 2021 with Committed Development and Machynys Hotel	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 (%)
1		ONE HOUR	✓	122	100.000
2		ONE HOUR	✓	819	100.000
3		ONE HOUR	✓	178	100.000
4		ONE HOUR	✓	719	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	70	0	52
	2	241	40	37	501
	3	0	122	0	56
	4	133	560	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.10	2.89	0.1	0.5	A	112	168
2	0.51	4.27	1.1	1.5	A	752	1127
3	0.14	2.96	0.2	0.5	A	163	245
4	0.50	4.65	1.0	1.5	A	660	990

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	561	1536	0.060	92	281	0.0	0.1	2.491	A
2	617	154	59	1789	0.345	614	594	0.0	0.5	3.159	A
3	134	34	626	1612	0.083	134	47	0.0	0.1	2.468	A
4	541	135	302	1663	0.325	539	457	0.0	0.5	3.247	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	672	1469	0.075	110	336	0.1	0.1	2.647	A
2	736	184	70	1782	0.413	736	711	0.5	0.7	3.550	A
3	160	40	749	1534	0.104	160	57	0.1	0.1	2.655	A
4	646	162	362	1627	0.397	646	547	0.5	0.7	3.723	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	822	1378	0.097	134	411	0.1	0.1	2.893	A
2	902	225	86	1773	0.509	900	871	0.7	1.1	4.261	A
3	196	49	917	1428	0.137	196	69	0.1	0.2	2.960	A
4	792	198	443	1578	0.502	790	670	0.7	1.0	4.629	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	824	1377	0.098	134	412	0.1	0.1	2.895	A
2	902	225	86	1773	0.509	902	872	1.1	1.1	4.267	A
3	196	49	918	1428	0.137	196	69	0.2	0.2	2.962	A
4	792	198	444	1578	0.502	792	671	1.0	1.0	4.647	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	674	1468	0.075	110	337	0.1	0.1	2.649	A
2	736	184	70	1782	0.413	738	713	1.1	0.7	3.562	A
3	160	40	751	1533	0.104	160	57	0.2	0.1	2.658	A
4	646	162	363	1627	0.397	648	548	1.0	0.7	3.738	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	564	1535	0.060	92	282	0.1	0.1	2.496	A
2	617	154	59	1789	0.345	617	597	0.7	0.5	3.174	A
3	134	34	629	1610	0.083	134	47	0.1	0.1	2.472	A
4	541	135	304	1662	0.326	542	459	0.7	0.5	3.264	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.54	0.54	1.03	1.45	1.50			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.49	0.00	0.00	0.49	0.49			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.46	0.48			N/A	N/A
2	0.72	0.10	0.86	1.42	1.49			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.66	0.10	0.83	1.39	1.46			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.26	0.47	0.49			N/A	N/A
2	1.06	0.03	0.26	1.06	1.06			N/A	N/A
3	0.16	0.03	0.26	0.47	0.49			N/A	N/A
4	1.01	0.03	0.26	1.01	1.01			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	1.06	0.03	0.28	1.06	1.41			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	1.02	0.03	0.27	1.02	1.41			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.73	0.57	1.03	1.45	1.50			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.67	0.56	1.02	1.42	1.47			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.55	0.06	0.66	1.37	1.46			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.49	0.04	0.43	1.28	1.40			N/A	N/A

Option 2: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.26	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
D18	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	354	100.000
2		ONE HOUR	✓	899	100.000
3		ONE HOUR	✓	85	100.000
4		ONE HOUR	✓	696	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	224	1	129
	2	101	23	109	666
	3	1	54	1	29
	4	53	611	32	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.28	3.58	0.4	1.2	A	325	487
2	0.58	4.99	1.4	1.8	A	825	1237
3	0.07	2.90	0.1	0.5	A	78	117
4	0.44	3.82	0.8	2.1	A	639	958

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	541	1549	0.172	266	116	0.0	0.2	2.805	A
2	677	169	122	1751	0.387	674	684	0.0	0.6	3.361	A
3	64	16	689	1572	0.041	64	107	0.0	0.0	2.449	A
4	524	131	135	1764	0.297	522	618	0.0	0.4	2.952	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	648	1484	0.214	318	139	0.2	0.3	3.087	A
2	808	202	146	1737	0.465	807	819	0.6	0.9	3.897	A
3	76	19	825	1486	0.051	76	128	0.0	0.1	2.619	A
4	626	156	162	1748	0.358	625	740	0.4	0.6	3.267	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	793	1396	0.279	389	170	0.3	0.4	3.574	A
2	990	247	179	1717	0.576	988	1003	0.9	1.4	4.960	A
3	94	23	1010	1370	0.068	94	157	0.1	0.1	2.893	A
4	766	192	198	1726	0.444	765	906	0.6	0.8	3.816	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	794	1395	0.279	390	171	0.4	0.4	3.579	A
2	990	247	179	1717	0.577	990	1004	1.4	1.4	4.987	A
3	94	23	1012	1369	0.068	94	157	0.1	0.1	2.896	A
4	766	192	198	1726	0.444	766	907	0.8	0.8	3.823	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	649	1483	0.215	319	140	0.4	0.3	3.092	A
2	808	202	147	1737	0.465	810	821	1.4	0.9	3.924	A
3	76	19	828	1484	0.051	76	129	0.1	0.1	2.623	A
4	626	156	162	1747	0.358	627	742	0.8	0.6	3.278	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	543	1547	0.172	267	117	0.3	0.2	2.813	A
2	677	169	123	1751	0.387	678	687	0.9	0.6	3.384	A
3	64	16	693	1569	0.041	64	108	0.1	0.0	2.452	A
4	524	131	136	1763	0.297	525	621	0.6	0.4	2.962	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.63	0.55	1.01	1.41	1.46			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.87	0.08	0.84	1.33	1.76			N/A	N/A
3	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4	0.57	0.08	0.77	1.38	1.45			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2	1.35	0.03	0.26	1.35	1.35			N/A	N/A
3	0.07	0.03	0.27	0.48	0.51			N/A	N/A
4	0.81	0.03	0.26	0.81	0.81			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.33	1.20	1.20			N/A	N/A
2	1.36	0.03	0.27	1.36	1.36			N/A	N/A
3	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4	0.81	0.03	0.28	0.81	2.10			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2	0.88	0.35	0.98	1.43	1.49			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.57	0.56	1.02	1.43	1.48			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.64	0.07	0.75	1.37	1.44			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

Option 2: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.20	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
D19	Option 2: 2026 with Committed Development and Machynys Hotel	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 (%)
1		ONE HOUR	✓	122	100.000
2		ONE HOUR	✓	819	100.000
3		ONE HOUR	✓	178	100.000
4		ONE HOUR	✓	719	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	70	0	52
	2	241	40	37	501
	3	0	122	0	56
	4	133	560	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	5
	3	0	2	0	0
	4	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.10	2.89	0.1	0.5	A	112	168
2	0.51	4.27	1.1	1.5	A	752	1127
3	0.14	2.96	0.2	0.5	A	163	245
4	0.50	4.65	1.0	1.5	A	660	990

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	561	1536	0.060	92	281	0.0	0.1	2.491	A
2	617	154	59	1789	0.345	614	594	0.0	0.5	3.159	A
3	134	34	626	1612	0.083	134	47	0.0	0.1	2.468	A
4	541	135	302	1663	0.325	539	457	0.0	0.5	3.247	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	672	1469	0.075	110	336	0.1	0.1	2.647	A
2	736	184	70	1782	0.413	736	711	0.5	0.7	3.550	A
3	160	40	749	1534	0.104	160	57	0.1	0.1	2.655	A
4	646	162	362	1627	0.397	646	547	0.5	0.7	3.723	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	822	1378	0.097	134	411	0.1	0.1	2.893	A
2	902	225	86	1773	0.509	900	871	0.7	1.1	4.261	A
3	196	49	917	1428	0.137	196	69	0.1	0.2	2.960	A
4	792	198	443	1578	0.502	790	670	0.7	1.0	4.629	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	134	34	824	1377	0.098	134	412	0.1	0.1	2.895	A
2	902	225	86	1773	0.509	902	872	1.1	1.1	4.267	A
3	196	49	918	1428	0.137	196	69	0.2	0.2	2.962	A
4	792	198	444	1578	0.502	792	671	1.0	1.0	4.647	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	110	27	674	1468	0.075	110	337	0.1	0.1	2.649	A
2	736	184	70	1782	0.413	738	713	1.1	0.7	3.562	A
3	160	40	751	1533	0.104	160	57	0.2	0.1	2.658	A
4	646	162	383	1627	0.397	648	548	1.0	0.7	3.738	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	92	23	564	1535	0.060	92	282	0.1	0.1	2.496	A
2	617	154	59	1789	0.345	617	597	0.7	0.5	3.174	A
3	134	34	629	1610	0.083	134	47	0.1	0.1	2.472	A
4	541	135	304	1662	0.326	542	459	0.7	0.5	3.264	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.54	0.54	1.03	1.45	1.50			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.49	0.00	0.00	0.49	0.49			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.46	0.48			N/A	N/A
2	0.72	0.10	0.86	1.42	1.49			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.66	0.10	0.83	1.39	1.46			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.26	0.47	0.49			N/A	N/A
2	1.06	0.03	0.26	1.06	1.06			N/A	N/A
3	0.16	0.03	0.26	0.47	0.49			N/A	N/A
4	1.01	0.03	0.26	1.01	1.01			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	1.06	0.03	0.28	1.06	1.41			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	1.02	0.03	0.27	1.02	1.41			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.73	0.57	1.03	1.45	1.50			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4	0.67	0.56	1.02	1.42	1.47			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.55	0.06	0.66	1.37	1.46			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4	0.49	0.04	0.43	1.28	1.40			N/A	N/A

Option 2: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.49	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
D20	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1		ONE HOUR	✓	354	100.000
2		ONE HOUR	✓	941	100.000
3		ONE HOUR	✓	90	100.000
4		ONE HOUR	✓	730	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	224	1	129
	2	101	23	115	702
	3	1	57	1	31
	4	53	644	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	1
	3	0	0	0	8
	4	0	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.28	3.67	0.4	1.3	A	325	487
2	0.60	5.33	1.5	2.0	A	863	1295
3	0.07	2.97	0.1	0.5	A	83	124
4	0.47	3.99	0.9	1.7	A	670	1005

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	569	1532	0.174	266	116	0.0	0.2	2.842	A
2	708	177	123	1751	0.405	706	711	0.0	0.7	3.462	A
3	68	17	716	1555	0.044	68	113	0.0	0.0	2.484	A
4	550	137	137	1762	0.312	548	647	0.0	0.5	3.018	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	681	1464	0.217	318	139	0.2	0.3	3.141	A
2	846	211	147	1736	0.487	845	851	0.7	0.9	4.064	A
3	81	20	857	1466	0.055	81	135	0.0	0.1	2.667	A
4	656	164	164	1746	0.376	656	774	0.5	0.6	3.363	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	833	1371	0.284	389	170	0.3	0.4	3.663	A
2	1036	259	180	1716	0.604	1034	1042	0.9	1.5	5.296	A
3	99	25	1049	1345	0.074	99	165	0.1	0.1	2.964	A
4	804	201	201	1724	0.466	803	947	0.6	0.9	3.978	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	390	97	835	1371	0.284	390	171	0.4	0.4	3.669	A
2	1036	259	181	1716	0.604	1036	1044	1.5	1.5	5.331	A
3	99	25	1051	1344	0.074	99	165	0.1	0.1	2.967	A
4	804	201	201	1724	0.466	804	949	0.9	0.9	3.988	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	318	80	683	1463	0.218	319	140	0.4	0.3	3.149	A
2	846	211	148	1736	0.487	848	854	1.5	1.0	4.096	A
3	81	20	861	1464	0.055	81	135	0.1	0.1	2.671	A
4	656	164	165	1746	0.376	657	777	0.9	0.6	3.376	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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	267	67	571	1530	0.174	267	117	0.3	0.2	2.849	A
2	708	177	124	1750	0.405	710	714	1.0	0.7	3.490	A
3	68	17	720	1552	0.044	68	113	0.1	0.0	2.490	A
4	550	137	138	1762	0.312	550	650	0.6	0.5	3.031	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.68	0.55	1.01	1.41	1.46			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.95	0.07	0.84	1.66	2.02			N/A	N/A
3	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4	0.61	0.09	0.83	1.39	1.46			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2	1.51	0.03	0.26	1.51	1.51			N/A	N/A
3	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4	0.88	0.03	0.26	0.88	0.88			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.40	0.03	0.33	1.29	1.33			N/A	N/A
2	1.52	0.03	0.27	1.52	1.52			N/A	N/A
3	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4	0.89	0.03	0.28	0.89	1.73			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.97	0.24	1.00	1.51	1.52			N/A	N/A
3	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4	0.62	0.56	1.02	1.43	1.48			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2	0.69	0.07	0.74	1.40	1.48			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: 06.Coastal Link Road_The Avenue_Machynys Cal Roundabout.j9
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling
Report generation date: 17/12/2020 15:01:34

»2017 Base, AM
»2017 Base, PM
»2021 with Committed Development, AM
»2021 with Committed Development, PM
»Option 1: 2021 with Committed Development and Machynys Hotel, AM
»Option 1: 2021 with Committed Development and Machynys Hotel, PM
»Option 1: 2026 with Committed Development and Machynys Hotel, AM
»Option 1: 2026 with Committed Development and Machynys Hotel, PM
»2021 Base, AM
»2021 Base, PM
»Option 2: 2021 with Committed Development and Machynys Hotel, AM
»Option 2: 2021 with Committed Development and Machynys Hotel, PM
»Option 2: 2026 with Committed Development and Machynys Hotel, AM
»Option 2: 2026 with Committed Development and Machynys Hotel, PM

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2017 Base									
1 - The Avenue	0.1	2.72	0.11	3.08	A	0.3	2.84	0.21	3.31	A
2 - Coastal Link E	0.6	3.09	0.35			0.9	3.66	0.47		
3 - Nicklaus Avenue	0.0	2.20	0.01			0.0	2.52	0.04		
4 - Coastal Link W	0.6	3.18	0.37			0.6	3.16	0.36		
	2021 with Committed Development									
1 - The Avenue	0.2	3.01	0.17	3.78	A	0.4	3.47	0.28	4.28	A
2 - Coastal Link E	1.1	4.13	0.50			1.3	4.56	0.57		
3 - Nicklaus Avenue	0.0	2.54	0.01			0.0	2.79	0.04		
4 - Coastal Link W	0.8	3.65	0.45			1.2	4.40	0.54		
	Option 1: 2021 with Committed Development and Machynys Hotel									
1 - The Avenue	0.2	3.07	0.17	3.84	A	0.4	3.54	0.29	4.42	A
2 - Coastal Link E	1.1	4.22	0.51			1.4	4.78	0.59		
3 - Nicklaus Avenue	0.0	2.62	0.04			0.1	2.85	0.06		
4 - Coastal Link W	0.9	3.74	0.46			1.2	4.52	0.55		
	Option 1: 2026 with Committed Development and Machynys Hotel									
1 - The Avenue	0.2	3.15	0.18	4.01	A	0.4	3.70	0.30	4.72	A
2 - Coastal Link E	1.2	4.40	0.53			1.6	5.17	0.62		
3 - Nicklaus Avenue	0.0	2.66	0.04			0.1	2.95	0.07		
4 - Coastal Link W	0.9	3.92	0.48			1.4	4.81	0.57		
	2021 Base									
1 - The Avenue	0.2	2.79	0.12	3.20	A	0.3	2.94	0.22	3.48	A
2 - Coastal Link E	0.6	3.19	0.37			1.0	3.88	0.50		
3 - Nicklaus Avenue	0.0	2.24	0.01			0.0	2.59	0.04		
4 - Coastal Link W	0.7	3.32	0.40			0.6	3.30	0.39		
	Option 2: 2021 with Committed Development and Machynys Hotel									
1 - The Avenue	0.2	3.05	0.17	3.86	A	0.4	3.51	0.28	4.40	A
2 - Coastal Link E	1.1	4.20	0.51			1.4	4.73	0.59		
3 - Nicklaus Avenue	0.0	2.56	0.01			0.0	2.84	0.04		
4 - Coastal Link W	0.9	3.75	0.46			1.2	4.49	0.55		
	Option 2: 2026 with Committed Development and Machynys Hotel									
1 - The Avenue	0.2	3.14	0.18	4.03	A	0.4	3.66	0.30	4.64	A
2 - Coastal Link E	1.2	4.38	0.53			1.6	5.06	0.61		
3 - Nicklaus Avenue	0.0	2.61	0.01			0.0	2.94	0.05		
4 - Coastal Link W	1.0	3.93	0.49			1.3	4.69	0.57		

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Coastal Link Road_The Avenue_Machynys Roundabout
Location	Machynys
Site number	1
Date	16/12/2020
Version	1
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278888
Enumerator	GLOBAL\Aneesah Irshad
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 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2021 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D5	Option 1: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D6	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D7	Option 1: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D8	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D13	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D14	2021 Base	PM	ONE HOUR	16:15	17:45	15	✓
D15	Option 2: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D16	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D17	Option 2: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D18	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2017 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	The Avenue	
2	Coastal Link E	
3	Nicklaus Avenue	
4	Coastal Link W	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - The Avenue	3.91	7.51	18.1	47.5	59.3	13.8	
2 - Coastal Link E	3.71	7.71	16.5	48.7	59.0	15.3	
3 - Nicklaus Avenue	3.72	8.11	22.9	42.9	59.1	15.6	
4 - Coastal Link W	3.73	7.06	23.6	43.4	59.0	17.3	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - The Avenue	0.637	2007
2 - Coastal Link E	0.627	1950
3 - Nicklaus Avenue	0.652	2100
4 - Coastal Link W	0.626	1954

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 Base	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 (%)
1 - The Avenue		ONE HOUR	✓	166	100.000
2 - Coastal Link E		ONE HOUR	✓	602	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	627	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	122	2	42
	2 - Coastal Link E	144	0	17	441
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	73	548	5	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.11	2.72	0.1	0.5	A	152	228
2 - Coastal Link E	0.35	3.09	0.6	2.6	A	552	829
3 - Nicklaus Avenue	0.01	2.20	0.0	0.5	A	11	17
4 - Coastal Link W	0.37	3.18	0.6	2.8	A	575	863

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	125	31	418	1741	0.072	125	164	0.0	0.1	2.418	A
2 - Coastal Link E	453	113	38	1927	0.235	452	505	0.0	0.3	2.620	A
3 - Nicklaus Avenue	9	2	471	1792	0.005	9	18	0.0	0.0	2.018	A
4 - Coastal Link W	472	118	112	1884	0.251	471	369	0.0	0.3	2.614	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	149	37	500	1688	0.088	149	197	0.1	0.1	2.538	A
2 - Coastal Link E	541	135	45	1922	0.282	541	605	0.3	0.4	2.800	A
3 - Nicklaus Avenue	11	3	564	1732	0.006	11	22	0.0	0.0	2.091	A
4 - Coastal Link W	564	141	134	1871	0.301	563	441	0.3	0.4	2.829	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	183	46	613	1617	0.113	183	241	0.1	0.1	2.724	A
2 - Coastal Link E	663	166	55	1916	0.346	662	740	0.4	0.6	3.083	A
3 - Nicklaus Avenue	13	3	691	1649	0.008	13	26	0.0	0.0	2.200	A
4 - Coastal Link W	690	173	164	1852	0.373	690	540	0.4	0.6	3.181	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	183	46	613	1616	0.113	183	241	0.1	0.1	2.725	A
2 - Coastal Link E	663	166	55	1916	0.346	663	741	0.6	0.6	3.085	A
3 - Nicklaus Avenue	13	3	691	1649	0.008	13	26	0.0	0.0	2.200	A
4 - Coastal Link W	690	173	164	1852	0.373	690	541	0.6	0.6	3.183	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	149	37	501	1688	0.088	149	197	0.1	0.1	2.542	A
2 - Coastal Link E	541	135	45	1922	0.282	542	606	0.6	0.4	2.804	A
3 - Nicklaus Avenue	11	3	565	1731	0.006	11	22	0.0	0.0	2.092	A
4 - Coastal Link W	564	141	134	1870	0.301	564	442	0.6	0.4	2.832	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	125	31	420	1740	0.072	125	165	0.1	0.1	2.420	A
2 - Coastal Link E	453	113	38	1927	0.235	454	507	0.4	0.3	2.627	A
3 - Nicklaus Avenue	9	2	473	1791	0.005	9	18	0.0	0.0	2.021	A
4 - Coastal Link W	472	118	112	1884	0.251	472	370	0.4	0.3	2.620	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link E	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.34	0.00	0.00	0.34	0.34			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.10	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.44	0.00	0.00	0.44	0.44			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.14	0.03	0.28	0.50	0.53			N/A	N/A
2 - Coastal Link E	0.57	0.03	0.27	0.57	0.57			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.61	0.03	0.28	0.61	0.61			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2 - Coastal Link E	0.57	0.03	0.32	1.46	2.63			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.61	0.03	0.30	1.24	2.76			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link E	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.45	0.00	0.00	0.45	0.45			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link E	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.34	0.00	0.00	0.34	0.34			N/A	N/A

2017 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.31	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
D2	2017 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	305	100.000
2 - Coastal Link E		ONE HOUR	✓	803	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	49	100.000
4 - Coastal Link W		ONE HOUR	✓	598	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	209	2	94
	2 - Coastal Link E	162	0	35	606
	3 - Nicklaus Avenue	5	32	0	12
	4 - Coastal Link W	68	521	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	1	0	0	1
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.21	2.84	0.3	0.9	A	280	420
2 - Coastal Link E	0.47	3.66	0.9	1.5	A	737	1105
3 - Nicklaus Avenue	0.04	2.52	0.0	0.5	A	45	67
4 - Coastal Link W	0.36	3.16	0.6	2.7	A	549	823

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	230	57	422	1738	0.132	229	176	0.0	0.2	2.400	A
2 - Coastal Link E	605	151	79	1901	0.318	603	572	0.0	0.5	2.796	A
3 - Nicklaus Avenue	37	9	647	1678	0.022	37	35	0.0	0.0	2.193	A
4 - Coastal Link W	450	113	149	1861	0.242	449	534	0.0	0.3	2.591	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	274	69	505	1685	0.163	274	211	0.2	0.2	2.567	A
2 - Coastal Link E	722	180	94	1891	0.382	721	685	0.5	0.6	3.104	A
3 - Nicklaus Avenue	44	11	774	1595	0.028	44	41	0.0	0.0	2.321	A
4 - Coastal Link W	538	134	179	1842	0.292	537	640	0.3	0.4	2.806	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	336	84	618	1613	0.208	336	258	0.2	0.3	2.836	A
2 - Coastal Link E	884	221	116	1878	0.471	883	838	0.6	0.9	3.650	A
3 - Nicklaus Avenue	54	13	948	1481	0.036	54	51	0.0	0.0	2.521	A
4 - Coastal Link W	658	165	219	1817	0.362	658	783	0.4	0.6	3.156	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	336	84	619	1613	0.208	336	259	0.3	0.3	2.837	A
2 - Coastal Link E	884	221	116	1878	0.471	884	839	0.9	0.9	3.656	A
3 - Nicklaus Avenue	54	13	949	1481	0.036	54	51	0.0	0.0	2.522	A
4 - Coastal Link W	658	165	219	1817	0.362	658	784	0.6	0.6	3.159	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	274	69	506	1685	0.163	274	212	0.3	0.2	2.569	A
2 - Coastal Link E	722	180	94	1891	0.382	723	686	0.9	0.6	3.113	A
3 - Nicklaus Avenue	44	11	776	1594	0.028	44	41	0.0	0.0	2.323	A
4 - Coastal Link W	538	134	179	1842	0.292	538	641	0.6	0.4	2.811	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	230	57	423	1737	0.132	230	177	0.2	0.2	2.405	A
2 - Coastal Link E	605	151	79	1901	0.318	605	574	0.6	0.5	2.807	A
3 - Nicklaus Avenue	37	9	650	1676	0.022	37	35	0.0	0.0	2.197	A
4 - Coastal Link W	450	113	150	1861	0.242	451	537	0.4	0.3	2.599	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.15	0.00	0.00	0.15	0.15			N/A	N/A
2 - Coastal Link E	0.47	0.00	0.00	0.47	0.47			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.32	0.00	0.00	0.32	0.32			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.19	0.00	0.00	0.19	0.19			N/A	N/A
2 - Coastal Link E	0.62	0.09	0.82	1.38	1.45			N/A	N/A
3 - Nicklaus Avenue	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.42	0.00	0.00	0.42	0.42			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.26	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	0.89	0.03	0.26	0.89	0.89			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.57	0.03	0.26	0.57	0.57			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.26	0.03	0.28	0.50	0.95			N/A	N/A
2 - Coastal Link E	0.89	0.03	0.27	0.89	1.47			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.58	0.03	0.30	1.33	2.69			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.20	0.00	0.00	0.20	0.20			N/A	N/A
2 - Coastal Link E	0.63	0.56	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.42	0.00	0.00	0.42	0.42			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.15	0.00	0.00	0.15	0.15			N/A	N/A
2 - Coastal Link E	0.47	0.00	0.00	0.47	0.47			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.33	0.00	0.00	0.33	0.33			N/A	N/A

2021 with Committed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.78	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
D3	2021 with Committed Development	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 (%)
1 - The Avenue		ONE HOUR	✓	239	100.000
2 - Coastal Link E		ONE HOUR	✓	854	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	746	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	138	2	99
	2 - Coastal Link E	189	0	18	667
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	97	643	5	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.17	3.01	0.2	0.5	A	219	329
2 - Coastal Link E	0.50	4.13	1.1	1.6	A	784	1175
3 - Nicklaus Avenue	0.01	2.54	0.0	0.5	A	11	17
4 - Coastal Link W	0.45	3.65	0.8	2.0	A	685	1027

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	180	45	489	1695	0.106	179	201	0.0	0.1	2.559	A
2 - Coastal Link E	643	161	80	1900	0.338	641	588	0.0	0.5	3.064	A
3 - Nicklaus Avenue	9	2	702	1642	0.006	9	19	0.0	0.0	2.204	A
4 - Coastal Link W	562	140	131	1873	0.300	560	581	0.0	0.4	2.813	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	215	54	586	1634	0.131	215	241	0.1	0.2	2.733	A
2 - Coastal Link E	768	192	96	1890	0.406	767	704	0.5	0.7	3.440	A
3 - Nicklaus Avenue	11	3	841	1551	0.007	11	22	0.0	0.0	2.336	A
4 - Coastal Link W	671	168	156	1857	0.361	670	695	0.4	0.6	3.114	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	263	66	717	1550	0.170	263	295	0.2	0.2	3.013	A
2 - Coastal Link E	940	235	118	1877	0.501	939	862	0.7	1.1	4.116	A
3 - Nicklaus Avenue	13	3	1029	1428	0.009	13	27	0.0	0.0	2.543	A
4 - Coastal Link W	821	205	191	1835	0.448	820	851	0.6	0.8	3.642	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	263	66	718	1550	0.170	263	295	0.2	0.2	3.015	A
2 - Coastal Link E	940	235	118	1877	0.501	940	863	1.1	1.1	4.127	A
3 - Nicklaus Avenue	13	3	1031	1428	0.009	13	28	0.0	0.0	2.544	A
4 - Coastal Link W	821	205	192	1834	0.448	821	852	0.8	0.8	3.648	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	215	54	587	1633	0.132	215	241	0.2	0.2	2.736	A
2 - Coastal Link E	768	192	96	1890	0.406	769	706	1.1	0.7	3.451	A
3 - Nicklaus Avenue	11	3	843	1550	0.007	11	23	0.0	0.0	2.338	A
4 - Coastal Link W	671	168	157	1856	0.361	672	697	0.8	0.6	3.125	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	180	45	491	1694	0.106	180	202	0.2	0.1	2.562	A
2 - Coastal Link E	643	161	81	1900	0.338	644	591	0.7	0.6	3.078	A
3 - Nicklaus Avenue	9	2	705	1640	0.006	9	19	0.0	0.0	2.209	A
4 - Coastal Link W	562	140	131	1872	0.300	562	583	0.6	0.4	2.825	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2 - Coastal Link E	0.55	0.55	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.44	0.00	0.00	0.44	0.44			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.16	0.00	0.00	0.16	0.16			N/A	N/A
2 - Coastal Link E	0.73	0.10	0.89	1.47	1.55			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.58	0.08	0.79	1.39	1.47			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.07	0.03	0.27	1.07	1.07			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.26	0.47	0.50			N/A	N/A
4 - Coastal Link W	0.83	0.03	0.26	0.83	0.83			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.03	0.27	0.49	0.51			N/A	N/A
2 - Coastal Link E	1.07	0.03	0.29	1.07	1.55			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.83	0.03	0.28	0.83	2.01			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.16	0.00	0.00	0.16	0.16			N/A	N/A
2 - Coastal Link E	0.74	0.59	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.58	0.56	1.03	1.44	1.49			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2 - Coastal Link E	0.55	0.06	0.61	1.41	1.51			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.44	0.00	0.00	0.44	0.44			N/A	N/A

2021 with Committed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.28	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	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	372	100.000
2 - Coastal Link E		ONE HOUR	✓	958	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	52	100.000
4 - Coastal Link W		ONE HOUR	✓	882	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	240	2	130
	2 - Coastal Link E	180	0	37	741
	3 - Nicklaus Avenue	5	34	0	13
	4 - Coastal Link W	125	747	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	1	0	0	1
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.28	3.47	0.4	1.2	A	341	512
2 - Coastal Link E	0.57	4.56	1.3	1.7	A	879	1319
3 - Nicklaus Avenue	0.04	2.79	0.0	0.5	A	48	72
4 - Coastal Link W	0.54	4.40	1.2	1.5	A	809	1214

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	280	70	593	1629	0.172	279	233	0.0	0.2	2.683	A
2 - Coastal Link E	721	180	107	1884	0.383	719	766	0.0	0.6	3.113	A
3 - Nicklaus Avenue	39	10	789	1585	0.025	39	37	0.0	0.0	2.327	A
4 - Coastal Link W	664	166	164	1852	0.359	662	663	0.0	0.6	3.072	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	334	84	710	1555	0.215	334	278	0.2	0.3	2.968	A
2 - Coastal Link E	861	215	128	1870	0.460	860	917	0.6	0.9	3.594	A
3 - Nicklaus Avenue	47	12	944	1484	0.032	47	44	0.0	0.0	2.504	A
4 - Coastal Link W	793	198	197	1831	0.433	792	794	0.6	0.8	3.519	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	410	102	869	1453	0.282	409	341	0.3	0.4	3.468	A
2 - Coastal Link E	1055	264	156	1852	0.569	1053	1122	0.9	1.3	4.536	A
3 - Nicklaus Avenue	57	14	1155	1346	0.043	57	54	0.0	0.0	2.792	A
4 - Coastal Link W	971	243	241	1804	0.538	969	972	0.8	1.2	4.380	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	410	102	871	1452	0.282	410	341	0.4	0.4	3.473	A
2 - Coastal Link E	1055	264	156	1852	0.569	1055	1124	1.3	1.3	4.556	A
3 - Nicklaus Avenue	57	14	1157	1345	0.043	57	54	0.0	0.0	2.795	A
4 - Coastal Link W	971	243	241	1803	0.538	971	973	1.2	1.2	4.397	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	334	84	712	1553	0.215	335	279	0.4	0.3	2.974	A
2 - Coastal Link E	861	215	128	1870	0.460	863	920	1.3	0.9	3.614	A
3 - Nicklaus Avenue	47	12	947	1482	0.032	47	44	0.0	0.0	2.509	A
4 - Coastal Link W	793	198	197	1831	0.433	794	796	1.2	0.8	3.536	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	280	70	596	1627	0.172	280	234	0.3	0.2	2.692	A
2 - Coastal Link E	721	180	107	1883	0.383	722	770	0.9	0.6	3.134	A
3 - Nicklaus Avenue	39	10	792	1583	0.025	39	37	0.0	0.0	2.333	A
4 - Coastal Link W	664	166	165	1851	0.359	665	666	0.8	0.6	3.087	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.62	0.56	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.57	0.56	1.02	1.42	1.47			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link E	0.86	0.08	0.83	1.28	1.73			N/A	N/A
3 - Nicklaus Avenue	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.77	0.09	0.83	1.09	1.09			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.39	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.32	0.03	0.26	1.32	1.32			N/A	N/A
3 - Nicklaus Avenue	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	1.17	0.03	0.26	1.17	1.17			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.39	0.03	0.33	1.24	1.24			N/A	N/A
2 - Coastal Link E	1.33	0.03	0.27	1.33	1.33			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	1.18	0.03	0.27	1.18	1.18			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link E	0.87	0.51	0.99	1.42	1.47			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.78	0.53	1.00	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.63	0.08	0.78	1.37	1.44			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.57	0.07	0.72	1.37	1.45			N/A	N/A

Option 1: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.84	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	Option 1: 2021 with Committed Development and Machynys Hotel	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 (%)
1 - The Avenue		ONE HOUR	✓	239	100.000
2 - Coastal Link E		ONE HOUR	✓	868	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	47	100.000
4 - Coastal Link W		ONE HOUR	✓	753	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	138	2	99
	2 - Coastal Link E	169	0	32	667
	3 - Nicklaus Avenue	2	27	0	18
	4 - Coastal Link W	97	643	12	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.17	3.07	0.2	0.5	A	219	329
2 - Coastal Link E	0.51	4.22	1.1	1.6	A	796	1195
3 - Nicklaus Avenue	0.04	2.62	0.0	0.5	A	43	65
4 - Coastal Link W	0.46	3.74	0.9	1.9	A	691	1036

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	180	45	513	1681	0.107	179	201	0.0	0.1	2.585	A
2 - Coastal Link E	653	163	86	1897	0.345	651	606	0.0	0.6	3.097	A
3 - Nicklaus Avenue	35	9	702	1642	0.022	35	35	0.0	0.0	2.240	A
4 - Coastal Link W	567	142	149	1861	0.305	565	589	0.0	0.4	2.848	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	215	54	613	1616	0.133	215	241	0.1	0.2	2.768	A
2 - Coastal Link E	780	195	102	1886	0.414	780	726	0.6	0.8	3.490	A
3 - Nicklaus Avenue	42	11	841	1551	0.027	42	41	0.0	0.0	2.385	A
4 - Coastal Link W	677	169	178	1843	0.367	676	705	0.4	0.6	3.166	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	263	66	751	1529	0.172	263	295	0.2	0.2	3.065	A
2 - Coastal Link E	956	239	125	1872	0.511	954	889	0.8	1.1	4.204	A
3 - Nicklaus Avenue	52	13	1029	1428	0.036	52	51	0.0	0.0	2.614	A
4 - Coastal Link W	829	207	218	1818	0.456	828	863	0.6	0.9	3.730	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	263	66	752	1528	0.172	263	295	0.2	0.2	3.066	A
2 - Coastal Link E	956	239	126	1872	0.511	956	890	1.1	1.1	4.218	A
3 - Nicklaus Avenue	52	13	1031	1428	0.036	52	51	0.0	0.0	2.616	A
4 - Coastal Link W	829	207	218	1818	0.456	829	864	0.9	0.9	3.737	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	215	54	615	1615	0.133	215	241	0.2	0.2	2.773	A
2 - Coastal Link E	780	195	103	1886	0.414	782	727	1.1	0.8	3.502	A
3 - Nicklaus Avenue	42	11	843	1550	0.027	42	41	0.0	0.0	2.389	A
4 - Coastal Link W	677	169	178	1843	0.367	678	707	0.9	0.6	3.178	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	180	45	515	1679	0.107	180	202	0.2	0.1	2.590	A
2 - Coastal Link E	653	163	86	1897	0.345	654	609	0.8	0.6	3.111	A
3 - Nicklaus Avenue	35	9	705	1640	0.022	35	35	0.0	0.0	2.243	A
4 - Coastal Link W	567	142	149	1861	0.305	567	592	0.6	0.5	2.858	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2 - Coastal Link E	0.56	0.56	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.45	0.00	0.00	0.45	0.45			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.16	0.00	0.00	0.16	0.16			N/A	N/A
2 - Coastal Link E	0.75	0.10	0.89	1.48	1.56			N/A	N/A
3 - Nicklaus Avenue	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.59	0.09	0.81	1.39	1.47			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.11	0.03	0.27	1.11	1.11			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.85	0.03	0.26	0.85	0.85			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.03	0.27	0.49	0.51			N/A	N/A
2 - Coastal Link E	1.11	0.03	0.29	1.11	1.45			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.86	0.03	0.28	0.86	1.89			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2 - Coastal Link E	0.76	0.59	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.60	0.56	1.03	1.44	1.49			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2 - Coastal Link E	0.57	0.06	0.69	1.43	1.52			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.45	0.00	0.00	0.45	0.45			N/A	N/A

Option 1: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.42	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
D6	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	372	100.000
2 - Coastal Link E		ONE HOUR	✓	985	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	74	100.000
4 - Coastal Link W		ONE HOUR	✓	893	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	240	2	130
	2 - Coastal Link E	180	0	64	741
	3 - Nicklaus Avenue	5	50	0	19
	4 - Coastal Link W	125	747	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	1	0	0	1
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.29	3.54	0.4	1.3	A	341	512
2 - Coastal Link E	0.59	4.78	1.4	1.9	A	904	1356
3 - Nicklaus Avenue	0.06	2.85	0.1	0.5	A	68	102
4 - Coastal Link W	0.55	4.52	1.2	1.5	A	819	1229

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	280	70	614	1616	0.173	279	233	0.0	0.2	2.709	A
2 - Coastal Link E	742	185	115	1878	0.395	739	778	0.0	0.7	3.182	A
3 - Nicklaus Avenue	56	14	789	1585	0.035	56	65	0.0	0.0	2.353	A
4 - Coastal Link W	672	168	176	1844	0.365	670	668	0.0	0.6	3.110	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	334	84	735	1539	0.217	334	278	0.2	0.3	3.006	A
2 - Coastal Link E	885	221	137	1864	0.475	884	931	0.7	0.9	3.705	A
3 - Nicklaus Avenue	67	17	944	1484	0.045	66	78	0.0	0.0	2.539	A
4 - Coastal Link W	803	201	211	1822	0.441	802	799	0.6	0.8	3.583	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	410	102	899	1434	0.286	409	341	0.3	0.4	3.532	A
2 - Coastal Link E	1085	271	168	1845	0.588	1082	1140	0.9	1.4	4.753	A
3 - Nicklaus Avenue	81	20	1155	1346	0.061	81	96	0.0	0.1	2.845	A
4 - Coastal Link W	983	246	258	1793	0.548	982	978	0.8	1.2	4.503	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	410	102	901	1433	0.286	410	341	0.4	0.4	3.538	A
2 - Coastal Link E	1085	271	168	1845	0.588	1084	1142	1.4	1.4	4.778	A
3 - Nicklaus Avenue	81	20	1157	1345	0.061	81	96	0.1	0.1	2.848	A
4 - Coastal Link W	983	246	259	1792	0.549	983	980	1.2	1.2	4.522	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	334	84	737	1538	0.217	335	279	0.4	0.3	3.015	A
2 - Coastal Link E	885	221	138	1864	0.475	888	934	1.4	0.9	3.727	A
3 - Nicklaus Avenue	67	17	947	1482	0.045	67	78	0.1	0.0	2.544	A
4 - Coastal Link W	803	201	212	1822	0.441	804	802	1.2	0.8	3.605	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	280	70	617	1614	0.173	280	234	0.3	0.2	2.716	A
2 - Coastal Link E	742	185	115	1878	0.395	743	782	0.9	0.7	3.202	A
3 - Nicklaus Avenue	56	14	792	1583	0.035	56	66	0.0	0.0	2.356	A
4 - Coastal Link W	672	168	177	1844	0.365	673	671	0.8	0.6	3.129	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.65	0.56	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.58	0.56	1.02	1.42	1.47			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link E	0.91	0.07	0.83	1.52	1.91			N/A	N/A
3 - Nicklaus Avenue	0.05	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.80	0.08	0.83	1.37	1.37			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.40	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.42	0.03	0.26	1.42	1.42			N/A	N/A
3 - Nicklaus Avenue	0.06	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link W	1.22	0.03	0.26	1.22	1.22			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.40	0.03	0.33	1.30	1.33			N/A	N/A
2 - Coastal Link E	1.43	0.03	0.27	1.43	1.43			N/A	N/A
3 - Nicklaus Avenue	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link W	1.23	0.03	0.27	1.23	1.23			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link E	0.92	0.37	1.00	1.45	1.51			N/A	N/A
3 - Nicklaus Avenue	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link W	0.81	0.52	1.00	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.66	0.08	0.77	1.38	1.45			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.59	0.07	0.74	1.37	1.45			N/A	N/A

Option 1: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.01	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	Option 1: 2026 with Committed Development and Machynys Hotel	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 (%)
1 - The Avenue		ONE HOUR	✓	249	100.000
2 - Coastal Link E		ONE HOUR	✓	902	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	47	100.000
4 - Coastal Link W		ONE HOUR	✓	789	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	146	2	101
	2 - Coastal Link E	177	0	33	692
	3 - Nicklaus Avenue	2	27	0	18
	4 - Coastal Link W	101	675	12	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.18	3.15	0.2	0.5	A	228	343
2 - Coastal Link E	0.53	4.40	1.2	1.6	A	828	1242
3 - Nicklaus Avenue	0.04	2.66	0.0	0.5	A	43	65
4 - Coastal Link W	0.48	3.92	0.9	1.5	A	724	1086

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	187	47	537	1665	0.113	187	210	0.0	0.1	2.626	A
2 - Coastal Link E	679	170	87	1896	0.358	677	636	0.0	0.6	3.165	A
3 - Nicklaus Avenue	35	9	728	1625	0.022	35	35	0.0	0.0	2.264	A
4 - Coastal Link W	594	149	155	1858	0.320	592	609	0.0	0.5	2.918	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	224	56	642	1598	0.140	224	251	0.1	0.2	2.824	A
2 - Coastal Link E	811	203	104	1885	0.430	810	762	0.6	0.8	3.589	A
3 - Nicklaus Avenue	42	11	872	1531	0.028	42	42	0.0	0.0	2.417	A
4 - Coastal Link W	709	177	185	1839	0.386	709	729	0.5	0.6	3.270	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	274	69	786	1506	0.182	274	308	0.2	0.2	3.149	A
2 - Coastal Link E	993	248	128	1870	0.531	992	932	0.8	1.2	4.389	A
3 - Nicklaus Avenue	52	13	1067	1403	0.037	52	52	0.0	0.0	2.662	A
4 - Coastal Link W	869	217	226	1813	0.479	868	893	0.6	0.9	3.906	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	274	69	787	1506	0.182	274	308	0.2	0.2	3.151	A
2 - Coastal Link E	993	248	128	1870	0.531	993	934	1.2	1.2	4.405	A
3 - Nicklaus Avenue	52	13	1069	1402	0.037	52	52	0.0	0.0	2.664	A
4 - Coastal Link W	869	217	227	1812	0.479	869	894	0.9	0.9	3.917	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	224	56	644	1597	0.140	224	252	0.2	0.2	2.827	A
2 - Coastal Link E	811	203	104	1885	0.430	812	764	1.2	0.8	3.607	A
3 - Nicklaus Avenue	42	11	875	1529	0.028	42	42	0.0	0.0	2.422	A
4 - Coastal Link W	709	177	186	1838	0.386	710	731	0.9	0.6	3.283	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	187	47	539	1664	0.113	188	211	0.2	0.1	2.631	A
2 - Coastal Link E	679	170	87	1896	0.358	680	639	0.8	0.6	3.182	A
3 - Nicklaus Avenue	35	9	732	1622	0.022	35	35	0.0	0.0	2.268	A
4 - Coastal Link W	594	149	155	1857	0.320	595	612	0.6	0.5	2.931	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2 - Coastal Link E	0.60	0.59	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.48	0.00	0.00	0.48	0.48			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.18	0.00	0.00	0.18	0.18			N/A	N/A
2 - Coastal Link E	0.80	0.10	0.89	1.52	1.60			N/A	N/A
3 - Nicklaus Avenue	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.64	0.09	0.84	1.40	1.47			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.24	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.20	0.03	0.28	1.20	1.20			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.94	0.03	0.26	0.94	0.94			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.24	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.21	0.03	0.29	1.21	1.22			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.94	0.03	0.28	0.94	1.46			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.18	0.00	0.00	0.18	0.18			N/A	N/A
2 - Coastal Link E	0.82	0.56	1.06	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.65	0.56	1.03	1.44	1.49			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2 - Coastal Link E	0.60	0.07	0.77	1.44	1.53			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.49	0.00	0.00	0.49	0.49			N/A	N/A

Option 1: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.72	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	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	390	100.000
2 - Coastal Link E		ONE HOUR	✓	1033	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	78	100.000
4 - Coastal Link W		ONE HOUR	✓	929	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	252	2	136
	2 - Coastal Link E	189	0	66	778
	3 - Nicklaus Avenue	6	52	0	20
	4 - Coastal Link W	129	779	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	1	0	0	1
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.30	3.70	0.4	1.7	A	358	537
2 - Coastal Link E	0.62	5.17	1.6	2.5	A	948	1422
3 - Nicklaus Avenue	0.07	2.95	0.1	0.5	A	72	107
4 - Coastal Link W	0.57	4.81	1.4	1.7	A	852	1279

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	294	73	639	1600	0.184	293	243	0.0	0.2	2.770	A
2 - Coastal Link E	778	194	119	1876	0.415	775	813	0.0	0.7	3.293	A
3 - Nicklaus Avenue	59	15	827	1560	0.038	59	67	0.0	0.0	2.397	A
4 - Coastal Link W	699	175	185	1838	0.380	697	701	0.0	0.6	3.200	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	351	88	765	1520	0.231	350	291	0.2	0.3	3.098	A
2 - Coastal Link E	929	232	143	1861	0.499	927	973	0.7	1.0	3.888	A
3 - Nicklaus Avenue	70	18	990	1454	0.048	70	80	0.0	0.1	2.601	A
4 - Coastal Link W	835	209	222	1816	0.460	834	839	0.6	0.9	3.726	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	429	107	936	1411	0.304	429	356	0.3	0.4	3.688	A
2 - Coastal Link E	1137	284	175	1841	0.618	1135	1190	1.0	1.6	5.130	A
3 - Nicklaus Avenue	86	21	1212	1309	0.066	86	98	0.1	0.1	2.942	A
4 - Coastal Link W	1023	256	271	1784	0.573	1021	1026	0.9	1.3	4.780	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	429	107	938	1409	0.305	429	357	0.4	0.4	3.695	A
2 - Coastal Link E	1137	284	175	1841	0.618	1137	1192	1.6	1.6	5.166	A
3 - Nicklaus Avenue	86	21	1214	1308	0.066	86	98	0.1	0.1	2.945	A
4 - Coastal Link W	1023	256	272	1784	0.573	1023	1028	1.3	1.4	4.807	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	351	88	768	1518	0.231	351	292	0.4	0.3	3.108	A
2 - Coastal Link E	929	232	143	1861	0.499	931	976	1.6	1.0	3.920	A
3 - Nicklaus Avenue	70	18	994	1451	0.048	70	80	0.1	0.1	2.608	A
4 - Coastal Link W	835	209	223	1815	0.460	837	842	1.4	0.9	3.751	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	294	73	642	1598	0.184	294	244	0.3	0.2	2.780	A
2 - Coastal Link E	778	194	120	1875	0.415	779	816	1.0	0.7	3.316	A
3 - Nicklaus Avenue	59	15	832	1557	0.038	59	67	0.1	0.0	2.402	A
4 - Coastal Link W	699	175	186	1838	0.381	700	704	0.9	0.6	3.219	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.23	0.00	0.00	0.23	0.23			N/A	N/A
2 - Coastal Link E	0.71	0.56	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.62	0.56	1.02	1.42	1.47			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - Coastal Link E	1.00	0.07	0.81	1.83	2.51			N/A	N/A
3 - Nicklaus Avenue	0.05	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.86	0.08	0.84	1.28	1.74			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.44	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.61	0.03	0.26	1.61	1.61			N/A	N/A
3 - Nicklaus Avenue	0.07	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link W	1.35	0.03	0.26	1.35	1.35			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.44	0.03	0.32	1.38	1.70			N/A	N/A
2 - Coastal Link E	1.62	0.03	0.27	1.62	1.62			N/A	N/A
3 - Nicklaus Avenue	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link W	1.36	0.03	0.27	1.36	1.36			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - Coastal Link E	1.01	0.24	1.03	1.28	1.67			N/A	N/A
3 - Nicklaus Avenue	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link W	0.87	0.41	0.99	1.43	1.49			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.23	0.00	0.00	0.23	0.23			N/A	N/A
2 - Coastal Link E	0.72	0.07	0.76	1.43	1.51			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.63	0.07	0.75	1.37	1.45			N/A	N/A

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.20	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
D13	2021 Base	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 (%)
1 - The Avenue		ONE HOUR	✓	176	100.000
2 - Coastal Link E		ONE HOUR	✓	639	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	666	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	129	2	45
	2 - Coastal Link E	153	0	18	468
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	78	582	5	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.12	2.79	0.2	0.5	A	162	242
2 - Coastal Link E	0.37	3.19	0.6	2.9	A	586	880
3 - Nicklaus Avenue	0.01	2.24	0.0	0.5	A	11	17
4 - Coastal Link W	0.40	3.32	0.7	2.7	A	611	917

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	133	33	444	1725	0.077	132	175	0.0	0.1	2.454	A
2 - Coastal Link E	481	120	40	1926	0.250	480	536	0.0	0.4	2.673	A
3 - Nicklaus Avenue	9	2	501	1773	0.005	9	19	0.0	0.0	2.040	A
4 - Coastal Link W	501	125	119	1880	0.267	500	391	0.0	0.4	2.677	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	158	40	531	1669	0.095	158	209	0.1	0.1	2.586	A
2 - Coastal Link E	574	144	48	1921	0.299	574	641	0.4	0.5	2.872	A
3 - Nicklaus Avenue	11	3	599	1709	0.006	11	22	0.0	0.0	2.119	A
4 - Coastal Link W	599	150	142	1866	0.321	598	468	0.4	0.5	2.918	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	194	48	650	1593	0.122	194	256	0.1	0.1	2.792	A
2 - Coastal Link E	704	176	58	1914	0.368	703	785	0.5	0.6	3.192	A
3 - Nicklaus Avenue	13	3	734	1621	0.008	13	27	0.0	0.0	2.238	A
4 - Coastal Link W	733	183	174	1846	0.397	733	573	0.5	0.7	3.321	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	194	48	651	1593	0.122	194	257	0.1	0.2	2.793	A
2 - Coastal Link E	704	176	58	1914	0.368	704	786	0.6	0.6	3.195	A
3 - Nicklaus Avenue	13	3	734	1621	0.008	13	28	0.0	0.0	2.239	A
4 - Coastal Link W	733	183	174	1845	0.397	733	574	0.7	0.7	3.324	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	158	40	532	1668	0.095	158	210	0.2	0.1	2.588	A
2 - Coastal Link E	574	144	48	1921	0.299	575	643	0.6	0.5	2.877	A
3 - Nicklaus Avenue	11	3	600	1708	0.006	11	23	0.0	0.0	2.120	A
4 - Coastal Link W	599	150	142	1865	0.321	599	469	0.7	0.5	2.922	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	133	33	445	1723	0.077	133	176	0.1	0.1	2.458	A
2 - Coastal Link E	481	120	40	1925	0.250	481	538	0.5	0.4	2.681	A
3 - Nicklaus Avenue	9	2	503	1772	0.005	9	19	0.0	0.0	2.041	A
4 - Coastal Link W	501	125	119	1880	0.267	502	393	0.5	0.4	2.686	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.09	0.00	0.00	0.09	0.09			N/A	N/A
2 - Coastal Link E	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.37	0.00	0.00	0.37	0.37			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.48	0.00	0.00	0.48	0.48			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.15	0.03	0.28	0.50	0.53			N/A	N/A
2 - Coastal Link E	0.62	0.03	0.27	0.62	0.62			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.67	0.03	0.26	0.67	0.67			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.15	0.00	0.00	0.15	0.15			N/A	N/A
2 - Coastal Link E	0.62	0.03	0.31	1.32	2.85			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.68	0.03	0.29	0.94	2.73			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.49	0.00	0.00	0.49	0.49			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.09	0.00	0.00	0.09	0.09			N/A	N/A
2 - Coastal Link E	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.38	0.00	0.00	0.38	0.38			N/A	N/A

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.48	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	2021 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	323	100.000
2 - Coastal Link E		ONE HOUR	✓	851	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	52	100.000
4 - Coastal Link W		ONE HOUR	✓	634	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	222	2	99
	2 - Coastal Link E	172	0	37	642
	3 - Nicklaus Avenue	5	34	0	13
	4 - Coastal Link W	72	552	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	1	0	0	1
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.22	2.94	0.3	1.2	A	296	445
2 - Coastal Link E	0.50	3.88	1.0	1.5	A	781	1171
3 - Nicklaus Avenue	0.04	2.59	0.0	0.5	A	48	72
4 - Coastal Link W	0.39	3.30	0.6	2.7	A	582	873

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	243	61	447	1722	0.141	243	187	0.0	0.2	2.448	A
2 - Coastal Link E	641	160	83	1898	0.338	639	607	0.0	0.5	2.880	A
3 - Nicklaus Avenue	39	10	685	1653	0.024	39	37	0.0	0.0	2.230	A
4 - Coastal Link W	477	119	158	1855	0.257	476	566	0.0	0.4	2.653	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	290	73	535	1666	0.174	290	224	0.2	0.2	2.634	A
2 - Coastal Link E	765	191	100	1888	0.405	764	726	0.5	0.7	3.233	A
3 - Nicklaus Avenue	47	12	820	1565	0.030	47	44	0.0	0.0	2.370	A
4 - Coastal Link W	570	142	190	1836	0.310	570	677	0.4	0.5	2.892	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	356	89	656	1589	0.224	355	274	0.2	0.3	2.937	A
2 - Coastal Link E	937	234	122	1874	0.500	936	889	0.7	1.0	3.869	A
3 - Nicklaus Avenue	57	14	1004	1445	0.040	57	54	0.0	0.0	2.593	A
4 - Coastal Link W	698	175	232	1809	0.386	697	829	0.5	0.6	3.292	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	356	89	656	1589	0.224	356	274	0.3	0.3	2.938	A
2 - Coastal Link E	937	234	122	1874	0.500	937	890	1.0	1.0	3.879	A
3 - Nicklaus Avenue	57	14	1005	1444	0.040	57	54	0.0	0.0	2.595	A
4 - Coastal Link W	698	175	232	1809	0.386	698	830	0.6	0.6	3.296	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	290	73	536	1665	0.174	291	224	0.3	0.2	2.638	A
2 - Coastal Link E	765	191	100	1888	0.405	766	727	1.0	0.7	3.246	A
3 - Nicklaus Avenue	47	12	822	1564	0.030	47	44	0.0	0.0	2.375	A
4 - Coastal Link W	570	142	190	1835	0.311	571	679	0.6	0.5	2.896	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	243	61	449	1721	0.141	243	188	0.2	0.2	2.452	A
2 - Coastal Link E	641	160	84	1898	0.338	641	609	0.7	0.5	2.893	A
3 - Nicklaus Avenue	39	10	688	1651	0.024	39	37	0.0	0.0	2.233	A
4 - Coastal Link W	477	119	159	1855	0.257	478	568	0.5	0.4	2.661	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2 - Coastal Link E	0.51	0.51	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.35	0.00	0.00	0.35	0.35			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.68	0.09	0.83	1.38	1.45			N/A	N/A
3 - Nicklaus Avenue	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.29	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.00	0.03	0.26	1.00	1.00			N/A	N/A
3 - Nicklaus Avenue	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.64	0.03	0.26	0.64	0.64			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.29	0.03	0.30	0.86	1.19			N/A	N/A
2 - Coastal Link E	1.01	0.03	0.27	1.01	1.41			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.64	0.03	0.29	1.10	2.75			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.69	0.56	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2 - Coastal Link E	0.52	0.52	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4 - Coastal Link W	0.35	0.00	0.00	0.35	0.35			N/A	N/A

Option 2: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	3.86	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
D15	Option 2: 2021 with Committed Development and Machynys Hotel	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 (%)
1 - The Avenue		ONE HOUR	✓	239	100.000
2 - Coastal Link E		ONE HOUR	✓	868	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	770	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	138	2	99
	2 - Coastal Link E	169	0	18	681
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	97	667	5	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.17	3.05	0.2	0.5	A	219	329
2 - Coastal Link E	0.51	4.20	1.1	1.6	A	796	1195
3 - Nicklaus Avenue	0.01	2.56	0.0	0.5	A	11	17
4 - Coastal Link W	0.46	3.75	0.9	1.8	A	707	1060

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	180	45	507	1684	0.107	179	201	0.0	0.1	2.579	A
2 - Coastal Link E	653	163	80	1900	0.344	651	606	0.0	0.6	3.090	A
3 - Nicklaus Avenue	9	2	713	1635	0.006	9	19	0.0	0.0	2.214	A
4 - Coastal Link W	580	145	131	1873	0.310	578	591	0.0	0.5	2.852	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	215	54	607	1620	0.133	215	241	0.1	0.2	2.760	A
2 - Coastal Link E	780	195	96	1890	0.413	780	726	0.6	0.8	3.478	A
3 - Nicklaus Avenue	11	3	853	1543	0.007	11	22	0.0	0.0	2.348	A
4 - Coastal Link W	692	173	156	1857	0.373	692	708	0.5	0.6	3.172	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	263	66	743	1534	0.172	263	295	0.2	0.2	3.053	A
2 - Coastal Link E	956	239	118	1877	0.509	954	889	0.8	1.1	4.185	A
3 - Nicklaus Avenue	13	3	1044	1418	0.009	13	27	0.0	0.0	2.561	A
4 - Coastal Link W	848	212	191	1835	0.462	847	866	0.6	0.9	3.740	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	263	66	744	1533	0.172	263	295	0.2	0.2	3.055	A
2 - Coastal Link E	956	239	118	1877	0.509	956	890	1.1	1.1	4.196	A
3 - Nicklaus Avenue	13	3	1046	1417	0.009	13	28	0.0	0.0	2.563	A
4 - Coastal Link W	848	212	192	1834	0.462	848	868	0.9	0.9	3.746	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	215	54	609	1619	0.133	215	241	0.2	0.2	2.763	A
2 - Coastal Link E	780	195	96	1890	0.413	782	727	1.1	0.8	3.490	A
3 - Nicklaus Avenue	11	3	855	1542	0.007	11	23	0.0	0.0	2.351	A
4 - Coastal Link W	692	173	157	1856	0.373	693	710	0.9	0.6	3.181	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	180	45	509	1683	0.107	180	202	0.2	0.1	2.582	A
2 - Coastal Link E	653	163	81	1900	0.344	654	609	0.8	0.6	3.106	A
3 - Nicklaus Avenue	9	2	716	1633	0.006	9	19	0.0	0.0	2.218	A
4 - Coastal Link W	580	145	131	1872	0.310	580	594	0.6	0.5	2.862	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2 - Coastal Link E	0.56	0.56	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.16	0.00	0.00	0.16	0.16			N/A	N/A
2 - Coastal Link E	0.75	0.10	0.89	1.48	1.55			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.61	0.09	0.82	1.40	1.47			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.10	0.03	0.27	1.10	1.10			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.26	0.47	0.50			N/A	N/A
4 - Coastal Link W	0.88	0.03	0.26	0.88	0.88			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.03	0.27	0.49	0.51			N/A	N/A
2 - Coastal Link E	1.11	0.03	0.29	1.11	1.45			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.88	0.03	0.28	0.88	1.76			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2 - Coastal Link E	0.76	0.59	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.61	0.56	1.03	1.44	1.49			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2 - Coastal Link E	0.57	0.06	0.68	1.43	1.52			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

Option 2: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.40	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
D16	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	372	100.000
2 - Coastal Link E		ONE HOUR	✓	985	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	52	100.000
4 - Coastal Link W		ONE HOUR	✓	898	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	240	2	130
	2 - Coastal Link E	180	0	37	768
	3 - Nicklaus Avenue	5	34	0	13
	4 - Coastal Link W	125	763	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	1	0	0	1
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.28	3.51	0.4	1.3	A	341	512
2 - Coastal Link E	0.59	4.73	1.4	1.9	A	904	1356
3 - Nicklaus Avenue	0.04	2.84	0.0	0.5	A	48	72
4 - Coastal Link W	0.55	4.49	1.2	1.5	A	824	1236

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	280	70	605	1621	0.173	279	233	0.0	0.2	2.698	A
2 - Coastal Link E	742	185	107	1884	0.394	739	778	0.0	0.7	3.169	A
3 - Nicklaus Avenue	39	10	809	1572	0.025	39	37	0.0	0.0	2.347	A
4 - Coastal Link W	676	169	164	1852	0.365	674	683	0.0	0.6	3.101	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	334	84	725	1545	0.216	334	278	0.2	0.3	2.991	A
2 - Coastal Link E	885	221	128	1870	0.473	884	931	0.7	0.9	3.683	A
3 - Nicklaus Avenue	47	12	968	1468	0.032	47	44	0.0	0.0	2.531	A
4 - Coastal Link W	807	202	197	1831	0.441	806	818	0.6	0.8	3.568	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	410	102	887	1442	0.284	409	341	0.3	0.4	3.505	A
2 - Coastal Link E	1085	271	156	1852	0.585	1082	1140	0.9	1.4	4.708	A
3 - Nicklaus Avenue	57	14	1185	1327	0.043	57	54	0.0	0.0	2.834	A
4 - Coastal Link W	989	247	241	1804	0.548	987	1001	0.8	1.2	4.474	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	410	102	888	1441	0.284	410	341	0.4	0.4	3.511	A
2 - Coastal Link E	1085	271	156	1852	0.585	1084	1142	1.4	1.4	4.732	A
3 - Nicklaus Avenue	57	14	1187	1326	0.043	57	54	0.0	0.0	2.837	A
4 - Coastal Link W	989	247	241	1803	0.548	989	1003	1.2	1.2	4.493	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	334	84	727	1544	0.217	335	279	0.4	0.3	2.999	A
2 - Coastal Link E	885	221	128	1870	0.473	888	934	1.4	0.9	3.705	A
3 - Nicklaus Avenue	47	12	971	1466	0.032	47	44	0.0	0.0	2.537	A
4 - Coastal Link W	807	202	197	1831	0.441	809	821	1.2	0.8	3.587	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	280	70	608	1620	0.173	280	234	0.3	0.2	2.705	A
2 - Coastal Link E	742	185	107	1883	0.394	743	782	0.9	0.7	3.188	A
3 - Nicklaus Avenue	39	10	813	1570	0.025	39	37	0.0	0.0	2.353	A
4 - Coastal Link W	676	169	165	1851	0.365	677	687	0.8	0.6	3.119	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.65	0.56	1.01	1.41	1.46			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.58	0.56	1.02	1.42	1.47			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link E	0.90	0.07	0.83	1.50	1.89			N/A	N/A
3 - Nicklaus Avenue	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.80	0.08	0.83	1.37	1.37			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.40	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.41	0.03	0.26	1.41	1.41			N/A	N/A
3 - Nicklaus Avenue	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	1.22	0.03	0.26	1.22	1.22			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.40	0.03	0.33	1.29	1.29			N/A	N/A
2 - Coastal Link E	1.42	0.03	0.27	1.42	1.42			N/A	N/A
3 - Nicklaus Avenue	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link W	1.23	0.03	0.27	1.23	1.23			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link E	0.91	0.39	1.00	1.45	1.50			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.81	0.52	1.00	1.42	1.47			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link E	0.66	0.08	0.77	1.38	1.45			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.59	0.07	0.74	1.37	1.45			N/A	N/A

Option 2: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.03	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
D17	Option 2: 2026 with Committed Development and Machynys Hotel	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 (%)
1 - The Avenue		ONE HOUR	✓	249	100.000
2 - Coastal Link E		ONE HOUR	✓	902	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	807	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	146	2	101
	2 - Coastal Link E	177	0	18	707
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	101	699	6	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	10	0	5
	2 - Coastal Link E	9	0	6	7
	3 - Nicklaus Avenue	0	0	0	0
	4 - Coastal Link W	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.18	3.14	0.2	0.5	A	228	343
2 - Coastal Link E	0.53	4.38	1.2	1.6	A	828	1242
3 - Nicklaus Avenue	0.01	2.61	0.0	0.5	A	12	18
4 - Coastal Link W	0.49	3.93	1.0	1.5	A	741	1111

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	187	47	532	1668	0.112	187	210	0.0	0.1	2.621	A
2 - Coastal Link E	679	170	83	1899	0.358	677	636	0.0	0.6	3.158	A
3 - Nicklaus Avenue	10	2	740	1617	0.006	10	20	0.0	0.0	2.239	A
4 - Coastal Link W	608	152	137	1869	0.325	606	613	0.0	0.5	2.924	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	224	56	637	1601	0.140	224	251	0.1	0.2	2.817	A
2 - Coastal Link E	811	203	99	1888	0.429	810	762	0.6	0.8	3.584	A
3 - Nicklaus Avenue	12	3	886	1522	0.008	12	23	0.0	0.0	2.382	A
4 - Coastal Link W	725	181	163	1852	0.392	725	734	0.5	0.7	3.279	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	274	69	780	1510	0.182	274	308	0.2	0.2	3.139	A
2 - Coastal Link E	993	248	121	1875	0.530	992	932	0.8	1.2	4.389	A
3 - Nicklaus Avenue	14	4	1084	1393	0.010	14	29	0.0	0.0	2.611	A
4 - Coastal Link W	889	222	200	1829	0.486	887	898	0.7	1.0	3.921	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	274	69	781	1510	0.182	274	308	0.2	0.2	3.140	A
2 - Coastal Link E	993	248	121	1874	0.530	993	934	1.2	1.2	4.385	A
3 - Nicklaus Avenue	14	4	1086	1392	0.010	14	29	0.0	0.0	2.613	A
4 - Coastal Link W	889	222	200	1829	0.486	889	900	1.0	1.0	3.931	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	224	56	638	1600	0.140	224	252	0.2	0.2	2.822	A
2 - Coastal Link E	811	203	99	1888	0.429	812	764	1.2	0.8	3.599	A
3 - Nicklaus Avenue	12	3	888	1520	0.008	12	23	0.0	0.0	2.385	A
4 - Coastal Link W	725	181	164	1852	0.392	727	736	1.0	0.7	3.292	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	187	47	534	1667	0.112	188	211	0.2	0.1	2.624	A
2 - Coastal Link E	679	170	83	1898	0.358	680	639	0.8	0.6	3.173	A
3 - Nicklaus Avenue	10	2	743	1615	0.006	10	20	0.0	0.0	2.244	A
4 - Coastal Link W	608	152	137	1869	0.325	608	616	0.7	0.5	2.935	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2 - Coastal Link E	0.59	0.59	1.07	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.49	0.00	0.00	0.49	0.49			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2 - Coastal Link E	0.80	0.10	0.89	1.52	1.60			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.66	0.10	0.84	1.40	1.47			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.24	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.20	0.03	0.28	1.20	1.20			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link W	0.96	0.03	0.26	0.96	0.96			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.24	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.20	0.03	0.29	1.20	1.23			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.97	0.03	0.28	0.97	1.29			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.18	0.00	0.00	0.18	0.18			N/A	N/A
2 - Coastal Link E	0.81	0.56	1.06	1.50	1.56			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.67	0.56	1.03	1.44	1.49			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2 - Coastal Link E	0.60	0.07	0.77	1.44	1.53			N/A	N/A
3 - Nicklaus Avenue	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4 - Coastal Link W	0.50	0.00	0.00	0.50	0.50			N/A	N/A

Option 2: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Machynys Roundabout	Standard Roundabout		1, 2, 3, 4	4.64	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
D18	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - The Avenue		ONE HOUR	✓	390	100.000
2 - Coastal Link E		ONE HOUR	✓	1032	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	55	100.000
4 - Coastal Link W		ONE HOUR	✓	933	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	252	2	136
	2 - Coastal Link E	189	0	39	804
	3 - Nicklaus Avenue	6	36	0	13
	4 - Coastal Link W	129	794	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - The Avenue	2 - Coastal Link E	3 - Nicklaus Avenue	4 - Coastal Link W
From	1 - The Avenue	0	1	0	0
	2 - Coastal Link E	0	1	0	0
	3 - Nicklaus Avenue	1	0	0	1
	4 - Coastal Link W	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - The Avenue	0.30	3.66	0.4	1.7	A	358	537
2 - Coastal Link E	0.61	5.06	1.6	2.4	A	947	1420
3 - Nicklaus Avenue	0.05	2.94	0.0	0.5	A	50	76
4 - Coastal Link W	0.57	4.69	1.3	1.7	A	856	1284

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	294	73	630	1606	0.183	293	243	0.0	0.2	2.758	A
2 - Coastal Link E	777	194	111	1881	0.413	774	812	0.0	0.7	3.245	A
3 - Nicklaus Avenue	41	10	847	1547	0.027	41	38	0.0	0.0	2.398	A
4 - Coastal Link W	702	176	173	1846	0.381	700	715	0.0	0.6	3.135	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	351	88	754	1527	0.230	350	291	0.2	0.3	3.080	A
2 - Coastal Link E	928	232	133	1867	0.497	927	972	0.7	1.0	3.822	A
3 - Nicklaus Avenue	49	12	1014	1438	0.034	49	46	0.0	0.0	2.600	A
4 - Coastal Link W	839	210	207	1825	0.460	838	856	0.6	0.8	3.645	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	429	107	923	1419	0.303	429	356	0.3	0.4	3.657	A
2 - Coastal Link E	1136	284	163	1848	0.615	1134	1189	1.0	1.6	5.021	A
3 - Nicklaus Avenue	61	15	1241	1291	0.047	61	56	0.0	0.0	2.936	A
4 - Coastal Link W	1027	257	254	1795	0.572	1025	1047	0.8	1.3	4.663	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	429	107	925	1418	0.303	429	357	0.4	0.4	3.664	A
2 - Coastal Link E	1136	284	163	1848	0.615	1136	1191	1.6	1.6	5.055	A
3 - Nicklaus Avenue	61	15	1243	1289	0.047	61	56	0.0	0.0	2.939	A
4 - Coastal Link W	1027	257	254	1795	0.572	1027	1049	1.3	1.3	4.687	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	351	88	757	1525	0.230	351	292	0.4	0.3	3.087	A
2 - Coastal Link E	928	232	133	1867	0.497	930	975	1.6	1.0	3.853	A
3 - Nicklaus Avenue	49	12	1017	1436	0.034	49	46	0.0	0.0	2.606	A
4 - Coastal Link W	839	210	208	1824	0.460	841	859	1.3	0.9	3.669	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - The Avenue	294	73	633	1604	0.183	294	244	0.3	0.2	2.768	A
2 - Coastal Link E	777	194	112	1880	0.413	778	816	1.0	0.7	3.268	A
3 - Nicklaus Avenue	41	10	851	1545	0.027	41	38	0.0	0.0	2.402	A
4 - Coastal Link W	702	176	174	1845	0.381	703	718	0.9	0.6	3.154	A

Queue Variation Results for each time segment

16:15 - 16:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	0.55	1.00	1.40	1.45			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.61	0.55	1.00	1.40	1.45			N/A	N/A

16:30 - 16:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - Coastal Link E	0.98	0.07	0.80	1.79	2.44			N/A	N/A
3 - Nicklaus Avenue	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4 - Coastal Link W	0.84	0.08	0.82	1.26	1.71			N/A	N/A

16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.43	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.57	0.03	0.26	1.57	1.57			N/A	N/A
3 - Nicklaus Avenue	0.05	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link W	1.32	0.03	0.26	1.32	1.32			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.44	0.03	0.33	1.38	1.67			N/A	N/A
2 - Coastal Link E	1.58	0.03	0.26	1.58	1.58			N/A	N/A
3 - Nicklaus Avenue	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link W	1.33	0.03	0.26	1.33	1.33			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - Coastal Link E	1.00	0.25	1.02	1.19	1.61			N/A	N/A
3 - Nicklaus Avenue	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link W	0.88	0.44	0.98	1.41	1.46			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - The Avenue	0.23	0.00	0.00	0.23	0.23			N/A	N/A
2 - Coastal Link E	0.71	0.07	0.76	1.41	1.49			N/A	N/A
3 - Nicklaus Avenue	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4 - Coastal Link W	0.62	0.07	0.75	1.35	1.43			N/A	N/A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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»2017 Base, AM
»2017 Base, PM
»2021 with Committed Development, AM
»2021 with Committed Development, PM
»Option 1: 2021 with Committed Development and Machynys Hotel, AM
»Option 1: 2021 with Committed Development and Machynys Hotel, PM
»2021 Base, AM
»2021 Base, PM
»Option 1: 2026 with Committed Development and Machynys Hotel, AM
»Option 1: 2026 with Committed Development and Machynys Hotel, PM
»Option 2: 2021 with Committed Development and Machynys Hotel, AM
»Option 2: 2021 with Committed Development and Machynys Hotel, PM
»Option 2: 2026 with Committed Development and Machynys Hotel, AM
»Option 2: 2026 with Committed Development and Machynys Hotel, PM

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
2017 Base										
1 - Lower Trostre Road	0.6	5.54	0.36	5.75	A	1.4	7.71	0.58	8.10	A
2 - N/A	0.9	10.12	0.47			2.0	16.84	0.66		
3 - Brickyard Row	0.2	5.85	0.13			0.1	6.87	0.12		
4 - B4304 Coastal Link Road	0.9	3.99	0.46			1.0	4.24	0.50		
2021 with Committed Development										
1 - Lower Trostre Road	1.4	8.21	0.56	7.99	A	2.7	12.49	0.73	12.43	B
2 - N/A	1.7	15.33	0.62			3.5	27.84	0.79		
3 - Brickyard Row	0.3	7.78	0.21			0.1	7.85	0.10		
4 - B4304 Coastal Link Road	1.2	4.68	0.53			2.0	6.38	0.67		
Option 1: 2021 with Committed Development and Machynys Hotel										
1 - Lower Trostre Road	1.5	8.48	0.57	8.20	A	3.0	13.67	0.75	13.48	B
2 - N/A	1.7	15.77	0.63			3.9	30.83	0.81		
3 - Brickyard Row	0.3	7.91	0.21			0.1	8.10	0.11		
4 - B4304 Coastal Link Road	1.3	4.84	0.55			2.1	6.60	0.68		
2021 Base										
1 - Lower Trostre Road	0.7	5.84	0.39	6.11	A	1.6	8.61	0.62	9.24	A
2 - N/A	1.1	10.90	0.50			2.5	20.11	0.71		
3 - Brickyard Row	0.2	6.08	0.14			0.1	6.96	0.09		
4 - B4304 Coastal Link Road	1.0	4.23	0.49			1.2	4.52	0.53		
Option 1: 2026 with Committed Development and Machynys Hotel										
1 - Lower Trostre Road	1.6	9.18	0.60	8.96	A	3.8	16.84	0.80	17.11	C
2 - N/A	2.0	17.73	0.66			5.5	42.56	0.86		
3 - Brickyard Row	0.3	8.36	0.23			0.1	8.67	0.12		
4 - B4304 Coastal Link Road	1.4	5.17	0.58			2.5	7.32	0.71		
Option 2: 2021 with Committed Development and Machynys Hotel										
1 - Lower Trostre Road	1.5	8.48	0.57	8.15	A	3.0	13.67	0.75	13.15	B
2 - N/A	1.7	15.56	0.62			3.6	29.30	0.79		
3 - Brickyard Row	0.3	7.88	0.21			0.1	8.04	0.11		
4 - B4304 Coastal Link Road	1.3	4.84	0.55			2.1	6.60	0.68		
Option 2: 2026 with Committed Development and Machynys Hotel										
1 - Lower Trostre Road	1.6	9.18	0.60	8.90	A	3.8	16.84	0.80	16.55	C
2 - N/A	2.0	17.46	0.66			5.1	39.93	0.85		
3 - Brickyard Row	0.3	8.33	0.23			0.1	8.61	0.12		
4 - B4304 Coastal Link Road	1.4	5.17	0.58			2.5	7.32	0.71		

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Coastal Link Road/Lower Trostre Road
Location	Machynys
Site number	2
Date	16/12/2020
Version	1
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278888
Enumerator	GLOBAL\Aneesah Irshad
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 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2021 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D5	Option 1: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D6	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D7	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D8	2021 Base	PM	ONE HOUR	16:15	17:45	15	✓
D9	Option 1: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D10	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D11	Option 2: 2021 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D12	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓
D13	Option 2: 2026 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D14	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2017 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	5.75	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lower Trostre Road	
2	N/A	
3	Brickyard Row	
4	B4304 Coastal Link Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Lower Trostre Road	3.50	6.00	7.0	29.5	49.8	25.0	
2 - N/A	3.36	6.50	21.0	31.5	49.8	25.0	
3 - Brickyard Row	2.77	4.75	4.0	14.6	49.8	22.5	
4 - B4304 Coastal Link Road	3.74	6.50	34.0	45.1	49.8	37.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lower Trostre Road	0.574	1461
2 - N/A	0.623	1720
3 - Brickyard Row	0.494	1080
4 - B4304 Coastal Link Road	0.630	1802

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lower Trostre Road	Percentage		90.00
2 - N/A	Percentage		48.00

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 Base	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	370	100.000
2 - N/A		ONE HOUR	✓	304	100.000
3 - Brickyard Row		ONE HOUR	✓	85	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	720	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	29	10	329
	2 - N/A	29	0	9	266
	3 - Brickyard Row	36	27	3	19
	4 - B4304 Coastal Link Road	408	303	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.36	5.54	0.6	A	340	509
2 - N/A	0.47	10.12	0.9	B	279	418
3 - Brickyard Row	0.13	5.85	0.2	A	78	117
4 - B4304 Coastal Link Road	0.46	3.99	0.9	A	661	991

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	279	70	257	1182	0.236	277	356	0.0	0.3	4.358	A
2 - N/A	229	57	264	747	0.307	227	289	0.0	0.5	7.280	A
3 - Brickyard Row	64	16	468	849	0.075	64	23	0.0	0.1	4.813	A
4 - B4304 Coastal Link Road	542	136	73	1757	0.309	540	459	0.0	0.5	3.089	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	333	83	307	1156	0.288	332	427	0.3	0.4	4.792	A
2 - N/A	273	68	317	731	0.374	273	322	0.5	0.6	8.270	A
3 - Brickyard Row	76	19	562	802	0.095	76	28	0.1	0.1	5.206	A
4 - B4304 Coastal Link Road	647	162	87	1747	0.370	647	551	0.5	0.6	3.416	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	407	102	376	1121	0.364	407	522	0.4	0.6	5.527	A
2 - N/A	335	84	388	710	0.472	334	395	0.6	0.9	10.056	B
3 - Brickyard Row	94	23	687	740	0.126	93	34	0.1	0.2	5.842	A
4 - B4304 Coastal Link Road	793	198	107	1735	0.457	792	674	0.6	0.9	3.983	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	407	102	377	1120	0.364	407	523	0.6	0.6	5.539	A
2 - N/A	335	84	389	709	0.472	335	395	0.9	0.9	10.122	B
3 - Brickyard Row	94	23	689	739	0.127	94	34	0.2	0.2	5.852	A
4 - B4304 Coastal Link Road	793	198	107	1735	0.457	793	676	0.9	0.9	3.992	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	333	83	308	1156	0.288	333	428	0.6	0.4	4.808	A
2 - N/A	273	68	318	730	0.374	274	323	0.9	0.6	8.343	A
3 - Brickyard Row	76	19	565	801	0.095	77	28	0.2	0.1	5.220	A
4 - B4304 Coastal Link Road	647	162	87	1747	0.370	648	554	0.9	0.6	3.425	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	279	70	258	1182	0.236	279	358	0.4	0.3	4.377	A
2 - N/A	229	57	266	746	0.307	230	271	0.6	0.5	7.355	A
3 - Brickyard Row	64	16	472	847	0.076	64	23	0.1	0.1	4.832	A
4 - B4304 Coastal Link Road	542	136	73	1756	0.309	543	463	0.6	0.5	3.101	A

2017 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	8.10	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 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	581	100.000
2 - N/A		ONE HOUR	✓	388	100.000
3 - Brickyard Row		ONE HOUR	✓	68	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	797	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	1	53	30	497
	2 - N/A	41	0	17	330
	3 - Brickyard Row	34	9	0	25
	4 - B4304 Coastal Link Road	446	327	23	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.58	7.71	1.4	A	533	800
2 - N/A	0.66	16.84	2.0	C	356	534
3 - Brickyard Row	0.12	6.87	0.1	A	62	94
4 - B4304 Coastal Link Road	0.50	4.24	1.0	A	731	1097

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	437	109	270	1175	0.372	435	391	0.0	0.6	4.889	A
2 - N/A	292	73	413	702	0.416	289	292	0.0	0.7	8.807	A
3 - Brickyard Row	51	13	650	759	0.067	51	52	0.0	0.1	5.162	A
4 - B4304 Coastal Link Road	600	150	64	1762	0.340	598	638	0.0	0.5	3.146	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	522	131	323	1148	0.455	521	469	0.6	0.8	5.787	A
2 - N/A	349	87	495	677	0.515	347	349	0.7	1.1	11.041	B
3 - Brickyard Row	61	15	780	695	0.088	61	63	0.1	0.1	5.770	A
4 - B4304 Coastal Link Road	716	179	76	1754	0.408	716	765	0.5	0.7	3.532	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	640	160	396	1110	0.576	638	574	0.8	1.3	7.646	A
2 - N/A	427	107	606	644	0.663	424	428	1.1	1.9	16.336	C
3 - Brickyard Row	75	19	953	609	0.123	75	77	0.1	0.1	6.839	A
4 - B4304 Coastal Link Road	878	219	93	1744	0.503	876	934	0.7	1.0	4.224	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	640	160	396	1110	0.576	640	575	1.3	1.4	7.714	A
2 - N/A	427	107	608	644	0.664	427	428	1.9	2.0	16.837	C
3 - Brickyard Row	75	19	958	607	0.123	75	77	0.1	0.1	6.872	A
4 - B4304 Coastal Link Road	878	219	94	1743	0.503	877	939	1.0	1.0	4.237	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	522	131	324	1147	0.455	524	470	1.4	0.9	5.848	A
2 - N/A	349	87	498	677	0.516	352	350	2.0	1.1	11.394	B
3 - Brickyard Row	61	15	787	691	0.088	61	63	0.1	0.1	5.805	A
4 - B4304 Coastal Link Road	716	179	77	1754	0.409	718	771	1.0	0.7	3.545	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	437	109	271	1175	0.372	438	394	0.9	0.6	4.937	A
2 - N/A	292	73	417	701	0.417	294	293	1.1	0.7	9.013	A
3 - Brickyard Row	51	13	657	755	0.068	51	53	0.1	0.1	5.193	A
4 - B4304 Coastal Link Road	600	150	64	1762	0.341	601	644	0.7	0.5	3.161	A

2021 with Committed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	7.99	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	2021 with Committed Development	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	561	100.000
2 - N/A		ONE HOUR	✓	362	100.000
3 - Brickyard Row		ONE HOUR	✓	114	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	834	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	31	14	514
	2 - N/A	30	0	10	322
	3 - Brickyard Row	50	30	3	31
	4 - B4304 Coastal Link Road	487	333	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.56	8.21	1.4	A	515	772
2 - N/A	0.62	15.33	1.7	C	332	498
3 - Brickyard Row	0.21	7.78	0.3	A	105	157
4 - B4304 Coastal Link Road	0.53	4.68	1.2	A	765	1148

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	422	106	285	1168	0.362	420	427	0.0	0.6	5.270	A
2 - N/A	273	68	409	703	0.388	270	295	0.0	0.7	8.706	A
3 - Brickyard Row	86	21	649	759	0.113	85	31	0.0	0.1	5.569	A
4 - B4304 Coastal Link Road	628	157	86	1748	0.359	626	648	0.0	0.6	3.344	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	504	126	341	1139	0.443	503	511	0.6	0.9	6.212	A
2 - N/A	325	81	491	679	0.479	324	354	0.7	0.9	10.664	B
3 - Brickyard Row	102	26	778	695	0.147	102	37	0.1	0.2	6.328	A
4 - B4304 Coastal Link Road	750	187	103	1737	0.432	749	777	0.6	0.8	3.802	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	618	154	418	1099	0.562	616	625	0.9	1.4	8.140	A
2 - N/A	399	100	600	646	0.617	396	433	0.9	1.6	14.996	B
3 - Brickyard Row	126	31	951	610	0.206	125	45	0.2	0.3	7.738	A
4 - B4304 Coastal Link Road	918	230	126	1723	0.533	917	950	0.8	1.2	4.657	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	618	154	418	1099	0.562	618	626	1.4	1.4	8.214	A
2 - N/A	399	100	602	645	0.617	398	434	1.6	1.7	15.334	C
3 - Brickyard Row	126	31	955	608	0.207	126	45	0.3	0.3	7.783	A
4 - B4304 Coastal Link Road	918	230	127	1723	0.533	918	954	1.2	1.2	4.677	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	504	126	342	1138	0.443	506	513	1.4	0.9	6.278	A
2 - N/A	325	81	494	678	0.480	328	355	1.7	1.0	10.925	B
3 - Brickyard Row	102	26	785	692	0.148	103	37	0.3	0.2	6.375	A
4 - B4304 Coastal Link Road	750	187	104	1737	0.432	751	784	1.2	0.8	3.822	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	422	106	286	1167	0.362	423	429	0.9	0.6	5.324	A
2 - N/A	273	68	413	702	0.388	274	297	1.0	0.7	8.882	A
3 - Brickyard Row	86	21	656	756	0.114	86	31	0.2	0.1	5.604	A
4 - B4304 Coastal Link Road	628	157	87	1748	0.359	629	655	0.8	0.6	3.366	A

2021 with Committed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	12.43	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
D4	2021 with Committed Development	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	710	100.000
2 - N/A		ONE HOUR	✓	427	100.000
3 - Brickyard Row		ONE HOUR	✓	50	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1056	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	1	56	41	612
	2 - N/A	43	0	19	385
	3 - Brickyard Row	40	10	0	0
	4 - B4304 Coastal Link Road	638	383	34	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.73	12.49	2.7	B	652	977
2 - N/A	0.79	27.84	3.5	D	392	588
3 - Brickyard Row	0.10	7.85	0.1	A	46	69
4 - B4304 Coastal Link Road	0.67	6.38	2.0	A	969	1454

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	535	134	321	1149	0.465	531	541	0.0	0.9	5.842	A
2 - N/A	321	80	515	671	0.479	318	336	0.0	0.9	10.244	B
3 - Brickyard Row	38	9	763	703	0.054	37	70	0.0	0.1	5.535	A
4 - B4304 Coastal Link Road	795	199	70	1758	0.452	792	730	0.0	0.8	3.785	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	638	160	384	1116	0.572	636	648	0.9	1.3	7.536	A
2 - N/A	384	96	618	641	0.599	382	403	0.9	1.5	13.993	B
3 - Brickyard Row	45	11	915	628	0.072	45	84	0.1	0.1	6.321	A
4 - B4304 Coastal Link Road	949	237	84	1749	0.543	948	876	0.8	1.2	4.570	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	782	195	470	1072	0.729	777	792	1.3	2.6	12.081	B
2 - N/A	470	118	754	600	0.783	463	493	1.5	3.3	25.403	D
3 - Brickyard Row	55	14	1114	530	0.104	55	103	0.1	0.1	7.761	A
4 - B4304 Coastal Link Road	1163	291	103	1738	0.669	1159	1066	1.2	2.0	6.308	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	782	195	471	1071	0.730	781	795	2.6	2.7	12.491	B
2 - N/A	470	118	758	599	0.785	469	494	3.3	3.5	27.842	D
3 - Brickyard Row	55	14	1124	524	0.105	55	103	0.1	0.1	7.850	A
4 - B4304 Coastal Link Road	1163	291	103	1737	0.669	1163	1076	2.0	2.0	6.383	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	638	160	386	1115	0.572	643	652	2.7	1.4	7.774	A
2 - N/A	384	96	624	639	0.601	391	405	3.5	1.6	15.199	C
3 - Brickyard Row	45	11	930	620	0.072	45	85	0.1	0.1	6.407	A
4 - B4304 Coastal Link Road	949	237	85	1749	0.543	953	890	2.0	1.2	4.628	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	535	134	323	1148	0.466	536	545	1.4	0.9	5.957	A
2 - N/A	321	80	521	670	0.480	324	339	1.6	1.0	10.653	B
3 - Brickyard Row	38	9	774	698	0.054	38	71	0.1	0.1	5.585	A
4 - B4304 Coastal Link Road	795	199	71	1758	0.452	797	740	1.2	0.8	3.826	A

Option 1: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	8.20	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
D5	Option 1: 2021 with Committed Development and Machynys Hotel	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	572	100.000
2 - N/A		ONE HOUR	✓	365	100.000
3 - Brickyard Row		ONE HOUR	✓	114	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	858	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	31	14	525
	2 - N/A	30	0	10	325
	3 - Brickyard Row	50	30	3	31
	4 - B4304 Coastal Link Road	506	338	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.57	8.48	1.5	A	525	787
2 - N/A	0.63	15.77	1.7	C	335	502
3 - Brickyard Row	0.21	7.91	0.3	A	105	157
4 - B4304 Coastal Link Road	0.55	4.84	1.3	A	787	1181

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	431	108	289	1166	0.369	428	441	0.0	0.6	5.342	A
2 - N/A	275	69	418	701	0.392	272	299	0.0	0.7	8.799	A
3 - Brickyard Row	86	21	659	754	0.114	85	31	0.0	0.1	5.603	A
4 - B4304 Coastal Link Road	646	161	86	1748	0.370	644	658	0.0	0.6	3.399	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	514	129	346	1136	0.453	513	528	0.6	0.9	6.334	A
2 - N/A	328	82	501	676	0.486	327	358	0.7	1.0	10.832	B
3 - Brickyard Row	102	26	791	689	0.149	102	37	0.1	0.2	6.394	A
4 - B4304 Coastal Link Road	771	193	103	1737	0.444	770	790	0.6	0.8	3.888	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	630	157	423	1096	0.574	628	646	0.9	1.5	8.394	A
2 - N/A	402	100	612	642	0.626	399	438	1.0	1.7	15.411	C
3 - Brickyard Row	126	31	966	602	0.208	125	45	0.2	0.3	7.859	A
4 - B4304 Coastal Link Road	945	236	126	1723	0.548	943	965	0.8	1.3	4.813	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	630	157	424	1096	0.575	630	647	1.5	1.5	8.478	A
2 - N/A	402	100	614	642	0.626	402	439	1.7	1.7	15.771	C
3 - Brickyard Row	126	31	971	600	0.209	126	45	0.3	0.3	7.908	A
4 - B4304 Coastal Link Road	945	236	127	1723	0.548	945	970	1.3	1.3	4.836	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	514	129	347	1136	0.453	516	530	1.5	0.9	6.408	A
2 - N/A	328	82	504	675	0.486	331	360	1.7	1.0	11.118	B
3 - Brickyard Row	102	26	798	686	0.149	103	37	0.3	0.2	6.442	A
4 - B4304 Coastal Link Road	771	193	104	1737	0.444	773	797	1.3	0.8	3.911	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	431	108	290	1165	0.370	432	443	0.9	0.7	5.401	A
2 - N/A	275	69	421	700	0.393	276	301	1.0	0.7	8.986	A
3 - Brickyard Row	86	21	666	751	0.114	86	31	0.2	0.1	5.650	A
4 - B4304 Coastal Link Road	646	161	87	1748	0.370	647	665	0.8	0.6	3.422	A

Option 1: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	13.48	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
D6	Option 1: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	731	100.000
2 - N/A		ONE HOUR	✓	433	100.000
3 - Brickyard Row		ONE HOUR	✓	50	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1073	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	1	56	41	633
	2 - N/A	43	0	19	371
	3 - Brickyard Row	40	10	0	0
	4 - B4304 Coastal Link Road	651	387	34	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.75	13.67	3.0	B	671	1006
2 - N/A	0.81	30.83	3.9	D	397	596
3 - Brickyard Row	0.11	8.10	0.1	A	46	69
4 - B4304 Coastal Link Road	0.68	6.60	2.1	A	985	1477

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	550	138	324	1148	0.480	547	551	0.0	0.9	6.008	A
2 - N/A	326	81	531	667	0.489	322	339	0.0	1.0	10.505	B
3 - Brickyard Row	38	9	783	693	0.054	37	70	0.0	0.1	5.618	A
4 - B4304 Coastal Link Road	808	202	70	1758	0.459	804	750	0.0	0.9	3.833	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	657	164	388	1115	0.590	655	660	0.9	1.4	7.868	A
2 - N/A	389	97	636	635	0.613	387	407	1.0	1.5	14.582	B
3 - Brickyard Row	45	11	939	616	0.073	45	84	0.1	0.1	6.452	A
4 - B4304 Coastal Link Road	965	241	84	1749	0.551	963	900	0.9	1.2	4.660	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	805	201	474	1070	0.752	799	806	1.4	2.9	13.117	B
2 - N/A	477	119	776	593	0.803	468	497	1.5	3.6	27.594	D
3 - Brickyard Row	55	14	1142	516	0.107	55	103	0.1	0.1	7.994	A
4 - B4304 Coastal Link Road	1181	295	103	1738	0.680	1178	1094	1.2	2.1	6.512	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	805	201	476	1069	0.753	805	809	2.9	3.0	13.673	B
2 - N/A	477	119	781	592	0.806	476	499	3.6	3.9	30.828	D
3 - Brickyard Row	55	14	1154	510	0.108	55	103	0.1	0.1	8.101	A
4 - B4304 Coastal Link Road	1181	295	103	1737	0.680	1181	1105	2.1	2.1	6.598	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	657	164	390	1114	0.590	663	664	3.0	1.5	8.165	A
2 - N/A	389	97	644	633	0.615	398	409	3.9	1.7	16.096	C
3 - Brickyard Row	45	11	957	607	0.074	45	85	0.1	0.1	6.555	A
4 - B4304 Coastal Link Road	965	241	86	1748	0.552	968	916	2.1	1.3	4.722	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	550	138	326	1146	0.480	552	555	1.5	0.9	6.134	A
2 - N/A	326	81	537	665	0.490	329	342	1.7	1.0	10.964	B
3 - Brickyard Row	38	9	794	687	0.055	38	71	0.1	0.1	5.671	A
4 - B4304 Coastal Link Road	808	202	71	1758	0.460	809	761	1.3	0.9	3.876	A

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	6.11	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	2021 Base	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	392	100.000
2 - N/A		ONE HOUR	✓	322	100.000
3 - Brickyard Row		ONE HOUR	✓	89	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	765	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	31	10	349
	2 - N/A	30	0	10	282
	3 - Brickyard Row	38	28	3	20
	4 - B4304 Coastal Link Road	433	322	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.39	5.84	0.7	A	360	540
2 - N/A	0.50	10.90	1.1	B	295	443
3 - Brickyard Row	0.14	6.08	0.2	A	82	123
4 - B4304 Coastal Link Road	0.49	4.23	1.0	A	702	1053

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	295	74	272	1174	0.251	294	377	0.0	0.4	4.479	A
2 - N/A	242	61	280	742	0.327	240	286	0.0	0.5	7.539	A
3 - Brickyard Row	67	17	496	835	0.080	67	25	0.0	0.1	4.914	A
4 - B4304 Coastal Link Road	576	144	76	1755	0.328	574	487	0.0	0.5	3.180	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	352	88	326	1146	0.307	352	452	0.4	0.5	4.968	A
2 - N/A	289	72	336	725	0.399	289	342	0.5	0.7	8.681	A
3 - Brickyard Row	80	20	595	786	0.102	80	30	0.1	0.1	5.349	A
4 - B4304 Coastal Link Road	688	172	91	1745	0.394	687	584	0.5	0.7	3.554	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	432	108	399	1109	0.389	431	553	0.5	0.7	5.819	A
2 - N/A	355	89	411	703	0.505	353	419	0.7	1.0	10.811	B
3 - Brickyard Row	98	24	728	720	0.136	98	36	0.1	0.2	6.066	A
4 - B4304 Coastal Link Road	842	211	111	1732	0.486	841	715	0.7	1.0	4.214	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	432	108	400	1108	0.389	432	554	0.7	0.7	5.835	A
2 - N/A	355	89	412	702	0.505	354	419	1.0	1.1	10.904	B
3 - Brickyard Row	98	24	730	719	0.136	98	36	0.2	0.2	6.079	A
4 - B4304 Coastal Link Road	842	211	111	1732	0.486	842	717	1.0	1.0	4.226	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	352	88	327	1146	0.308	353	453	0.7	0.5	4.989	A
2 - N/A	289	72	337	725	0.399	291	343	1.1	0.7	8.774	A
3 - Brickyard Row	80	20	598	784	0.102	80	30	0.2	0.1	5.366	A
4 - B4304 Coastal Link Road	688	172	91	1745	0.394	689	587	1.0	0.7	3.568	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	295	74	274	1173	0.251	296	379	0.5	0.4	4.503	A
2 - N/A	242	61	282	741	0.327	243	287	0.7	0.5	7.634	A
3 - Brickyard Row	67	17	500	833	0.080	67	25	0.1	0.1	4.935	A
4 - B4304 Coastal Link Road	576	144	76	1754	0.328	577	491	0.7	0.5	3.198	A

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	9.24	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	2021 Base	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	615	100.000
2 - N/A		ONE HOUR	✓	411	100.000
3 - Brickyard Row		ONE HOUR	✓	45	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	843	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	1	56	32	526
	2 - N/A	43	0	18	350
	3 - Brickyard Row	36	9	0	0
	4 - B4304 Coastal Link Road	472	346	24	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.62	8.61	1.6	A	564	847
2 - N/A	0.71	20.11	2.5	C	377	566
3 - Brickyard Row	0.09	6.96	0.1	A	41	62
4 - B4304 Coastal Link Road	0.53	4.52	1.2	A	774	1160

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	463	116	285	1168	0.397	460	414	0.0	0.7	5.116	A
2 - N/A	309	77	437	695	0.445	306	308	0.0	0.8	9.341	A
3 - Brickyard Row	34	8	688	740	0.046	34	55	0.0	0.0	5.215	A
4 - B4304 Coastal Link Road	635	159	66	1760	0.361	632	655	0.0	0.6	3.246	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	553	138	341	1139	0.486	552	496	0.7	0.9	6.172	A
2 - N/A	369	92	524	669	0.552	368	369	0.8	1.2	12.085	B
3 - Brickyard Row	40	10	825	672	0.060	40	66	0.0	0.1	5.832	A
4 - B4304 Coastal Link Road	758	189	80	1752	0.433	757	786	0.6	0.8	3.684	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	677	169	418	1099	0.616	675	606	0.9	1.6	8.498	A
2 - N/A	453	113	641	634	0.714	448	452	1.2	2.4	19.194	C
3 - Brickyard Row	50	12	1007	582	0.085	49	81	0.1	0.1	6.915	A
4 - B4304 Coastal Link Road	928	232	97	1741	0.533	927	959	0.8	1.2	4.498	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	677	169	418	1099	0.616	677	608	1.6	1.6	8.606	A
2 - N/A	453	113	643	633	0.715	452	453	2.4	2.5	20.106	C
3 - Brickyard Row	50	12	1014	579	0.086	50	81	0.1	0.1	6.957	A
4 - B4304 Coastal Link Road	928	232	98	1741	0.533	928	965	1.2	1.2	4.516	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	553	138	342	1138	0.486	555	498	1.6	1.0	6.258	A
2 - N/A	369	92	527	668	0.553	374	370	2.5	1.3	12.645	B
3 - Brickyard Row	40	10	835	668	0.061	41	67	0.1	0.1	5.877	A
4 - B4304 Coastal Link Road	758	189	81	1752	0.433	759	795	1.2	0.8	3.706	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	463	116	286	1167	0.397	464	416	1.0	0.7	5.177	A
2 - N/A	309	77	441	694	0.446	311	310	1.3	0.8	9.614	A
3 - Brickyard Row	34	8	696	736	0.046	34	56	0.1	0.0	5.250	A
4 - B4304 Coastal Link Road	635	159	67	1760	0.361	635	663	0.8	0.6	3.267	A

Option 1: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	8.96	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	Option 1: 2026 with Committed Development and Machynys Hotel	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	594	100.000
2 - N/A		ONE HOUR	✓	383	100.000
3 - Brickyard Row		ONE HOUR	✓	119	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	900	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	32	15	545
	2 - N/A	32	0	11	340
	3 - Brickyard Row	52	32	3	32
	4 - B4304 Coastal Link Road	530	356	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.60	9.18	1.6	A	545	818
2 - N/A	0.66	17.73	2.0	C	351	527
3 - Brickyard Row	0.23	8.36	0.3	A	109	164
4 - B4304 Coastal Link Road	0.58	5.17	1.4	A	826	1239

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	447	112	304	1158	0.386	444	462	0.0	0.7	5.520	A
2 - N/A	288	72	433	696	0.414	285	315	0.0	0.7	9.178	A
3 - Brickyard Row	90	22	687	741	0.121	89	32	0.0	0.1	5.755	A
4 - B4304 Coastal Link Road	678	169	90	1745	0.388	675	685	0.0	0.7	3.506	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	534	133	364	1127	0.474	533	553	0.7	1.0	6.640	A
2 - N/A	344	86	519	670	0.514	343	377	0.7	1.1	11.538	B
3 - Brickyard Row	107	27	824	673	0.159	107	39	0.1	0.2	6.629	A
4 - B4304 Coastal Link Road	809	202	108	1734	0.467	808	822	0.7	0.9	4.059	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	654	164	445	1085	0.603	651	677	1.0	1.6	9.063	A
2 - N/A	422	105	635	636	0.663	418	461	1.1	2.0	17.163	C
3 - Brickyard Row	131	33	1006	583	0.225	131	47	0.2	0.3	8.293	A
4 - B4304 Coastal Link Road	991	248	133	1719	0.577	989	1004	0.9	1.4	5.140	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	654	164	446	1085	0.603	654	678	1.6	1.6	9.177	A
2 - N/A	422	105	637	635	0.664	421	462	2.0	2.0	17.727	C
3 - Brickyard Row	131	33	1012	580	0.226	131	47	0.3	0.3	8.359	A
4 - B4304 Coastal Link Road	991	248	133	1718	0.577	991	1009	1.4	1.4	5.171	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	534	133	365	1126	0.474	537	555	1.6	1.0	6.732	A
2 - N/A	344	86	523	669	0.515	348	379	2.0	1.1	11.934	B
3 - Brickyard Row	107	27	832	669	0.160	107	39	0.3	0.2	6.690	A
4 - B4304 Coastal Link Road	809	202	109	1733	0.467	811	830	1.4	0.9	4.087	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	447	112	305	1157	0.386	448	465	1.0	0.7	5.590	A
2 - N/A	288	72	437	695	0.415	290	317	1.1	0.8	9.404	A
3 - Brickyard Row	90	22	694	737	0.122	90	32	0.2	0.1	5.803	A
4 - B4304 Coastal Link Road	678	169	91	1745	0.388	679	693	0.9	0.7	3.534	A

Option 1: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	17.11	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
D10	Option 1: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	767	100.000
2 - N/A		ONE HOUR	✓	456	100.000
3 - Brickyard Row		ONE HOUR	✓	52	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1120	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	59	43	663
	2 - N/A	45	0	20	391
	3 - Brickyard Row	42	10	0	0
	4 - B4304 Coastal Link Road	678	406	35	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.80	16.84	3.8	C	704	1056
2 - N/A	0.86	42.56	5.5	E	418	628
3 - Brickyard Row	0.12	8.67	0.1	A	48	72
4 - B4304 Coastal Link Road	0.71	7.32	2.5	A	1028	1542

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	577	144	339	1140	0.507	573	575	0.0	1.0	6.364	A
2 - N/A	343	86	556	659	0.521	339	356	0.0	1.1	11.279	B
3 - Brickyard Row	39	10	822	674	0.058	39	73	0.0	0.1	5.794	A
4 - B4304 Coastal Link Road	843	211	74	1756	0.480	839	787	0.0	0.9	3.989	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	690	172	406	1105	0.624	687	688	1.0	1.6	8.629	A
2 - N/A	410	102	667	626	0.655	407	426	1.1	1.8	16.444	C
3 - Brickyard Row	47	12	986	593	0.079	47	88	0.1	0.1	6.739	A
4 - B4304 Coastal Link Road	1007	252	89	1747	0.576	1005	944	0.9	1.4	4.937	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	844	211	496	1059	0.798	836	840	1.6	3.7	15.774	C
2 - N/A	502	126	812	583	0.861	490	521	1.8	4.9	35.282	E
3 - Brickyard Row	57	14	1194	490	0.117	57	107	0.1	0.1	8.504	A
4 - B4304 Coastal Link Road	1233	308	108	1735	0.711	1229	1144	1.4	2.4	7.194	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	844	211	498	1058	0.798	844	844	3.7	3.8	16.845	C
2 - N/A	502	126	819	581	0.865	500	523	4.9	5.5	42.562	E
3 - Brickyard Row	57	14	1210	482	0.119	57	108	0.1	0.1	8.670	A
4 - B4304 Coastal Link Road	1233	308	109	1734	0.711	1233	1159	2.4	2.5	7.322	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	690	172	408	1104	0.625	698	694	3.8	1.7	9.117	A
2 - N/A	410	102	677	623	0.658	424	429	5.5	2.1	19.486	C
3 - Brickyard Row	47	12	1011	580	0.081	47	89	0.1	0.1	6.907	A
4 - B4304 Coastal Link Road	1007	252	91	1745	0.577	1011	968	2.5	1.4	5.026	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	577	144	341	1139	0.507	580	579	1.7	1.1	6.533	A
2 - N/A	343	86	563	657	0.522	347	358	2.1	1.1	11.921	B
3 - Brickyard Row	39	10	835	667	0.059	39	74	0.1	0.1	5.863	A
4 - B4304 Coastal Link Road	843	211	75	1755	0.480	845	800	1.4	1.0	4.041	A

Option 2: 2021 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	8.15	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
D11	Option 2: 2021 with Committed Development and Machynys Hotel	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	572	100.000
2 - N/A		ONE HOUR	✓	362	100.000
3 - Brickyard Row		ONE HOUR	✓	114	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	858	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	31	14	525
	2 - N/A	30	0	10	322
	3 - Brickyard Row	50	30	3	31
	4 - B4304 Coastal Link Road	506	338	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.57	8.48	1.5	A	525	787
2 - N/A	0.62	15.56	1.7	C	332	498
3 - Brickyard Row	0.21	7.88	0.3	A	105	157
4 - B4304 Coastal Link Road	0.55	4.84	1.3	A	787	1181

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	431	108	289	1166	0.369	428	441	0.0	0.6	5.342	A
2 - N/A	273	68	418	701	0.389	270	299	0.0	0.7	8.754	A
3 - Brickyard Row	86	21	657	755	0.114	85	31	0.0	0.1	5.594	A
4 - B4304 Coastal Link Road	646	161	86	1748	0.370	644	656	0.0	0.6	3.399	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	514	129	346	1136	0.453	513	528	0.6	0.9	6.334	A
2 - N/A	325	81	501	676	0.482	324	358	0.7	1.0	10.751	B
3 - Brickyard Row	102	26	788	691	0.148	102	37	0.1	0.2	6.380	A
4 - B4304 Coastal Link Road	771	193	103	1737	0.444	770	787	0.6	0.8	3.888	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	630	157	423	1096	0.574	628	646	0.9	1.5	8.394	A
2 - N/A	399	100	612	642	0.620	396	438	1.0	1.7	15.205	C
3 - Brickyard Row	126	31	963	604	0.208	125	45	0.2	0.3	7.833	A
4 - B4304 Coastal Link Road	945	236	126	1723	0.548	943	962	0.8	1.3	4.813	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	630	157	424	1096	0.575	630	647	1.5	1.5	8.478	A
2 - N/A	399	100	614	642	0.621	398	439	1.7	1.7	15.559	C
3 - Brickyard Row	126	31	968	602	0.209	126	45	0.3	0.3	7.881	A
4 - B4304 Coastal Link Road	945	236	127	1723	0.548	945	967	1.3	1.3	4.836	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	514	129	347	1136	0.453	516	530	1.5	0.9	6.408	A
2 - N/A	325	81	504	675	0.482	328	360	1.7	1.0	11.026	B
3 - Brickyard Row	102	26	795	687	0.149	103	37	0.3	0.2	6.430	A
4 - B4304 Coastal Link Road	771	193	104	1737	0.444	773	794	1.3	0.8	3.911	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	431	108	290	1165	0.370	432	443	0.9	0.7	5.399	A
2 - N/A	273	68	421	700	0.390	274	301	1.0	0.7	8.935	A
3 - Brickyard Row	86	21	664	752	0.114	86	31	0.2	0.1	5.641	A
4 - B4304 Coastal Link Road	646	161	87	1748	0.370	647	663	0.8	0.6	3.422	A

Option 2: 2021 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	13.15	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
D12	Option 2: 2021 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	731	100.000
2 - N/A		ONE HOUR	✓	427	100.000
3 - Brickyard Row		ONE HOUR	✓	50	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1073	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	1	56	41	633
	2 - N/A	43	0	19	365
	3 - Brickyard Row	40	10	0	0
	4 - B4304 Coastal Link Road	651	387	34	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.75	13.67	3.0	B	671	1006
2 - N/A	0.79	29.30	3.6	D	392	588
3 - Brickyard Row	0.11	8.04	0.1	A	46	69
4 - B4304 Coastal Link Road	0.68	6.60	2.1	A	985	1477

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	550	138	324	1148	0.480	547	551	0.0	0.9	6.008	A
2 - N/A	321	80	531	667	0.482	318	339	0.0	0.9	10.376	B
3 - Brickyard Row	38	9	779	695	0.054	37	70	0.0	0.1	5.600	A
4 - B4304 Coastal Link Road	808	202	70	1758	0.459	804	746	0.0	0.9	3.834	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	657	164	388	1115	0.590	655	660	0.9	1.4	7.868	A
2 - N/A	384	96	636	635	0.604	382	407	0.9	1.5	14.290	B
3 - Brickyard Row	45	11	934	619	0.073	45	84	0.1	0.1	6.422	A
4 - B4304 Coastal Link Road	965	241	84	1749	0.551	963	894	0.9	1.2	4.660	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	805	201	474	1070	0.752	799	806	1.4	2.9	13.117	B
2 - N/A	470	118	776	593	0.792	462	497	1.5	3.4	26.485	D
3 - Brickyard Row	55	14	1136	519	0.106	55	103	0.1	0.1	7.943	A
4 - B4304 Coastal Link Road	1181	295	103	1738	0.680	1178	1088	1.2	2.1	6.512	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	805	201	476	1069	0.753	805	809	2.9	3.0	13.673	B
2 - N/A	470	118	781	592	0.794	469	499	3.4	3.6	29.302	D
3 - Brickyard Row	55	14	1147	513	0.107	55	103	0.1	0.1	8.044	A
4 - B4304 Coastal Link Road	1181	295	103	1737	0.680	1181	1099	2.1	2.1	6.598	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	657	164	390	1114	0.590	663	664	3.0	1.5	8.167	A
2 - N/A	384	96	644	633	0.606	392	409	3.6	1.6	15.642	C
3 - Brickyard Row	45	11	951	610	0.074	45	85	0.1	0.1	6.523	A
4 - B4304 Coastal Link Road	965	241	85	1748	0.552	968	910	2.1	1.3	4.724	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	550	138	326	1146	0.480	552	555	1.5	0.9	6.134	A
2 - N/A	321	80	537	665	0.483	324	342	1.6	1.0	10.808	B
3 - Brickyard Row	38	9	790	690	0.055	38	71	0.1	0.1	5.651	A
4 - B4304 Coastal Link Road	808	202	71	1758	0.460	809	756	1.3	0.9	3.878	A

Option 2: 2026 with Committed Development and Machynys Hotel, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	8.90	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
D13	Option 2: 2026 with Committed Development and Machynys Hotel	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	594	100.000
2 - N/A		ONE HOUR	✓	380	100.000
3 - Brickyard Row		ONE HOUR	✓	119	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	900	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	32	15	545
	2 - N/A	32	0	11	337
	3 - Brickyard Row	52	32	3	32
	4 - B4304 Coastal Link Road	530	356	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	7	11	10
	2 - N/A	4	0	25	5
	3 - Brickyard Row	3	8	50	0
	4 - B4304 Coastal Link Road	5	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.60	9.18	1.6	A	545	818
2 - N/A	0.66	17.46	2.0	C	349	523
3 - Brickyard Row	0.23	8.33	0.3	A	109	164
4 - B4304 Coastal Link Road	0.58	5.17	1.4	A	826	1239

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	447	112	304	1158	0.386	444	462	0.0	0.7	5.520	A
2 - N/A	286	72	433	696	0.411	283	315	0.0	0.7	9.129	A
3 - Brickyard Row	90	22	684	742	0.121	89	32	0.0	0.1	5.746	A
4 - B4304 Coastal Link Road	678	169	90	1745	0.388	675	683	0.0	0.7	3.506	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	534	133	364	1127	0.474	533	553	0.7	1.0	6.640	A
2 - N/A	342	85	519	670	0.510	340	377	0.7	1.1	11.448	B
3 - Brickyard Row	107	27	821	674	0.159	107	39	0.1	0.2	6.614	A
4 - B4304 Coastal Link Road	809	202	109	1734	0.467	808	819	0.7	0.9	4.059	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	654	164	445	1085	0.603	651	677	1.0	1.6	9.063	A
2 - N/A	418	105	635	636	0.658	415	461	1.1	1.9	16.925	C
3 - Brickyard Row	131	33	1003	584	0.224	131	47	0.2	0.3	8.264	A
4 - B4304 Coastal Link Road	991	248	133	1719	0.577	989	1001	0.9	1.4	5.140	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	654	164	446	1085	0.603	654	678	1.6	1.6	9.177	A
2 - N/A	418	105	637	635	0.659	418	462	1.9	2.0	17.461	C
3 - Brickyard Row	131	33	1008	582	0.225	131	47	0.3	0.3	8.328	A
4 - B4304 Coastal Link Road	991	248	133	1718	0.577	991	1006	1.4	1.4	5.171	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	534	133	365	1126	0.474	537	555	1.6	1.0	6.732	A
2 - N/A	342	85	523	669	0.511	345	379	2.0	1.1	11.825	B
3 - Brickyard Row	107	27	829	670	0.160	107	39	0.3	0.2	6.673	A
4 - B4304 Coastal Link Road	809	202	109	1733	0.467	811	827	1.4	0.9	4.087	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	447	112	305	1157	0.386	448	465	1.0	0.7	5.588	A
2 - N/A	286	72	437	695	0.412	288	317	1.1	0.8	9.350	A
3 - Brickyard Row	90	22	692	738	0.121	90	32	0.2	0.1	5.793	A
4 - B4304 Coastal Link Road	678	169	91	1745	0.388	679	691	0.9	0.7	3.534	A

Option 2: 2026 with Committed Development and Machynys Hotel, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	4 - B4304 Coastal Link Road - 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
2	Morfa Roundabout	Standard Roundabout		1, 2, 3, 4	16.55	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
D14	Option 2: 2026 with Committed Development and Machynys Hotel	PM	ONE HOUR	16:15	17:45	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 (%)
1 - Lower Trostre Road		ONE HOUR	✓	767	100.000
2 - N/A		ONE HOUR	✓	450	100.000
3 - Brickyard Row		ONE HOUR	✓	52	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1120	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	2	59	43	663
	2 - N/A	45	0	20	385
	3 - Brickyard Row	42	10	0	0
	4 - B4304 Coastal Link Road	678	406	35	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Lower Trostre Road	2 - N/A	3 - Brickyard Row	4 - B4304 Coastal Link Road
From	1 - Lower Trostre Road	0	0	0	1
	2 - N/A	8	0	0	1
	3 - Brickyard Row	0	13	0	0
	4 - B4304 Coastal Link Road	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Lower Trostre Road	0.80	16.84	3.8	C	704	1056
2 - N/A	0.85	39.93	5.1	E	413	619
3 - Brickyard Row	0.12	8.61	0.1	A	48	72
4 - B4304 Coastal Link Road	0.71	7.32	2.5	A	1028	1542

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	577	144	339	1140	0.507	573	575	0.0	1.0	6.364	A
2 - N/A	339	85	556	659	0.514	335	356	0.0	1.0	11.132	B
3 - Brickyard Row	39	10	818	676	0.058	39	73	0.0	0.1	5.779	A
4 - B4304 Coastal Link Road	843	211	74	1756	0.480	839	783	0.0	0.9	3.989	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	690	172	406	1105	0.624	687	688	1.0	1.6	8.629	A
2 - N/A	405	101	667	626	0.646	402	426	1.0	1.8	16.077	C
3 - Brickyard Row	47	12	980	596	0.079	47	88	0.1	0.1	6.707	A
4 - B4304 Coastal Link Road	1007	252	89	1747	0.576	1005	938	0.9	1.4	4.937	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	844	211	496	1059	0.798	836	841	1.6	3.7	15.774	C
2 - N/A	495	124	812	583	0.850	484	521	1.8	4.6	33.658	D
3 - Brickyard Row	57	14	1189	493	0.116	57	107	0.1	0.1	8.450	A
4 - B4304 Coastal Link Road	1233	308	108	1735	0.711	1229	1138	1.4	2.4	7.195	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	844	211	498	1058	0.798	844	844	3.7	3.8	16.845	C
2 - N/A	495	124	819	581	0.853	493	523	4.6	5.1	39.927	E
3 - Brickyard Row	57	14	1204	485	0.118	57	108	0.1	0.1	8.608	A
4 - B4304 Coastal Link Road	1233	308	109	1734	0.711	1233	1153	2.4	2.5	7.322	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	690	172	408	1104	0.625	698	694	3.8	1.7	9.117	A
2 - N/A	405	101	677	623	0.649	417	429	5.1	2.0	18.735	C
3 - Brickyard Row	47	12	1005	584	0.080	47	89	0.1	0.1	6.865	A
4 - B4304 Coastal Link Road	1007	252	90	1745	0.577	1011	961	2.5	1.4	5.026	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/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 - Lower Trostre Road	577	144	341	1139	0.507	580	579	1.7	1.1	6.530	A
2 - N/A	339	85	563	657	0.515	342	358	2.0	1.1	11.734	B
3 - Brickyard Row	39	10	831	669	0.058	39	74	0.1	0.1	5.844	A
4 - B4304 Coastal Link Road	843	211	75	1755	0.480	845	795	1.4	1.0	4.041	A

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Machynys Central Resl Access.j9
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling
Report generation date: 17/12/2020 15:18:57

»2021 Committed Development, AM
»2021 Committed Development, PM
»2021 Committed Development with Machynys Hotel, AM
»2021 Committed Development with Machynys Hotel, PM
»2026 Committed Development with Machynys Hotel, AM
»2026 Committed Development with Machynys Hotel, PM

Summary of junction performance

	AM						PM					
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS
	2021 Committed Development											
Stream B-AC	0.1	8.11	0.06	A	0.14	A	0.0	8.38	0.02	A	0.06	A
Stream C-B	0.0	7.52	0.01	A			0.0	8.14	0.01	A		
	2021 Committed Development with Machynys Hotel											
Stream B-AC	0.2	8.87	0.13	A	0.35	A	0.1	8.95	0.08	A	0.22	A
Stream C-B	0.0	7.70	0.02	A			0.0	8.55	0.04	A		
	2026 Committed Development with Machynys Hotel											
Stream B-AC	0.2	9.06	0.14	A	0.35	A	0.1	9.24	0.08	A	0.22	A
Stream C-B	0.0	7.85	0.02	A			0.0	8.82	0.04	A		

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Proposed Machynys Central Residential Access
Location	Machynys
Site number	3
Date	14/12/2020
Version	1
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Aneesah Irshad
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Committed Development	AM	ONE HOUR	07:45	09:15	15
D2	2021 Committed Development	PM	ONE HOUR	16:15	17:45	15
D3	2021 Committed Development with Machynys Hotel	AM	ONE HOUR	07:45	09:15	15
D4	2021 Committed Development with Machynys Hotel	PM	ONE HOUR	16:15	17:45	15
D5	2026 Committed Development with Machynys Hotel	AM	ONE HOUR	07:45	09:15	15
D6	2026 Committed Development with Machynys Hotel	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 Committed Development, 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
3	Proposed Access	T-Junction	Two-way		0.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B4304 East		Major
B	Proposed Access		Minor
C	B4304 West		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 - B4304 West	6.00		✓	3.00	150.0		-

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 - Proposed Access	One lane	3.00	120	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
3	B-A	578	0.105	0.266	0.167	0.380
3	B-C	699	0.107	0.271	-	-
3	C-B	718	0.278	0.278	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Committed Development	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4304 East		✓	772	100.000
B - Proposed Access		✓	24	100.000
C - B4304 West		✓	783	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	6	766
	B - Proposed Access	0	0	24
	C - B4304 West	760	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	0	12
	B - Proposed Access	0	0	0
	C - B4304 West	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.06	8.11	0.1	A
C-A				
C-B	0.01	7.52	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	18	543	0.033	18	0.0	6.858	A
C-A	572			572			
C-B	2	557	0.004	2	0.0	6.493	A
A-B	5			5			
A-C	577			577			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22	512	0.042	22	0.0	7.335	A
C-A	683			683			
C-B	3	525	0.005	3	0.0	6.889	A
A-B	5			5			
A-C	689			689			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	470	0.056	26	0.1	8.110	A
C-A	837			837			
C-B	3	482	0.007	3	0.0	7.522	A
A-B	7			7			
A-C	843			843			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	470	0.056	26	0.1	8.111	A
C-A	837			837			
C-B	3	482	0.007	3	0.0	7.522	A
A-B	7			7			
A-C	843			843			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22	512	0.042	22	0.0	7.340	A
C-A	683			683			
C-B	3	525	0.005	3	0.0	6.889	A
A-B	5			5			
A-C	689			689			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	18	543	0.033	18	0.0	6.862	A
C-A	572			572			
C-B	2	557	0.004	2	0.0	6.496	A
A-B	5			5			
A-C	577			577			

2021 Committed Development, 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
3	Proposed Access	T-Junction	Two-way		0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2021 Committed Development	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4304 East		✓	883	100.000
B - Proposed Access		✓	8	100.000
C - B4304 West		✓	886	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	13	870
	B - Proposed Access	0	0	8
	C - B4304 West	881	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	0	1
	B - Proposed Access	0	0	0
	C - B4304 West	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	8.38	0.0	A
C-A				
C-B	0.01	8.14	0.0	A
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	521	0.012	6	0.0	6.990	A
C-A	663			663			
C-B	4	533	0.007	4	0.0	6.797	A
A-B	10			10			
A-C	655			655			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	486	0.015	7	0.0	7.513	A
C-A	792			792			
C-B	4	497	0.009	4	0.0	7.302	A
A-B	12			12			
A-C	782			782			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	438	0.020	9	0.0	8.380	A
C-A	970			970			
C-B	6	448	0.012	5	0.0	8.139	A
A-B	14			14			
A-C	958			958			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	438	0.020	9	0.0	8.380	A
C-A	970			970			
C-B	6	448	0.012	6	0.0	8.139	A
A-B	14			14			
A-C	958			958			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	486	0.015	7	0.0	7.517	A
C-A	792			792			
C-B	4	497	0.009	5	0.0	7.305	A
A-B	12			12			
A-C	782			782			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	521	0.012	6	0.0	6.991	A
C-A	663			663			
C-B	4	533	0.007	4	0.0	6.799	A
A-B	10			10			
A-C	655			655			

2021 Committed Development with Machynys Hotel, 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
3	Proposed Access	T-Junction	Two-way		0.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2021 Committed Development with Machynys Hotel	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4304 East		✓	786	100.000
B - Proposed Access		✓	57	100.000
C - B4304 West		✓	786	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	21	765
	B - Proposed Access	0	0	57
	C - B4304 West	777	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	0	12
	B - Proposed Access	0	0	0
	C - B4304 West	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.13	8.87	0.2	A
C-A				
C-B	0.02	7.70	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	542	0.079	43	0.1	7.208	A
C-A	585			585			
C-B	7	554	0.012	7	0.0	6.581	A
A-B	16			16			
A-C	576			576			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	51	511	0.100	51	0.1	7.825	A
C-A	699			699			
C-B	8	522	0.016	8	0.0	7.008	A
A-B	19			19			
A-C	688			688			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	63	469	0.134	63	0.2	8.860	A
C-A	855			855			
C-B	10	477	0.021	10	0.0	7.698	A
A-B	23			23			
A-C	842			842			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	63	469	0.134	63	0.2	8.867	A
C-A	855			855			
C-B	10	477	0.021	10	0.0	7.698	A
A-B	23			23			
A-C	842			842			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	51	511	0.100	51	0.1	7.834	A
C-A	699			699			
C-B	8	522	0.016	8	0.0	7.011	A
A-B	19			19			
A-C	688			688			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	542	0.079	43	0.1	7.222	A
C-A	585			585			
C-B	7	554	0.012	7	0.0	6.584	A
A-B	16			16			
A-C	576			576			

2021 Committed Development with Machynys Hotel, 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
3	Proposed Access	T-Junction	Two-way		0.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2021 Committed Development with Machynys Hotel	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4304 East		✓	909	100.000
B - Proposed Access		✓	30	100.000
C - B4304 West		✓	914	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	39	870
	B - Proposed Access	0	0	30
	C - B4304 West	897	17	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	0	1
	B - Proposed Access	0	0	0
	C - B4304 West	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	8.95	0.1	A
C-A				
C-B	0.04	8.55	0.0	A
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	519	0.044	22	0.0	7.250	A
C-A	675			675			
C-B	13	528	0.024	13	0.0	6.988	A
A-B	29			29			
A-C	655			655			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	27	484	0.056	27	0.1	7.879	A
C-A	806			806			
C-B	15	491	0.031	15	0.0	7.567	A
A-B	35			35			
A-C	782			782			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	435	0.076	33	0.1	8.945	A
C-A	988			988			
C-B	19	440	0.043	19	0.0	8.547	A
A-B	43			43			
A-C	958			958			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	435	0.076	33	0.1	8.949	A
C-A	988			988			
C-B	19	440	0.043	19	0.0	8.548	A
A-B	43			43			
A-C	958			958			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	27	484	0.056	27	0.1	7.885	A
C-A	806			806			
C-B	15	491	0.031	15	0.0	7.572	A
A-B	35			35			
A-C	782			782			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	519	0.044	23	0.0	7.258	A
C-A	675			675			
C-B	13	528	0.024	13	0.0	6.991	A
A-B	29			29			
A-C	655			655			

2026 Committed Development with Machynys Hotel, 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
3	Proposed Access	T-Junction	Two-way		0.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2026 Committed Development with Machynys Hotel	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4304 East		✓	815	100.000
B - Proposed Access		✓	57	100.000
C - B4304 West		✓	823	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	21	794
	B - Proposed Access	0	0	57
	C - B4304 West	814	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	0	12
	B - Proposed Access	0	0	0
	C - B4304 West	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.14	9.06	0.2	A
C-A				
C-B	0.02	7.85	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	536	0.080	43	0.1	7.294	A
C-A	613			613			
C-B	7	548	0.012	7	0.0	6.655	A
A-B	16			16			
A-C	598			598			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	51	504	0.102	51	0.1	7.947	A
C-A	732			732			
C-B	8	514	0.016	8	0.0	7.108	A
A-B	19			19			
A-C	714			714			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	63	460	0.136	63	0.2	9.053	A
C-A	896			896			
C-B	10	469	0.021	10	0.0	7.847	A
A-B	23			23			
A-C	874			874			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	63	460	0.136	63	0.2	9.060	A
C-A	896			896			
C-B	10	469	0.021	10	0.0	7.847	A
A-B	23			23			
A-C	874			874			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	51	504	0.102	51	0.1	7.958	A
C-A	732			732			
C-B	8	514	0.016	8	0.0	7.112	A
A-B	19			19			
A-C	714			714			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	536	0.080	43	0.1	7.306	A
C-A	613			613			
C-B	7	548	0.012	7	0.0	6.658	A
A-B	16			16			
A-C	598			598			

2026 Committed Development with Machynys Hotel, 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
3	Proposed Access	T-Junction	Two-way		0.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2026 Committed Development with Machynys Hotel	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4304 East		✓	952	100.000
B - Proposed Access		✓	30	100.000
C - B4304 West		✓	950	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	39	913
	B - Proposed Access	0	0	30
	C - B4304 West	933	17	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - B4304 East	B - Proposed Access	C - B4304 West
From	A - B4304 East	0	0	1
	B - Proposed Access	0	0	0
	C - B4304 West	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	9.24	0.1	A
C-A				
C-B	0.04	8.82	0.0	A
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	510	0.044	22	0.0	7.381	A
C-A	702			702			
C-B	13	519	0.025	13	0.0	7.109	A
A-B	29			29			
A-C	687			687			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	27	473	0.057	27	0.1	8.064	A
C-A	839			839			
C-B	15	480	0.032	15	0.0	7.743	A
A-B	35			35			
A-C	821			821			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	422	0.078	33	0.1	9.240	A
C-A	1027			1027			
C-B	19	427	0.044	19	0.0	8.823	A
A-B	43			43			
A-C	1005			1005			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	422	0.078	33	0.1	9.244	A
C-A	1027			1027			
C-B	19	427	0.044	19	0.0	8.825	A
A-B	43			43			
A-C	1005			1005			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	27	473	0.057	27	0.1	8.070	A
C-A	839			839			
C-B	15	480	0.032	15	0.0	7.746	A
A-B	35			35			
A-C	821			821			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	510	0.044	23	0.0	7.388	A
C-A	702			702			
C-B	13	519	0.025	13	0.0	7.113	A
A-B	29			29			
A-C	687			687			

Appendix H

Travel Survey Example

Crowne Plaza / Holiday Inn 2019 Staff Travel Survey

Please answer the following questions by ticking the box that best fits your answer, or if your answer is 'other', write your answer in the space provided.

Which of the following best describes your normal working pattern?	☐ Core Working Hours (Monday to Friday) ☐ Shift Work
Are you a permanent or part time staff member?	☐ Permanent Staff ☐ Part time Staff
Which days of the week, on average, do you work? (Tick all that apply)	☐ Monday-Friday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday ☐ Varies each week
Which building is your principal place of work?	☐ Crowne Plaza ☐ Holiday Inn ☐ Split
From what area/town do you travel to work each day?	_____

How do you usually travel TO work? Tick one box only, for the longest part, by distance, of your usual journey to work.	☐ Bicycle (pedal powered) ☐ Bus, Minibus or Coach ☐ Shuttle Bus ☐ Driving a Car (you drive and require parking) ☐ Motorcycle or Scooter ☐ On Foot ☐ Passenger in a car with driver going to different destination ☐ Passenger in a car with driver going to the same destination ☐ Train or DART ☐ Luas ☐ Taxi ☐ Other (please specify _____
What is your main reason for choosing that mode? (select up to three)	☐ Traffic Congestion ☐ Availability of car parking ☐ Lack of public transport (time/routes) ☐ Hours of work ☐ Disability ☐ Cheapest ☐ Comfort ☐ Environmentally-friendly ☐ Lack of alternative ☐ Less stressful ☐ Other commitments (e.g. school run, creche etc) ☐ Quickest ☐ Reliability ☐ Other (please specify)

	_____
If you usually use more than one mode of transport as part of your journey, how do you usually travel for the shorter part, by distance? Tick only one box. (e.g. bike from train station, dropped to a Luas stop)	☐ Bicycle (pedal powered) ☐ Bus, Minibus or Coach ☐ Shuttle Bus ☐ Driving a Car (you drive and require parking) ☐ Motorcycle or Scooter ☐ On Foot ☐ Passenger in a car with driver going to different destination ☐ Passenger in a car with driver going to the same destination ☐ Train or DART ☐ Luas ☐ Taxi ☐ N/A ☐ Other (please specify) _____
What is your most regular arrival time to work?	☐ 6:00 – 9:00 ☐ 9:00 – 12:00 ☐ 12:00 – 15:00 ☐ 15:00 – 18:00 ☐ After 18:00 ☐ Shift Work – Arrival Time varies ☐ Other (please specify) _____

What is your most regular departure time from work?	☐ Before 16:00 ☐ 16:00 - 17:00 ☐ 17:00 - 18:00 ☐ 18:00 - 19:00 ☐ 19:00 – 20:00 ☐ 20:00 - 21:00 ☐ 21:00 - 22:00 ☐ After 22:00 ☐ Shift Work - Departure Time Varies ☐ Other (please specify) _____
How long does it take you to get to work (door to door)?	☐ Less than 15 minutes ☐ 15 - 30 mins ☐ 30 - 45 mins ☐ 45 – 60 mins ☐ 60 – 90 mins ☐ More than 90 mins
How far do you travel to work (door to door)?	☐ Less than 3km ☐ Between 3 and 5km ☐ Between 5 and 10 km ☐ Between 10 and 30km ☐ Between 30 and 60 km ☐ More than 60km

Do any of the following factors affect your mode choice to and from work? Please choose up to three reasons	☐ Traffic Congestion ☐ Availability of car parking ☐ Lack of public transport (time/routes) ☐ Hours of work ☐ Disability ☐ Cost ☐ Comfort ☐ Environmentally-friendly ☐ Lack of alternative ☐ Less stressful ☐ Other commitments (e.g. school run, creche etc) ☐ Quickest ☐ Reliability ☐ Other (please specify) _____
If you usually drive to and from work by car, do you usually have a car-parking space available to you at work?	☐ Always ☐ Sometimes ☐ Never ☐ Don't Know ☐ N/A
How many people normally travel in your car TO work?	☐ Just me (no passengers) ☐ Me plus one passenger ☐ Me plus two passengers or more ☐ N/A
Do you need a car for doing your job throughout the day?	☐ Always (3 times per week or more) ☐ Never / Rarely ☐ Sometimes (less than 3 times per week) ☐ N/A

Do you need your car for other pick ups or drop offs (for example the school run, creche etc) on your commute?	☐ Yes ☐ No ☐ N/A
Are there any additional incentives that would make you consider alternative travel methods to/from work other than by car? Please tick all that apply.	☐ Shuttle bus service ☐ Priority parking for car sharing staff ☐ Better-located and more secure cycle parking ☐ More / improved showers ☐ Drying room for cycling gear ☐ More/ improved Lockers ☐ Improved bicycle subsidy scheme ☐ Trial passes for public transport services ☐ N/A ☐ Other (please specify) _____
Do you live within 400 metres (approx. 6 minutes walk) of a direct bus route to work?	☐ Yes ☐ No ☐ Don't Know
If you travel by bus to work, which of the following bus routes do you use most regularly?	☐ 16 ☐ 27b ☐ 33 ☐ 41 ☐ 41b ☐ Shuttle Bus ☐ N/A ☐ 41c ☐ 787 ☐ 4 ☐ 13 ☐ 1 ☐ 104 ☐ Other (please specify) _____
Do you own a bicycle?	☐ Yes ☐ No

Are you aware that Tax Saver tickets for public transport are available? This can save you approximately 30-50% off the price of the ticket	☐ Yes ☐ No
If you currently use public transport for your journey to or from work, do you avail of Tax Saver tickets?	☐ Yes ☐ No
Are you aware that we have the Bike to Work scheme in place, whereby you can purchase a tax-free bicycle and related equipment?	☐ Yes ☐ No
Do you avail of the Bike to Work scheme?	☐ Yes ☐ No
If you have changed the mode of transport you use on the commute over the past two years, please can you indicate the main reason for this change:	☐ Financial reasons ☐ Health or fitness reasons ☐ Sustainable Transport promotions in my workplace e.g. Cycle to Work promotion, travel displays, walking / cycling facilities ☐ The infrastructure available to me changed (buses introduced / removed, cycle lanes installed, etc) ☐ I changed job, or the nature of my work changed ☐ I moved house ☐ N/A ☐ Other (please specify) _____
Do you have any other comments on travel to or from work that have not been previously covered?	