ARUP

Carmarthenshire County Council

Machynys Hotel

Transport Assessment

Reference:

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Job number 278688-11

Ove Arup & Partners Limited
4 Pierhead Street
Capital Waterside
Cardiff
CF10 4QP
United Kingdom
arup.com

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1. Introduction

1.1 Background

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 hotel, located on land to the east of Pentre Nicklaus Avenue and south of the B4304, Machynys, Llanelli, Carmarthenshire. The application is submitted to Carmarthenshire County Council (CCC) on behalf of the Applicant, Carmarthenshire County Council.

Previous and current relevant planning applications submitted within the area include:

- TA for a 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 Residential Development (9 residential units) located to the south of the proposed hotel site. The proposal is being prepared by Arup and still under review. The application will be submitted in 2024; 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 to the previous TA prepared by Waterman (as detailed above) in support of the development of a 120-bed hotel. The TA considers the transport implications of the proposed hotel development on the surrounding area and provides detail on measures to encourage the uptake of sustainable transport by future visitors, employees, and deliveries associated with the proposed development.

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

- 120 beds across four floors – including office, meeting and function rooms and a restaurant;
- A coach and car drop-off area;
- Active travel connections and vehicular access;
- Cycle storage; and
- Visitors and employee car park.

1.2 Scoping

The consent 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, a further scoping exercise has been undertaken to ensure that CCC agree with the approach for assessment. Following discussion with the planning department at CCC, it was agreed that an updated 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 whilst also accounting for updates in terms of committed development sites within the site's proximity.

1.3 Report Structure

This report is structured as follows:

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

2. Legislation and Policy Context

2.1 National Policy

2.1.1 Planning Policy Wales (PPW) Edition 12

PPW sets out the land use planning policies of the Welsh Government and establishes the key principles for the planning system in Wales. It is supplemented by a series of Technical Advice Notes (TANs). The primary objective 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. It emphasises well-being by highlighting the role of placemaking in development management decisions to create sustainable places and improve the well-being of communities.

Aligning with the key principles of PPW Edition 12, the development proposal has sought to enhance the accessibility by walking and cycling, by segregating traffic from pedestrians and cyclists within the site to create a safe and cycling-friendly environment. The development will also improve the quality of place and create safe access where people want to walk, cycle and enjoy. The following key planning principles are relevant to the hotel development:

- Maximising environmental protection and limiting environmental impact;
- Facilitating accessible and healthy environments; and
- Growing our economy in a sustainable manner.

2.1.2 Well-being of Future Generation (Wales) Act 2015

The main goals of the Act are to improve the social, economic, environmental, and cultural well-being of Wales. It prompts public bodies to think more about long-term impacts, encourages collaboration to work better with one another - particularly people and communities. It also seeks to prevent problems by taking a more joined up approach to create a Wales that we all want to live in, now and in the future. Seven well-being goals have been identified within the Act to ensure public bodies are working towards the same goals, and include the following:

- 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 are able to 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.

The development itself, through its design and its integration with the surrounding environment, encourages active travel modes hence promoting a healthier and more globally responsible Wales. In addition, it will stimulate economic growth within the local area and create employment opportunities by boosting tourism, therefore contributing to a more equal Wales. The biodiversity rich landscape will promote a vibrant culture by encouraging visitors and guests to explore the local area and participate in recreation activities nearby. It will also support the local economy.

2.1.3 Active Travel (Wales) Act 2013

The Active Travel (Wales) Act 2013 aims to make active travel the most attractive option for most shorter journeys. The Act requires local authorities in Wales to produce active travel maps and deliver year on year improvements in active travel routes and facilities. It requires highways authorities in Wales to make enhancements to routes and facilities for pedestrians and cyclists in all new road schemes and to have regard to the needs of walkers and cyclists in a range of other highway authority functions.

In line with the Act, CCC have prepared Active Travel Network Maps (ATNM) including 'existing' and 'potential future routes' which seek to improve the attractiveness, comfort, directness, safety and coherence of the routes.

The development is situated within close proximity to some of the routes identified. Provision for walking and cycling will be made as part of the development and careful consideration will be given to providing connections to existing and potential future routes. This will ensure that the number of visitors and staff that travel to and from the site by active travel modes is maximised.

2.1.4 Future Wales: The National Plan 2040

Future Wales – The National Plan 2040 is a new development plan which provides a national spatial strategy setting out the priorities for Wales over the next 20 years through the planning system, including 'sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities'. It consists of 11 outcomes to be achieved over the next ~20 years.

Policy 12 outlines a number of measures that the Welsh Government will prioritise investment. These are listed below and seek to improve regional connectivity across Wales:

- **Active Travel** – Prioritising walking and cycling for all local travel. We will support the implementation of the Active Travel Act to create comprehensive networks of local walking and cycling routes that connect places that people need to get to for everyday purposes.
- **Bus** - Improve the legislative framework for how local bus services are planned and delivered. We will invest in the development of integrated regional and local bus networks to increase modal share of bus travel and improve access by bus to a wider range of trip destinations.
- **Ultra-Low Emission Vehicles** – Support the roll-out of suitable fuelling infrastructure to facilitate the adoption of ultra-low emission vehicles, particularly in rural areas.

The Framework Travel Plan produced for the development will help encourage sustainable travel and active travel modes and hence reducing reliance on the private car. Adequate provision will also be made for ULEVs and more spaces could be provided in future as demand increases for spaces.

2.1.5 Llwybr Newydd - The Wales Transport Strategy 2021

This plan has been in place since 2021. It sets out Welsh Government's vision for how the transport system can help deliver the priorities for Wales, helping to create a more prosperous, green, and equal society. The three priorities of the strategy include:

- bring services to people in order to reduce the need to travel;
- allow people and goods to move easily from door to door by accessible, sustainable transport; and
- encourage people to make the change to more sustainable transport.

The development proposal will contribute to the priorities of the Strategy by providing adequate numbers of cycle and car parking spaces, including accessible and EV charging bays, which will help enable future visitors and staff to travel easily to and from the site by sustainable transport modes. This hence contribute towards decarbonisation goals and climate resilience.

2.1.6 Technical Advice Note (TAN) 18: Transport

TAN 18 is used to supplement PPW, which expands on the integration between land use planning and transport infrastructure. The development proposal has adopted the following key principles stated in TAN 18 to create a basis for sustainable travel patterns:

1. Ensuring new development is located at accessible locations to access education, employment, shops and other services by public transport, walking and cycling, and to encourage multi-purpose trips;
2. Ensuring appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;
3. Promoting cycling and walking; and
4. Supporting the provision of high quality and inclusive public transport.

2.1.7 CSS Wales Parking Standards 2014

These Parking Standards seek to ensure a transparent and consistent approach to the requirements and provision of parking according to land use and location and the required provision for commercial vehicles, cars and cycles. The proposed development layout and parking provision are designed in accordance with the Parking Standards where appropriate to accommodate the needs of the staff and guests, considering those uses to serve as destinations on their own such as the restaurant.

2.2 Regional Policy

2.2.1 South West Wales Regional Transport Plan (Emerging)

The emerging SWWRTP is working in progress to identify opportunities to develop "a more effective, more sustainable transport network in the region" – which aligns with the priorities set out by Llwybr Newydd. It also aims to fully integrate land use choices together with meeting development's transport use. The location of the development proposal is connected by local highway network, rail and bus services. Given the active travel route connections on site, it will also provide continuous and last-mile infrastructure to support walking and cycling in the wider area.

2.3 Local Policy

2.3.1 Local Development Plan 2006 – 2021 (Adopted)

Carmarthenshire Local Development Plan (LDP) 2006 – 2021, adopted in 2014, supports sustainable development encouraging an integrated and sustainable transport system. The following policies are considered 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.

– 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.

It states that 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.

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 May / June 2025.[1] Until the revised LDP is adopted, the existing 2006-2021 LDP will remain in place for all planning decisions, in line with advice issued by the Welsh Government. The following policies are considered relevant to the proposed development:

- Strategic Policy SP 11: The Visitor Economy
  - Exhibit high quality design and placemaking principles;
  - Contribute to the protection and enhancement of the natural environment;
  - Add value to our visitor economy;
  - Are sustainably and appropriately located.
- Strategic Policy SP17: Transport and Accessibility. 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] Revised Delivery Agreement - Revised Carmarthenshire Local Development Plan 2018 - 2033

- Reducing the need to travel, particularly by private motor car;
- Addressing social inclusion through increased accessibility to employment, services, and facilities;
- 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;
- Promoting the efficient use of the transport network;
- Enhancing accessibility to places of employment, homes, services, facilities, and other significant trip generating proposals at locations with access to appropriate transport infrastructure;
- The incorporation of design and access solutions within developments to promote accessibility;
- Providing walking and cycling routes, linking in with active travel and green and blue infrastructure networks;
- Providing for new technological solutions through Ultra Low Emission Vehicles Charging Points in new developments; and,
- Adopting a sustainable approach to the design, function, and layout of new development, including providing appropriate levels of parking.

2.3.3 CCC Highway Design Guide 2018

This guidance is produced by CCC, which provides guidance on preparing transport proposals and providing transport infrastructure and services to support new development. It also sets out the associated requirements during planning and construction. Throughout the design process of the development, references have been made to meet the design principles and standards in relation to hierarchy of transport modes, and access and connectivity both internally and externally.

3. Existing Conditions

3.1 Site Context

The application site as shown in Figure 3.1, measuring circa 1.56ha, is located approximately 2.4 kilometres to the south-east of Llanelli town centre and overlooks the Burry Inlet and the Millennium Coastal Path to the south and west.

It is bounded to the north by the B4304 Coastal Link Road, to the east by greenfield land and the Nicklaus Avenue access road to the Machynys Peninsular Golf & Country Club further east, to the south by residential properties within Pentre Nicklaus Village, and to the west by Pentre Nicklaus Avenue.

The site is currently vacant and benefits from public access linking Pentre Nicklaus Avenue to the Millennium Coastal Path. The site also benefits from good transport links with bus stops on the B4304. Llanelli Train Station is approximately 1 mile north of the application site and pedestrian links also available along the B4304.

Figure 3.1 Site Location Plan

3.2 Active Travel Provision

The site is bounded to the north by the B4304 Coastal Road which has an existing shared cycleway/footway (approximately 2.8m in width) which runs parallel along the north of the carriageway. At the nearby Delta Lakes and Machynys roundabouts to the east and west of the site 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, which is also the case for the majority 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.

Referring to the Active Travel Network Map (ATNM) network surrounding the site as shown in Figure 5.1 (with more details covered in Section 5.1), there is no existing active travel route identified in ATNM to the immediate site boundary. The existing walking routes are rather fragmented and scattered in the wider local area. It is noted that the routes in ATNM are identified and classified according to the Welsh Government's active travel standards, which means substandard routes might not be shown.

Figure 3.2 presents the registered Public Rights of Way (PROW), which is captured from CCC PROW online map. The plan also shows the local facilities within the vicinity of the development site including a public house/club/bars, parks and retail.

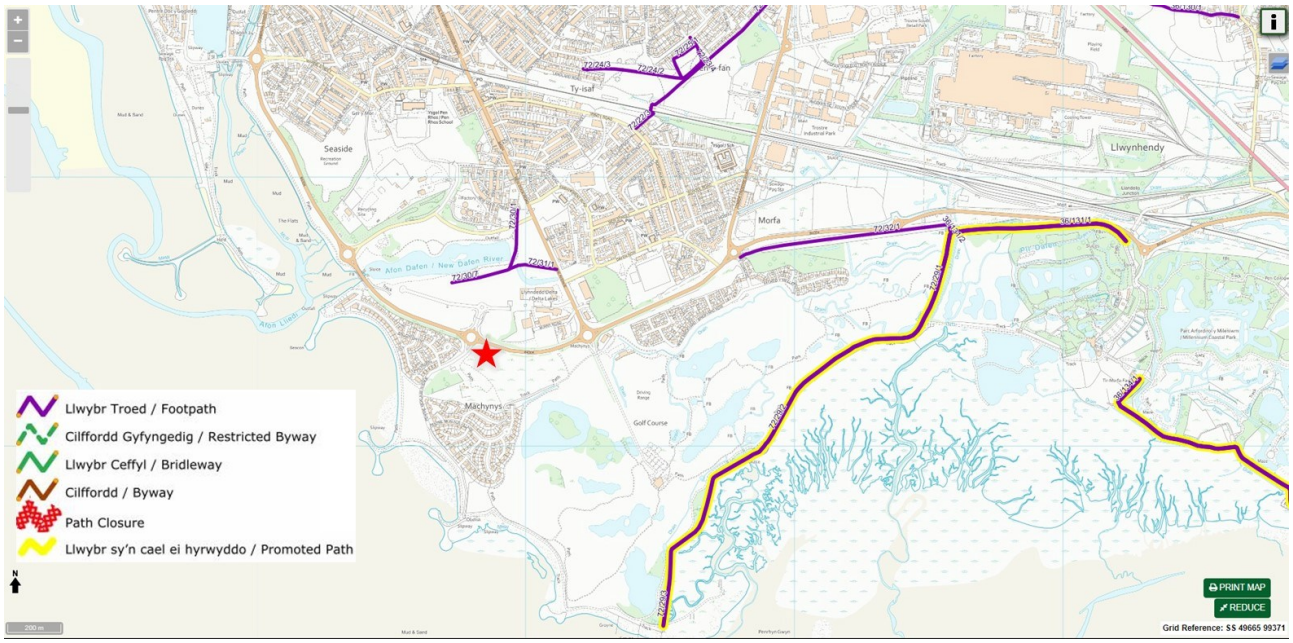


Figure 3.2 Public Right of Way

Figure 3.3 shows the National Cycle Network (NCN) produced by Sustrans, which shows there is a traffic-free cycling route section running along the coastline further south to the development site. It is a long east-to-west route stretching from London to Fishguard in west Wales.

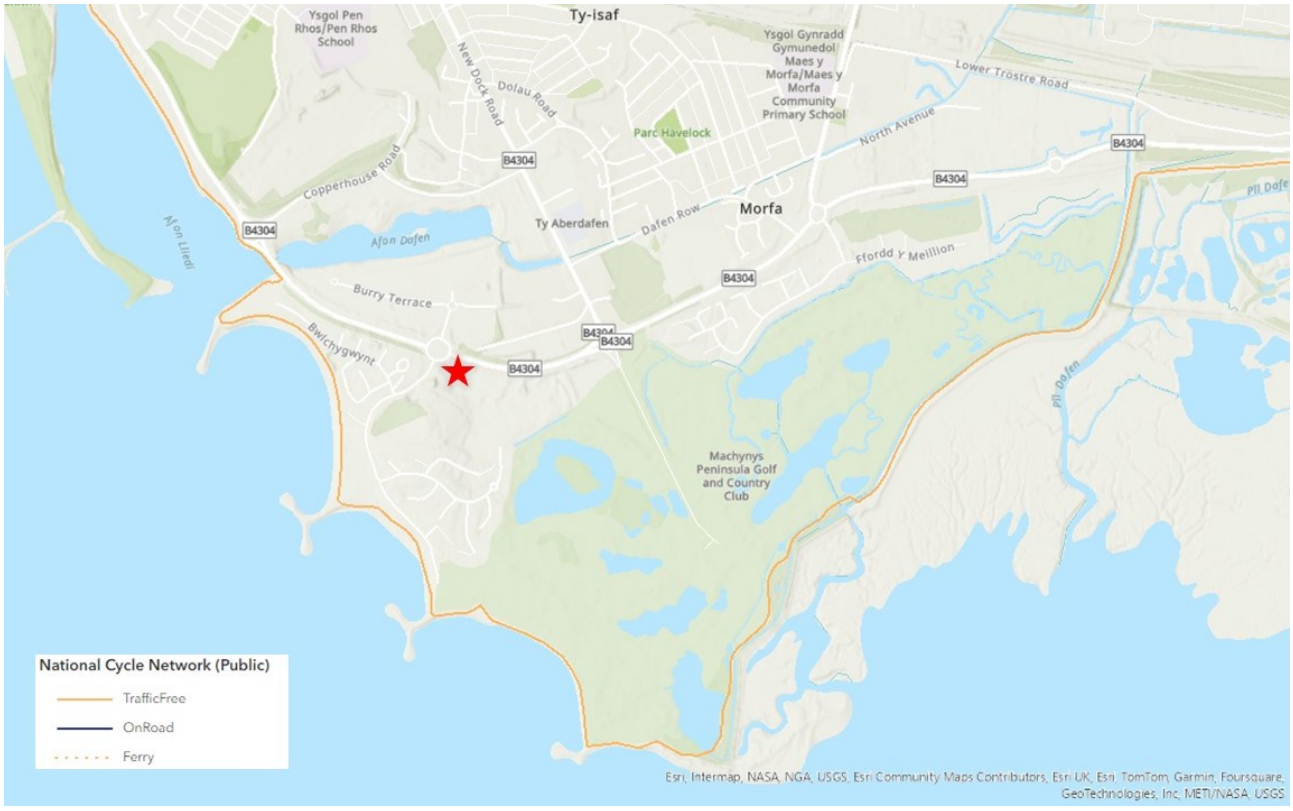


Figure 3.3 National Cycle Network

Figure 3.4 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 3.5 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 Parc Trostre retail area. 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.

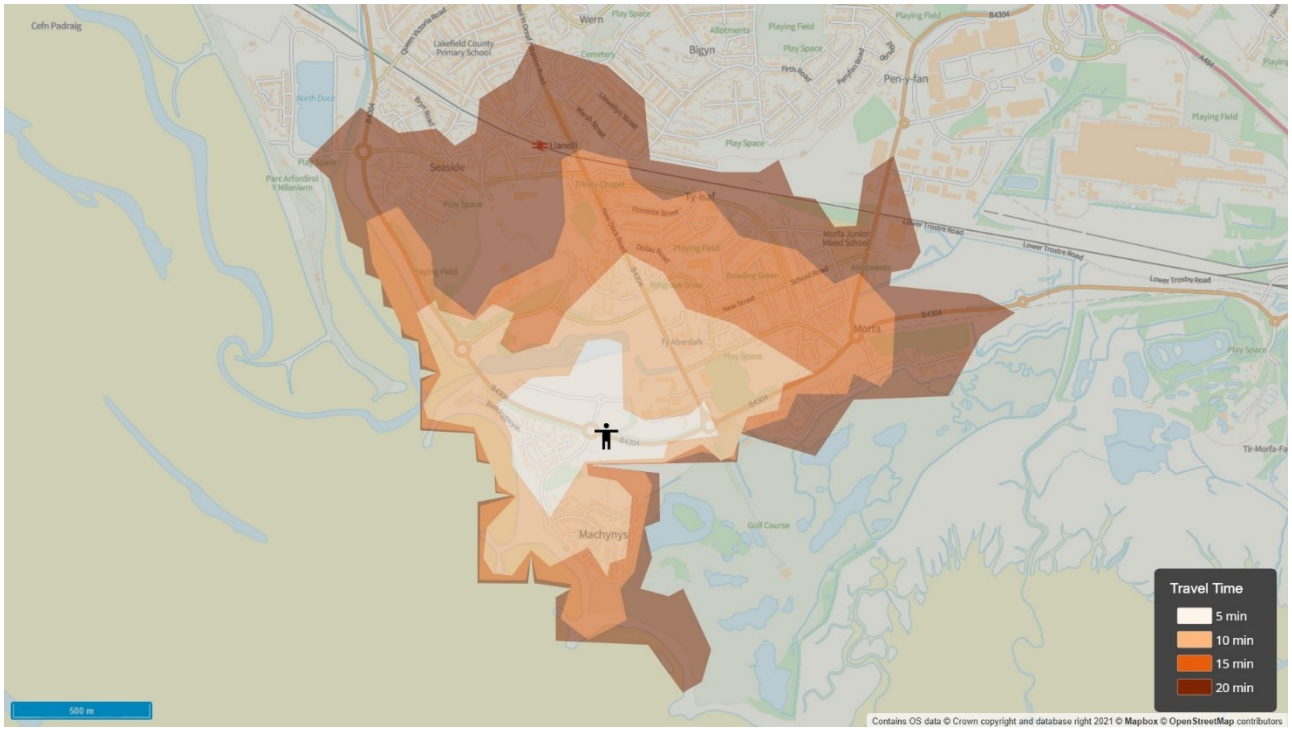


Figure 3.4 Walking Accessibility

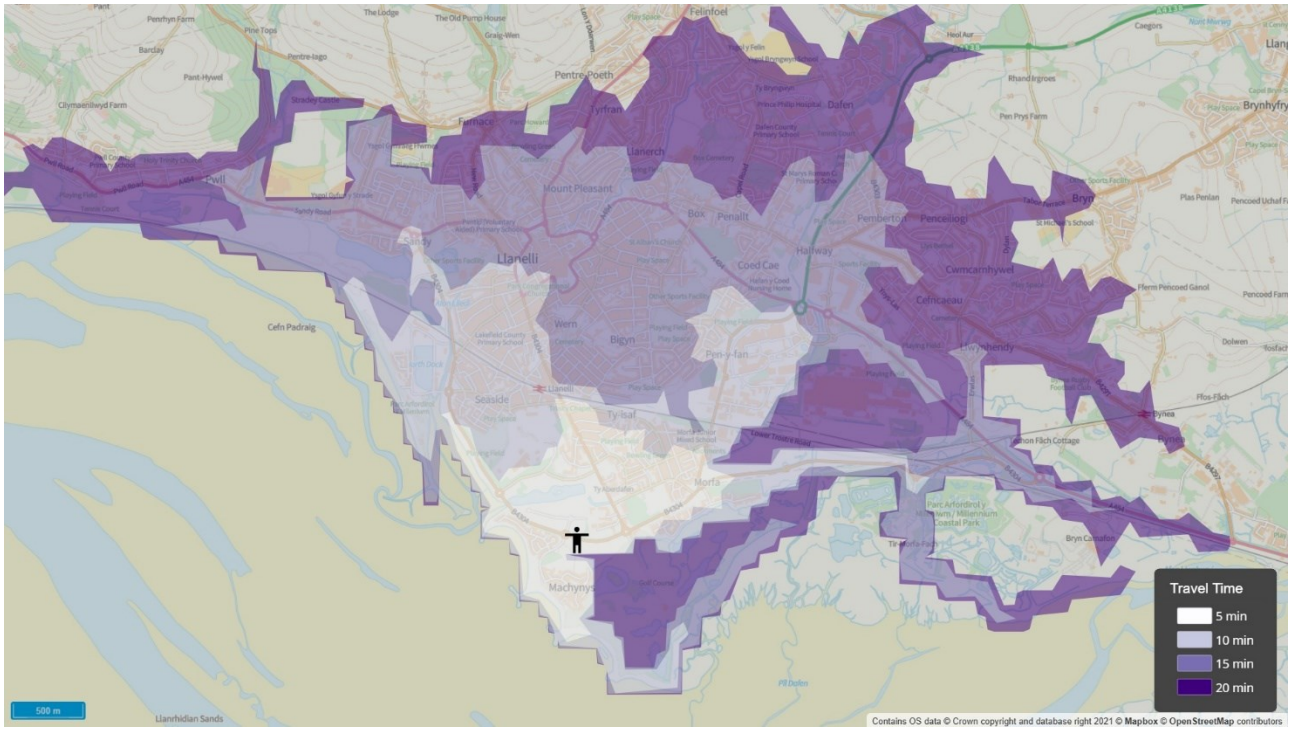


Figure 3.5 Cycling Accessibility

3.3 Public Transport

3.3.1 Bus

The closest bus stops to the site are located on both sides of New Street, approximately 800m from the site access. The stop is basic in nature and lacks facilities such as a flag, timetable information or shelter.

The bus stops are served by the circular L1 service which originates and terminates at Llanelli Bus Station. The details of the route set out in Table 3.1 and Figure 3.6, obtained from First Cymru's website as of 2nd October 2024. 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.

Service	Route	Operator	Service Frequency daytime/evening (minutes)	
			Monday-Saturday	Sunday & Bank Holidays
L1	Llanelli Town circular via Seaside	First Cymru	105/-	No service

Table 3.1 Local Bus Timetable

Figure 3.6 First Cymru L1 Bus Network Map

3.3.2 Rail

Llanelli railway station is located some 1.6km 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 (06:10-12:40) and Saturdays (07:00-13:30) and has facilities which include a waiting room, seating area, toilets, cycle storage (on the platform with shelter), car parking and a taxi rank.

As part of the Transport for Wales' Station Improvements Plan and Network Rail's Access for All, enhancements to the station have recently been completed including accessible toilets, improved shelters and additional seating, help points, CCTV and the bridge span to provide step-free access.

As Table 3.2 shows, train services calling at Llanelli are operated by Transport for Wales and Great Western Railway, with increased frequency following the Swansea Bay and West Wales Metro development.

Destination	Frequency			Operator
	Mon-Fri	Sat	Sun	
Milford Haven	120 mins	5 per day	7 per day	Transport for Wales
Pembroke	120 mins	90-120 mins	4 per day	Transport for Wales
Carmarthen	20-75 mins	20-75 mins	20-120 mins	Transport for Wales / Great Western Railway
Swansea	15-60 mins	15-60 mins	30-60 mins	
Cardiff	15-60 mins	15-60 mins	60 mins	

Table 3.2 Rail Services and Frequencies from Llanelli

3.4 Local Highway Network

Figure 3.7 shows the local highway network surrounding the site. 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 30/40mph speed limit and at-grade roundabout junctions at regular intervals providing access to development areas. 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.

Previous 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.

CCC worked in partnership with Welsh Government on a major highway improvement scheme – M4 Junction 48 Improvements – completed in the winter of 2021. The project has significantly improved traffic flows at this crucial artery serving the Llanelli area and eased traffic congestion.

Figure 3.7 Local Highway Network

3.5 Road Safety

Accident data for the most recent available five-year period (2018 – 2022) 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.

No accident trend has been identified around 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.

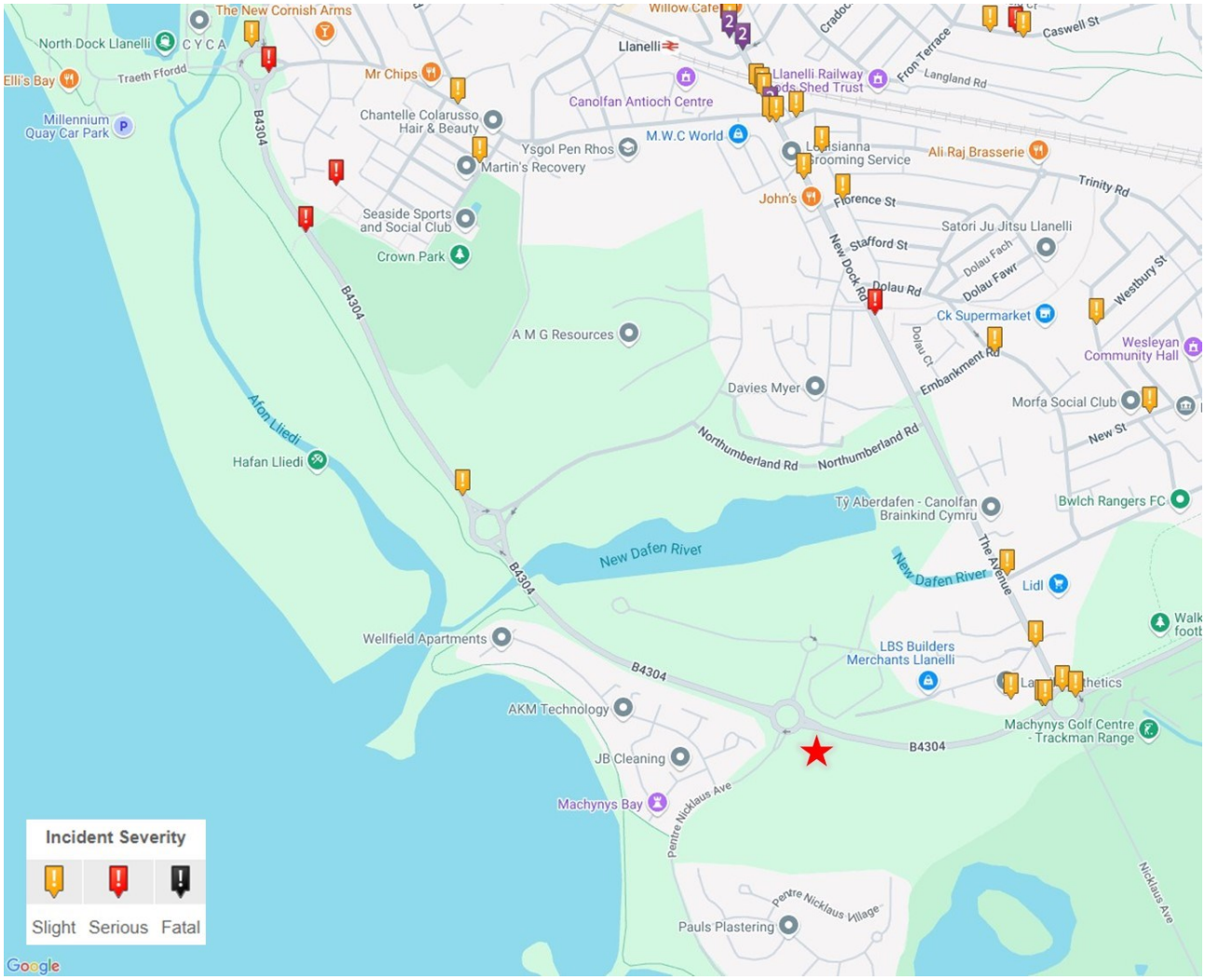


Figure 3.8 Road Traffic Collision

3.6 Existing Traffic Flows

Classified turning counts have been used from the LWLV planning application given its locality to the proposed development site. The surveys were completed on Wednesday 5 July 2017. In addition, a seven-day Automatic Traffic Count (ATC) survey was undertaken for the period 5 -11 July 2017. Analysis of the data indicates that the AM network peak hour is between 08:00-09:00 with the PM peak hour between 16:30-17:30. TEMPro has been used to account for the traffic growth factors which includes population and future development projections. The methodology and results are detailed in Section 6. Based on the results, there has not been a significant change in the existing traffic as compared to 2017.

Four out of fifteen junctions surveyed have been selected in order to assess the impact of the proposed development. These junctions are listed below, and the locations are illustrated in Figure 3.9.

1. Coastal Link Road/Copperhouse Road, Copperhouse Roundabout;
2. Coastal Link Road/Delta Lakes/Pentre Nicklaus, Delta Lakes Roundabout;
3. Coastal Link Road/The Avenue/Nicklaus Avenue, Machynys Roundabout; and
4. Coastal Link Road/Lower Trostre Road, Morfa Roundabout.

Figure 3.9 Location of roundabouts included for junction assessment

4. Development Proposals

4.1 Introduction

The development will provide 120 beds across four floors, office, meeting and function rooms, a restaurant, rain gardens and biodiversity rich landscape. It incorporates associated infrastructure, including separated pedestrian and vehicular accesses, sheltered cycle parking spaces, a total of 140 car parking spaces (consisting of accessible bays and EV charging spaces). Figure 4.1 illustrates the overview of the hotel on ground floor, where details of these elements will be agreed within the reserved matters process.

Figure 4.1 Ground Floor Sketch Plan

4.2 Site Access

Figure 4.2 illustrates the landscape layout for the site, which includes coach and car drop-off area, active travel routes, vehicular access, cycle storage, and visitors and employee car parking area. Details of these elements will be agreed within the reserved matters process.

Several pedestrian and cycle connections to the proposed hotel will be provided as part of the development. There is also potential to provide an extension to the footpath along the south of the B4304 and an uncontrolled crossing to the shared use path along the north of the site across the B4304 near Delta Lakes roundabout. Improvements to the existing active travel infrastructure will be agreed during the reserved matters stage.

The new primary vehicular access point will be located at the north of the site, linking to the B4304. The vehicular access for deliveries and servicing vehicles will be located at the west of the site which connects to Pentre Nicklaus Avenue. They will both form a simple T-junction with adequate visibility and spaces to ensure vehicles can access and egress safely. Detailed designs of the layout and swept path analysis will form part of the reserved matters process.

Within the site, footways will be provided across the internal road network providing direct accesses to hotel entrance and through the car park, adopting 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. The

drop-off area in front of hotel entrance will allow coaches and taxis to drop off and pick up people, especially for people with mobility issues, to access the hotel seamlessly.

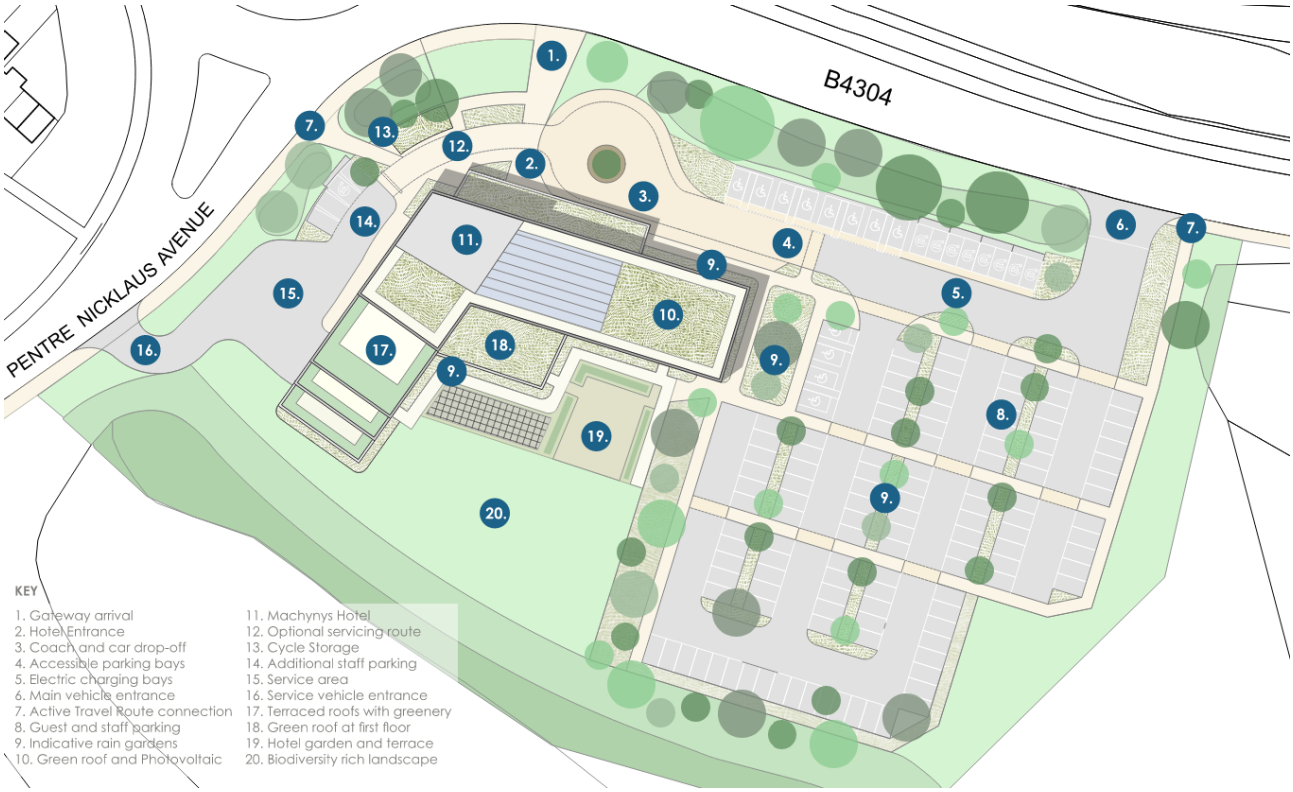


Figure 4.2 Indicative landscape plan

4.3 Vehicle Parking

The hotel development will provide a total of 140 car parking spaces for staff and guests – including 12 accessible bays and 10 EV charging bays – as illustrated in Figure 4.2. The location of all accessible bays is close to the hotel premises, to shorten the distance people in need to travel. The service area to the west of the hotel will provide drop-off and parking for deliveries and servicing vehicles, which is outside the refuse store and service room of the hotel on the ground floor and separated access from the guests.

4.4 Cycle Parking

Within the site, there will be a sheltered cycle storage providing approximately 22 cycle parking spaces for staff and guests, which locates a few steps away from the hotel entrance at the north of the premises where security is enhanced by active frontage and natural surveillance from the adjacent active travel accesses.

5. Future Transport Improvements

5.1 Active Travel

A number of improvements to the local pedestrian and cycle network are proposed as part of the LWLV development that will positively impact the proposed Machynys Hotel development by providing better infrastructure including pedestrian crossings between Coopers Roundabout and Delta Lakes Roundabout, located at the northwest of the proposed hotel. There is also 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 also proposed as part of the LWLV development, which forms part of the Section 278 agreement for the Pentre Awel development to the north of the hotel (where detailed designs are subject to changes as work is still in progress), including:

- Staggered uncontrolled crossings with new tactile paving on the B4304 Coastal Link Road; and
- Narrowing of carriageways (including a reduction of lane on the eastbound) on the B4304 near Delta Lakes Roundabout to shorten the distance for crossing and enhance safety for active travel.

The Active Travel Network Map (ATNM) network surrounding the site is shown in Figure 5.1, showing both existing and proposed active travel routes. The future active travel route to the north of the site (Reference ID: L27) along the B4304 is considered as medium-term priority. It might be appropriate for the development to contribute towards this as part of their responsibilities detailed by the Active Travel (Wales) Act (2013).

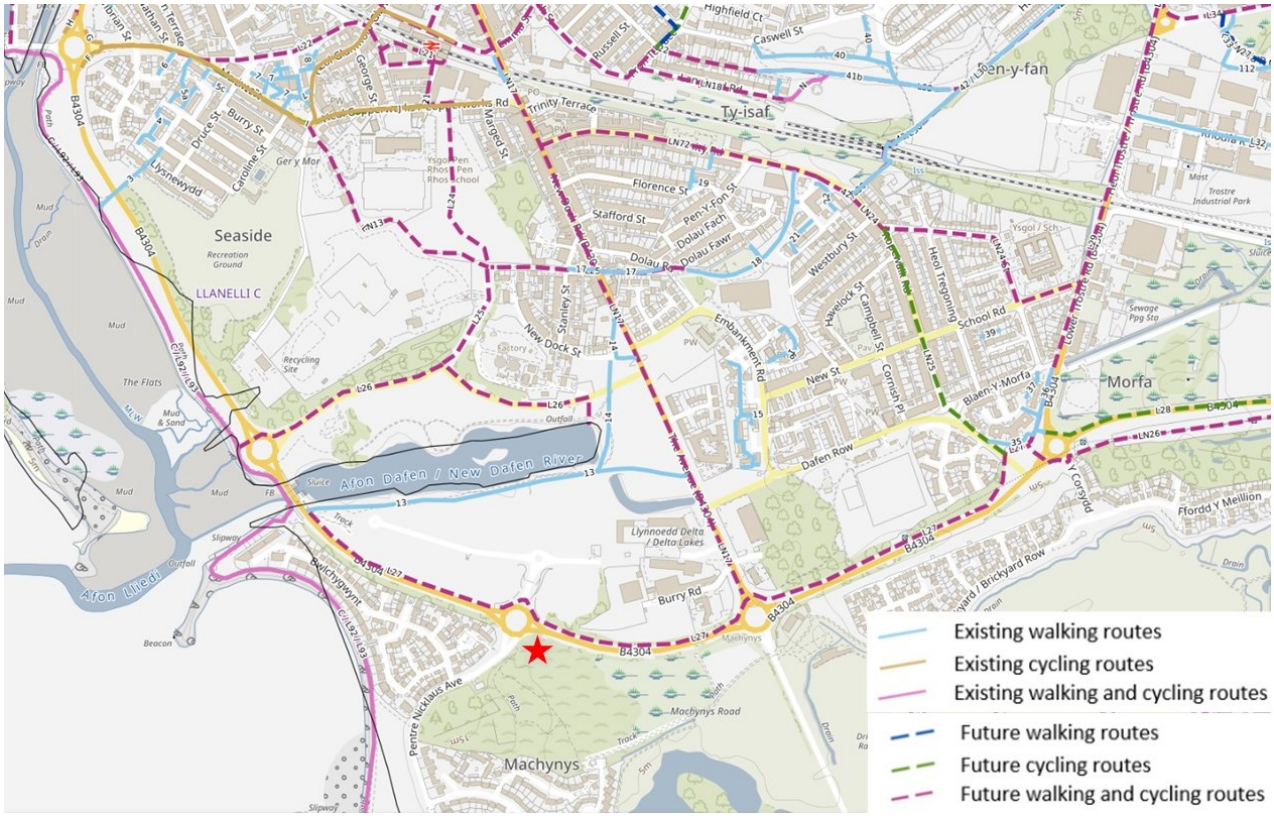


Figure 5.1 Active Travel Network Map

5.2 Bus Enhancements

A range of local bus priority measures in Llanelli will be looked at as part of the West Wales Metro as shown in Figure 5.2. This work will be aligned with further optimisation of bus networks and greater integration with enhanced rail service provision. The project is also exploring decarbonised fleet options.

For the financial year 2024/25, CCC have secured £150,000 in funding from the Local Transport Fund to enhance bus infrastructure in Llanelli urban and the coastal belt corridor – aiming to make bus stops more accessible and improving journey times by sustainable modes of transport.

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. This will also improve the accessibility to the hotel development by bus, encouraging the use of sustainable transport.

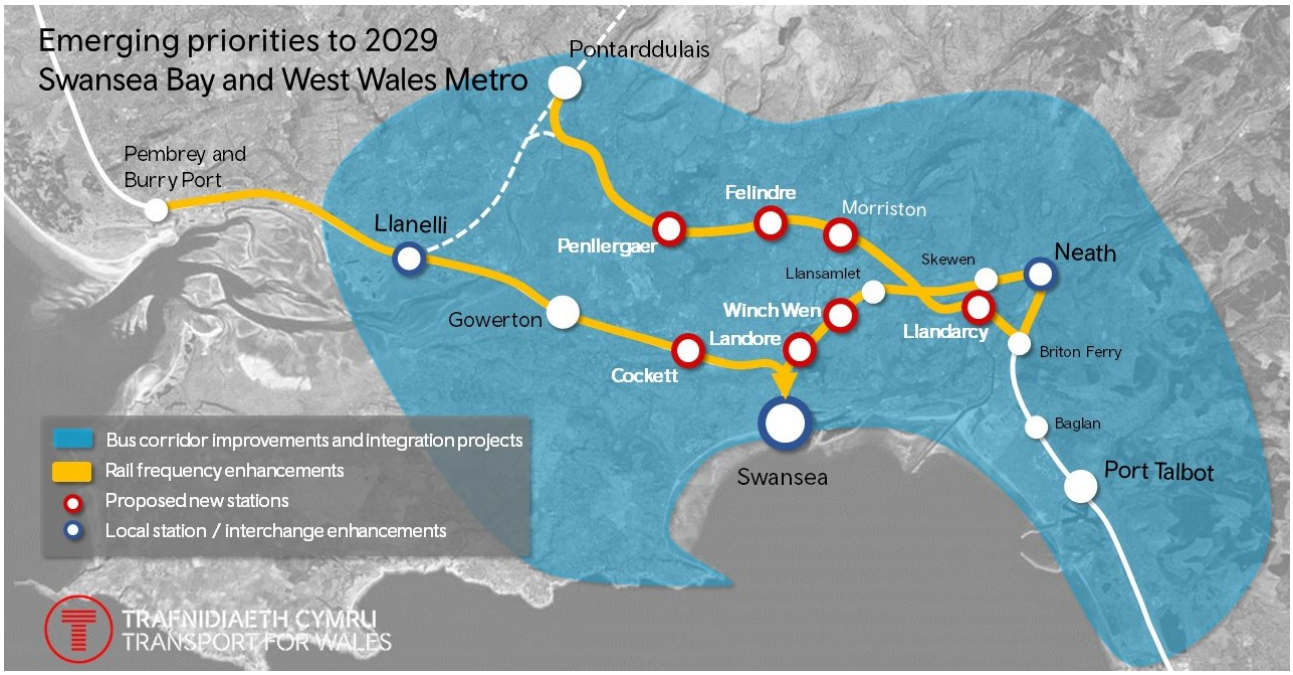


Figure 5.2 Proposed bus corridor improvements

5.3 Rail Enhancements

Llanelli railway station is also included as part of the West Wales Metro programme as shown in Figure 5.3, where rail services frequency is expected to increase and there will be improvements at the interchange, including integration with the local bus network.

Once implemented, these proposals will enhance accessibility to / from Llanelli and help encourage more people to travel by sustainable modes of transport including to the proposed development site.

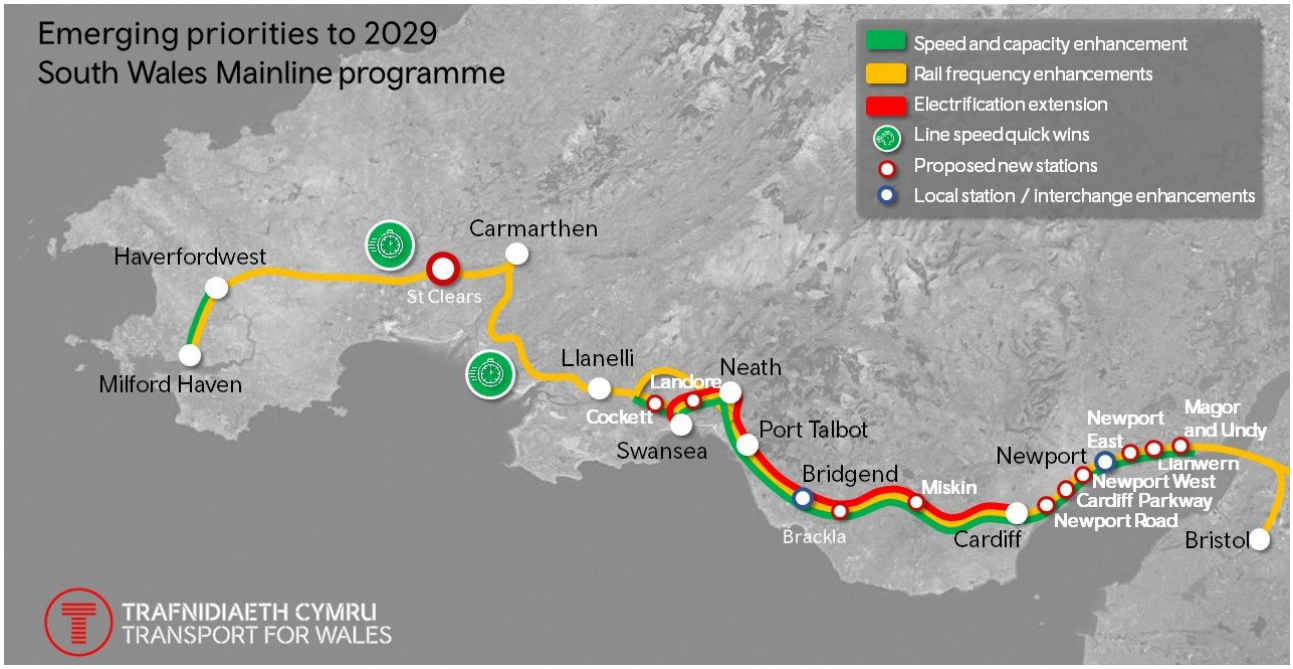


Figure 5.3 Proposed rail frequency enhancements

6. Future Travel Demand

6.1 Introduction

This section 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 local transport network. Vehicle trip generation forecasts have also been produced to assess the development's impact on each of the key junctions identified.

Travel demand has been estimated from average trip rates and scale of the proposed development. The average trip rates used have been interrogated from the TRICS database which 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.

6.2 Methodology

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;
- 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 with and without the development scenario have been calculated using the classified counts from 2017. Using TEMPro, traffic growth factors have been derived which takes into account population and future development projections. The following future year scenarios have been used for the purposes of the assessment:

- 2024 Base Year;
- 2029 with Committed Development; and
- 2029 with Committed Development and Hotel Development.

6.3 Committed Developments

Given the consultation undertaken with CCC as the local planning authority and the local highway authority in 2020, 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 the relevant developments has been taken from the approved LWLV planning application, with documents obtained via the 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 Section 7.4.2 of this TA.

Table 6.1 is a summary of the additional trips expected after the time of the 2017 traffic surveys and the forecast trips predicted to be generated from the LWLV Mix Use Development.

Development	AM Peak Hour			PM Peak Hour		
	In	Out	Two-way	In	Out	Two-way
Machynys East Residential Development (remaining 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

Table 6.1 Committed Development Trips

6.4 Background Traffic Growth

The uptake in active travel and public transport is expected to increase as a result of infrastructure upgrades and enhanced public transport services to the area. However, for robustness the 2017 surveyed data which was used for LWLV will be utilised. A growth factor has been applied to represent a 2024 base year for traffic flows.

Background traffic growth factors have been derived from the Department for Transport (DfT) Trip End Model Presentation Program (TEMPro v8.0). 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 6.2.

Period	Growth Factors	
	AM Peak	PM Peak
2017-2024	1.0701	1.0648
2024-2029	1.0375	1.036

Table 6.2 TEMPro Traffic Growth Factors

6.5 Trip Generation

The TRICS database (version 7.11.2) has been interrogated to establish trip rates for the hotel-led development site. The surveys were based on the following criteria:

- Land use criteria: Hotel;
- Located outside of London, Scotland and Ireland; and
- Edge of town, edge of town centre.

The sites identified in TRICS from the above criteria includes 4 surveys, with an average of 99 beds. A copy of the TRICS report is provided in full at Appendix A.

The trip rates (per bed) of the selected sites are shown in Table 6.3. It also presents the estimated total person trips, during AM and PM peak hours and daily on average, for the development based on 120 beds.

The vehicle trip rates for the proposed development are presented in Table 6.3.

Period	Trip Rates (per bed)			Vehicular Trip Generation		
	In	Out	Two-way	In	Out	Two-way
AM Peak	0.216	0.147	0.363	15	27	42
PM Peak	0.124	0.226	0.35	26	18	44

Table 6.3 Proposed Trip Rate and Trip Generation for Machynys Hotel (120 bed)

The development is forecast to generate between 42 and 44 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) likely following implementation of a Travel Plan.

6.5.1 Trip Distribution

The distribution of trips on the local highway network was been agreed with CCC in 2020. 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 B.

6.5.2 Mode Share

Using TRICS data, mode share proportions have been 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 on the local highway network, it is unlikely that this would be the case. This is particularly the case given the improvements likely within the surrounding area in terms of active travel infrastructure as well as implementation of a Travel Plan and its impacts. .The typical mode share for a hotel development based on TRICs analysis is presented in Table 6.4

Mode	Proportions
Car	80.4%
Public transport (Bus/coach/train)	0%
Cycling	0.9%
Walking	0%
Taxi	4.7%
Motorcycle	0.7%
LGV and OGV	13.2%

Table 6.4 Mode share of hotel trips

7. Transport Implementation Strategy

7.1 Context

The policy context in Section 2 highlighted the importance of sustainability reflected in various national, regional and local policy documents. 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 of 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.

7.2 Objectives

Sections 3 (Evaluation to existing transport conditions) 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 trips;
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.

7.3 Mitigation Measures

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:

- Connecting the development with a network of footways and shared footway/cycleways that intersect and border the site to improving connectivity by active travel modes;
- Provision of pedestrian access points and internal traffic-free routes contributing to a high-quality public realm;
- Provision of cycle parking spaces around the site and at a level that meets CCC guidance;
- 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.

7.4 Assessment

The assessment measures of the transport impact strategy and the key objectives are set out in detail in Section 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 Section 7.4 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 Section 6.

7.4.1 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 7.1.

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

Figure 7.1 Seven Point Assessment Scale of Transport Implementation Strategy 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 (including for ULEVs) 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.

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

Table 7.1 Assessment summary for Transport Implementation Strategy - Operation

7.4.2 Highways

This section presents the capacity assessments undertaken at each of the junctions assessed. 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 120-bed hotel in addition to existing traffic flows and those forecast for committed developments in the area.

7.4.2.1 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, with a vehicular access junction off the B4304 Coastal Road providing access to the north of the hotel. This has been calculated using the 2024 Base traffic flows for robustness.

In line with previous discussions and 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 7.2.

	AM	PM
1. Copperhouse Roundabout (Coastal Link Road/Copperhouse Road)	0.8%	1.5%
2. Delta Lakes Roundabout (Coastal Link Road/Delta Lakes/Access Road)	2.2%	1.7%
3. Machynys Roundabout (Coastal Link Road/The Avenue/Nicklaus Avenue)	2.1%	1.9%
4. Morfa Roundabout (Coastal Link Road/Lower Trostre Road)	1.9%	1.6%

Table 7.2 Percentage Impact Assessment

7.4.2.2 Junction Modelling

Method of Assessment

Junction assessments have been undertaken for four junctions using the Junctions 10 ARCADY module for roundabouts.

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.

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. The opening year of the development will inform any potential mitigation proposals whilst the horizon year is provided as a sensitivity test only.

The following future year scenarios are assessed in order to forecast the traffic impacts of the development proposals on the surrounding highway network:

- 2029 with committed development; and
- 2029 with committed development and Machynys Hotel.

Junction Assessment Results

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

- Copperhouse Roundabout;
- Delta Lakes Roundabout;
- Machynys Roundabout; and
- Morfa Roundabout.

The junction capacity assessments are summarised below, whilst Table 7.4 presents a summary of the junction delay. Full modelling reports can be found in Appendix C.

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 equal to or under 0.46.

Delta Lakes Roundabout

Modelling results indicate that RFC ratios for all arms are equal to or below 0.60, and that delays are negligible, as shown in Table 7.4. Therefore, Delta Lakes Roundabout is forecast to operate comfortably with the forecasted traffic in all future year assessment scenarios.

Machynys Roundabout

Modelling results indicate that RFC ratios for all arms are equal to or below 0.61, and that delays are negligible, as shown in Table 7.4. Therefore, Machynys Roundabout is forecast to operate comfortably with the forecasted traffic in all future year assessment scenarios.

Morfa Roundabout

Table 7.3 presents the capacity adjustments that were made in order for the forecast queues to better reflect the observed queue lengths.

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

Table 7.3 Morfa Roundabout ARCADY Model Capacity Adjustments

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 equal to or under 0.84, and overall junction delay is negligible as shown in Table 7.4. It is therefore demonstrated that the development trips associated with Machynys Hotel can be accommodated without any mitigation.

Junction 10 modelling reports contain further details of the modelling results showing RFC's and delay for each arm of Morfa roundabout and is within Appendix C.

Junction	2024 Base		2029 with Committed Development		2029 with Committed Development and Machynys Hotel	
	AM	PM	AM	PM	AM	PM
Copperhouse Roundabout (Coastal Link Road/Copperhouse Road)	2.47	2.67	2.76	3.02	2.78	3.05
Delta Lakes Roundabout (Coastal Link Road/Delta Lakes/Access Road)	3.05	3.45	4.20	4.29	4.34	4.42
Machynys Roundabout (Coastal Link Road/The Avenue/Nicklaus Avenue)	3.21	3.50	3.92	4.48	4.00	4.61
Morfa Roundabout (Coastal Link Road/Lower Trostre Road)	6.16	9.35	8.59	14.54	8.78	15.49

Table 7.4 Summary of the Junction Capacity Assessment Results, Junction Delay (s) with hotel access

Summary

Based on the results of the junction capacity assessments for junctions, traffic associated with the proposed Machynys Hotel would not increase volumes by no more than 2% presented and no mitigation is proposed for the junctions assessed given the low impact of the proposals.

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

8. Construction Traffic Management

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 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 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 Purpose

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 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.

Travel Plans are aimed at delivering sustainable transport objectives and providing a range of benefits to the community as a whole, including:

- Reducing congestion and peak time conflicts;
- Reducing energy use and harmful transport emissions;
- Facilitating improved public transport through economies of scale and transport efficiency; and
- Improved accessibility.

This FTP has the potential to bring benefits to the hotel and its users, which include visitors and staff. These benefits include:

- Releasing additional site capacity or capital by reducing requirements for car parking spaces and site maintenance costs;
- Reducing business/organisation operating costs by introducing more efficient and sustainable transport options;
- Assisting staff recruitment and retention by encouraging improved accessibility and through a wider range of travel choice;
- Creating a healthier environment and workforce by offering healthier sustainable travel choices; and
- Attracting guests and visitors that choose not to travel by car.

9.3 Travel Plan Structure

This FTP is intended to form a central element of the overall long-term connectivity strategy for the hotel. The structure outline is shown in Figure 9.1.

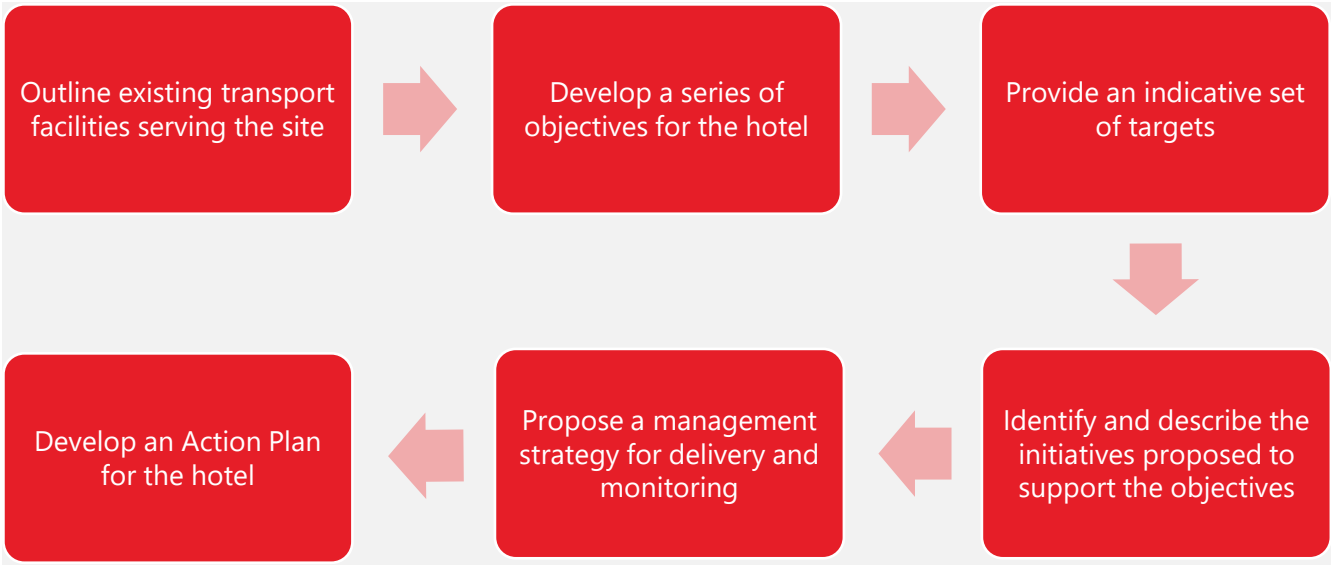


Figure 9.1: Travel Plan Structure

The structure of the report has been informed by guidance including the Eco Active Workplace Travel Plan Toolkit published by the Department for Transport (DfT) as well as other relevant UK policy. The guidance aims to assist with the development and implementation of business travel plans, including the structure they should follow and elements they should contain.

9.4 Timescales

The Travel Plan (TP) will be implemented once the hotel is in operation. The TP will be submitted for approval prior to occupation. Within one year or at least 50% of the site being in operation, a baseline travel survey will be undertaken to confirm the baseline mode shares estimated in the TA and summarised in the FTP. Subsequent travel surveys will take place on a regular basis to monitor the progress of the Travel Plan and to inform any necessary changes.

A Travel Plan should be periodically monitored and updated to remain current and relevant to the development site and its use. As such, this Travel Plan has no expiration date and should be updated throughout the life of the hotel to reflect its current condition.

9.5 Travel Plan Aims and Objectives

9.5.1 Aims

The following aims and objectives have been prepared for the proposed hotel staff and visitors. As an evolving document, these will be continually reviewed over time and in accordance with the changing circumstances of the site. The overall aims of the Travel Plan are:

- Influence the travel behaviour of staff and visitors;
- Reduce carbon emission associated with commuter and visitors' journeys.
- Minimise car trips to and from the hotel through the introduction and promotion of measures to encourage sustainable travel;

- Help reduce local road congestion;
- Encourage travel by cycle and by foot by improving their attractiveness;
- Encourage travel by public transport mode by improving their attractiveness; and
- Promote the health and environmental benefits associated with travel by walking, cycling and public transport.

9.5.2 Objectives

This section outlines the Travel Plan objectives as follows:

- Reduce single occupancy journeys to the site by 5%;
- Encourage car sharing to increase the mode share;
- Making alternative transport modes to the car accessible and user friendly;
- Increase staff and visitor awareness of the environmental and health implications of different travel modes;
- Promote active travel to increase mode share of walking and cycling;
- Encourage bus travel to the hotel site to increase the proportion of bus trips;
- Promoting local walk, cycle and public transport connections in the area; and
- The provision of an on-site Travel Plan Co-ordinator who will ensure the Travel Plan measures are implemented and monitored.

9.6 Measures and Initiatives

This section of the Travel Plan describes the measures that are proposed in order for the Travel Plan to meet the objectives. There are a wide variety of possible measures that can be implemented to promote sustainable initiatives and measures. Figure 9.2 below outlines the seven categories that these measures fall into.

Additional (remedial) measures have been identified in Section 9.7, should annual travel surveys indicate the Travel Plan targets are not being met.

9.6.1 Marketing the Travel Plan

The communication and support for sustainable transport options to employees is a key part of the TP. The dissemination of this information will be done in the following ways:

- Travel information pack for new staff, detailing key walking, cycle and public transport routes as part of their induction; and
- Travel plan information boards located in appropriate locations within the hotel to provide staff and visitors with up-to-date information about the Travel Plan.

9.6.2 Minimise single occupancy car travel

The following measures are proposed to reduce the proportion of single-occupancy vehicle trips:

- Improve and increase awareness of the car share database;
- Encourage staff, including those who car-share informally, to register with the formal system;
- Encourage staff to car-share when travelling to meetings;
- Develop a guide for staff who car share, identifying the rules of the system i.e. charging mechanisms, emergencies, and behaviour;
- Priority parking for car shares; and

- Provide a ‘reward’ to those making their first successful car sharing partnership.

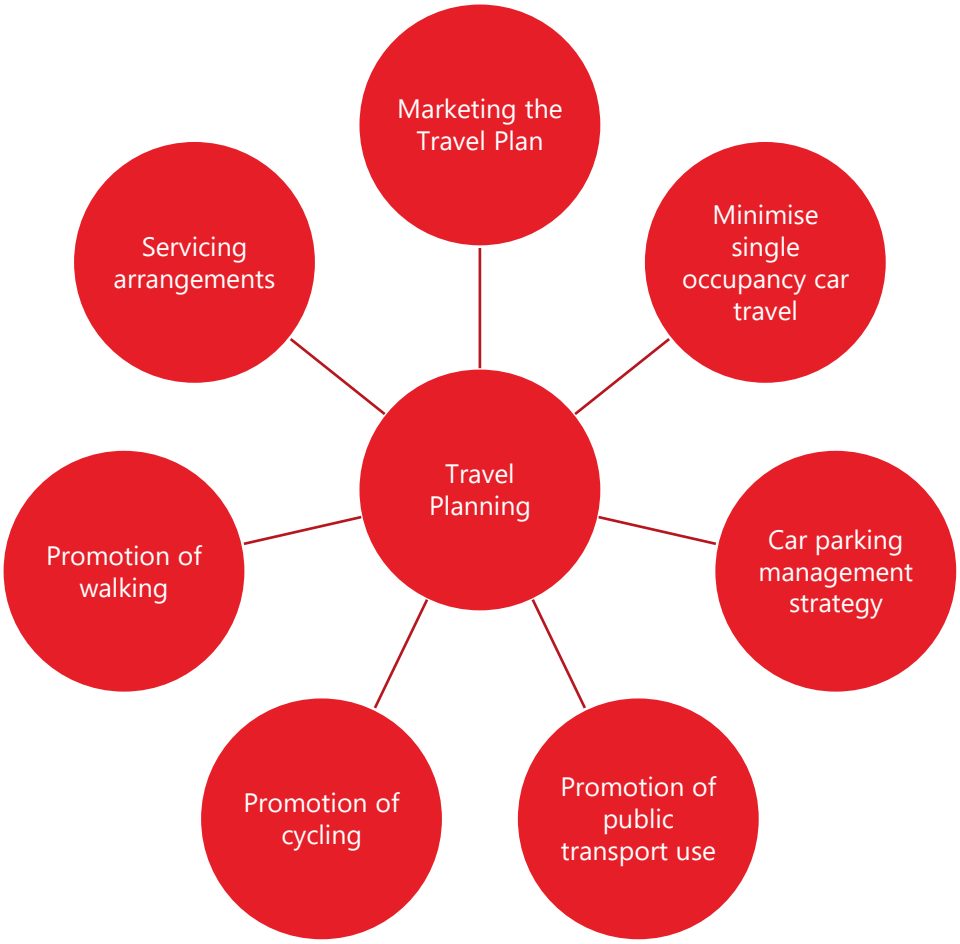


Figure 9.2: Categories of Measures

9.6.3 Promotion of public transport use

To maximise the use of public transport, staff and visitors to the site need to be made aware of the local public transport network. The following initiatives aim to encourage travel by Public Transport:

- Raise awareness of discounted travel passes and season tickets with local bus operators;
- Raise awareness of the interest free loans available for public transport season tickets;
- Set up notice boards in the lobby around the hotel to provide up to date public transport information;
- Offer Travel Surgeries and Personalised Travel Planning;
- Produce a map showing bus routes to the site and the nearest bus stop;
- Display public transport information on the hotel website;
- Set up a Public Transport User Group (PTUG) to encourage the use of public transport; and
- Look into negotiation with local bus operators to secure alterations to bus timings.

9.6.4 Promotion of cycling

The following measures aim to encourage cycling to work:

- Install safe, secure, and covered employee cycle parking;
- Provide cloakroom facilities with storage lockers and drying facilities;
- Provide showers for staff who cycle to work;

- Raise awareness through promotional material of the health benefits of cycling;
- Produce a map showing safe cycling routes that surround the site, indicating distances and travel times from major settlements;
- Offer Travel Surgeries and Personalised Travel Planning;
- Raise awareness of the Bicycle User Group (BUG) to encourage cycling;
- Introduce an awareness campaign such as Bike to Work Week;
- Negotiate staff discounts with local cycle shops;
- Provide personal Safety alarms for staff;

9.6.5 Promotion of walking

To encourage walking, the following measures are recommended:

- Raise awareness through promotional material of the health benefits of walking;
- Produce a map showing safe walking routes that surround the site, indicating distances and travel times to common destinations;
- Offer Travel Surgeries and Personalised Travel Planning; and
- Continue to explore other incentives that could be offered to staff who walk to work.

9.6.6 Servicing and administrative arrangements

- Encourage the use of tele- and video-conferencing where possible; and
- Rationalise deliveries where practicable.

9.7 Remedial measures

Should the targets set out in this FTP not be met, the following potential remedial measures could be implemented. The precise mix of remedial measures would be identified following a review of the success of the measures identified in Section 9.6 and the findings of the travel surveys.

9.7.1 Marketing the Travel Plan

- Use the Travel Plan as a public relations opportunity for both internal and external image – make the most of photo opportunity and environmental initiatives; and
- Promote public transport routes on maps sent to visitors or on publicity about the hotel. Identify the locations of bus stops and approximate taxi/ bus fares and times between stations and the site.
- Minimise single occupancy car travel
- Set up ‘postcode coffee clubs’, to allow potential partners to become acquainted and to discuss travel arrangements;
- Encourage staff that have children at the same school to car-share; and
- Raise awareness of actual motoring costs and amounts saved through using different modes.

9.7.2 Car parking management strategy

- Ensure that sign posting for car parking is clear (especially for visitors and car-sharers);
- Ensure car parking on footways and at crossing points is enforced effectively, alongside blocking and unauthorised parking;
- Review the need for a method of charging and the rationing of spaces with staff;

- Reallocate additional parking spaces for car sharers (or additional cycle parking if demand suggests significant numbers);
- Introduce a premium car parking charge;
- Car park rationing – limit access to the car park on a rota basis for staff;
- Introduce parking 'cash-out' – all staff are allocated a bonus sum from which parking charges are deducted, with the less you park the higher your bonus; and
- Offer to buy 'the right to park on site' from staff.

9.7.3 Promotion of public transport use

- Raise awareness of actual motoring costs and amounts saved through using different modes;
- Ensure that sign posting to public transport is clear; and
- Amalgamate loans for cycle purchase with a season ticket loan to enable staff to combine public transport and cycle journeys.

9.7.4 Promotion of cycling

- Ensure cycle routes are direct, well-lit and well maintained and that cycle parking within the site is well maintained;
- Invite local police safety officers and staff to contribute to assessment of cycle routes;
- Provide cycle safety training for interested employees;
- Provide a puncture repair service, and/or a 'spares box' for cyclist; and
- Negotiate preferable rates for cycle insurance.

9.7.5 Promotion of walking

- Ensure walking routes are direct, well-lit and well maintained (especially those to and from bus stops);
- Invite local police safety officers and staff to contribute to assessment of pedestrian routes; and
- Car parking on footways and at crossing points should be discouraged and enforcement applied if necessary.

9.8 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. 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 (TPC). 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.

9.8.1 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 TPC will be appointed who 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 departments within the hotel;
- 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.

9.8.2 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.

9.9 Monitoring and Evaluation

The Travel Plan sets out what the hotel should do to recognise and address the transport requirement for staff, guests, and visitors while considering the environmental impact of movements to and from the site. The overall aim is to achieve a modal shift towards sustainable travel to and from the hotel. This should make a positive contribution to local communities, preserve the natural environment, and promote sustainable and active travel that will have a positive impact to the local residents.

9.9.1 Purpose of Monitoring

It is crucial for any Travel Plan document to have continuous monitoring and review of its effectiveness. Monitoring of the Travel Plan will indicate how well it is performing at meeting the targets that are set throughout the life of the Plan. Regular monitoring and review will also assist in refining Travel Plan measures and establishing new targets, as appropriate. As such, it is crucial that the Travel Plan becomes a continuous and on-going process of monitoring and review, rather than a one-off event.

To summarise, the key purposes of the monitoring include:

- Provide a running assessment of how staff travel to the site;
- Assess performance against the aims and targets of the Travel Plan;
- Demonstrate continued support at all levels; and
- Guide implementation of revised targets or further travel initiatives, as necessary.

9.9.2 Monitoring

As a living document, there will be the need to update the Travel Plan as required. This requirement should be borne from the monitoring exercise which will take place bi-annually following the implementation of the

Plan. The criteria for monitoring will entail the understanding of the travel needs of staff, guests, and visitors so that transport measures can be adapted or added to provide for these needs.

The monitoring will be the responsibility of the TPC and will review:

- Travel Patterns (via a travel survey) – comprehensive travel surveys will be undertaken with a commitment to review the Travel Plan targets at each monitoring phase. This review will identify elements of the Plan that are not working as well as others.
- Full Site Audit – undertaken by the TPC, the audit will identify any barriers that obstruct walking, cycling, and using public transport and make recommendations for improvements.
- Parking counts (all vehicles, including bicycles).

More details are provided in the following sections.

9.9.3 Travel Plan Monitoring Framework

To facilitate the monitoring of the Travel Plan, a key action is the agreement of a Travel Plan Monitoring Framework, assigning persons responsible for tasks that need to be carried out as park of the monitoring exercise. This is to be coordinated by the TPC, with input from the Staff and Visitor Steering Groups (the latter if applicable).

The TPC will be responsible for ensuring monitoring associated with the site is undertaken and reporting the results to the Travel Plan Steering Groups.

The Travel Plan Monitoring Framework for the development will include the following:

- Travel surveys for staff;
- Monitoring of car parking provided for staff and visitors;
- Snapshot surveys to assess the use of cycle parking and electric vehicle charging points;
- Record comments made by staff, guests, and visitors on the Travel Plan; and
- Record uptake of funded Travel Plan measures.

Key Action:	Review Travel Plan Monitoring Framework and reaffirm agreement at the first meeting(s) of the Travel Plan Steering Group(s).
To be completed by:	Within three months of occupation of the development, and bi-monthly thereafter.
Responsibility of:	Travel Plan Coordinator.

9.9.4 Travel Surveys

Travel surveys will form a key component of the monitoring framework. The site assessment and transport audit assists in informing the contents needed in this survey. In general, travel surveys should be kept relatively straightforward and aim to identify how and when staff are travelling, where staff travel from, what alternative sustainable transport modes they would consider and what measures will be implemented to encourage sustainable travel.

The survey data will be collected via online or paper self-completion questionnaires, which help to identify travel requirements and set targets for modal split. There are two levels of surveys to be undertaken:

- Detailed survey – to be undertaken bi-annually; and
- Snapshot survey – a shorter survey, which will be used to assess the progress of the Plan or to test the effect of any new travel measures that are introduced.

In order to obtain meaningful and representative travel data, the survey response rate must be as high as possible. The TPC will set out an action plan in the monitoring framework to encourage a higher responses

rate, i.e. online surveys, email, face-to-face interaction, promotion via senior leadership team. The TPC will assess the effects of the various initiatives bi-annually, based on the travel survey results.

Key Action:	Undertake detailed staff travel surveys
To be completed by:	Bi-annually
Responsibility of:	Travel Plan Co-ordinator

Key Action:	Undertake snapshot surveys of car parking utilisation
To be completed by:	Every 6 months
Responsibility of:	Travel Plan Co-ordinator

9.9.5 Surveys of Cycle and Electric Vehicle Parking

To reflect possible variation in the level of cycle use through the year (for example, associated with seasonal weather conditions), the use of cycle parking by both staff and visitors to the site will be surveyed on a regular basis. This will enable average and maximum use of cycle parking to be identified through the year. Cycle parking on the site can be increased if the monitoring indicates there is sufficient demand. Potential changes to the appropriate locations and quantity of additional cycle parking can be agreed by the Steering Group, having regard to the monitoring results.

A similar exercise can be undertaken for electric vehicle charging points. If surveys indicate additional demand for charging points, these can be installed as required.

Key Action:	Undertake cycle and electric vehicle parking surveys
To be completed by:	Every 6 months
Responsibility of:	Travel Plan Co-ordinator

9.10 Analysis and Reporting of Monitoring

The Travel Plan Co-ordinator will lead the development of the monitoring exercise and will be responsible for analysing the data collected.

9.10.1 Bi-annual Monitoring Report

A full Bi-annual Monitoring Report will be produced by the Travel Plan Coordinator and discussed with the relevant stakeholder and user groups, before being submitted to CCC.

The Bi-annual Monitoring Report will present the monitoring data collected, including travel survey results, and will compare this against the targets set out in the Travel Plan. If the report indicates that the Travel Plan targets are not being met with the measures that have been implemented, it will be the responsibility of the Travel Plan Co-ordinator to identify an Action Plan for the following 24 months. The Action Plan will contain a programme of measures and tasks such that the Travel Plan targets are achieved, alongside the person(s) responsible for implementing any changes to existing measures or new measures required and the timescale for delivery.

The Action Plan will be submitted with the Bi-annual Monitoring Report for agreement by the Travel Plan Steering Group. Monitoring of the agreed measures will be undertaken as part of the monitoring framework for the following review period, the next 24 months, and agreed by the Travel Plan Steering Group and Machynys Hotel Employees (MHE) representative(s).

9.10.2 Travel Plan Review

Travel Plans are active documents which must be reviewed on a regular basis to ensure they reflect current local opportunities and circumstances. The review of Travel Plans must take place bi-annually in conjunction with MHE representative(s). The Travel Plan Co-ordinator must submit a bi-annual monitoring report to the MHE representative(s) which includes all the survey data, an update on how the Travel Plan has been implemented, any proposed revisions to the Plan and the bi-annual action plan for the next 24 months. The Action Plan must contain a bi-annual programme of measures designed to help achieve the Travel Plan's targets on travel modal share. It must also clearly set out the tasks involved, the person(s) responsible, and dates by which the measures will be achieved over the next 24 months.

To summarise, following the production of the Bi-annual Monitoring Report, the Travel Plan Coordinator will be responsible for disseminating its findings to the relevant stakeholder and user groups, including MHE representative(s). Since the Travel Plan is a working document that will develop with time and in accordance with the changing circumstances of the development, it will be regularly reviewed by the TPC in liaison with the relevant groups.

Key Action:	Prepare and submit Bi-annual Monitoring Report and Action Plan
To be completed by:	Bi-annually, within one month of completion of monitoring surveys/ counts
Responsibility of:	Travel Plan Co-ordinator / Steering Group

9.11 Communication and Marketing Strategy

The effective communication of the Travel Plan will be essential to its success. Promotion and marketing of the measures including general information, progression, benefits and achievements require successful dissemination to Machynys Hotel staff, guests and visitors. A detailed communication strategy for on-going promotion and awareness raising of the Travel Plan will be developed by the Travel Plan Coordinator. This section sets out a number of possible options for the communication of the Travel Plan.

9.11.1 Travel Plan Webpage

At the time of writing, there is no webpage as the final user is not known. The webpage would provide directions to the future site by car, bus, cycle or on foot. The development is currently at pre-application stage so detailed information cannot be provided at this point. However, as the development stages progress, a webpage will be set up.

A Travel Plan webpage will be developed for the site, which will provide travel information and key highlights of the Travel Plan.

The webpage will be made available to external users so staff and visitors to the site can always access relevant and up-to-date sustainable travel information. It will specifically emphasise how the development can be accessed by walking, cycling and bus. Directions and information for staff and visitors travelling by car (for example, identifying the number of parking spaces) will be given less prominence.

9.11.2 Travel Information Pack

A comprehensive Travel Information Pack will be produced by the Travel Plan Coordinator and distributed to all departments at OHP. This is a key measure to encourage sustainable travel and will contain information about the development and the immediate area, a copy of the most recently published walking and cycling routes, bus timetables, information regarding car sharing schemes (if available), and details of any travel initiatives offered to employees. The Travel Information Pack will also direct staff to websites or points of contact for the following:

- Walking – provision of information on walking routes between the site and key destinations such as bus stops, the rail station and Llanelli town centre.
- Cycling – link to Llanelli and Carmarthenshire cycle routes information. Information about cycle routes and cycle hire.
- Bus – link to the bus operator website where staff can obtain the most up to date timetable information.
- Rail – link to the latest rail timetables and fare information.
- Car-sharing / Car club – links to any available car share databases or car club websites.
- Taxis – Contact details for taxi companies operating in Llanelli and the wider area.

The Travel Information Pack will be periodically reviewed and updated by the Travel Plan Coordinator.

9.11.3 Travel Plan Information Boards

Information boards will be placed at appropriate locations within buildings to provide staff, guests and visitors with up-to-date information about the Travel Plan. The boards will include the following:

- Information about the Travel Plan, including its aims and objectives;
- Details about any Travel Plan measures or initiatives;
- Information about any Travel Plan Meetings, workshops, events and information from previous events;
- Contact details of the Travel Plan Coordinator;
- Information on bus services, timetables and stops, plus details on cycling and safe pedestrian routes;
- Telephone numbers of local taxi firms;
- Details of local cycle shops, especially if these offer discounts to organisations implementing Travel Plans; and
- A message board where staff can place notices (e.g. for cycle equipment for sale or potential car sharing opportunities etc.).

These information boards could be traditional notice boards, but there is potential for these boards to be more interactive. For example, there could be numerous digital touch screen displays showing bus timetable real time information. Cost implications of different options should be reviewed.

9.11.4 Marketing and Promotion

It is recognised that for the Travel Plan to be successful, it is essential that the target audience are involved and made aware of its implementation and evolution.

A detailed strategy for on-going promotion and awareness raising of the Travel Plan will be developed by the Travel Plan Coordinator. The strategy will include:

- A series of meetings to explain the purpose of the Travel Plan;
- 'Branding' the Travel Plan to raise its profile and to make it instantly recognisable. An official 'launch event' will be held. All leaflets and publications produced as a part of the Travel Plan will take on this branding; and,
- Information about transport options and the Travel Plan will be included in employee recruitment packs and visitor information packs as appropriate.

Transport and travel information will also be provided in areas where people congregate in the hotel.

9.12 Implementation Strategy and Action Plan

This section sets out the potential actions that will be undertaken in order to deliver the Travel Plan objectives and to deliver the measures necessary to minimise car trips to the site and increase the mode share of sustainable transport.

9.12.1 Implementation of the Travel Plan

Table 9.1 summaries the key actions identified in this document that will enable the successful implementation of the Travel Plan. This Implementation Plan will be reviewed with stakeholders and updated as required throughout the hotel's development and operation. As stated previously, the Travel Plan is an evolving document and as such will be reviewed over time and adapted where necessary to accommodate changing demands and guidance on encouraging sustainable travel.

Actions	Responsibility	Timescale
Appoint a Travel Plan Co-ordinator	MHE	Immediate commencement
Establish a Travel Plan Steering Group	TPC	Within 1 month of occupation
Arrange further meetings of the Travel Plan Steering Group	TPC/ Steering Group	Bi-annually
Establish a Travel Plan Webpage which includes detailed information on public transport	TPC	3 months prior to operation of development
Review the site audit, updating as necessary	TPC	On-going
Review Travel Plan Monitoring Framework and reaffirm agreement at the first meeting(s) of the Travel Plan Steering Group(s)	TPC	Within 3 months of occupation and bi-annually thereafter
Undertake detailed staff travel surveys	TPC	Bi-annually
Undertake snapshot surveys of staff and visitor's car parking utilisation	TPC	Every 6 months
Undertake cycle and electric vehicle parking surveys	TPC	Every 6 months
Prepare and submit the Bi-annual Monitoring Report and Supporting Action Plan	TPC/ Steering Group	Bi-annually, within one month of completion of monitoring surveys/ counts
Provide Travel Plan Information Boards	TPC	Within 3 months of occupation of development and reviewed periodically thereafter
Provide a Travel Plan Information Pack	TPC	Prior to occupation of development and reviewed periodically thereafter

Table 9.1: Key Actions for the Development of the Travel Plan

9.13 Implementation of Measures

Table 9.2 sets out the key actions that will enable the delivery of the measures to increase the mode share of active travel, bus travel and minimise car trips to the site. An estimated timescale for implementation has been provided which will be refined and updated as required.

Actions	Responsibility	Implementation
Minimising Single Occupancy Car Travel		
Improve and increase the use of the car share database.	TPC	Ongoing
Encourage staff, including those who car-share informally, to register with the formal system.	TPC	Ongoing
Encourage staff to car share when travelling to meetings.	TPC	Ongoing
Develop a guide for staff who car share, identifying the rules of the system, i.e. charging mechanisms, emergencies, and behaviour.	TPC	Ongoing
Priority car parking charges for car shares.	TPC/Hotelier	Ongoing
Provide a 'reward' to those making their first successful car sharing partnership.	TPC/Hotelier	Ongoing
Encourage the use of alternative modes to the car through sustainable policies for travel.	TPC	Ongoing
Car Parking Management		
Introduce realistic parking charges for staff and/or visitors to recoup the cost of providing the spaces.	TPC	Ongoing, with monitoring usage and demand
Promotion of Public Transport		
Raise awareness of discounted travel passes and season tickets.	TPC	Ongoing
Raise awareness of the interest free loans available for public transport season tickets.	TPC	Ongoing
Set up notice boards in lobby around the hotel to provide up to date public transport information.	TPC/Bus Operator	Prior to occupation of development, update as required.
Offer Travel Surgeries and Personalised Travel Planning.	TPC	Ongoing
Produce a map showing bus routes and bus stops nearest the site	TPC/Bus Operator	Prior to occupation of development, update as required.
Send public transport information with a local plan to visitors. Provide written directions for reaching the site by bus.	TPC/Bus Operator	Prior to occupation of development, update as required.
Display public transport information on the Hotel's Intranet and website.	TPC	Ongoing
Set up a Public Transport User Group (PTUG) to encourage the use of public transport.	TPC/ Steering Group	Within 3 months of occupation
Negotiate with the bus operator to secure alterations to bus timings.	CCC/Bus Operator	Prior to occupation of the development
Negotiate with the bus operator to secure additional services to serve the site.	CCC/Bus Operator	Prior to occupation of the development
Cycling		
Install safe, secure, and covered employee cycle parking.	CCC/Hotelier	Ongoing, with monitoring usage and demand
Provide cloakroom facilities with storage lockers and places to hang wet clothes.	TPC/Hotelier	Ongoing
Provide showers for staff who cycle to work.	TPC/Hotelier	Ongoing
Raise awareness through promotional material of the health benefits of cycling.	TPC	Ongoing, including one event every six months
Produce a map showing safe cycling routes, indicating distances and travel times to common destinations.	TPC	Ongoing
Offer Travel Surgeries and Personalised Travel Planning.	TPC. Steering Group	Ongoing

Actions	Responsibility	Implementation
Raise awareness of the Bicycle User Group (BUG) to encourage cycling and motorcycling.	TPC	Within 3 months of occupation and ongoing thereafter
Introduce an awareness campaign such as 'Bike to Work Week'.	TPC/Hotelier	Ongoing
Negotiate staff discounts with local cycle shops.	TPC/Hotelier	Prior to occupation and ongoing thereafter
Personal Safety alarms for staff.	TPC	Ongoing
Provide a cycle/ motorcycle mileage allowance for staff travelling for work (20p/mile).	TPC/Hotelier	Ongoing
Walking		
Raise awareness through promotional material of the health benefits of walking.	TPC	Ongoing, including one event every six months
Produce a map showing safe walking routes, indicating distances and travel times to common destinations.	TPC	Prior to occupation of development, updated as required.
Offer Travel Surgeries and Personalised Travel Planning.	TPC	Ongoing
Continue to explore other incentives that could be offered to staff who walk to work.	TPC/Hotelier	Prior to occupation of development and ongoing thereafter.
Servicing Arrangements		
Encourage the use of tele- and video-conferencing where possible	CCC/Hotelier	Prior to the occupation of the development and ongoing thereafter
Rationalise deliveries where practicable.	CCC/Hotelier	Prior to the occupation of the development and ongoing thereafter

Table 9.2: Key Actions for the Delivery of Measures

10. Conclusion

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 120-bed hotel, located on land to the east of Pentre Nicklaus Avenue, and south of the B4304, Machynys, Llanelli, Carmarthenshire. The application is submitted to Carmarthenshire County Council (CCC) on behalf of the Applicant, Carmarthenshire County Council.

The proposal incorporates associated infrastructure and landscaping, including the construction of a car park and creation of a green space around the hotel's perimeter designed to provide a net benefit in biodiversity and mitigate potential flood risk.

The site's location is conveniently located in relation to walking and cycling connections including a combined footway/cycleway to the north of the site running parallel to the B4304 which connects to the National Cycle Network. Several proposals from neighbouring developments are expected to have a positive impact on the site in terms of active travel, such as new / improved pedestrian crossings proposed in the vicinity of the LWLV, directly north of the proposed site. The implementation of ATNMs will upgrade the existing active travel infrastructure to the latest standards, providing safe and continuous routes for pedestrians and cyclists around the hotel. This will also encourage people to walk and cycle as part of their journeys to the hotel development and in the local area.

In addition, a new bus stop is proposed within the LWLV site directly north of the Delta Lakes roundabout which will help cater for the hotel site and will improve accessibility to / from the bus network.

The strategic highway network, i.e. the B4304, can be accessed easily from the proposed site. This is a key benefit for HGV movements associated with construction and subsequent traffic relating to visitors, deliveries and servicing. It is recommended that the contractor(s) produces a CTMP to minimize the impact of construction traffic on the highway network, which will be addressed in the reserved matters process.

The new primary vehicular access point will locate at the north of the site, linking to the B4304. The vehicular access for deliveries and servicing vehicles will locate at the west of the site which connects to Pentre Nicklaus Avenue. They will both form a simple T-junction with adequate visibility and spaces to ensure vehicles can access and egress safely. Detailed designs of the layout and swept path analysis will form part of the reserved matters process.

The development is forecast to generate 42 two-way vehicle trips in the AM peak hour and 44 two-way vehicle trips in the PM peak hour. Four junctions have been assessed using Junctions 10 for roundabouts (ARCADY module). A robust junction assessment methodology has been adopted including nearby committed developments and shows that the proposals would have minimal impact on the local highway network given the scale of the development. As a result, no mitigation is proposed.

A framework Travel Plan has also been prepared in support of the hotel development. It sets out several site wide measures which could be introduced to encourage walking, cycling and public transport use for future staff members. Proposed measures have a key focus on walking and cycling, car sharing with frequency monitoring of travel to site recommended to increase the proportion of journeys made by sustainable modes.

It is concluded that the site is suitable for the type and scale of development proposed and is considered acceptable from a traffic and transportation perspective, providing that the following transport measures are implemented:

1. Extension of footpath along the south of the B4304 and provision of an uncontrolled crossing to enable access across to the shared use path to the north of the B4304;
2. Provision of footways throughout the proposed development site on either side of the vehicle access road apart from those areas of the development which will adopt 'pedestrian prioritised street' principles;
3. Provision of 22 sheltered cycle parking spaces to encourage use of active travel modes; and
4. A total of 140 car parking spaces including 12 accessible bays and 10 EV charging bays.

Appendix A TRICS Report

Calculation Reference: AUDIT-701009-240917-0915

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : A - HOTELS
TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	WL	WILTSHIRE	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
10	WALES		
	SW	SWANSEA	1 days

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

Primary Filtering selection:

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

Parameter:	Number of bedrooms
Actual Range:	57 to 138 (units:)
Range Selected by User:	50 to 300 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 12/11/21

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

Selected survey days:

Monday	1 days
Tuesday	2 days
Wednesday	1 days

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

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Edge of Town	3

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

Selected Location Sub Categories:

Development Zone	1
Residential Zone	1
Out of Town	1
No Sub Category	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	4 days - Selected
Servicing vehicles Excluded	6 days - Selected

Secondary Filtering selection:

Use Class:

C1	4 days

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

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
25,001 to 50,000	1 days

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

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	3 days

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

Travel Plan:

No	4 days

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

PTAL Rating:

No PTAL Present	4 days

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

LIST OF SITES relevant to selection parameters

1 NY-06-A-01 ASCEND HOTEL NORTH YORKSHIRE
PARK PARADE
HARROGATE

Edge of Town Centre
Residential Zone
Total Number of bedrooms: 100
Survey date: TUESDAY *23/10/18* *Survey Type: MANUAL*

2 SW-06-A-01 IBIS SWANSEA
FABIAN WAY
SWANSEA
PORT TENNANT
Edge of Town
Development Zone
Total Number of bedrooms: 99
Survey date: MONDAY *07/10/19* *Survey Type: MANUAL*

3 WK-06-A-01 HOLIDAY INN EXPRESS WARWICKSHIRE
STRATFORD ROAD
WARWICK
LONGBRIDGE
Edge of Town
Out of Town
Total Number of bedrooms: 138
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

4 WL-06-A-03 TRAVELODGE WILTSHIRE
LAWRENCE HILL
WINCANTON

Edge of Town
No Sub Category
Total Number of bedrooms: 57
Survey date: TUESDAY *18/09/18* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AL-06-A-01	N/A
DS-06-A-04	N/A
GS-06-A-03	N/A

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
TOTAL VEHICLES
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.043	4	99	0.198	4	99	0.241
08:00 - 09:00	4	99	0.124	4	99	0.226	4	99	0.350
09:00 - 10:00	4	99	0.140	4	99	0.185	4	99	0.325
10:00 - 11:00	4	99	0.107	4	99	0.145	4	99	0.252
11:00 - 12:00	4	99	0.063	4	99	0.099	4	99	0.162
12:00 - 13:00	4	99	0.081	4	99	0.074	4	99	0.155
13:00 - 14:00	4	99	0.086	4	99	0.099	4	99	0.185
14:00 - 15:00	4	99	0.119	4	99	0.099	4	99	0.218
15:00 - 16:00	4	99	0.140	4	99	0.084	4	99	0.224
16:00 - 17:00	4	99	0.162	4	99	0.122	4	99	0.284
17:00 - 18:00	4	99	0.216	4	99	0.147	4	99	0.363
18:00 - 19:00	4	99	0.183	4	99	0.117	4	99	0.300
19:00 - 20:00	4	99	0.155	4	99	0.094	4	99	0.249
20:00 - 21:00	4	99	0.104	4	99	0.048	4	99	0.152
21:00 - 22:00	4	99	0.099	4	99	0.043	4	99	0.142
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.822			1.780			3.602

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

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

Parameter summary

Trip rate parameter range selected:	57 - 138 (units:)
Survey date date range:	01/01/16 - 12/11/21
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	3

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
TAXIS
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.003	4	99	0.000	4	99	0.003
08:00 - 09:00	4	99	0.015	4	99	0.018	4	99	0.033
09:00 - 10:00	4	99	0.013	4	99	0.010	4	99	0.023
10:00 - 11:00	4	99	0.003	4	99	0.000	4	99	0.003
11:00 - 12:00	4	99	0.003	4	99	0.005	4	99	0.008
12:00 - 13:00	4	99	0.000	4	99	0.000	4	99	0.000
13:00 - 14:00	4	99	0.005	4	99	0.008	4	99	0.013
14:00 - 15:00	4	99	0.000	4	99	0.000	4	99	0.000
15:00 - 16:00	4	99	0.003	4	99	0.003	4	99	0.006
16:00 - 17:00	4	99	0.003	4	99	0.003	4	99	0.006
17:00 - 18:00	4	99	0.003	4	99	0.003	4	99	0.006
18:00 - 19:00	4	99	0.013	4	99	0.013	4	99	0.026
19:00 - 20:00	4	99	0.005	4	99	0.005	4	99	0.010
20:00 - 21:00	4	99	0.008	4	99	0.008	4	99	0.016
21:00 - 22:00	4	99	0.010	4	99	0.008	4	99	0.018
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.087			0.084			0.171

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

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
OGVS
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.000	4	99	0.003	4	99	0.003
08:00 - 09:00	4	99	0.000	4	99	0.000	4	99	0.000
09:00 - 10:00	4	99	0.003	4	99	0.003	4	99	0.006
10:00 - 11:00	4	99	0.003	4	99	0.000	4	99	0.003
11:00 - 12:00	4	99	0.003	4	99	0.003	4	99	0.006
12:00 - 13:00	4	99	0.003	4	99	0.005	4	99	0.008
13:00 - 14:00	4	99	0.003	4	99	0.000	4	99	0.003
14:00 - 15:00	4	99	0.000	4	99	0.003	4	99	0.003
15:00 - 16:00	4	99	0.000	4	99	0.000	4	99	0.000
16:00 - 17:00	4	99	0.000	4	99	0.000	4	99	0.000
17:00 - 18:00	4	99	0.000	4	99	0.000	4	99	0.000
18:00 - 19:00	4	99	0.000	4	99	0.000	4	99	0.000
19:00 - 20:00	4	99	0.000	4	99	0.003	4	99	0.003
20:00 - 21:00	4	99	0.000	4	99	0.000	4	99	0.000
21:00 - 22:00	4	99	0.000	4	99	0.000	4	99	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.015			0.020			0.035

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

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
CYCLISTS
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.000	4	99	0.000	4	99	0.000
08:00 - 09:00	4	99	0.005	4	99	0.000	4	99	0.005
09:00 - 10:00	4	99	0.005	4	99	0.003	4	99	0.008
10:00 - 11:00	4	99	0.003	4	99	0.003	4	99	0.006
11:00 - 12:00	4	99	0.003	4	99	0.000	4	99	0.003
12:00 - 13:00	4	99	0.000	4	99	0.000	4	99	0.000
13:00 - 14:00	4	99	0.000	4	99	0.005	4	99	0.005
14:00 - 15:00	4	99	0.003	4	99	0.003	4	99	0.006
15:00 - 16:00	4	99	0.000	4	99	0.000	4	99	0.000
16:00 - 17:00	4	99	0.000	4	99	0.000	4	99	0.000
17:00 - 18:00	4	99	0.000	4	99	0.000	4	99	0.000
18:00 - 19:00	4	99	0.000	4	99	0.000	4	99	0.000
19:00 - 20:00	4	99	0.000	4	99	0.000	4	99	0.000
20:00 - 21:00	4	99	0.000	4	99	0.000	4	99	0.000
21:00 - 22:00	4	99	0.000	4	99	0.000	4	99	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.019			0.014			0.033

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

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
CARS
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.036	4	99	0.160	4	99	0.196
08:00 - 09:00	4	99	0.091	4	99	0.178	4	99	0.269
09:00 - 10:00	4	99	0.109	4	99	0.150	4	99	0.259
10:00 - 11:00	4	99	0.076	4	99	0.135	4	99	0.211
11:00 - 12:00	4	99	0.053	4	99	0.081	4	99	0.134
12:00 - 13:00	4	99	0.066	4	99	0.058	4	99	0.124
13:00 - 14:00	4	99	0.071	4	99	0.074	4	99	0.145
14:00 - 15:00	4	99	0.109	4	99	0.086	4	99	0.195
15:00 - 16:00	4	99	0.112	4	99	0.069	4	99	0.181
16:00 - 17:00	4	99	0.142	4	99	0.107	4	99	0.249
17:00 - 18:00	4	99	0.180	4	99	0.135	4	99	0.315
18:00 - 19:00	4	99	0.155	4	99	0.086	4	99	0.241
19:00 - 20:00	4	99	0.119	4	99	0.061	4	99	0.180
20:00 - 21:00	4	99	0.081	4	99	0.033	4	99	0.114
21:00 - 22:00	4	99	0.089	4	99	0.033	4	99	0.122
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.489			1.446			2.935

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

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
LGVS
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.005	4	99	0.033	4	99	0.038
08:00 - 09:00	4	99	0.018	4	99	0.030	4	99	0.048
09:00 - 10:00	4	99	0.015	4	99	0.023	4	99	0.038
10:00 - 11:00	4	99	0.020	4	99	0.005	4	99	0.025
11:00 - 12:00	4	99	0.005	4	99	0.010	4	99	0.015
12:00 - 13:00	4	99	0.013	4	99	0.010	4	99	0.023
13:00 - 14:00	4	99	0.008	4	99	0.018	4	99	0.026
14:00 - 15:00	4	99	0.008	4	99	0.010	4	99	0.018
15:00 - 16:00	4	99	0.020	4	99	0.013	4	99	0.033
16:00 - 17:00	4	99	0.018	4	99	0.013	4	99	0.031
17:00 - 18:00	4	99	0.033	4	99	0.010	4	99	0.043
18:00 - 19:00	4	99	0.018	4	99	0.018	4	99	0.036
19:00 - 20:00	4	99	0.025	4	99	0.023	4	99	0.048
20:00 - 21:00	4	99	0.015	4	99	0.008	4	99	0.023
21:00 - 22:00	4	99	0.000	4	99	0.003	4	99	0.003
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.221			0.227			0.448

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

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

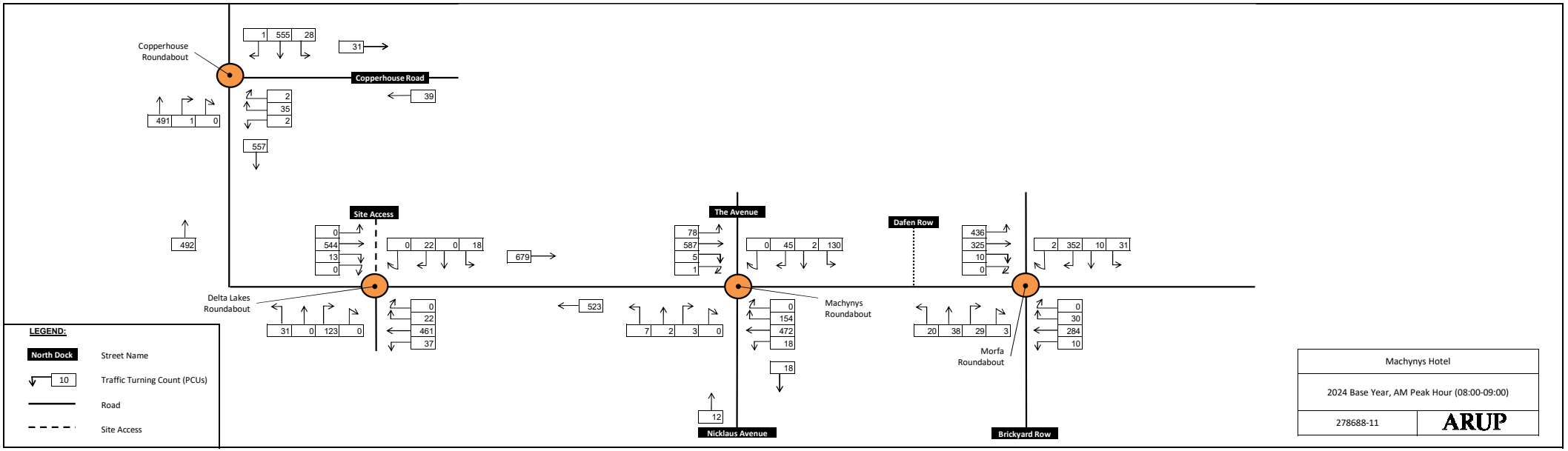
TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MOTOR CYCLES
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

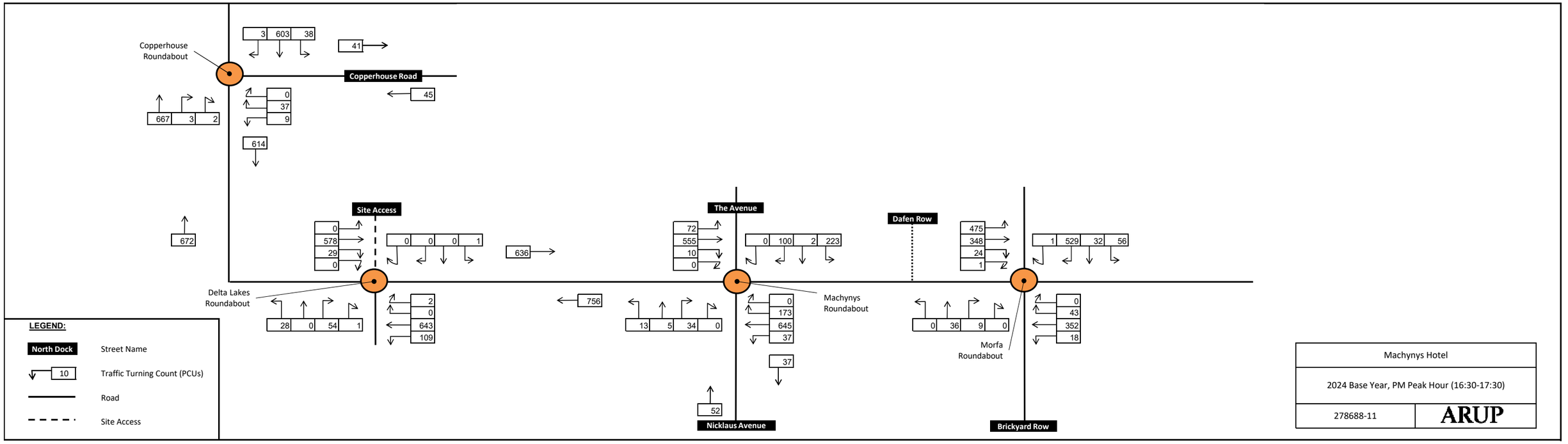
	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	99	0.000	4	99	0.003	4	99	0.003
08:00 - 09:00	4	99	0.000	4	99	0.000	4	99	0.000
09:00 - 10:00	4	99	0.000	4	99	0.000	4	99	0.000
10:00 - 11:00	4	99	0.005	4	99	0.005	4	99	0.010
11:00 - 12:00	4	99	0.000	4	99	0.000	4	99	0.000
12:00 - 13:00	4	99	0.000	4	99	0.000	4	99	0.000
13:00 - 14:00	4	99	0.000	4	99	0.000	4	99	0.000
14:00 - 15:00	4	99	0.003	4	99	0.000	4	99	0.003
15:00 - 16:00	4	99	0.005	4	99	0.000	4	99	0.005
16:00 - 17:00	4	99	0.000	4	99	0.000	4	99	0.000
17:00 - 18:00	4	99	0.000	4	99	0.000	4	99	0.000
18:00 - 19:00	4	99	0.003	4	99	0.000	4	99	0.003
19:00 - 20:00	4	99	0.000	4	99	0.003	4	99	0.003
20:00 - 21:00	4	99	0.000	4	99	0.000	4	99	0.000
21:00 - 22:00	4	99	0.000	4	99	0.000	4	99	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.016			0.011			0.027

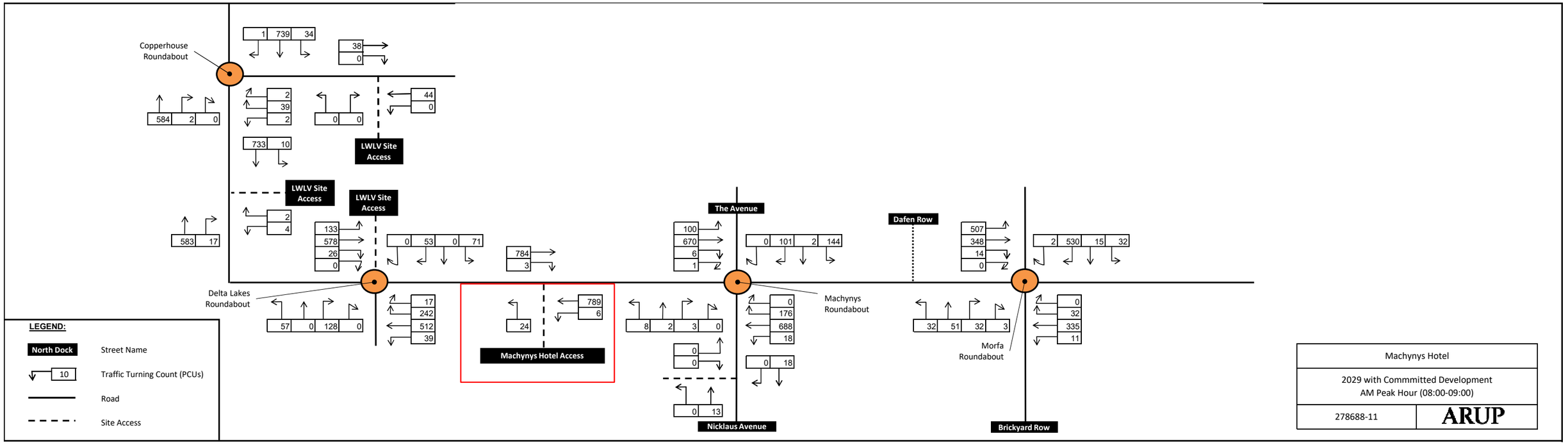
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

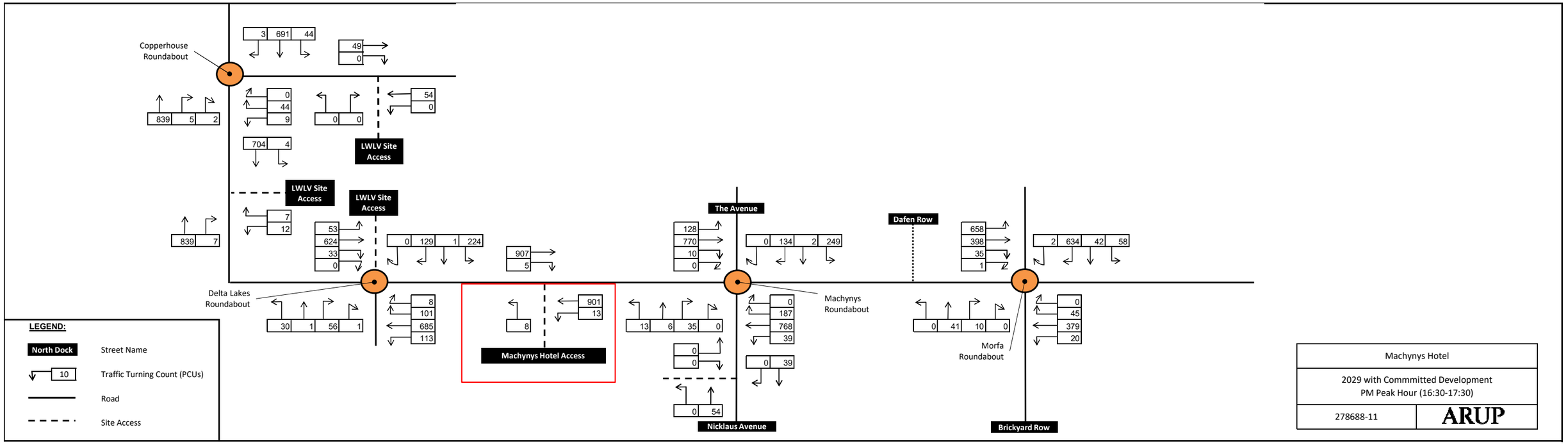
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

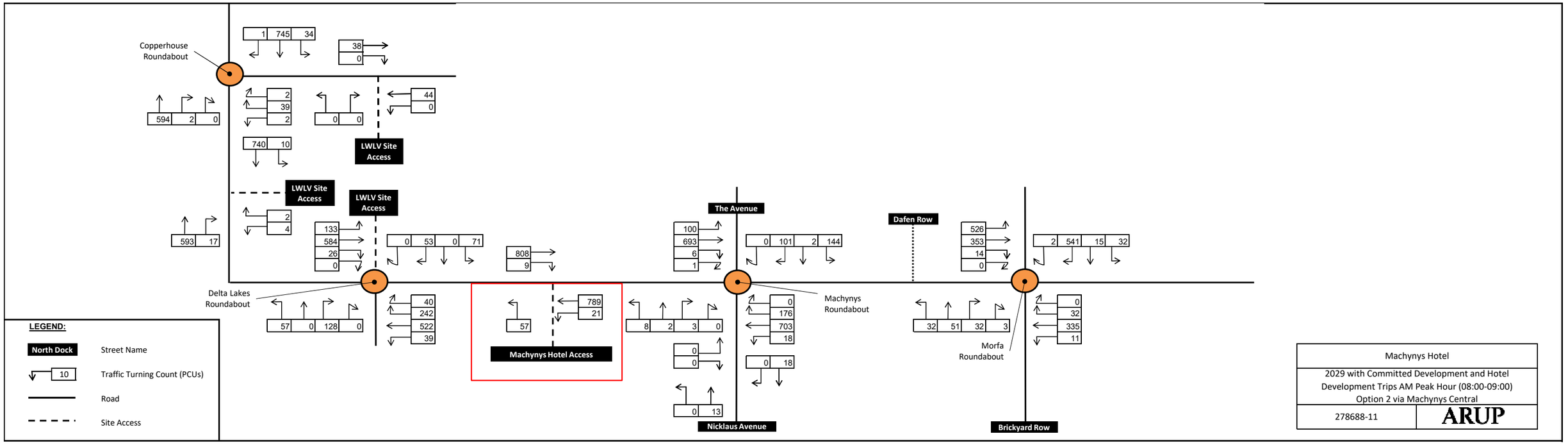
Appendix B Trip Generation and Distribution

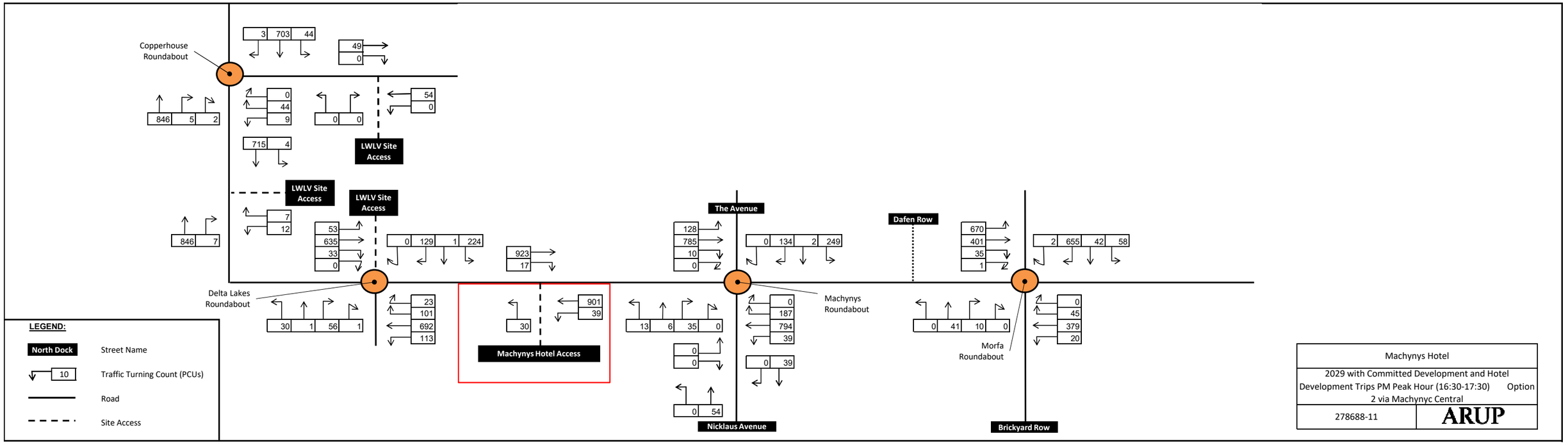

Copperhouse Roundabout
Copperhouse Road
Site Access
The Avenue
Dafen Row
Delta Lakes Roundabout
Machynys Roundabout
Morfa Roundabout
Nicklaus Avenue
Brickyard Row
LEGEND:
North Dock
Street Name
Traffic Turning Count (PCUs)
Road
Site Access
Machynys Hotel
2024 Base Year, AM Peak Hour (08:00-09:00)
278688-11
ARUP


Copperhouse Roundabout
3 603 38
41
Copperhouse Road
45
0 37 9
667 3 2
614
672
Site Access
0 578 29 0
0 0 0 1
636
The Avenue
72 555 10 0
0 100 2 223
Dafen Row
475 348 24 1
1 529 32 56
Delta Lakes Roundabout
28 0 54 1
2 0 643 109
756
13 5 34 0
Machynys Roundabout
0 173 645 37
37
0 36 9 0
Morfa Roundabout
0 43 352 18
52
Nicklaus Avenue
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
Road
Site Access
Machynys Hotel
2024 Base Year, PM Peak Hour (16:30-17:30)
278688-11
ARUP


Copperhouse Roundabout
1 739 34
38 0
584 2 0
2 39 2
0 0
44 0
733 10
LWLV Site Access
LWLV Site Access
LWLV Site Access
2 4
583 17
133 578 26 0
0 53 0 71
784 3
Delta Lakes Roundabout
57 0 128 0
17 242 512 39
789 6
24
Machynys Hotel Access
The Avenue
100 670 6 1
0 101 2 144
Machynys Roundabout
8 2 3 0
0 176 688 18
0 0
0 18
0 13
Nicklaus Avenue
Dafen Row
507 348 14 0
2 530 15 32
32 51 32 3
Morfa Roundabout
0 32 335 11
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
Road
Site Access
Machynys Hotel
2029 with Commmitted Development
AM Peak Hour (08:00-09:00)
278688-11
ARUP


Copperhouse Roundabout
3 691 44
49 0
0 44 9
0 0
54 0
839 5 2
704 4
LWLV Site Access
LWLV Site Access
LWLV Site Access
7 12
839 7
53 624 33 0
0 129 1 224
907 5
Delta Lakes Roundabout
30 1 56 1
8 101 685 113
8
901 13
Machynys Hotel Access
The Avenue
128 770 10 0
0 134 2 249
Machynys Roundabout
13 6 35 0
0 187 768 39
0 0
0 39
0 54
Nicklaus Avenue
Dafen Row
658 398 35 1
2 634 42 58
0 41 10 0
0 45 379 20
Morfa Roundabout
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
Road
Site Access
Machynys Hotel
2029 with Commmitted Development
PM Peak Hour (16:30-17:30)
278688-11
ARUP


Copperhouse Roundabout
1 745 34
38 0
2 39 2
0 0
44 0
594 2 0
740 10
LWLV Site Access
LWLV Site Access
LWLV Site Access
2 4
593 17
133 584 26 0
0 53 0 71
808 9
Delta Lakes Roundabout
57 0 128 0
40 242 522 39
789 21
57
Machynys Hotel Access
The Avenue
100 693 6 1
0 101 2 144
Machynys Roundabout
8 2 3 0
0 176 703 18
0 0
0 18
0 13
Nicklaus Avenue
Dafen Row
526 353 14 0
2 541 15 32
32 51 32 3
Morfa Roundabout
0 32 335 11
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
Road
Site Access
Machynys Hotel
2029 with Committed Development and Hotel Development Trips AM Peak Hour (08:00-09:00)
Option 2 via Machynys Central
278688-11
ARUP


Copperhouse Roundabout
3 703 44
49 0
0 44 9
0 0
54 0
846 5 2
715 4
LWLV Site Access
LWLV Site Access
LWLV Site Access
7 12
846 7
53 635 33 0
0 129 1 224
923 17
Delta Lakes Roundabout
30 1 56 1
23 101 692 113
30
901 39
Machynys Hotel Access
The Avenue
128 785 10 0
0 134 2 249
13 6 35 0
0 187 794 39
0 0
0 39
0 54
Nicklaus Avenue
Machynys Roundabout
Dafen Row
670 401 35 1
2 655 42 58
0 41 10 0
0 45 379 20
Morfa Roundabout
Brickyard Row
LEGEND:
North Dock
Street Name
10
Traffic Turning Count (PCUs)
Road
Site Access
Machynys Hotel
2029 with Committed Development and Hotel Development Trips PM Peak Hour (16:30-17:30) Option 2 via Machynyc Central
278688-11
ARUP

Appendix C Junctions 10 Outputs

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 01. Copperhouse Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:20:08

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Coastal Link N	D1	0.4	2.40	0.30	2.47	A	D2	0.5	2.52	0.33	2.67	A
2 - Copperhouse Road		0.0	2.65	0.03				0.0	2.54	0.03		
3 - Coastal Link S		0.4	2.53	0.27				0.6	2.81	0.36		
	2029 with Committed Development											
1 - Coastal Link N	D3	0.7	2.78	0.39	2.76	A	D4	0.6	2.71	0.37	3.02	A
2 - Copperhouse Road		0.0	2.90	0.03				0.0	2.65	0.04		
3 - Coastal Link S		0.5	2.72	0.32				0.9	3.32	0.46		
	2029 with Committed Development and Machynys Hotel											
1 - Coastal Link N	D13	0.7	2.80	0.40	2.78	A	D14	0.6	2.74	0.38	3.05	A
2 - Copperhouse Road		0.0	2.91	0.03				0.0	2.66	0.04		
3 - Coastal Link S		0.5	2.75	0.32				0.9	3.34	0.46		

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	1
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	Using the historical data in 2017	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	Using the historical data in 2017	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM		ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM		ONE HOUR	16:15	17:45	15	✓
D13	2029 with Committed Development and Machynys Hotel	AM		ONE HOUR	07:45	09:15	15	✓
D14	2029 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

2024 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.47	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.47	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	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	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	Using the historical data in 2017	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	✓	584	100.000
2 - Copperhouse Road		ONE HOUR	✓	39	100.000
3 - Coastal Link S		ONE HOUR	✓	492	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	555
	2 - Copperhouse Road	35	2	2
	3 - Coastal Link S	491	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	0.30	2.40	0.4	1.6	A	536	804
2 - Copperhouse Road	0.03	2.65	0.0	0.5	A	36	54
3 - Coastal Link S	0.27	2.53	0.4	1.5	A	451	677

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	440	110	2	2174	0.202	439	396	0.0	0.3	2.117	A
2 - Copperhouse Road	29	7	418	1724	0.017	29	23	0.0	0.0	2.442	A
3 - Coastal Link S	370	93	29	2043	0.181	369	418	0.0	0.2	2.257	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	525	131	3	2174	0.242	525	474	0.3	0.3	2.228	A
2 - Copperhouse Road	35	9	500	1673	0.021	35	28	0.0	0.0	2.526	A
3 - Coastal Link S	442	111	34	2040	0.217	442	500	0.2	0.3	2.365	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	643	161	3	2173	0.296	643	580	0.3	0.4	2.401	A
2 - Copperhouse Road	43	11	612	1603	0.027	43	34	0.0	0.0	2.652	A
3 - Coastal Link S	542	135	42	2035	0.266	541	613	0.3	0.4	2.531	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	643	161	3	2173	0.296	643	580	0.4	0.4	2.401	A
2 - Copperhouse Road	43	11	612	1603	0.027	43	34	0.0	0.0	2.652	A
3 - Coastal Link S	542	135	42	2035	0.266	542	613	0.4	0.4	2.531	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	525	131	3	2174	0.242	525	474	0.4	0.3	2.229	A
2 - Copperhouse Road	35	9	500	1673	0.021	35	28	0.0	0.0	2.527	A
3 - Coastal Link S	442	111	34	2040	0.217	443	501	0.4	0.3	2.368	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	440	110	2	2174	0.202	440	397	0.3	0.3	2.119	A
2 - Copperhouse Road	29	7	419	1723	0.017	29	23	0.0	0.0	2.443	A
3 - Coastal Link S	370	93	29	2043	0.181	371	420	0.3	0.2	2.261	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	0.43	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	0.43	0.03	0.33	1.37	1.58			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	1.26	1.52			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	0.33	0.00	0.00	0.33	0.33			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

2024 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.67	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2024 Base	PM	Using the historical data in 2017	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	✓	644	100.000
2 - Copperhouse Road		ONE HOUR	✓	46	100.000
3 - Coastal Link S		ONE HOUR	✓	672	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	603
	2 - Copperhouse Road	37	0	9
	3 - Coastal Link S	667	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	0.33	2.52	0.5	2.1	A	591	886
2 - Copperhouse Road	0.03	2.54	0.0	0.5	A	42	63
3 - Coastal Link S	0.36	2.81	0.6	2.7	A	617	925

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	485	121	4	2173	0.223	484	531	0.0	0.3	2.181	A
2 - Copperhouse Road	35	9	457	1700	0.020	35	31	0.0	0.0	2.317	A
3 - Coastal Link S	506	126	30	2042	0.248	505	461	0.0	0.3	2.366	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	579	145	4	2173	0.266	579	635	0.3	0.4	2.312	A
2 - Copperhouse Road	41	10	546	1644	0.025	41	37	0.0	0.0	2.408	A
3 - Coastal Link S	604	151	36	2038	0.296	604	552	0.3	0.4	2.538	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	709	177	6	2172	0.326	709	778	0.4	0.5	2.519	A
2 - Copperhouse Road	51	13	669	1568	0.032	51	45	0.0	0.0	2.543	A
3 - Coastal Link S	740	185	44	2033	0.364	739	676	0.4	0.6	2.812	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	709	177	6	2172	0.326	709	778	0.5	0.5	2.519	A
2 - Copperhouse Road	51	13	669	1568	0.032	51	45	0.0	0.0	2.544	A
3 - Coastal Link S	740	185	44	2033	0.364	740	676	0.6	0.6	2.814	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	579	145	4	2173	0.266	579	636	0.5	0.4	2.315	A
2 - Copperhouse Road	41	10	547	1644	0.025	41	37	0.0	0.0	2.410	A
3 - Coastal Link S	604	151	36	2038	0.296	605	552	0.6	0.4	2.542	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	485	121	4	2173	0.223	485	533	0.4	0.3	2.183	A
2 - Copperhouse Road	35	9	458	1699	0.020	35	31	0.0	0.0	2.320	A
3 - Coastal Link S	506	126	30	2042	0.248	506	463	0.4	0.3	2.371	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	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.58	0.03	0.25	0.58	0.58			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	0.50	0.03	0.32	1.45	2.12			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	0.58	0.03	0.30	1.30	2.68			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

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.76	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.76	A

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	2029 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	✓	774	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	586	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	34	739
	2 - Copperhouse Road	39	2	2
	3 - Coastal Link S	584	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	0.39	2.78	0.7	2.7	A	710	1065
2 - Copperhouse Road	0.03	2.90	0.0	0.5	A	39	59
3 - Coastal Link S	0.32	2.72	0.5	2.0	A	538	807

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	583	146	3	2173	0.268	581	469	0.0	0.4	2.306	A
2 - Copperhouse Road	32	8	556	1638	0.020	32	29	0.0	0.0	2.581	A
3 - Coastal Link S	441	110	32	2041	0.216	440	556	0.0	0.3	2.359	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	696	174	4	2173	0.320	695	561	0.4	0.5	2.487	A
2 - Copperhouse Road	39	10	665	1570	0.025	39	34	0.0	0.0	2.706	A
3 - Coastal Link S	527	132	38	2037	0.259	526	666	0.3	0.4	2.501	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	852	213	4	2173	0.392	851	687	0.5	0.7	2.780	A
2 - Copperhouse Road	47	12	814	1478	0.032	47	42	0.0	0.0	2.898	A
3 - Coastal Link S	645	161	46	2032	0.318	645	815	0.4	0.5	2.724	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	852	213	4	2173	0.392	852	687	0.7	0.7	2.782	A
2 - Copperhouse Road	47	12	815	1477	0.032	47	42	0.0	0.0	2.899	A
3 - Coastal Link S	645	161	46	2032	0.318	645	816	0.5	0.5	2.725	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	696	174	4	2173	0.320	697	561	0.7	0.5	2.489	A
2 - Copperhouse Road	39	10	666	1570	0.025	39	34	0.0	0.0	2.707	A
3 - Coastal Link S	527	132	38	2037	0.259	527	667	0.5	0.4	2.505	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	583	146	3	2173	0.268	583	470	0.5	0.4	2.311	A
2 - Copperhouse Road	32	8	558	1637	0.020	32	29	0.0	0.0	2.585	A
3 - Coastal Link S	441	110	32	2041	0.216	441	558	0.4	0.3	2.362	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	0.37	0.00	0.00	0.37	0.37			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

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	0.48	0.00	0.00	0.48	0.48			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	0.36	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 - Coastal Link N	0.66	0.03	0.26	0.66	0.66			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	0.49	0.03	0.26	0.49	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	0.66	0.03	0.29	0.97	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	0.49	0.03	0.33	1.47	2.02			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	0.48	0.00	0.00	0.48	0.48			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	0.37	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 - Coastal Link N	0.38	0.00	0.00	0.38	0.38			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

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.02	A

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	2029 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	✓	738	100.000
2 - Copperhouse Road		ONE HOUR	✓	53	100.000
3 - Coastal Link S		ONE HOUR	✓	846	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	44	691
	2 - Copperhouse Road	44	0	9
	3 - Coastal Link S	839	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	2.71	0.6	2.8	A	677	1016
2 - Copperhouse Road	0.04	2.65	0.0	0.5	A	49	73
3 - Coastal Link S	0.46	3.32	0.9	1.6	A	776	1164

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	556	139	5	2172	0.256	554	665	0.0	0.4	2.276	A
2 - Copperhouse Road	40	10	523	1659	0.024	40	37	0.0	0.0	2.371	A
3 - Coastal Link S	637	159	35	2039	0.312	635	527	0.0	0.5	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 - Coastal Link N	663	166	6	2171	0.306	663	796	0.4	0.4	2.443	A
2 - Copperhouse Road	48	12	625	1595	0.030	48	44	0.0	0.0	2.480	A
3 - Coastal Link S	761	190	42	2034	0.374	760	631	0.5	0.6	2.856	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	813	203	8	2170	0.374	812	974	0.4	0.6	2.711	A
2 - Copperhouse Road	58	15	766	1508	0.039	58	54	0.0	0.0	2.648	A
3 - Coastal Link S	931	233	52	2028	0.459	930	772	0.6	0.9	3.315	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	813	203	8	2170	0.374	813	975	0.6	0.6	2.713	A
2 - Copperhouse Road	58	15	766	1507	0.039	58	54	0.0	0.0	2.649	A
3 - Coastal Link S	931	233	52	2028	0.459	931	773	0.9	0.9	3.320	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	663	166	6	2171	0.306	664	798	0.6	0.5	2.446	A
2 - Copperhouse Road	48	12	626	1594	0.030	48	44	0.0	0.0	2.481	A
3 - Coastal Link S	761	190	42	2034	0.374	762	632	0.9	0.6	2.865	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	556	139	5	2172	0.256	556	668	0.5	0.4	2.282	A
2 - Copperhouse Road	40	10	524	1658	0.024	40	37	0.0	0.0	2.374	A
3 - Coastal Link S	637	159	35	2039	0.312	637	529	0.6	0.5	2.602	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	0.35	0.00	0.00	0.35	0.35			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	0.46	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 - Coastal Link N	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.60	0.09	0.80	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	0.61	0.03	0.26	0.61	0.61			N/A	N/A
2 - Copperhouse Road	0.04	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.85	0.03	0.26	0.85	0.85			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	0.61	0.03	0.30	1.22	2.76			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	0.86	0.03	0.27	0.86	1.61			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	0.45	0.00	0.00	0.45	0.45			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	0.61	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	0.35	0.00	0.00	0.35	0.35			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	0.46	0.00	0.00	0.46	0.46			N/A	N/A

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.78	A

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	2029 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	✓	780	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	596	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	34	745
	2 - Copperhouse Road	39	2	2
	3 - Coastal Link S	594	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	0.40	2.80	0.7	2.7	A	716	1074
2 - Copperhouse Road	0.03	2.91	0.0	0.5	A	39	59
3 - Coastal Link S	0.32	2.75	0.5	2.1	A	547	820

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	587	147	3	2173	0.270	586	476	0.0	0.4	2.312	A
2 - Copperhouse Road	32	8	560	1635	0.020	32	29	0.0	0.0	2.585	A
3 - Coastal Link S	449	112	32	2041	0.220	448	561	0.0	0.3	2.370	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	701	175	4	2173	0.323	701	570	0.4	0.5	2.496	A
2 - Copperhouse Road	39	10	670	1567	0.025	39	34	0.0	0.0	2.712	A
3 - Coastal Link S	536	134	38	2037	0.263	535	671	0.3	0.4	2.516	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	859	215	4	2173	0.395	858	698	0.5	0.7	2.794	A
2 - Copperhouse Road	47	12	821	1474	0.032	47	42	0.0	0.0	2.906	A
3 - Coastal Link S	656	164	46	2032	0.323	656	822	0.4	0.5	2.746	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	859	215	4	2173	0.395	859	698	0.7	0.7	2.796	A
2 - Copperhouse Road	47	12	821	1473	0.032	47	42	0.0	0.0	2.907	A
3 - Coastal Link S	656	164	46	2032	0.323	656	822	0.5	0.5	2.746	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 - Coastal Link N	701	175	4	2173	0.323	702	570	0.7	0.5	2.500	A
2 - Copperhouse Road	39	10	671	1566	0.025	39	34	0.0	0.0	2.715	A
3 - Coastal Link S	536	134	38	2037	0.263	536	672	0.5	0.4	2.520	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	587	147	3	2173	0.270	588	478	0.5	0.4	2.319	A
2 - Copperhouse Road	32	8	562	1634	0.020	32	29	0.0	0.0	2.587	A
3 - Coastal Link S	449	112	32	2041	0.220	449	563	0.4	0.3	2.375	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	0.38	0.00	0.00	0.38	0.38			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

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	0.48	0.00	0.00	0.48	0.48			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	0.37	0.00	0.00	0.37	0.37			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	0.66	0.03	0.26	0.66	0.66			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	0.50	0.03	0.26	0.50	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	0.67	0.03	0.29	0.92	2.69			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	0.50	0.03	0.33	1.48	2.10			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	0.49	0.00	0.00	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	0.38	0.00	0.00	0.38	0.38			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	0.38	0.00	0.00	0.38	0.38			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	0.30	0.00	0.00	0.30	0.30			N/A	N/A

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.05	A

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	2029 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	✓	750	100.000
2 - Copperhouse Road		ONE HOUR	✓	53	100.000
3 - Coastal Link S		ONE HOUR	✓	853	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	44	703
	2 - Copperhouse Road	44	0	9
	3 - Coastal Link S	846	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	0.38	2.74	0.6	2.7	A	688	1032
2 - Copperhouse Road	0.04	2.66	0.0	0.5	A	49	73
3 - Coastal Link S	0.46	3.34	0.9	1.5	A	783	1174

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	565	141	5	2172	0.260	563	670	0.0	0.4	2.288	A
2 - Copperhouse Road	40	10	532	1653	0.024	40	37	0.0	0.0	2.379	A
3 - Coastal Link S	642	161	35	2039	0.315	640	536	0.0	0.5	2.601	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	674	169	6	2171	0.311	674	802	0.4	0.5	2.461	A
2 - Copperhouse Road	48	12	636	1588	0.030	48	44	0.0	0.0	2.491	A
3 - Coastal Link S	767	192	42	2034	0.377	766	641	0.5	0.6	2.871	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	826	206	8	2170	0.380	825	982	0.5	0.6	2.738	A
2 - Copperhouse Road	58	15	779	1500	0.039	58	54	0.0	0.0	2.663	A
3 - Coastal Link S	939	235	52	2028	0.463	938	785	0.6	0.9	3.338	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	826	206	8	2170	0.380	826	983	0.6	0.6	2.740	A
2 - Copperhouse Road	58	15	780	1499	0.039	58	54	0.0	0.0	2.664	A
3 - Coastal Link S	939	235	52	2028	0.463	939	786	0.9	0.9	3.343	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	674	169	6	2171	0.311	675	804	0.6	0.5	2.465	A
2 - Copperhouse Road	48	12	637	1588	0.030	48	44	0.0	0.0	2.494	A
3 - Coastal Link S	767	192	42	2034	0.377	768	642	0.9	0.6	2.880	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	565	141	5	2172	0.260	565	673	0.5	0.4	2.293	A
2 - Copperhouse Road	40	10	533	1652	0.024	40	37	0.0	0.0	2.382	A
3 - Coastal Link S	642	161	35	2039	0.315	643	538	0.6	0.5	2.612	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	0.46	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 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.61	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	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	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 - Coastal Link N	0.63	0.03	0.29	1.14	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	0.87	0.03	0.27	0.87	1.53			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 - 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	0.62	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	0.36	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

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 02. Delta Lakes Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:24:21

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Site Access	D13	0.0	2.61	0.03	3.05	A	D14	0.0	0.00	0.00	3.45	A
2 - Coastal Link Road E		0.5	3.07	0.32				0.9	3.72	0.46		
3 - Pentre Nicklaus		0.1	2.46	0.10				0.1	2.52	0.06		
4 - Coastal Link Road W		0.5	3.23	0.35				0.6	3.23	0.37		
	2029 with Committed Development											
1 - Site Access	D15	0.1	2.90	0.10	4.20	A	D16	0.4	3.58	0.28	4.29	A
2 - Coastal Link Road E		1.0	4.23	0.50				1.4	5.05	0.58		
3 - Pentre Nicklaus		0.2	2.96	0.14				0.1	2.91	0.07		
4 - Coastal Link Road W		1.1	4.70	0.51				0.8	3.85	0.45		
	2029 with Committed Development and Machynys Hotel											
1 - Site Access	D17	0.1	2.95	0.10	4.34	A	D18	0.4	3.64	0.28	4.42	A
2 - Coastal Link Road E		1.1	4.41	0.52				1.5	5.23	0.60		
3 - Pentre Nicklaus		0.2	3.02	0.14				0.1	2.94	0.07		
4 - Coastal Link Road W		1.1	4.84	0.52				0.9	3.94	0.46		

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	Delta Lakes Roundabout
Location	Machynys
Site number	2
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

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
D13	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D14	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D15	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D16	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D17	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D18	2029 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

2024 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	3.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.05	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	Exit only
1 - Site Access	3.66	7.81	14.0	40.0	60.0	17.0		
2 - Coastal Link Road E	3.74	7.83	11.0	41.0	60.0	16.0		
3 - Pentre Nicklaus	3.62	7.64	22.0	38.0	60.0	15.0		
4 - Coastal Link Road W	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 - Site Access	0.606	1876
2 - Coastal Link Road E	0.598	1824
3 - Pentre Nicklaus	0.630	2006
4 - Coastal Link Road W	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
D13	2024 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 - Site Access		ONE HOUR	✓	40	100.000
2 - Coastal Link Road E		ONE HOUR	✓	520	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	154	100.000
4 - Coastal Link Road W		ONE HOUR	✓	557	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	18	0	22
	2 - Coastal Link Road E	22	0	37	461
	3 - Pentre Nicklaus	0	123	0	31
	4 - Coastal Link Road W	0	544	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.03	2.61	0.0	0.5	A	37	55
2 - Coastal Link Road E	0.32	3.07	0.5	2.0	A	477	716
3 - Pentre Nicklaus	0.10	2.46	0.1	0.5	A	141	212
4 - Coastal Link Road W	0.35	3.23	0.5	2.6	A	511	767

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 - Site Access	30	8	510	1567	0.019	30	17	0.0	0.0	2.341	A
2 - Coastal Link Road E	391	98	26	1809	0.216	390	514	0.0	0.3	2.658	A
3 - Pentre Nicklaus	116	29	379	1767	0.066	116	38	0.0	0.1	2.214	A
4 - Coastal Link Road W	419	105	109	1779	0.236	418	386	0.0	0.3	2.693	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 - Site Access	36	9	611	1506	0.024	36	20	0.0	0.0	2.448	A
2 - Coastal Link Road E	467	117	31	1805	0.259	467	615	0.3	0.4	2.820	A
3 - Pentre Nicklaus	138	35	454	1720	0.080	138	45	0.1	0.1	2.311	A
4 - Coastal Link Road W	501	125	130	1767	0.283	500	462	0.3	0.4	2.898	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 - Site Access	44	11	748	1423	0.031	44	24	0.0	0.0	2.609	A
2 - Coastal Link Road E	573	143	39	1801	0.318	572	754	0.4	0.5	3.068	A
3 - Pentre Nicklaus	170	42	556	1656	0.102	169	55	0.1	0.1	2.460	A
4 - Coastal Link Road W	613	153	160	1749	0.351	613	565	0.4	0.5	3.228	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 - Site Access	44	11	749	1423	0.031	44	24	0.0	0.0	2.610	A
2 - Coastal Link Road E	573	143	39	1801	0.318	573	754	0.5	0.5	3.071	A
3 - Pentre Nicklaus	170	42	556	1656	0.102	170	55	0.1	0.1	2.460	A
4 - Coastal Link Road W	613	153	160	1749	0.351	613	566	0.5	0.5	3.231	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 - Site Access	36	9	612	1506	0.024	36	20	0.0	0.0	2.451	A
2 - Coastal Link Road E	467	117	31	1805	0.259	468	616	0.5	0.4	2.822	A
3 - Pentre Nicklaus	138	35	454	1720	0.081	139	45	0.1	0.1	2.314	A
4 - Coastal Link Road W	501	125	130	1766	0.283	501	463	0.5	0.4	2.901	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 - Site Access	30	8	512	1566	0.019	30	17	0.0	0.0	2.343	A
2 - Coastal Link Road E	391	98	26	1808	0.216	392	516	0.4	0.3	2.666	A
3 - Pentre Nicklaus	116	29	380	1766	0.066	116	38	0.1	0.1	2.216	A
4 - Coastal Link Road W	419	105	109	1779	0.236	420	387	0.4	0.3	2.699	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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - Pentre Nicklaus	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.02	0.02	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3 - Pentre Nicklaus	0.09	0.03	0.27	0.48	0.50			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2 - Coastal Link Road E	0.49	0.03	0.26	0.49	0.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.03	0.26	0.47	0.50			N/A	N/A
4 - Coastal Link Road W	0.55	0.03	0.26	0.55	0.55			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 - Site Access	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2 - Coastal Link Road E	0.49	0.03	0.33	1.46	2.04			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.55	0.03	0.30	1.38	2.57			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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.37	0.00	0.00	0.37	0.37			N/A	N/A
3 - Pentre Nicklaus	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4 - Coastal Link Road W	0.41	0.00	0.00	0.41	0.41			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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - Pentre Nicklaus	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link Road W	0.32	0.00	0.00	0.32	0.32			N/A	N/A

2024 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	3.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.45	A

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	2024 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 - Site Access		ONE HOUR	✓	1	100.000
2 - Coastal Link Road E		ONE HOUR	✓	754	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	83	100.000
4 - Coastal Link Road W		ONE HOUR	✓	607	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	1	0	0
	2 - Coastal Link Road E	0	2	109	643
	3 - Pentre Nicklaus	0	54	1	28
	4 - Coastal Link Road W	0	578	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.0	~1	A	0	0
2 - Coastal Link Road E	0.46	3.72	0.9	1.7	A	692	1038
3 - Pentre Nicklaus	0.06	2.52	0.1	0.5	A	76	114
4 - Coastal Link Road W	0.37	3.23	0.6	2.7	A	557	835

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 - Site Access	0	0	498	1574	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	568	142	23	1811	0.313	566	476	0.0	0.5	2.913	A
3 - Pentre Nicklaus	62	16	484	1701	0.037	62	104	0.0	0.0	2.253	A
4 - Coastal Link Road W	457	114	43	1819	0.251	456	504	0.0	0.3	2.693	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 - Site Access	0	0	597	1515	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	678	169	27	1808	0.375	677	570	0.5	0.6	3.208	A
3 - Pentre Nicklaus	75	19	579	1641	0.045	75	125	0.0	0.0	2.356	A
4 - Coastal Link Road W	546	136	51	1814	0.301	545	603	0.3	0.4	2.896	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 - Site Access	0	0	730	1434	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	830	208	33	1805	0.460	829	697	0.6	0.9	3.719	A
3 - Pentre Nicklaus	91	23	709	1559	0.059	91	153	0.0	0.1	2.515	A
4 - Coastal Link Road W	668	167	63	1807	0.370	668	738	0.4	0.6	3.223	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 - Site Access	0	0	731	1433	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	830	208	33	1804	0.460	830	698	0.9	0.9	3.725	A
3 - Pentre Nicklaus	91	23	710	1559	0.059	91	153	0.1	0.1	2.516	A
4 - Coastal Link Road W	668	167	63	1807	0.370	668	739	0.6	0.6	3.226	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 - Site Access	0	0	598	1514	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	678	169	27	1808	0.375	679	571	0.9	0.6	3.217	A
3 - Pentre Nicklaus	75	19	581	1640	0.045	75	125	0.1	0.0	2.360	A
4 - Coastal Link Road W	546	136	51	1814	0.301	546	604	0.6	0.4	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 - Site Access	0	0	500	1573	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	568	142	23	1811	0.313	568	478	0.6	0.5	2.925	A
3 - Pentre Nicklaus	62	16	486	1700	0.037	63	105	0.0	0.0	2.254	A
4 - Coastal Link Road W	457	114	43	1819	0.251	457	506	0.4	0.3	2.701	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Pentre Nicklaus	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.60	0.09	0.82	1.37	1.44			N/A	N/A
3 - Pentre Nicklaus	0.05	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.44	0.00	0.00	0.44	0.44			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.85	0.03	0.26	0.85	0.85			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.27	0.48	0.50			N/A	N/A
4 - Coastal Link Road W	0.60	0.03	0.26	0.60	0.60			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.86	0.03	0.27	0.86	1.66			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	0.60	0.03	0.30	1.23	2.72			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.61	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Pentre Nicklaus	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link Road W	0.34	0.00	0.00	0.34	0.34			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.20	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.20	A

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	2029 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 - Site Access		ONE HOUR	✓	124	100.000
2 - Coastal Link Road E		ONE HOUR	✓	810	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	185	100.000
4 - Coastal Link Road W		ONE HOUR	✓	737	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	71	0	53
	2 - Coastal Link Road E	242	17	39	512
	3 - Pentre Nicklaus	0	128	0	57
	4 - Coastal Link Road W	133	578	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.10	2.90	0.1	0.5	A	114	171
2 - Coastal Link Road E	0.50	4.23	1.0	1.5	A	743	1115
3 - Pentre Nicklaus	0.14	2.96	0.2	0.5	A	170	255
4 - Coastal Link Road W	0.51	4.70	1.1	1.5	A	676	1014

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 - Site Access	93	23	562	1536	0.061	93	281	0.0	0.1	2.495	A
2 - Coastal Link Road E	610	152	59	1789	0.341	608	596	0.0	0.5	3.146	A
3 - Pentre Nicklaus	139	35	618	1616	0.086	139	49	0.0	0.1	2.470	A
4 - Coastal Link Road W	555	139	290	1670	0.332	553	467	0.0	0.5	3.266	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 - Site Access	111	28	673	1469	0.076	111	337	0.1	0.1	2.651	A
2 - Coastal Link Road E	728	182	71	1782	0.409	727	713	0.5	0.7	3.529	A
3 - Pentre Nicklaus	166	42	740	1540	0.108	166	58	0.1	0.1	2.656	A
4 - Coastal Link Road W	663	166	348	1636	0.405	662	559	0.5	0.7	3.752	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 - Site Access	137	34	823	1377	0.099	136	412	0.1	0.1	2.900	A
2 - Coastal Link Road E	892	223	87	1772	0.503	891	873	0.7	1.0	4.215	A
3 - Pentre Nicklaus	204	51	906	1435	0.142	204	71	0.1	0.2	2.962	A
4 - Coastal Link Road W	811	203	426	1589	0.511	810	684	0.7	1.0	4.685	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 - Site Access	137	34	825	1377	0.099	137	413	0.1	0.1	2.902	A
2 - Coastal Link Road E	892	223	87	1772	0.503	892	874	1.0	1.0	4.227	A
3 - Pentre Nicklaus	204	51	907	1434	0.142	204	72	0.2	0.2	2.964	A
4 - Coastal Link Road W	811	203	426	1589	0.511	811	685	1.0	1.1	4.703	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 - Site Access	111	28	675	1468	0.076	112	338	0.1	0.1	2.656	A
2 - Coastal Link Road E	728	182	71	1782	0.409	729	715	1.0	0.7	3.543	A
3 - Pentre Nicklaus	166	42	742	1538	0.108	166	59	0.2	0.1	2.659	A
4 - Coastal Link Road W	663	166	348	1635	0.405	664	560	1.1	0.7	3.768	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 - Site Access	93	23	565	1534	0.061	93	283	0.1	0.1	2.498	A
2 - Coastal Link Road E	610	152	60	1789	0.341	611	598	0.7	0.5	3.163	A
3 - Pentre Nicklaus	139	35	621	1615	0.086	139	49	0.1	0.1	2.473	A
4 - Coastal Link Road W	555	139	292	1670	0.332	556	469	0.7	0.5	3.286	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 - Site Access	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2 - Coastal Link Road E	0.53	0.53	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.50	0.00	0.00	0.50	0.50			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 - Site Access	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	0.71	0.10	0.86	1.42	1.49			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.69	0.09	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 - Site Access	0.11	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	1.04	0.03	0.26	1.04	1.04			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link Road W	1.05	0.03	0.26	1.05	1.05			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 - Site Access	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link Road E	1.04	0.03	0.28	1.04	1.47			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link Road W	1.05	0.03	0.27	1.05	1.22			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 - Site Access	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link Road E	0.72	0.57	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.70	0.51	0.99	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 - Site Access	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2 - Coastal Link Road E	0.54	0.06	0.62	1.37	1.46			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.51	0.05	0.48	1.31	1.42			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.29	A

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	2029 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 - Site Access		ONE HOUR	✓	354	100.000
2 - Coastal Link Road E		ONE HOUR	✓	907	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	88	100.000
4 - Coastal Link Road W		ONE HOUR	✓	710	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	224	1	129
	2 - Coastal Link Road E	101	8	113	685
	3 - Pentre Nicklaus	1	56	1	30
	4 - Coastal Link Road W	53	624	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.28	3.58	0.4	1.2	A	325	487
2 - Coastal Link Road E	0.58	5.05	1.4	1.8	A	832	1248
3 - Pentre Nicklaus	0.07	2.91	0.1	0.5	A	81	121
4 - Coastal Link Road W	0.45	3.85	0.8	2.0	A	652	977

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 - Site Access	267	67	542	1548	0.172	266	116	0.0	0.2	2.806	A
2 - Coastal Link Road E	683	171	123	1751	0.390	680	684	0.0	0.6	3.380	A
3 - Pentre Nicklaus	66	17	692	1570	0.042	66	111	0.0	0.0	2.455	A
4 - Coastal Link Road W	535	134	125	1770	0.302	533	633	0.0	0.4	2.963	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 - Site Access	318	80	649	1483	0.215	318	139	0.2	0.3	3.088	A
2 - Coastal Link Road E	815	204	147	1736	0.470	814	819	0.6	0.9	3.931	A
3 - Pentre Nicklaus	79	20	829	1484	0.053	79	133	0.0	0.1	2.628	A
4 - Coastal Link Road W	638	160	150	1755	0.364	638	758	0.4	0.6	3.283	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 - Site Access	390	97	794	1395	0.279	389	170	0.3	0.4	3.576	A
2 - Coastal Link Road E	999	250	180	1716	0.582	997	1003	0.9	1.4	5.025	A
3 - Pentre Nicklaus	97	24	1014	1367	0.071	97	163	0.1	0.1	2.907	A
4 - Coastal Link Road W	782	195	184	1735	0.451	781	928	0.6	0.8	3.843	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 - Site Access	390	97	795	1395	0.279	390	171	0.4	0.4	3.581	A
2 - Coastal Link Road E	999	250	181	1716	0.582	999	1004	1.4	1.4	5.053	A
3 - Pentre Nicklaus	97	24	1016	1366	0.071	97	163	0.1	0.1	2.909	A
4 - Coastal Link Road W	782	195	184	1734	0.451	782	929	0.8	0.8	3.851	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 - Site Access	318	80	650	1482	0.215	319	140	0.4	0.3	3.093	A
2 - Coastal Link Road E	815	204	148	1736	0.470	817	821	1.4	0.9	3.958	A
3 - Pentre Nicklaus	79	20	832	1482	0.053	79	133	0.1	0.1	2.634	A
4 - Coastal Link Road W	638	160	150	1754	0.364	639	760	0.8	0.6	3.292	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 - Site Access	267	67	544	1547	0.172	267	117	0.3	0.2	2.812	A
2 - Coastal Link Road E	683	171	124	1750	0.390	684	687	0.9	0.6	3.403	A
3 - Pentre Nicklaus	66	17	696	1568	0.042	66	112	0.1	0.0	2.459	A
4 - Coastal Link Road W	535	134	126	1769	0.302	535	636	0.6	0.4	2.974	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.64	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link Road E	0.89	0.08	0.84	1.40	1.81			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.58	0.08	0.80	1.38	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 - Site Access	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	1.38	0.03	0.26	1.38	1.38			N/A	N/A
3 - Pentre Nicklaus	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4 - Coastal Link Road W	0.83	0.03	0.26	0.83	0.83			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 - Site Access	0.39	0.03	0.33	1.20	1.20			N/A	N/A
2 - Coastal Link Road E	1.39	0.03	0.27	1.39	1.39			N/A	N/A
3 - Pentre Nicklaus	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4 - Coastal Link Road W	0.83	0.03	0.28	0.83	1.97			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 - Site Access	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link Road E	0.90	0.32	0.99	1.44	1.50			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	0.59	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.65	0.07	0.75	1.37	1.45			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.44	0.00	0.00	0.44	0.44			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.34	A

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	2029 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 - Site Access		ONE HOUR	✓	124	100.000
2 - Coastal Link Road E		ONE HOUR	✓	843	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	185	100.000
4 - Coastal Link Road W		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	71	0	53
	2 - Coastal Link Road E	242	40	39	522
	3 - Pentre Nicklaus	0	128	0	57
	4 - Coastal Link Road W	133	584	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.10	2.95	0.1	0.5	A	114	171
2 - Coastal Link Road E	0.52	4.41	1.1	1.5	A	774	1160
3 - Pentre Nicklaus	0.14	3.02	0.2	0.5	A	170	255
4 - Coastal Link Road W	0.52	4.84	1.1	1.5	A	682	1023

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 - Site Access	93	23	584	1523	0.061	93	281	0.0	0.1	2.518	A
2 - Coastal Link Road E	635	159	59	1789	0.355	632	617	0.0	0.6	3.211	A
3 - Pentre Nicklaus	139	35	643	1601	0.087	139	49	0.0	0.1	2.496	A
4 - Coastal Link Road W	559	140	308	1660	0.337	557	474	0.0	0.5	3.311	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 - Site Access	111	28	699	1453	0.077	111	337	0.1	0.1	2.682	A
2 - Coastal Link Road E	758	189	71	1782	0.425	757	739	0.6	0.8	3.628	A
3 - Pentre Nicklaus	166	42	770	1521	0.109	166	58	0.1	0.1	2.693	A
4 - Coastal Link Road W	668	167	368	1624	0.411	667	568	0.5	0.7	3.819	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 - Site Access	137	34	855	1358	0.101	136	412	0.1	0.1	2.946	A
2 - Coastal Link Road E	928	232	87	1772	0.524	927	905	0.8	1.1	4.392	A
3 - Pentre Nicklaus	204	51	942	1412	0.144	204	71	0.1	0.2	3.018	A
4 - Coastal Link Road W	818	205	451	1574	0.520	817	695	0.7	1.1	4.818	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 - Site Access	137	34	857	1357	0.101	137	413	0.1	0.1	2.948	A
2 - Coastal Link Road E	928	232	87	1772	0.524	928	906	1.1	1.1	4.406	A
3 - Pentre Nicklaus	204	51	944	1412	0.144	204	72	0.2	0.2	3.020	A
4 - Coastal Link Road W	818	205	451	1573	0.520	818	696	1.1	1.1	4.839	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 - Site Access	111	28	701	1452	0.077	112	338	0.1	0.1	2.686	A
2 - Coastal Link Road E	758	189	71	1782	0.425	759	741	1.1	0.8	3.642	A
3 - Pentre Nicklaus	166	42	772	1520	0.109	166	59	0.2	0.1	2.698	A
4 - Coastal Link Road W	668	167	369	1623	0.412	669	569	1.1	0.7	3.842	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 - Site Access	93	23	586	1521	0.061	93	283	0.1	0.1	2.521	A
2 - Coastal Link Road E	635	159	60	1789	0.355	635	620	0.8	0.6	3.226	A
3 - Pentre Nicklaus	139	35	646	1599	0.087	139	49	0.1	0.1	2.502	A
4 - Coastal Link Road W	559	140	309	1659	0.337	560	476	0.7	0.5	3.328	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 - Site Access	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2 - Coastal Link Road E	0.57	0.57	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.51	0.51	1.02	1.42	1.47			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 - Site Access	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	0.76	0.10	0.86	1.45	1.52			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.70	0.09	0.83	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 - Site Access	0.11	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	1.12	0.03	0.26	1.12	1.12			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link Road W	1.09	0.03	0.26	1.09	1.09			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 - Site Access	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link Road E	1.13	0.03	0.27	1.13	1.25			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link Road W	1.09	0.03	0.27	1.09	1.11			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 - Site Access	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link Road E	0.77	0.54	1.02	1.44	1.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.72	0.45	0.99	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 - Site Access	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2 - Coastal Link Road E	0.57	0.07	0.73	1.39	1.47			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.52	0.05	0.51	1.32	1.42			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.42	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.42	A

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	2029 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 - Site Access		ONE HOUR	✓	354	100.000
2 - Coastal Link Road E		ONE HOUR	✓	929	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	88	100.000
4 - Coastal Link Road W		ONE HOUR	✓	721	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	224	1	129
	2 - Coastal Link Road E	101	23	113	692
	3 - Pentre Nicklaus	1	56	1	30
	4 - Coastal Link Road W	53	635	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.28	3.64	0.4	1.3	A	325	487
2 - Coastal Link Road E	0.60	5.23	1.5	1.9	A	852	1279
3 - Pentre Nicklaus	0.07	2.94	0.1	0.5	A	81	121
4 - Coastal Link Road W	0.46	3.94	0.9	1.8	A	662	992

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 - Site Access	267	67	561	1536	0.173	266	116	0.0	0.2	2.832	A
2 - Coastal Link Road E	699	175	123	1751	0.400	697	704	0.0	0.7	3.432	A
3 - Pentre Nicklaus	66	17	709	1559	0.042	66	111	0.0	0.0	2.473	A
4 - Coastal Link Road W	543	136	137	1763	0.308	541	638	0.0	0.5	3.000	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 - Site Access	318	80	672	1469	0.217	318	139	0.2	0.3	3.126	A
2 - Coastal Link Road E	835	209	147	1736	0.481	834	843	0.7	0.9	4.017	A
3 - Pentre Nicklaus	79	20	849	1471	0.054	79	133	0.0	0.1	2.652	A
4 - Coastal Link Road W	648	162	163	1747	0.371	648	764	0.5	0.6	3.337	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 - Site Access	390	97	822	1378	0.283	389	170	0.3	0.4	3.639	A
2 - Coastal Link Road E	1023	256	180	1716	0.596	1021	1031	0.9	1.5	5.197	A
3 - Pentre Nicklaus	97	24	1038	1352	0.072	97	163	0.1	0.1	2.942	A
4 - Coastal Link Road W	794	198	200	1725	0.460	793	935	0.6	0.9	3.934	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 - Site Access	390	97	824	1377	0.283	390	171	0.4	0.4	3.644	A
2 - Coastal Link Road E	1023	256	181	1716	0.596	1023	1033	1.5	1.5	5.229	A
3 - Pentre Nicklaus	97	24	1040	1351	0.072	97	163	0.1	0.1	2.945	A
4 - Coastal Link Road W	794	198	200	1724	0.460	794	937	0.9	0.9	3.943	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 - Site Access	318	80	674	1468	0.217	319	140	0.4	0.3	3.132	A
2 - Coastal Link Road E	835	209	148	1736	0.481	837	845	1.5	0.9	4.046	A
3 - Pentre Nicklaus	79	20	852	1469	0.054	79	133	0.1	0.1	2.656	A
4 - Coastal Link Road W	648	162	164	1746	0.371	649	767	0.9	0.6	3.347	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 - Site Access	267	67	564	1535	0.174	267	117	0.3	0.2	2.841	A
2 - Coastal Link Road E	699	175	124	1750	0.400	700	707	0.9	0.7	3.457	A
3 - Pentre Nicklaus	66	17	712	1557	0.043	66	112	0.1	0.0	2.477	A
4 - Coastal Link Road W	543	136	137	1762	0.308	543	642	0.6	0.5	3.011	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.67	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.45	0.00	0.00	0.45	0.45			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 - Site Access	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link Road E	0.93	0.07	0.84	1.58	1.95			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.60	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 - Site Access	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	1.47	0.03	0.26	1.47	1.47			N/A	N/A
3 - Pentre Nicklaus	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4 - Coastal Link Road W	0.86	0.03	0.26	0.86	0.86			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 - Site Access	0.39	0.03	0.33	1.28	1.29			N/A	N/A
2 - Coastal Link Road E	1.48	0.03	0.27	1.48	1.48			N/A	N/A
3 - Pentre Nicklaus	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4 - Coastal Link Road W	0.87	0.03	0.28	0.87	1.83			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 - Site Access	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link Road E	0.94	0.27	1.00	1.35	1.35			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.67	0.07	0.75	1.39	1.47			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 03. Machynys Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:27:55

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - The Avenue	D1	0.2	2.80	0.12	3.21	A	D2	0.3	2.95	0.23	3.50	A
2 - Coastal Link E		0.6	3.21	0.37				1.0	3.90	0.50		
3 - Nicklaus Avenue		0.0	2.24	0.01				0.0	2.60	0.04		
4 - Coastal Link W		0.7	3.34	0.40				0.6	3.31	0.39		
	2029 with Committed Development											
1 - The Avenue	D3	0.2	3.08	0.18	3.92	A	D4	0.4	3.58	0.30	4.48	A
2 - Coastal Link E		1.1	4.28	0.52				1.5	4.81	0.59		
3 - Nicklaus Avenue		0.0	2.59	0.01				0.0	2.86	0.05		
4 - Coastal Link W		0.9	3.79	0.47				1.3	4.59	0.56		
	2029 with Committed Development and Machynys Hotel											
1 - The Avenue	D15	0.2	3.12	0.18	4.00	A	D16	0.4	3.62	0.30	4.61	A
2 - Coastal Link E		1.2	4.36	0.53				1.5	5.00	0.61		
3 - Nicklaus Avenue		0.0	2.61	0.01				0.0	2.90	0.05		
4 - Coastal Link W		0.9	3.90	0.48				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	3
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

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	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D15	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D16	2029 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

2024 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	3.21	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.21	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	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	2024 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	✓	177	100.000
2 - Coastal Link E		ONE HOUR	✓	644	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	671	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	130	2	45
	2 - Coastal Link E	154	0	18	472
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	78	587	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	2.80	0.2	0.5	A	162	244
2 - Coastal Link E	0.37	3.21	0.6	2.9	A	591	886
3 - Nicklaus Avenue	0.01	2.24	0.0	0.5	A	11	17
4 - Coastal Link W	0.40	3.34	0.7	2.7	A	616	924

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	447	1722	0.077	133	176	0.0	0.1	2.459	A
2 - Coastal Link E	485	121	40	1926	0.252	483	540	0.0	0.4	2.680	A
3 - Nicklaus Avenue	9	2	504	1771	0.005	9	19	0.0	0.0	2.043	A
4 - Coastal Link W	505	126	119	1880	0.269	504	394	0.0	0.4	2.686	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	159	40	535	1666	0.096	159	210	0.1	0.1	2.593	A
2 - Coastal Link E	579	145	48	1921	0.301	579	647	0.4	0.5	2.882	A
3 - Nicklaus Avenue	11	3	604	1706	0.006	11	22	0.0	0.0	2.123	A
4 - Coastal Link W	603	151	143	1865	0.323	603	472	0.4	0.5	2.930	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	195	49	656	1589	0.123	195	257	0.1	0.2	2.801	A
2 - Coastal Link E	709	177	58	1914	0.370	708	792	0.5	0.6	3.207	A
3 - Nicklaus Avenue	13	3	739	1618	0.008	13	27	0.0	0.0	2.243	A
4 - Coastal Link W	739	185	175	1845	0.400	738	578	0.5	0.7	3.340	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	195	49	656	1589	0.123	195	258	0.2	0.2	2.802	A
2 - Coastal Link E	709	177	58	1914	0.370	709	793	0.6	0.6	3.209	A
3 - Nicklaus Avenue	13	3	740	1617	0.008	13	28	0.0	0.0	2.244	A
4 - Coastal Link W	739	185	175	1845	0.400	739	578	0.7	0.7	3.343	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	159	40	536	1665	0.096	159	211	0.2	0.1	2.596	A
2 - Coastal Link E	579	145	48	1921	0.301	580	648	0.6	0.5	2.885	A
3 - Nicklaus Avenue	11	3	605	1705	0.006	11	23	0.0	0.0	2.125	A
4 - Coastal Link W	603	151	143	1865	0.323	604	472	0.7	0.5	2.936	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	449	1721	0.077	133	176	0.1	0.1	2.463	A
2 - Coastal Link E	485	121	40	1925	0.252	485	543	0.5	0.4	2.688	A
3 - Nicklaus Avenue	9	2	506	1769	0.005	9	19	0.0	0.0	2.046	A
4 - Coastal Link W	505	126	120	1879	0.269	506	396	0.5	0.4	2.692	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	0.38	0.00	0.00	0.38	0.38			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	0.49	0.00	0.00	0.49	0.49			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	0.63	0.03	0.27	0.63	0.63			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	0.68	0.03	0.26	0.68	0.68			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	0.63	0.03	0.31	1.29	2.86			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	0.89	2.71			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	0.12	0.00	0.00	0.12	0.12			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	0.01	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

2024 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	3.50	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.50	A

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	2024 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	✓	325	100.000
2 - Coastal Link E		ONE HOUR	✓	855	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	52	100.000
4 - Coastal Link W		ONE HOUR	✓	637	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	223	2	100
	2 - Coastal Link E	173	0	37	645
	3 - Nicklaus Avenue	5	34	0	13
	4 - Coastal Link W	72	555	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	0.23	2.95	0.3	1.2	A	298	447
2 - Coastal Link E	0.50	3.90	1.0	1.5	A	785	1177
3 - Nicklaus Avenue	0.04	2.60	0.0	0.5	A	48	72
4 - Coastal Link W	0.39	3.31	0.6	2.7	A	585	877

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	245	61	450	1721	0.142	244	188	0.0	0.2	2.453	A
2 - Coastal Link E	644	161	84	1898	0.339	642	610	0.0	0.5	2.888	A
3 - Nicklaus Avenue	39	10	689	1650	0.024	39	37	0.0	0.0	2.234	A
4 - Coastal Link W	480	120	159	1855	0.259	478	569	0.0	0.4	2.658	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	292	73	538	1664	0.176	292	225	0.2	0.2	2.641	A
2 - Coastal Link E	769	192	101	1887	0.407	768	729	0.5	0.7	3.245	A
3 - Nicklaus Avenue	47	12	825	1562	0.030	47	44	0.0	0.0	2.375	A
4 - Coastal Link W	573	143	190	1835	0.312	572	681	0.4	0.5	2.900	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	358	89	659	1587	0.225	358	275	0.2	0.3	2.947	A
2 - Coastal Link E	941	235	123	1873	0.503	940	893	0.7	1.0	3.889	A
3 - Nicklaus Avenue	57	14	1009	1441	0.040	57	54	0.0	0.0	2.600	A
4 - Coastal Link W	701	175	233	1808	0.388	701	833	0.5	0.6	3.304	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	358	89	660	1587	0.225	358	275	0.3	0.3	2.948	A
2 - Coastal Link E	941	235	123	1873	0.503	941	894	1.0	1.0	3.900	A
3 - Nicklaus Avenue	57	14	1011	1440	0.040	57	54	0.0	0.0	2.602	A
4 - Coastal Link W	701	175	233	1808	0.388	701	835	0.6	0.6	3.307	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	292	73	539	1664	0.176	292	225	0.3	0.2	2.645	A
2 - Coastal Link E	769	192	101	1887	0.407	770	731	1.0	0.7	3.255	A
3 - Nicklaus Avenue	47	12	827	1561	0.030	47	44	0.0	0.0	2.379	A
4 - Coastal Link W	573	143	191	1835	0.312	573	682	0.6	0.5	2.904	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	245	61	451	1720	0.142	245	188	0.2	0.2	2.459	A
2 - Coastal Link E	644	161	84	1898	0.339	644	612	0.7	0.5	2.903	A
3 - Nicklaus Avenue	39	10	692	1648	0.024	39	37	0.0	0.0	2.236	A
4 - Coastal Link W	480	120	160	1854	0.259	480	571	0.5	0.4	2.667	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	0.52	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

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	0.69	0.09	0.83	1.39	1.46			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	1.01	0.03	0.26	1.01	1.01			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	0.89	1.21			N/A	N/A
2 - Coastal Link E	1.02	0.03	0.27	1.02	1.39			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	1.08	2.74			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	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	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	0.36	0.00	0.00	0.36	0.36			N/A	N/A

2029 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	3.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.92	A

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	2029 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	✓	247	100.000
2 - Coastal Link E		ONE HOUR	✓	882	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	777	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	144	2	101
	2 - Coastal Link E	176	0	18	688
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	100	670	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	3.08	0.2	0.5	A	227	340
2 - Coastal Link E	0.52	4.28	1.1	1.6	A	809	1214
3 - Nicklaus Avenue	0.01	2.59	0.0	0.5	A	12	18
4 - Coastal Link W	0.47	3.79	0.9	1.7	A	713	1069

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	186	46	510	1682	0.111	185	209	0.0	0.1	2.593	A
2 - Coastal Link E	664	166	83	1899	0.350	662	613	0.0	0.6	3.120	A
3 - Nicklaus Avenue	10	2	725	1627	0.006	10	20	0.0	0.0	2.225	A
4 - Coastal Link W	585	146	136	1869	0.313	583	599	0.0	0.5	2.871	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	222	56	611	1618	0.137	222	250	0.1	0.2	2.779	A
2 - Coastal Link E	793	198	99	1888	0.420	792	734	0.6	0.8	3.524	A
3 - Nicklaus Avenue	12	3	868	1534	0.008	12	23	0.0	0.0	2.364	A
4 - Coastal Link W	699	175	163	1853	0.377	698	717	0.5	0.6	3.200	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	272	68	748	1531	0.178	272	306	0.2	0.2	3.082	A
2 - Coastal Link E	971	243	121	1875	0.518	970	898	0.8	1.1	4.264	A
3 - Nicklaus Avenue	14	4	1062	1407	0.010	14	29	0.0	0.0	2.584	A
4 - Coastal Link W	855	214	199	1830	0.468	854	877	0.6	0.9	3.788	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	272	68	749	1530	0.178	272	306	0.2	0.2	3.084	A
2 - Coastal Link E	971	243	121	1874	0.518	971	900	1.1	1.1	4.278	A
3 - Nicklaus Avenue	14	4	1064	1406	0.010	14	29	0.0	0.0	2.586	A
4 - Coastal Link W	855	214	199	1830	0.468	855	879	0.9	0.9	3.794	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	222	56	612	1617	0.137	222	250	0.2	0.2	2.784	A
2 - Coastal Link E	793	198	99	1888	0.420	794	736	1.1	0.8	3.537	A
3 - Nicklaus Avenue	12	3	870	1532	0.008	12	23	0.0	0.0	2.367	A
4 - Coastal Link W	699	175	163	1852	0.377	700	719	0.9	0.6	3.212	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	186	46	512	1681	0.111	186	210	0.2	0.1	2.598	A
2 - Coastal Link E	664	166	83	1898	0.350	665	616	0.8	0.6	3.134	A
3 - Nicklaus Avenue	10	2	728	1625	0.006	10	20	0.0	0.0	2.230	A
4 - Coastal Link W	585	146	136	1869	0.313	586	601	0.6	0.5	2.881	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	0.57	0.57	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	0.47	0.00	0.00	0.47	0.47			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	0.77	0.10	0.89	1.49	1.57			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	0.62	0.09	0.83	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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.14	0.03	0.27	1.14	1.14			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link W	0.89	0.03	0.26	0.89	0.89			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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.15	0.03	0.29	1.15	1.36			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	0.90	0.03	0.28	0.90	1.67			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	0.78	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	0.63	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	0.58	0.07	0.73	1.44	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	0.47	0.00	0.00	0.47	0.47			N/A	N/A

2029 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	4.48	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.48	A

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	2029 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	✓	385	100.000
2 - Coastal Link E		ONE HOUR	✓	994	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	54	100.000
4 - Coastal Link W		ONE HOUR	✓	908	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	249	2	134
	2 - Coastal Link E	187	0	39	768
	3 - Nicklaus Avenue	6	35	0	13
	4 - Coastal Link W	128	770	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	0.30	3.58	0.4	1.5	A	353	530
2 - Coastal Link E	0.59	4.81	1.5	1.9	A	912	1368
3 - Nicklaus Avenue	0.05	2.86	0.0	0.5	A	50	74
4 - Coastal Link W	0.56	4.59	1.3	1.5	A	833	1250

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	290	72	611	1618	0.179	289	241	0.0	0.2	2.726	A
2 - Coastal Link E	748	187	110	1882	0.398	746	791	0.0	0.7	3.193	A
3 - Nicklaus Avenue	41	10	817	1567	0.026	41	38	0.0	0.0	2.358	A
4 - Coastal Link W	684	171	171	1847	0.370	681	686	0.0	0.6	3.132	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	346	87	732	1541	0.225	346	288	0.2	0.3	3.031	A
2 - Coastal Link E	894	223	131	1868	0.478	893	947	0.7	0.9	3.722	A
3 - Nicklaus Avenue	49	12	978	1462	0.033	49	46	0.0	0.0	2.546	A
4 - Coastal Link W	816	204	205	1826	0.447	815	822	0.6	0.8	3.618	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	424	106	896	1436	0.295	423	353	0.3	0.4	3.574	A
2 - Coastal Link E	1094	274	161	1850	0.592	1092	1159	0.9	1.4	4.785	A
3 - Nicklaus Avenue	59	15	1197	1319	0.045	59	56	0.0	0.0	2.857	A
4 - Coastal Link W	1000	250	251	1798	0.556	998	1006	0.8	1.3	4.568	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	424	106	897	1435	0.295	424	353	0.4	0.4	3.580	A
2 - Coastal Link E	1094	274	161	1850	0.592	1094	1160	1.4	1.5	4.812	A
3 - Nicklaus Avenue	59	15	1199	1318	0.045	59	56	0.0	0.0	2.860	A
4 - Coastal Link W	1000	250	251	1797	0.556	1000	1007	1.3	1.3	4.589	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	346	87	734	1539	0.225	347	289	0.4	0.3	3.040	A
2 - Coastal Link E	894	223	131	1868	0.478	896	949	1.5	0.9	3.745	A
3 - Nicklaus Avenue	49	12	981	1460	0.033	49	46	0.0	0.0	2.550	A
4 - Coastal Link W	816	204	205	1826	0.447	818	824	1.3	0.8	3.640	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	290	72	614	1616	0.179	290	242	0.3	0.2	2.735	A
2 - Coastal Link E	748	187	110	1881	0.398	749	794	0.9	0.7	3.215	A
3 - Nicklaus Avenue	41	10	821	1564	0.026	41	38	0.0	0.0	2.362	A
4 - Coastal Link W	684	171	172	1847	0.370	684	690	0.8	0.6	3.151	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	0.66	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	0.59	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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.92	0.07	0.83	1.57	1.95			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	0.82	0.08	0.83	1.51	1.52			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	0.42	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.44	0.03	0.26	1.44	1.44			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	1.26	0.03	0.26	1.26	1.26			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	0.42	0.03	0.33	1.35	1.54			N/A	N/A
2 - Coastal Link E	1.45	0.03	0.27	1.45	1.45			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	1.27	0.03	0.27	1.27	1.27			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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.93	0.35	1.00	1.08	1.08			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	0.83	0.51	0.99	1.42	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 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.67	0.08	0.77	1.38	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	0.60	0.07	0.75	1.37	1.45			N/A	N/A

2029 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	4.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.00	A

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	2029 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	✓	247	100.000
2 - Coastal Link E		ONE HOUR	✓	897	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	800	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	144	2	101
	2 - Coastal Link E	176	0	18	703
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	100	693	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	3.12	0.2	0.5	A	227	340
2 - Coastal Link E	0.53	4.36	1.2	1.6	A	823	1235
3 - Nicklaus Avenue	0.01	2.61	0.0	0.5	A	12	18
4 - Coastal Link W	0.48	3.90	0.9	1.5	A	734	1101

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	186	46	528	1671	0.111	185	209	0.0	0.1	2.612	A
2 - Coastal Link E	675	169	83	1899	0.356	673	630	0.0	0.6	3.148	A
3 - Nicklaus Avenue	10	2	736	1620	0.006	10	20	0.0	0.0	2.235	A
4 - Coastal Link W	602	151	136	1869	0.322	600	610	0.0	0.5	2.910	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	222	56	631	1605	0.138	222	250	0.1	0.2	2.806	A
2 - Coastal Link E	806	202	99	1888	0.427	806	754	0.6	0.8	3.568	A
3 - Nicklaus Avenue	12	3	881	1525	0.008	12	23	0.0	0.0	2.378	A
4 - Coastal Link W	719	180	163	1853	0.388	719	730	0.5	0.6	3.259	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	272	68	773	1515	0.180	272	306	0.2	0.2	3.122	A
2 - Coastal Link E	988	247	121	1875	0.527	986	924	0.8	1.2	4.342	A
3 - Nicklaus Avenue	14	4	1078	1396	0.010	14	29	0.0	0.0	2.604	A
4 - Coastal Link W	881	220	199	1830	0.481	880	894	0.6	0.9	3.887	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	272	68	774	1514	0.180	272	306	0.2	0.2	3.124	A
2 - Coastal Link E	988	247	121	1874	0.527	988	925	1.2	1.2	4.357	A
3 - Nicklaus Avenue	14	4	1080	1395	0.010	14	29	0.0	0.0	2.606	A
4 - Coastal Link W	881	220	199	1830	0.481	881	895	0.9	0.9	3.897	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	222	56	633	1604	0.138	222	250	0.2	0.2	2.809	A
2 - Coastal Link E	806	202	99	1888	0.427	808	756	1.2	0.8	3.581	A
3 - Nicklaus Avenue	12	3	884	1523	0.008	12	23	0.0	0.0	2.380	A
4 - Coastal Link W	719	180	163	1852	0.388	720	732	0.9	0.7	3.271	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	186	46	530	1670	0.111	186	210	0.2	0.1	2.618	A
2 - Coastal Link E	675	169	83	1898	0.356	676	633	0.8	0.6	3.166	A
3 - Nicklaus Avenue	10	2	739	1617	0.006	10	20	0.0	0.0	2.238	A
4 - Coastal Link W	602	151	136	1869	0.322	603	613	0.7	0.5	2.924	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	0.59	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	0.79	0.10	0.89	1.51	1.59			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	0.65	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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.18	0.03	0.28	1.18	1.18			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	0.95	0.03	0.26	0.95	0.95			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	1.19	0.03	0.29	1.19	1.26			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	0.95	0.03	0.28	0.95	1.38			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	0.81	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	0.66	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	0.49	0.00	0.00	0.49	0.49			N/A	N/A

2029 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	4.61	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.61	A

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	2029 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	✓	385	100.000
2 - Coastal Link E		ONE HOUR	✓	1020	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	54	100.000
4 - Coastal Link W		ONE HOUR	✓	923	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	249	2	134
	2 - Coastal Link E	187	0	39	794
	3 - Nicklaus Avenue	6	35	0	13
	4 - Coastal Link W	128	785	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	0.30	3.62	0.4	1.6	A	353	530
2 - Coastal Link E	0.61	5.00	1.5	2.3	A	936	1404
3 - Nicklaus Avenue	0.05	2.90	0.0	0.5	A	50	74
4 - Coastal Link W	0.57	4.69	1.3	1.7	A	847	1270

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	290	72	623	1610	0.180	289	241	0.0	0.2	2.740	A
2 - Coastal Link E	768	192	110	1882	0.408	765	802	0.0	0.7	3.247	A
3 - Nicklaus Avenue	41	10	836	1554	0.026	41	38	0.0	0.0	2.378	A
4 - Coastal Link W	695	174	171	1847	0.376	692	706	0.0	0.6	3.163	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	346	87	745	1532	0.226	346	288	0.2	0.3	3.053	A
2 - Coastal Link E	917	229	131	1868	0.491	916	960	0.7	1.0	3.813	A
3 - Nicklaus Avenue	49	12	1001	1447	0.034	49	46	0.0	0.0	2.574	A
4 - Coastal Link W	830	207	205	1826	0.454	829	845	0.6	0.8	3.667	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	424	106	912	1426	0.297	423	353	0.3	0.4	3.612	A
2 - Coastal Link E	1123	281	161	1850	0.607	1121	1175	1.0	1.5	4.969	A
3 - Nicklaus Avenue	59	15	1225	1301	0.046	59	56	0.0	0.0	2.900	A
4 - Coastal Link W	1016	254	251	1798	0.565	1014	1034	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	424	106	914	1425	0.297	424	353	0.4	0.4	3.618	A
2 - Coastal Link E	1123	281	161	1850	0.607	1123	1177	1.5	1.5	5.001	A
3 - Nicklaus Avenue	59	15	1228	1299	0.046	59	56	0.0	0.0	2.903	A
4 - Coastal Link W	1016	254	251	1797	0.565	1016	1036	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	346	87	748	1531	0.226	347	289	0.4	0.3	3.062	A
2 - Coastal Link E	917	229	131	1868	0.491	919	963	1.5	1.0	3.839	A
3 - Nicklaus Avenue	49	12	1005	1444	0.034	49	46	0.0	0.0	2.580	A
4 - Coastal Link W	830	207	205	1826	0.454	832	848	1.3	0.9	3.688	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	290	72	626	1608	0.180	290	242	0.3	0.2	2.750	A
2 - Coastal Link E	768	192	110	1881	0.408	769	806	1.0	0.7	3.272	A
3 - Nicklaus Avenue	41	10	841	1551	0.026	41	38	0.0	0.0	2.382	A
4 - Coastal Link W	695	174	172	1847	0.376	696	709	0.9	0.6	3.182	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	0.69	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	0.61	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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.97	0.07	0.82	1.73	2.26			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	0.84	0.08	0.84	1.14	1.65			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	0.42	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.54	0.03	0.26	1.54	1.54			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	1.31	0.03	0.26	1.31	1.31			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	0.42	0.03	0.33	1.35	1.57			N/A	N/A
2 - Coastal Link E	1.55	0.03	0.27	1.55	1.55			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	1.32	0.03	0.27	1.32	1.32			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	0.98	0.28	1.02	1.51	1.52			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	0.85	0.47	0.99	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 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	0.07	0.77	1.40	1.48			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	1.37	1.45			N/A	N/A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 11. Morfa Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:32:41

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Lower Trostre Road	D1	0.7	5.88	0.39	6.16	A	D2	1.6	8.70	0.62	9.35	A
2 - N/A		1.1	11.00	0.51				2.5	20.46	0.72		
3 - Brickyard Row		0.2	6.12	0.14				0.1	6.99	0.09		
4 - B4304 Coastal Link Road		1.0	4.26	0.49				1.2	4.55	0.54		
	2029 with Committed Development											
1 - Lower Trostre Road	D3	1.5	8.75	0.59	8.59	A	D4	3.1	14.33	0.76	14.54	B
2 - N/A		1.9	16.91	0.65				4.4	34.41	0.83		
3 - Brickyard Row		0.3	8.14	0.22				0.1	8.23	0.11		
4 - B4304 Coastal Link Road		1.3	4.93	0.56				2.3	6.89	0.69		
	2029 with Committed Development and Machynys Hotel											
1 - Lower Trostre Road	D11	1.6	9.05	0.60	8.78	A	D12	3.6	15.85	0.79	15.49	C
2 - N/A		1.9	17.19	0.65				4.7	36.56	0.84		
3 - Brickyard Row		0.3	8.25	0.22				0.1	8.44	0.11		
4 - B4304 Coastal Link Road		1.4	5.11	0.57				2.4	7.11	0.70		

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	11
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL|Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

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	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D11	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D12	2029 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

2024 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	6.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.16	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	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	2024 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	✓	395	100.000
2 - N/A		ONE HOUR	✓	324	100.000
3 - Brickyard Row		ONE HOUR	✓	90	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	771	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	352
	2 - N/A	30	0	10	284
	3 - Brickyard Row	38	29	3	20
	4 - B4304 Coastal Link Road	436	325	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	5.88	0.7	A	362	544
2 - N/A	0.51	11.00	1.1	B	297	446
3 - Brickyard Row	0.14	6.12	0.2	A	83	124
4 - B4304 Coastal Link Road	0.49	4.26	1.0	A	707	1061

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	297	74	275	1173	0.254	296	379	0.0	0.4	4.498	A
2 - N/A	244	61	282	741	0.329	242	289	0.0	0.5	7.572	A
3 - Brickyard Row	68	17	500	833	0.081	67	25	0.0	0.1	4.932	A
4 - B4304 Coastal Link Road	580	145	76	1754	0.331	578	491	0.0	0.5	3.194	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	355	89	330	1145	0.310	355	454	0.4	0.5	4.997	A
2 - N/A	291	73	338	724	0.402	291	346	0.5	0.7	8.732	A
3 - Brickyard Row	81	20	599	784	0.103	81	30	0.1	0.1	5.375	A
4 - B4304 Coastal Link Road	693	173	92	1745	0.397	692	589	0.5	0.7	3.574	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	435	109	403	1106	0.393	434	556	0.5	0.7	5.867	A
2 - N/A	357	89	414	702	0.508	355	423	0.7	1.1	10.912	B
3 - Brickyard Row	99	25	733	718	0.138	99	36	0.1	0.2	6.106	A
4 - B4304 Coastal Link Road	849	212	112	1732	0.490	848	720	0.7	1.0	4.249	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	435	109	404	1106	0.393	435	557	0.7	0.7	5.884	A
2 - N/A	357	89	415	701	0.509	357	424	1.1	1.1	11.005	B
3 - Brickyard Row	99	25	735	717	0.138	99	36	0.2	0.2	6.118	A
4 - B4304 Coastal Link Road	849	212	112	1732	0.490	849	722	1.0	1.0	4.261	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	355	89	331	1144	0.310	356	456	0.7	0.5	5.018	A
2 - N/A	291	73	340	724	0.402	293	347	1.1	0.7	8.830	A
3 - Brickyard Row	81	20	603	782	0.103	81	30	0.2	0.1	5.392	A
4 - B4304 Coastal Link Road	693	173	92	1744	0.397	694	592	1.0	0.7	3.586	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	297	74	277	1172	0.254	298	381	0.5	0.4	4.521	A
2 - N/A	244	61	284	741	0.329	245	290	0.7	0.5	7.665	A
3 - Brickyard Row	68	17	504	831	0.082	68	25	0.1	0.1	4.954	A
4 - B4304 Coastal Link Road	580	145	77	1754	0.331	581	495	0.7	0.5	3.209	A

2024 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	9.35	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.35	A

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	2024 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	✓	618	100.000
2 - N/A		ONE HOUR	✓	413	100.000
3 - Brickyard Row		ONE HOUR	✓	45	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	848	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	529
	2 - N/A	43	0	18	352
	3 - Brickyard Row	36	9	0	0
	4 - B4304 Coastal Link Road	475	348	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	8.70	1.6	A	567	851
2 - N/A	0.72	20.46	2.5	C	379	568
3 - Brickyard Row	0.09	6.99	0.1	A	41	62
4 - B4304 Coastal Link Road	0.54	4.55	1.2	A	778	1167

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	465	116	287	1167	0.399	463	416	0.0	0.7	5.136	A
2 - N/A	311	78	439	694	0.448	308	310	0.0	0.8	9.392	A
3 - Brickyard Row	34	8	692	738	0.046	34	55	0.0	0.0	5.229	A
4 - B4304 Coastal Link Road	638	160	66	1760	0.363	636	659	0.0	0.6	3.257	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	556	139	343	1138	0.488	554	498	0.7	1.0	6.212	A
2 - N/A	371	93	527	668	0.556	370	371	0.8	1.2	12.185	B
3 - Brickyard Row	40	10	830	670	0.060	40	66	0.0	0.1	5.853	A
4 - B4304 Coastal Link Road	762	191	80	1752	0.435	762	790	0.6	0.8	3.701	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	680	170	420	1098	0.620	678	610	1.0	1.6	8.641	A
2 - N/A	455	114	644	633	0.718	450	454	1.2	2.4	19.496	C
3 - Brickyard Row	50	12	1013	580	0.086	49	81	0.1	0.1	6.949	A
4 - B4304 Coastal Link Road	934	233	97	1741	0.536	932	965	0.8	1.2	4.529	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	680	170	421	1098	0.620	680	611	1.6	1.6	8.697	A
2 - N/A	455	114	646	632	0.719	454	455	2.4	2.5	20.457	C
3 - Brickyard Row	50	12	1019	576	0.086	50	81	0.1	0.1	6.993	A
4 - B4304 Coastal Link Road	934	233	98	1741	0.536	934	971	1.2	1.2	4.547	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	556	139	344	1137	0.489	558	500	1.6	1.0	6.298	A
2 - N/A	371	93	530	667	0.557	376	372	2.5	1.3	12.769	B
3 - Brickyard Row	40	10	839	665	0.061	41	67	0.1	0.1	5.901	A
4 - B4304 Coastal Link Road	762	191	81	1752	0.435	764	799	1.2	0.8	3.723	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	465	116	288	1166	0.399	466	419	1.0	0.7	5.198	A
2 - N/A	311	78	443	693	0.449	313	311	1.3	0.8	9.671	A
3 - Brickyard Row	34	8	700	734	0.046	34	56	0.1	0.0	5.264	A
4 - B4304 Coastal Link Road	638	160	67	1760	0.363	639	667	0.8	0.6	3.276	A

2029 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	8.59	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.59	A

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	2029 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	✓	579	100.000
2 - N/A		ONE HOUR	✓	378	100.000
3 - Brickyard Row		ONE HOUR	✓	118	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	869	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	530
	2 - N/A	32	0	11	335
	3 - Brickyard Row	51	32	3	32
	4 - B4304 Coastal Link Road	507	348	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	0.59	8.75	1.5	A	531	797
2 - N/A	0.65	16.91	1.9	C	347	520
3 - Brickyard Row	0.22	8.14	0.3	A	108	162
4 - B4304 Coastal Link Road	0.56	4.93	1.3	A	797	1196

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	436	109	298	1161	0.375	433	444	0.0	0.7	5.412	A
2 - N/A	285	71	422	699	0.407	282	309	0.0	0.7	9.026	A
3 - Brickyard Row	89	22	672	748	0.119	88	32	0.0	0.1	5.685	A
4 - B4304 Coastal Link Road	654	164	90	1746	0.375	652	670	0.0	0.6	3.432	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	521	130	356	1131	0.460	519	531	0.7	0.9	6.455	A
2 - N/A	340	85	506	674	0.504	338	370	0.7	1.0	11.254	B
3 - Brickyard Row	106	27	806	682	0.156	106	39	0.1	0.2	6.518	A
4 - B4304 Coastal Link Road	781	195	108	1735	0.450	780	804	0.6	0.8	3.940	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	637	159	436	1090	0.585	635	650	0.9	1.5	8.655	A
2 - N/A	416	104	619	641	0.650	413	453	1.0	1.9	16.431	C
3 - Brickyard Row	130	32	984	593	0.219	130	47	0.2	0.3	8.086	A
4 - B4304 Coastal Link Road	957	239	132	1719	0.556	955	982	0.8	1.3	4.909	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	637	159	437	1089	0.585	637	652	1.5	1.5	8.748	A
2 - N/A	416	104	621	640	0.650	416	454	1.9	1.9	16.910	C
3 - Brickyard Row	130	32	990	591	0.220	130	47	0.3	0.3	8.142	A
4 - B4304 Coastal Link Road	957	239	132	1719	0.557	957	987	1.3	1.3	4.934	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	521	130	358	1130	0.461	523	534	1.5	1.0	6.537	A
2 - N/A	340	85	509	673	0.505	343	371	1.9	1.1	11.602	B
3 - Brickyard Row	106	27	813	678	0.156	106	39	0.3	0.2	6.575	A
4 - B4304 Coastal Link Road	781	195	108	1734	0.451	783	811	1.3	0.9	3.963	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	436	109	299	1160	0.376	437	446	1.0	0.7	5.474	A
2 - N/A	285	71	426	698	0.408	286	311	1.1	0.7	9.236	A
3 - Brickyard Row	89	22	679	744	0.119	89	32	0.2	0.1	5.733	A
4 - B4304 Coastal Link Road	654	164	91	1745	0.375	655	678	0.9	0.6	3.453	A

2029 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	14.54	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.54	B

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	2029 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	✓	736	100.000
2 - N/A		ONE HOUR	✓	444	100.000
3 - Brickyard Row		ONE HOUR	✓	51	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1092	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	58	42	634
	2 - N/A	45	0	20	379
	3 - Brickyard Row	41	10	0	0
	4 - B4304 Coastal Link Road	658	398	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	0.76	14.33	3.1	B	675	1013
2 - N/A	0.83	34.41	4.4	D	407	611
3 - Brickyard Row	0.11	8.23	0.1	A	47	70
4 - B4304 Coastal Link Road	0.69	6.89	2.3	A	1002	1503

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	554	139	333	1143	0.485	550	559	0.0	0.9	6.091	A
2 - N/A	334	84	534	666	0.502	330	349	0.0	1.0	10.779	B
3 - Brickyard Row	38	10	792	689	0.056	38	73	0.0	0.1	5.660	A
4 - B4304 Coastal Link Road	822	206	73	1756	0.468	819	757	0.0	0.9	3.898	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	662	165	398	1109	0.597	660	669	0.9	1.5	8.040	A
2 - N/A	399	100	640	634	0.629	397	418	1.0	1.7	15.221	C
3 - Brickyard Row	46	11	950	611	0.075	46	87	0.1	0.1	6.518	A
4 - B4304 Coastal Link Road	982	245	88	1747	0.562	980	908	0.9	1.3	4.775	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	810	203	487	1063	0.762	804	818	1.5	3.0	13.682	B
2 - N/A	489	122	780	592	0.825	479	511	1.7	4.1	30.087	D
3 - Brickyard Row	56	14	1154	510	0.110	56	106	0.1	0.1	8.113	A
4 - B4304 Coastal Link Road	1202	301	107	1735	0.693	1198	1103	1.3	2.2	6.789	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	810	203	489	1062	0.763	810	821	3.0	3.1	14.326	B
2 - N/A	489	122	786	591	0.828	487	513	4.1	4.4	34.415	D
3 - Brickyard Row	56	14	1166	504	0.112	56	107	0.1	0.1	8.232	A
4 - B4304 Coastal Link Road	1202	301	108	1734	0.693	1202	1115	2.2	2.3	6.889	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	662	165	401	1108	0.597	668	674	3.1	1.5	8.372	A
2 - N/A	399	100	648	632	0.632	409	421	4.4	1.8	17.149	C
3 - Brickyard Row	46	11	969	601	0.076	46	88	0.1	0.1	6.640	A
4 - B4304 Coastal Link Road	982	245	89	1746	0.562	985	926	2.3	1.3	4.848	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	554	139	335	1142	0.485	556	563	1.5	1.0	6.227	A
2 - N/A	334	84	540	664	0.503	337	352	1.8	1.1	11.297	B
3 - Brickyard Row	38	10	804	683	0.056	38	73	0.1	0.1	5.718	A
4 - B4304 Coastal Link Road	822	206	74	1756	0.468	824	768	1.3	0.9	3.946	A

2029 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	8.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.78	A

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	2029 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	✓	590	100.000
2 - N/A		ONE HOUR	✓	378	100.000
3 - Brickyard Row		ONE HOUR	✓	118	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	893	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	541
	2 - N/A	32	0	11	335
	3 - Brickyard Row	51	32	3	32
	4 - B4304 Coastal Link Road	526	353	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	9.05	1.6	A	541	812
2 - N/A	0.65	17.19	1.9	C	347	520
3 - Brickyard Row	0.22	8.25	0.3	A	108	162
4 - B4304 Coastal Link Road	0.57	5.11	1.4	A	819	1229

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	444	111	301	1159	0.383	441	458	0.0	0.7	5.488	A
2 - N/A	285	71	430	697	0.408	282	313	0.0	0.7	9.080	A
3 - Brickyard Row	89	22	680	744	0.119	88	32	0.0	0.1	5.720	A
4 - B4304 Coastal Link Road	672	168	90	1746	0.385	670	678	0.0	0.7	3.487	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	530	133	361	1128	0.470	529	548	0.7	1.0	6.587	A
2 - N/A	340	85	516	671	0.506	338	374	0.7	1.1	11.352	B
3 - Brickyard Row	106	27	816	677	0.157	106	39	0.1	0.2	6.574	A
4 - B4304 Coastal Link Road	803	201	108	1735	0.463	802	814	0.7	0.9	4.030	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	650	162	442	1087	0.598	647	671	1.0	1.6	8.940	A
2 - N/A	416	104	631	637	0.653	413	458	1.1	1.9	16.679	C
3 - Brickyard Row	130	32	996	588	0.221	130	47	0.2	0.3	8.188	A
4 - B4304 Coastal Link Road	983	246	132	1719	0.572	981	994	0.9	1.4	5.084	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	650	162	443	1086	0.598	650	673	1.6	1.6	9.048	A
2 - N/A	416	104	633	636	0.654	416	459	1.9	1.9	17.185	C
3 - Brickyard Row	130	32	1002	585	0.222	130	47	0.3	0.3	8.249	A
4 - B4304 Coastal Link Road	983	246	132	1719	0.572	983	999	1.4	1.4	5.112	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	530	133	362	1128	0.470	533	551	1.6	1.0	6.676	A
2 - N/A	340	85	519	670	0.507	343	376	1.9	1.1	11.715	B
3 - Brickyard Row	106	27	824	673	0.158	106	39	0.3	0.2	6.633	A
4 - B4304 Coastal Link Road	803	201	108	1734	0.463	805	822	1.4	0.9	4.058	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	444	111	303	1158	0.384	445	461	1.0	0.7	5.554	A
2 - N/A	285	71	434	696	0.409	286	314	1.1	0.7	9.296	A
3 - Brickyard Row	89	22	688	740	0.120	89	32	0.2	0.1	5.769	A
4 - B4304 Coastal Link Road	672	168	91	1745	0.385	673	686	0.9	0.7	3.515	A

2029 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	15.49	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.49	C

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	2029 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	✓	757	100.000
2 - N/A		ONE HOUR	✓	444	100.000
3 - Brickyard Row		ONE HOUR	✓	51	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1107	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	58	42	655
	2 - N/A	45	0	20	379
	3 - Brickyard Row	41	10	0	0
	4 - B4304 Coastal Link Road	670	401	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	0.79	15.85	3.6	C	695	1042
2 - N/A	0.84	36.56	4.7	E	407	611
3 - Brickyard Row	0.11	8.44	0.1	A	47	70
4 - B4304 Coastal Link Road	0.70	7.11	2.4	A	1016	1524

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	570	142	335	1142	0.499	566	568	0.0	1.0	6.264	A
2 - N/A	334	84	550	661	0.506	330	351	0.0	1.0	10.924	B
3 - Brickyard Row	38	10	807	681	0.056	38	73	0.0	0.1	5.728	A
4 - B4304 Coastal Link Road	833	208	73	1756	0.475	830	772	0.0	0.9	3.946	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	681	170	401	1108	0.614	678	680	1.0	1.6	8.410	A
2 - N/A	399	100	659	629	0.635	396	421	1.0	1.7	15.569	C
3 - Brickyard Row	46	11	968	602	0.076	46	87	0.1	0.1	6.626	A
4 - B4304 Coastal Link Road	995	249	88	1747	0.570	993	926	0.9	1.3	4.858	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	833	208	491	1062	0.785	826	831	1.6	3.4	14.962	B
2 - N/A	489	122	802	586	0.835	479	514	1.7	4.3	31.511	D
3 - Brickyard Row	56	14	1175	499	0.112	56	106	0.1	0.1	8.304	A
4 - B4304 Coastal Link Road	1219	305	107	1735	0.702	1215	1124	1.3	2.3	6.998	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	833	208	492	1061	0.786	833	834	3.4	3.6	15.851	C
2 - N/A	489	122	809	584	0.838	487	516	4.3	4.7	36.564	E
3 - Brickyard Row	56	14	1189	492	0.114	56	107	0.1	0.1	8.444	A
4 - B4304 Coastal Link Road	1219	305	108	1734	0.703	1219	1138	2.3	2.4	7.109	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	681	170	403	1106	0.615	688	685	3.6	1.7	8.833	A
2 - N/A	399	100	668	626	0.638	410	424	4.7	1.9	17.770	C
3 - Brickyard Row	46	11	990	591	0.078	46	88	0.1	0.1	6.762	A
4 - B4304 Coastal Link Road	995	249	89	1746	0.570	999	947	2.4	1.4	4.939	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	570	142	337	1141	0.500	572	572	1.7	1.0	6.417	A
2 - N/A	334	84	556	659	0.507	337	354	1.9	1.1	11.477	B
3 - Brickyard Row	38	10	820	675	0.057	38	73	0.1	0.1	5.790	A
4 - B4304 Coastal Link Road	833	208	74	1756	0.475	835	784	1.4	0.9	3.995	A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 01. Copperhouse Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:20:08

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Coastal Link N	D1	0.4	2.40	0.30	2.47	A	D2	0.5	2.52	0.33	2.67	A
2 - Copperhouse Road		0.0	2.65	0.03				0.0	2.54	0.03		
3 - Coastal Link S		0.4	2.53	0.27				0.6	2.81	0.36		
	2029 with Committed Development											
1 - Coastal Link N	D3	0.7	2.78	0.39	2.76	A	D4	0.6	2.71	0.37	3.02	A
2 - Copperhouse Road		0.0	2.90	0.03				0.0	2.65	0.04		
3 - Coastal Link S		0.5	2.72	0.32				0.9	3.32	0.46		
	2029 with Committed Development and Machynys Hotel											
1 - Coastal Link N	D13	0.7	2.80	0.40	2.78	A	D14	0.6	2.74	0.38	3.05	A
2 - Copperhouse Road		0.0	2.91	0.03				0.0	2.66	0.04		
3 - Coastal Link S		0.5	2.75	0.32				0.9	3.34	0.46		

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	1
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	Using the historical data in 2017	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	Using the historical data in 2017	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM		ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM		ONE HOUR	16:15	17:45	15	✓
D13	2029 with Committed Development and Machynys Hotel	AM		ONE HOUR	07:45	09:15	15	✓
D14	2029 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

2024 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.47	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.47	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	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	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	Using the historical data in 2017	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	✓	584	100.000
2 - Copperhouse Road		ONE HOUR	✓	39	100.000
3 - Coastal Link S		ONE HOUR	✓	492	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	555
	2 - Copperhouse Road	35	2	2
	3 - Coastal Link S	491	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	0.30	2.40	0.4	1.6	A	536	804
2 - Copperhouse Road	0.03	2.65	0.0	0.5	A	36	54
3 - Coastal Link S	0.27	2.53	0.4	1.5	A	451	677

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	440	110	2	2174	0.202	439	396	0.0	0.3	2.117	A
2 - Copperhouse Road	29	7	418	1724	0.017	29	23	0.0	0.0	2.442	A
3 - Coastal Link S	370	93	29	2043	0.181	369	418	0.0	0.2	2.257	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	525	131	3	2174	0.242	525	474	0.3	0.3	2.228	A
2 - Copperhouse Road	35	9	500	1673	0.021	35	28	0.0	0.0	2.526	A
3 - Coastal Link S	442	111	34	2040	0.217	442	500	0.2	0.3	2.365	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	643	161	3	2173	0.296	643	580	0.3	0.4	2.401	A
2 - Copperhouse Road	43	11	612	1603	0.027	43	34	0.0	0.0	2.652	A
3 - Coastal Link S	542	135	42	2035	0.266	541	613	0.3	0.4	2.531	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	643	161	3	2173	0.296	643	580	0.4	0.4	2.401	A
2 - Copperhouse Road	43	11	612	1603	0.027	43	34	0.0	0.0	2.652	A
3 - Coastal Link S	542	135	42	2035	0.266	542	613	0.4	0.4	2.531	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	525	131	3	2174	0.242	525	474	0.4	0.3	2.229	A
2 - Copperhouse Road	35	9	500	1673	0.021	35	28	0.0	0.0	2.527	A
3 - Coastal Link S	442	111	34	2040	0.217	443	501	0.4	0.3	2.368	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	440	110	2	2174	0.202	440	397	0.3	0.3	2.119	A
2 - Copperhouse Road	29	7	419	1723	0.017	29	23	0.0	0.0	2.443	A
3 - Coastal Link S	370	93	29	2043	0.181	371	420	0.3	0.2	2.261	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	0.43	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	0.43	0.03	0.33	1.37	1.58			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	1.26	1.52			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	0.33	0.00	0.00	0.33	0.33			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

2024 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.67	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2024 Base	PM	Using the historical data in 2017	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	✓	644	100.000
2 - Copperhouse Road		ONE HOUR	✓	46	100.000
3 - Coastal Link S		ONE HOUR	✓	672	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	603
	2 - Copperhouse Road	37	0	9
	3 - Coastal Link S	667	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	0.33	2.52	0.5	2.1	A	591	886
2 - Copperhouse Road	0.03	2.54	0.0	0.5	A	42	63
3 - Coastal Link S	0.36	2.81	0.6	2.7	A	617	925

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	485	121	4	2173	0.223	484	531	0.0	0.3	2.181	A
2 - Copperhouse Road	35	9	457	1700	0.020	35	31	0.0	0.0	2.317	A
3 - Coastal Link S	506	126	30	2042	0.248	505	461	0.0	0.3	2.366	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	579	145	4	2173	0.266	579	635	0.3	0.4	2.312	A
2 - Copperhouse Road	41	10	546	1644	0.025	41	37	0.0	0.0	2.408	A
3 - Coastal Link S	604	151	36	2038	0.296	604	552	0.3	0.4	2.538	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	709	177	6	2172	0.326	709	778	0.4	0.5	2.519	A
2 - Copperhouse Road	51	13	669	1568	0.032	51	45	0.0	0.0	2.543	A
3 - Coastal Link S	740	185	44	2033	0.364	739	676	0.4	0.6	2.812	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	709	177	6	2172	0.326	709	778	0.5	0.5	2.519	A
2 - Copperhouse Road	51	13	669	1568	0.032	51	45	0.0	0.0	2.544	A
3 - Coastal Link S	740	185	44	2033	0.364	740	676	0.6	0.6	2.814	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	579	145	4	2173	0.266	579	636	0.5	0.4	2.315	A
2 - Copperhouse Road	41	10	547	1644	0.025	41	37	0.0	0.0	2.410	A
3 - Coastal Link S	604	151	36	2038	0.296	605	552	0.6	0.4	2.542	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	485	121	4	2173	0.223	485	533	0.4	0.3	2.183	A
2 - Copperhouse Road	35	9	458	1699	0.020	35	31	0.0	0.0	2.320	A
3 - Coastal Link S	506	126	30	2042	0.248	506	463	0.4	0.3	2.371	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	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.58	0.03	0.25	0.58	0.58			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	0.50	0.03	0.32	1.45	2.12			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	0.58	0.03	0.30	1.30	2.68			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

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.76	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.76	A

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	2029 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	✓	774	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	586	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	34	739
	2 - Copperhouse Road	39	2	2
	3 - Coastal Link S	584	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	0.39	2.78	0.7	2.7	A	710	1065
2 - Copperhouse Road	0.03	2.90	0.0	0.5	A	39	59
3 - Coastal Link S	0.32	2.72	0.5	2.0	A	538	807

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	583	146	3	2173	0.268	581	469	0.0	0.4	2.306	A
2 - Copperhouse Road	32	8	556	1638	0.020	32	29	0.0	0.0	2.581	A
3 - Coastal Link S	441	110	32	2041	0.216	440	556	0.0	0.3	2.359	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	696	174	4	2173	0.320	695	561	0.4	0.5	2.487	A
2 - Copperhouse Road	39	10	665	1570	0.025	39	34	0.0	0.0	2.706	A
3 - Coastal Link S	527	132	38	2037	0.259	526	666	0.3	0.4	2.501	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	852	213	4	2173	0.392	851	687	0.5	0.7	2.780	A
2 - Copperhouse Road	47	12	814	1478	0.032	47	42	0.0	0.0	2.898	A
3 - Coastal Link S	645	161	46	2032	0.318	645	815	0.4	0.5	2.724	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	852	213	4	2173	0.392	852	687	0.7	0.7	2.782	A
2 - Copperhouse Road	47	12	815	1477	0.032	47	42	0.0	0.0	2.899	A
3 - Coastal Link S	645	161	46	2032	0.318	645	816	0.5	0.5	2.725	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	696	174	4	2173	0.320	697	561	0.7	0.5	2.489	A
2 - Copperhouse Road	39	10	666	1570	0.025	39	34	0.0	0.0	2.707	A
3 - Coastal Link S	527	132	38	2037	0.259	527	667	0.5	0.4	2.505	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	583	146	3	2173	0.268	583	470	0.5	0.4	2.311	A
2 - Copperhouse Road	32	8	558	1637	0.020	32	29	0.0	0.0	2.585	A
3 - Coastal Link S	441	110	32	2041	0.216	441	558	0.4	0.3	2.362	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	0.37	0.00	0.00	0.37	0.37			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

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	0.48	0.00	0.00	0.48	0.48			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	0.36	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 - Coastal Link N	0.66	0.03	0.26	0.66	0.66			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	0.49	0.03	0.26	0.49	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	0.66	0.03	0.29	0.97	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	0.49	0.03	0.33	1.47	2.02			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	0.48	0.00	0.00	0.48	0.48			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	0.37	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 - Coastal Link N	0.38	0.00	0.00	0.38	0.38			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

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.02	A

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	2029 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	✓	738	100.000
2 - Copperhouse Road		ONE HOUR	✓	53	100.000
3 - Coastal Link S		ONE HOUR	✓	846	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	44	691
	2 - Copperhouse Road	44	0	9
	3 - Coastal Link S	839	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	2.71	0.6	2.8	A	677	1016
2 - Copperhouse Road	0.04	2.65	0.0	0.5	A	49	73
3 - Coastal Link S	0.46	3.32	0.9	1.6	A	776	1164

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	556	139	5	2172	0.256	554	665	0.0	0.4	2.276	A
2 - Copperhouse Road	40	10	523	1659	0.024	40	37	0.0	0.0	2.371	A
3 - Coastal Link S	637	159	35	2039	0.312	635	527	0.0	0.5	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 - Coastal Link N	663	166	6	2171	0.306	663	796	0.4	0.4	2.443	A
2 - Copperhouse Road	48	12	625	1595	0.030	48	44	0.0	0.0	2.480	A
3 - Coastal Link S	761	190	42	2034	0.374	760	631	0.5	0.6	2.856	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	813	203	8	2170	0.374	812	974	0.4	0.6	2.711	A
2 - Copperhouse Road	58	15	766	1508	0.039	58	54	0.0	0.0	2.648	A
3 - Coastal Link S	931	233	52	2028	0.459	930	772	0.6	0.9	3.315	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	813	203	8	2170	0.374	813	975	0.6	0.6	2.713	A
2 - Copperhouse Road	58	15	766	1507	0.039	58	54	0.0	0.0	2.649	A
3 - Coastal Link S	931	233	52	2028	0.459	931	773	0.9	0.9	3.320	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	663	166	6	2171	0.306	664	798	0.6	0.5	2.446	A
2 - Copperhouse Road	48	12	626	1594	0.030	48	44	0.0	0.0	2.481	A
3 - Coastal Link S	761	190	42	2034	0.374	762	632	0.9	0.6	2.865	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	556	139	5	2172	0.256	556	668	0.5	0.4	2.282	A
2 - Copperhouse Road	40	10	524	1658	0.024	40	37	0.0	0.0	2.374	A
3 - Coastal Link S	637	159	35	2039	0.312	637	529	0.6	0.5	2.602	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	0.35	0.00	0.00	0.35	0.35			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	0.46	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 - Coastal Link N	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.60	0.09	0.80	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	0.61	0.03	0.26	0.61	0.61			N/A	N/A
2 - Copperhouse Road	0.04	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.85	0.03	0.26	0.85	0.85			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	0.61	0.03	0.30	1.22	2.76			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	0.86	0.03	0.27	0.86	1.61			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	0.45	0.00	0.00	0.45	0.45			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	0.61	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	0.35	0.00	0.00	0.35	0.35			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	0.46	0.00	0.00	0.46	0.46			N/A	N/A

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.78	A

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	2029 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	✓	780	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	596	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	34	745
	2 - Copperhouse Road	39	2	2
	3 - Coastal Link S	594	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	0.40	2.80	0.7	2.7	A	716	1074
2 - Copperhouse Road	0.03	2.91	0.0	0.5	A	39	59
3 - Coastal Link S	0.32	2.75	0.5	2.1	A	547	820

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	587	147	3	2173	0.270	586	476	0.0	0.4	2.312	A
2 - Copperhouse Road	32	8	560	1635	0.020	32	29	0.0	0.0	2.585	A
3 - Coastal Link S	449	112	32	2041	0.220	448	561	0.0	0.3	2.370	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	701	175	4	2173	0.323	701	570	0.4	0.5	2.496	A
2 - Copperhouse Road	39	10	670	1567	0.025	39	34	0.0	0.0	2.712	A
3 - Coastal Link S	536	134	38	2037	0.263	535	671	0.3	0.4	2.516	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	859	215	4	2173	0.395	858	698	0.5	0.7	2.794	A
2 - Copperhouse Road	47	12	821	1474	0.032	47	42	0.0	0.0	2.906	A
3 - Coastal Link S	656	164	46	2032	0.323	656	822	0.4	0.5	2.746	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	859	215	4	2173	0.395	859	698	0.7	0.7	2.796	A
2 - Copperhouse Road	47	12	821	1473	0.032	47	42	0.0	0.0	2.907	A
3 - Coastal Link S	656	164	46	2032	0.323	656	822	0.5	0.5	2.746	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 - Coastal Link N	701	175	4	2173	0.323	702	570	0.7	0.5	2.500	A
2 - Copperhouse Road	39	10	671	1566	0.025	39	34	0.0	0.0	2.715	A
3 - Coastal Link S	536	134	38	2037	0.263	536	672	0.5	0.4	2.520	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	587	147	3	2173	0.270	588	478	0.5	0.4	2.319	A
2 - Copperhouse Road	32	8	562	1634	0.020	32	29	0.0	0.0	2.587	A
3 - Coastal Link S	449	112	32	2041	0.220	449	563	0.4	0.3	2.375	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	0.38	0.00	0.00	0.38	0.38			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

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	0.48	0.00	0.00	0.48	0.48			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	0.37	0.00	0.00	0.37	0.37			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	0.66	0.03	0.26	0.66	0.66			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	0.50	0.03	0.26	0.50	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	0.67	0.03	0.29	0.92	2.69			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	0.50	0.03	0.33	1.48	2.10			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	0.49	0.00	0.00	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	0.38	0.00	0.00	0.38	0.38			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	0.38	0.00	0.00	0.38	0.38			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	0.30	0.00	0.00	0.30	0.30			N/A	N/A

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.05	A

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	2029 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	✓	750	100.000
2 - Copperhouse Road		ONE HOUR	✓	53	100.000
3 - Coastal Link S		ONE HOUR	✓	853	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	44	703
	2 - Copperhouse Road	44	0	9
	3 - Coastal Link S	846	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	0.38	2.74	0.6	2.7	A	688	1032
2 - Copperhouse Road	0.04	2.66	0.0	0.5	A	49	73
3 - Coastal Link S	0.46	3.34	0.9	1.5	A	783	1174

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	565	141	5	2172	0.260	563	670	0.0	0.4	2.288	A
2 - Copperhouse Road	40	10	532	1653	0.024	40	37	0.0	0.0	2.379	A
3 - Coastal Link S	642	161	35	2039	0.315	640	536	0.0	0.5	2.601	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	674	169	6	2171	0.311	674	802	0.4	0.5	2.461	A
2 - Copperhouse Road	48	12	636	1588	0.030	48	44	0.0	0.0	2.491	A
3 - Coastal Link S	767	192	42	2034	0.377	766	641	0.5	0.6	2.871	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	826	206	8	2170	0.380	825	982	0.5	0.6	2.738	A
2 - Copperhouse Road	58	15	779	1500	0.039	58	54	0.0	0.0	2.663	A
3 - Coastal Link S	939	235	52	2028	0.463	938	785	0.6	0.9	3.338	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	826	206	8	2170	0.380	826	983	0.6	0.6	2.740	A
2 - Copperhouse Road	58	15	780	1499	0.039	58	54	0.0	0.0	2.664	A
3 - Coastal Link S	939	235	52	2028	0.463	939	786	0.9	0.9	3.343	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	674	169	6	2171	0.311	675	804	0.6	0.5	2.465	A
2 - Copperhouse Road	48	12	637	1588	0.030	48	44	0.0	0.0	2.494	A
3 - Coastal Link S	767	192	42	2034	0.377	768	642	0.9	0.6	2.880	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	565	141	5	2172	0.260	565	673	0.5	0.4	2.293	A
2 - Copperhouse Road	40	10	533	1652	0.024	40	37	0.0	0.0	2.382	A
3 - Coastal Link S	642	161	35	2039	0.315	643	538	0.6	0.5	2.612	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	0.46	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 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.61	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	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	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 - Coastal Link N	0.63	0.03	0.29	1.14	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	0.87	0.03	0.27	0.87	1.53			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 - 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	0.62	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	0.36	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

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 02. Delta Lakes Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:24:21

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Site Access	D13	0.0	2.61	0.03	3.05	A	D14	0.0	0.00	0.00	3.45	A
2 - Coastal Link Road E		0.5	3.07	0.32				0.9	3.72	0.46		
3 - Pentre Nicklaus		0.1	2.46	0.10				0.1	2.52	0.06		
4 - Coastal Link Road W		0.5	3.23	0.35				0.6	3.23	0.37		
	2029 with Committed Development											
1 - Site Access	D15	0.1	2.90	0.10	4.20	A	D16	0.4	3.58	0.28	4.29	A
2 - Coastal Link Road E		1.0	4.23	0.50				1.4	5.05	0.58		
3 - Pentre Nicklaus		0.2	2.96	0.14				0.1	2.91	0.07		
4 - Coastal Link Road W		1.1	4.70	0.51				0.8	3.85	0.45		
	2029 with Committed Development and Machynys Hotel											
1 - Site Access	D17	0.1	2.95	0.10	4.34	A	D18	0.4	3.64	0.28	4.42	A
2 - Coastal Link Road E		1.1	4.41	0.52				1.5	5.23	0.60		
3 - Pentre Nicklaus		0.2	3.02	0.14				0.1	2.94	0.07		
4 - Coastal Link Road W		1.1	4.84	0.52				0.9	3.94	0.46		

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	Delta Lakes Roundabout
Location	Machynys
Site number	2
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

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
D13	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D14	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D15	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D16	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D17	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D18	2029 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

2024 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	3.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.05	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	Exit only
1 - Site Access	3.66	7.81	14.0	40.0	60.0	17.0		
2 - Coastal Link Road E	3.74	7.83	11.0	41.0	60.0	16.0		
3 - Pentre Nicklaus	3.62	7.64	22.0	38.0	60.0	15.0		
4 - Coastal Link Road W	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 - Site Access	0.606	1876
2 - Coastal Link Road E	0.598	1824
3 - Pentre Nicklaus	0.630	2006
4 - Coastal Link Road W	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
D13	2024 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 - Site Access		ONE HOUR	✓	40	100.000
2 - Coastal Link Road E		ONE HOUR	✓	520	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	154	100.000
4 - Coastal Link Road W		ONE HOUR	✓	557	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	18	0	22
	2 - Coastal Link Road E	22	0	37	461
	3 - Pentre Nicklaus	0	123	0	31
	4 - Coastal Link Road W	0	544	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.03	2.61	0.0	0.5	A	37	55
2 - Coastal Link Road E	0.32	3.07	0.5	2.0	A	477	716
3 - Pentre Nicklaus	0.10	2.46	0.1	0.5	A	141	212
4 - Coastal Link Road W	0.35	3.23	0.5	2.6	A	511	767

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 - Site Access	30	8	510	1567	0.019	30	17	0.0	0.0	2.341	A
2 - Coastal Link Road E	391	98	26	1809	0.216	390	514	0.0	0.3	2.658	A
3 - Pentre Nicklaus	116	29	379	1767	0.066	116	38	0.0	0.1	2.214	A
4 - Coastal Link Road W	419	105	109	1779	0.236	418	386	0.0	0.3	2.693	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 - Site Access	36	9	611	1506	0.024	36	20	0.0	0.0	2.448	A
2 - Coastal Link Road E	467	117	31	1805	0.259	467	615	0.3	0.4	2.820	A
3 - Pentre Nicklaus	138	35	454	1720	0.080	138	45	0.1	0.1	2.311	A
4 - Coastal Link Road W	501	125	130	1767	0.283	500	462	0.3	0.4	2.898	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 - Site Access	44	11	748	1423	0.031	44	24	0.0	0.0	2.609	A
2 - Coastal Link Road E	573	143	39	1801	0.318	572	754	0.4	0.5	3.068	A
3 - Pentre Nicklaus	170	42	556	1656	0.102	169	55	0.1	0.1	2.460	A
4 - Coastal Link Road W	613	153	160	1749	0.351	613	565	0.4	0.5	3.228	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 - Site Access	44	11	749	1423	0.031	44	24	0.0	0.0	2.610	A
2 - Coastal Link Road E	573	143	39	1801	0.318	573	754	0.5	0.5	3.071	A
3 - Pentre Nicklaus	170	42	556	1656	0.102	170	55	0.1	0.1	2.460	A
4 - Coastal Link Road W	613	153	160	1749	0.351	613	566	0.5	0.5	3.231	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 - Site Access	36	9	612	1506	0.024	36	20	0.0	0.0	2.451	A
2 - Coastal Link Road E	467	117	31	1805	0.259	468	616	0.5	0.4	2.822	A
3 - Pentre Nicklaus	138	35	454	1720	0.081	139	45	0.1	0.1	2.314	A
4 - Coastal Link Road W	501	125	130	1766	0.283	501	463	0.5	0.4	2.901	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 - Site Access	30	8	512	1566	0.019	30	17	0.0	0.0	2.343	A
2 - Coastal Link Road E	391	98	26	1808	0.216	392	516	0.4	0.3	2.666	A
3 - Pentre Nicklaus	116	29	380	1766	0.066	116	38	0.1	0.1	2.216	A
4 - Coastal Link Road W	419	105	109	1779	0.236	420	387	0.4	0.3	2.699	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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - Pentre Nicklaus	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.02	0.02	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3 - Pentre Nicklaus	0.09	0.03	0.27	0.48	0.50			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2 - Coastal Link Road E	0.49	0.03	0.26	0.49	0.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.03	0.26	0.47	0.50			N/A	N/A
4 - Coastal Link Road W	0.55	0.03	0.26	0.55	0.55			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 - Site Access	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2 - Coastal Link Road E	0.49	0.03	0.33	1.46	2.04			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.55	0.03	0.30	1.38	2.57			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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.37	0.00	0.00	0.37	0.37			N/A	N/A
3 - Pentre Nicklaus	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4 - Coastal Link Road W	0.41	0.00	0.00	0.41	0.41			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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - Pentre Nicklaus	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link Road W	0.32	0.00	0.00	0.32	0.32			N/A	N/A

2024 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	3.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.45	A

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	2024 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 - Site Access		ONE HOUR	✓	1	100.000
2 - Coastal Link Road E		ONE HOUR	✓	754	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	83	100.000
4 - Coastal Link Road W		ONE HOUR	✓	607	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	1	0	0
	2 - Coastal Link Road E	0	2	109	643
	3 - Pentre Nicklaus	0	54	1	28
	4 - Coastal Link Road W	0	578	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.0	~1	A	0	0
2 - Coastal Link Road E	0.46	3.72	0.9	1.7	A	692	1038
3 - Pentre Nicklaus	0.06	2.52	0.1	0.5	A	76	114
4 - Coastal Link Road W	0.37	3.23	0.6	2.7	A	557	835

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 - Site Access	0	0	498	1574	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	568	142	23	1811	0.313	566	476	0.0	0.5	2.913	A
3 - Pentre Nicklaus	62	16	484	1701	0.037	62	104	0.0	0.0	2.253	A
4 - Coastal Link Road W	457	114	43	1819	0.251	456	504	0.0	0.3	2.693	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 - Site Access	0	0	597	1515	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	678	169	27	1808	0.375	677	570	0.5	0.6	3.208	A
3 - Pentre Nicklaus	75	19	579	1641	0.045	75	125	0.0	0.0	2.356	A
4 - Coastal Link Road W	546	136	51	1814	0.301	545	603	0.3	0.4	2.896	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 - Site Access	0	0	730	1434	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	830	208	33	1805	0.460	829	697	0.6	0.9	3.719	A
3 - Pentre Nicklaus	91	23	709	1559	0.059	91	153	0.0	0.1	2.515	A
4 - Coastal Link Road W	668	167	63	1807	0.370	668	738	0.4	0.6	3.223	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 - Site Access	0	0	731	1433	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	830	208	33	1804	0.460	830	698	0.9	0.9	3.725	A
3 - Pentre Nicklaus	91	23	710	1559	0.059	91	153	0.1	0.1	2.516	A
4 - Coastal Link Road W	668	167	63	1807	0.370	668	739	0.6	0.6	3.226	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 - Site Access	0	0	598	1514	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	678	169	27	1808	0.375	679	571	0.9	0.6	3.217	A
3 - Pentre Nicklaus	75	19	581	1640	0.045	75	125	0.1	0.0	2.360	A
4 - Coastal Link Road W	546	136	51	1814	0.301	546	604	0.6	0.4	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 - Site Access	0	0	500	1573	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	568	142	23	1811	0.313	568	478	0.6	0.5	2.925	A
3 - Pentre Nicklaus	62	16	486	1700	0.037	63	105	0.0	0.0	2.254	A
4 - Coastal Link Road W	457	114	43	1819	0.251	457	506	0.4	0.3	2.701	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Pentre Nicklaus	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.60	0.09	0.82	1.37	1.44			N/A	N/A
3 - Pentre Nicklaus	0.05	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.44	0.00	0.00	0.44	0.44			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.85	0.03	0.26	0.85	0.85			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.27	0.48	0.50			N/A	N/A
4 - Coastal Link Road W	0.60	0.03	0.26	0.60	0.60			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.86	0.03	0.27	0.86	1.66			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	0.60	0.03	0.30	1.23	2.72			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.61	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Pentre Nicklaus	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link Road W	0.34	0.00	0.00	0.34	0.34			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.20	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.20	A

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	2029 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 - Site Access		ONE HOUR	✓	124	100.000
2 - Coastal Link Road E		ONE HOUR	✓	810	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	185	100.000
4 - Coastal Link Road W		ONE HOUR	✓	737	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	71	0	53
	2 - Coastal Link Road E	242	17	39	512
	3 - Pentre Nicklaus	0	128	0	57
	4 - Coastal Link Road W	133	578	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.10	2.90	0.1	0.5	A	114	171
2 - Coastal Link Road E	0.50	4.23	1.0	1.5	A	743	1115
3 - Pentre Nicklaus	0.14	2.96	0.2	0.5	A	170	255
4 - Coastal Link Road W	0.51	4.70	1.1	1.5	A	676	1014

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 - Site Access	93	23	562	1536	0.061	93	281	0.0	0.1	2.495	A
2 - Coastal Link Road E	610	152	59	1789	0.341	608	596	0.0	0.5	3.146	A
3 - Pentre Nicklaus	139	35	618	1616	0.086	139	49	0.0	0.1	2.470	A
4 - Coastal Link Road W	555	139	290	1670	0.332	553	467	0.0	0.5	3.266	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 - Site Access	111	28	673	1469	0.076	111	337	0.1	0.1	2.651	A
2 - Coastal Link Road E	728	182	71	1782	0.409	727	713	0.5	0.7	3.529	A
3 - Pentre Nicklaus	166	42	740	1540	0.108	166	58	0.1	0.1	2.656	A
4 - Coastal Link Road W	663	166	348	1636	0.405	662	559	0.5	0.7	3.752	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 - Site Access	137	34	823	1377	0.099	136	412	0.1	0.1	2.900	A
2 - Coastal Link Road E	892	223	87	1772	0.503	891	873	0.7	1.0	4.215	A
3 - Pentre Nicklaus	204	51	906	1435	0.142	204	71	0.1	0.2	2.962	A
4 - Coastal Link Road W	811	203	426	1589	0.511	810	684	0.7	1.0	4.685	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 - Site Access	137	34	825	1377	0.099	137	413	0.1	0.1	2.902	A
2 - Coastal Link Road E	892	223	87	1772	0.503	892	874	1.0	1.0	4.227	A
3 - Pentre Nicklaus	204	51	907	1434	0.142	204	72	0.2	0.2	2.964	A
4 - Coastal Link Road W	811	203	426	1589	0.511	811	685	1.0	1.1	4.703	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 - Site Access	111	28	675	1468	0.076	112	338	0.1	0.1	2.656	A
2 - Coastal Link Road E	728	182	71	1782	0.409	729	715	1.0	0.7	3.543	A
3 - Pentre Nicklaus	166	42	742	1538	0.108	166	59	0.2	0.1	2.659	A
4 - Coastal Link Road W	663	166	348	1635	0.405	664	560	1.1	0.7	3.768	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 - Site Access	93	23	565	1534	0.061	93	283	0.1	0.1	2.498	A
2 - Coastal Link Road E	610	152	60	1789	0.341	611	598	0.7	0.5	3.163	A
3 - Pentre Nicklaus	139	35	621	1615	0.086	139	49	0.1	0.1	2.473	A
4 - Coastal Link Road W	555	139	292	1670	0.332	556	469	0.7	0.5	3.286	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 - Site Access	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2 - Coastal Link Road E	0.53	0.53	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.50	0.00	0.00	0.50	0.50			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 - Site Access	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	0.71	0.10	0.86	1.42	1.49			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.69	0.09	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 - Site Access	0.11	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	1.04	0.03	0.26	1.04	1.04			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link Road W	1.05	0.03	0.26	1.05	1.05			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 - Site Access	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link Road E	1.04	0.03	0.28	1.04	1.47			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link Road W	1.05	0.03	0.27	1.05	1.22			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 - Site Access	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link Road E	0.72	0.57	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.70	0.51	0.99	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 - Site Access	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2 - Coastal Link Road E	0.54	0.06	0.62	1.37	1.46			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.51	0.05	0.48	1.31	1.42			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.29	A

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	2029 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 - Site Access		ONE HOUR	✓	354	100.000
2 - Coastal Link Road E		ONE HOUR	✓	907	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	88	100.000
4 - Coastal Link Road W		ONE HOUR	✓	710	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	224	1	129
	2 - Coastal Link Road E	101	8	113	685
	3 - Pentre Nicklaus	1	56	1	30
	4 - Coastal Link Road W	53	624	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.28	3.58	0.4	1.2	A	325	487
2 - Coastal Link Road E	0.58	5.05	1.4	1.8	A	832	1248
3 - Pentre Nicklaus	0.07	2.91	0.1	0.5	A	81	121
4 - Coastal Link Road W	0.45	3.85	0.8	2.0	A	652	977

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 - Site Access	267	67	542	1548	0.172	266	116	0.0	0.2	2.806	A
2 - Coastal Link Road E	683	171	123	1751	0.390	680	684	0.0	0.6	3.380	A
3 - Pentre Nicklaus	66	17	692	1570	0.042	66	111	0.0	0.0	2.455	A
4 - Coastal Link Road W	535	134	125	1770	0.302	533	633	0.0	0.4	2.963	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 - Site Access	318	80	649	1483	0.215	318	139	0.2	0.3	3.088	A
2 - Coastal Link Road E	815	204	147	1736	0.470	814	819	0.6	0.9	3.931	A
3 - Pentre Nicklaus	79	20	829	1484	0.053	79	133	0.0	0.1	2.628	A
4 - Coastal Link Road W	638	160	150	1755	0.364	638	758	0.4	0.6	3.283	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 - Site Access	390	97	794	1395	0.279	389	170	0.3	0.4	3.576	A
2 - Coastal Link Road E	999	250	180	1716	0.582	997	1003	0.9	1.4	5.025	A
3 - Pentre Nicklaus	97	24	1014	1367	0.071	97	163	0.1	0.1	2.907	A
4 - Coastal Link Road W	782	195	184	1735	0.451	781	928	0.6	0.8	3.843	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 - Site Access	390	97	795	1395	0.279	390	171	0.4	0.4	3.581	A
2 - Coastal Link Road E	999	250	181	1716	0.582	999	1004	1.4	1.4	5.053	A
3 - Pentre Nicklaus	97	24	1016	1366	0.071	97	163	0.1	0.1	2.909	A
4 - Coastal Link Road W	782	195	184	1734	0.451	782	929	0.8	0.8	3.851	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 - Site Access	318	80	650	1482	0.215	319	140	0.4	0.3	3.093	A
2 - Coastal Link Road E	815	204	148	1736	0.470	817	821	1.4	0.9	3.958	A
3 - Pentre Nicklaus	79	20	832	1482	0.053	79	133	0.1	0.1	2.634	A
4 - Coastal Link Road W	638	160	150	1754	0.364	639	760	0.8	0.6	3.292	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 - Site Access	267	67	544	1547	0.172	267	117	0.3	0.2	2.812	A
2 - Coastal Link Road E	683	171	124	1750	0.390	684	687	0.9	0.6	3.403	A
3 - Pentre Nicklaus	66	17	696	1568	0.042	66	112	0.1	0.0	2.459	A
4 - Coastal Link Road W	535	134	126	1769	0.302	535	636	0.6	0.4	2.974	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.64	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link Road E	0.89	0.08	0.84	1.40	1.81			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.58	0.08	0.80	1.38	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 - Site Access	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	1.38	0.03	0.26	1.38	1.38			N/A	N/A
3 - Pentre Nicklaus	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4 - Coastal Link Road W	0.83	0.03	0.26	0.83	0.83			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 - Site Access	0.39	0.03	0.33	1.20	1.20			N/A	N/A
2 - Coastal Link Road E	1.39	0.03	0.27	1.39	1.39			N/A	N/A
3 - Pentre Nicklaus	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4 - Coastal Link Road W	0.83	0.03	0.28	0.83	1.97			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 - Site Access	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link Road E	0.90	0.32	0.99	1.44	1.50			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	0.59	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.65	0.07	0.75	1.37	1.45			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.44	0.00	0.00	0.44	0.44			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.34	A

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	2029 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 - Site Access		ONE HOUR	✓	124	100.000
2 - Coastal Link Road E		ONE HOUR	✓	843	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	185	100.000
4 - Coastal Link Road W		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	71	0	53
	2 - Coastal Link Road E	242	40	39	522
	3 - Pentre Nicklaus	0	128	0	57
	4 - Coastal Link Road W	133	584	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.10	2.95	0.1	0.5	A	114	171
2 - Coastal Link Road E	0.52	4.41	1.1	1.5	A	774	1160
3 - Pentre Nicklaus	0.14	3.02	0.2	0.5	A	170	255
4 - Coastal Link Road W	0.52	4.84	1.1	1.5	A	682	1023

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 - Site Access	93	23	584	1523	0.061	93	281	0.0	0.1	2.518	A
2 - Coastal Link Road E	635	159	59	1789	0.355	632	617	0.0	0.6	3.211	A
3 - Pentre Nicklaus	139	35	643	1601	0.087	139	49	0.0	0.1	2.496	A
4 - Coastal Link Road W	559	140	308	1660	0.337	557	474	0.0	0.5	3.311	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 - Site Access	111	28	699	1453	0.077	111	337	0.1	0.1	2.682	A
2 - Coastal Link Road E	758	189	71	1782	0.425	757	739	0.6	0.8	3.628	A
3 - Pentre Nicklaus	166	42	770	1521	0.109	166	58	0.1	0.1	2.693	A
4 - Coastal Link Road W	668	167	368	1624	0.411	667	568	0.5	0.7	3.819	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 - Site Access	137	34	855	1358	0.101	136	412	0.1	0.1	2.946	A
2 - Coastal Link Road E	928	232	87	1772	0.524	927	905	0.8	1.1	4.392	A
3 - Pentre Nicklaus	204	51	942	1412	0.144	204	71	0.1	0.2	3.018	A
4 - Coastal Link Road W	818	205	451	1574	0.520	817	695	0.7	1.1	4.818	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 - Site Access	137	34	857	1357	0.101	137	413	0.1	0.1	2.948	A
2 - Coastal Link Road E	928	232	87	1772	0.524	928	906	1.1	1.1	4.406	A
3 - Pentre Nicklaus	204	51	944	1412	0.144	204	72	0.2	0.2	3.020	A
4 - Coastal Link Road W	818	205	451	1573	0.520	818	696	1.1	1.1	4.839	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 - Site Access	111	28	701	1452	0.077	112	338	0.1	0.1	2.686	A
2 - Coastal Link Road E	758	189	71	1782	0.425	759	741	1.1	0.8	3.642	A
3 - Pentre Nicklaus	166	42	772	1520	0.109	166	59	0.2	0.1	2.698	A
4 - Coastal Link Road W	668	167	369	1623	0.412	669	569	1.1	0.7	3.842	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 - Site Access	93	23	586	1521	0.061	93	283	0.1	0.1	2.521	A
2 - Coastal Link Road E	635	159	60	1789	0.355	635	620	0.8	0.6	3.226	A
3 - Pentre Nicklaus	139	35	646	1599	0.087	139	49	0.1	0.1	2.502	A
4 - Coastal Link Road W	559	140	309	1659	0.337	560	476	0.7	0.5	3.328	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 - Site Access	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2 - Coastal Link Road E	0.57	0.57	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.51	0.51	1.02	1.42	1.47			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 - Site Access	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	0.76	0.10	0.86	1.45	1.52			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.70	0.09	0.83	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 - Site Access	0.11	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	1.12	0.03	0.26	1.12	1.12			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link Road W	1.09	0.03	0.26	1.09	1.09			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 - Site Access	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link Road E	1.13	0.03	0.27	1.13	1.25			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link Road W	1.09	0.03	0.27	1.09	1.11			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 - Site Access	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link Road E	0.77	0.54	1.02	1.44	1.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.72	0.45	0.99	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 - Site Access	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2 - Coastal Link Road E	0.57	0.07	0.73	1.39	1.47			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.52	0.05	0.51	1.32	1.42			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.42	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.42	A

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	2029 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 - Site Access		ONE HOUR	✓	354	100.000
2 - Coastal Link Road E		ONE HOUR	✓	929	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	88	100.000
4 - Coastal Link Road W		ONE HOUR	✓	721	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	224	1	129
	2 - Coastal Link Road E	101	23	113	692
	3 - Pentre Nicklaus	1	56	1	30
	4 - Coastal Link Road W	53	635	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.28	3.64	0.4	1.3	A	325	487
2 - Coastal Link Road E	0.60	5.23	1.5	1.9	A	852	1279
3 - Pentre Nicklaus	0.07	2.94	0.1	0.5	A	81	121
4 - Coastal Link Road W	0.46	3.94	0.9	1.8	A	662	992

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 - Site Access	267	67	561	1536	0.173	266	116	0.0	0.2	2.832	A
2 - Coastal Link Road E	699	175	123	1751	0.400	697	704	0.0	0.7	3.432	A
3 - Pentre Nicklaus	66	17	709	1559	0.042	66	111	0.0	0.0	2.473	A
4 - Coastal Link Road W	543	136	137	1763	0.308	541	638	0.0	0.5	3.000	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 - Site Access	318	80	672	1469	0.217	318	139	0.2	0.3	3.126	A
2 - Coastal Link Road E	835	209	147	1736	0.481	834	843	0.7	0.9	4.017	A
3 - Pentre Nicklaus	79	20	849	1471	0.054	79	133	0.0	0.1	2.652	A
4 - Coastal Link Road W	648	162	163	1747	0.371	648	764	0.5	0.6	3.337	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 - Site Access	390	97	822	1378	0.283	389	170	0.3	0.4	3.639	A
2 - Coastal Link Road E	1023	256	180	1716	0.596	1021	1031	0.9	1.5	5.197	A
3 - Pentre Nicklaus	97	24	1038	1352	0.072	97	163	0.1	0.1	2.942	A
4 - Coastal Link Road W	794	198	200	1725	0.460	793	935	0.6	0.9	3.934	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 - Site Access	390	97	824	1377	0.283	390	171	0.4	0.4	3.644	A
2 - Coastal Link Road E	1023	256	181	1716	0.596	1023	1033	1.5	1.5	5.229	A
3 - Pentre Nicklaus	97	24	1040	1351	0.072	97	163	0.1	0.1	2.945	A
4 - Coastal Link Road W	794	198	200	1724	0.460	794	937	0.9	0.9	3.943	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 - Site Access	318	80	674	1468	0.217	319	140	0.4	0.3	3.132	A
2 - Coastal Link Road E	835	209	148	1736	0.481	837	845	1.5	0.9	4.046	A
3 - Pentre Nicklaus	79	20	852	1469	0.054	79	133	0.1	0.1	2.656	A
4 - Coastal Link Road W	648	162	164	1746	0.371	649	767	0.9	0.6	3.347	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 - Site Access	267	67	564	1535	0.174	267	117	0.3	0.2	2.841	A
2 - Coastal Link Road E	699	175	124	1750	0.400	700	707	0.9	0.7	3.457	A
3 - Pentre Nicklaus	66	17	712	1557	0.043	66	112	0.1	0.0	2.477	A
4 - Coastal Link Road W	543	136	137	1762	0.308	543	642	0.6	0.5	3.011	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.67	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.45	0.00	0.00	0.45	0.45			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 - Site Access	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link Road E	0.93	0.07	0.84	1.58	1.95			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.60	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 - Site Access	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	1.47	0.03	0.26	1.47	1.47			N/A	N/A
3 - Pentre Nicklaus	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4 - Coastal Link Road W	0.86	0.03	0.26	0.86	0.86			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 - Site Access	0.39	0.03	0.33	1.28	1.29			N/A	N/A
2 - Coastal Link Road E	1.48	0.03	0.27	1.48	1.48			N/A	N/A
3 - Pentre Nicklaus	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4 - Coastal Link Road W	0.87	0.03	0.28	0.87	1.83			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 - Site Access	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link Road E	0.94	0.27	1.00	1.35	1.35			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.67	0.07	0.75	1.39	1.47			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 03. Machynys Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:27:55

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - The Avenue	D1	0.2	2.80	0.12	3.21	A	D2	0.3	2.95	0.23	3.50	A
2 - Coastal Link E		0.6	3.21	0.37				1.0	3.90	0.50		
3 - Nicklaus Avenue		0.0	2.24	0.01				0.0	2.60	0.04		
4 - Coastal Link W		0.7	3.34	0.40				0.6	3.31	0.39		
	2029 with Committed Development											
1 - The Avenue	D3	0.2	3.08	0.18	3.92	A	D4	0.4	3.58	0.30	4.48	A
2 - Coastal Link E		1.1	4.28	0.52				1.5	4.81	0.59		
3 - Nicklaus Avenue		0.0	2.59	0.01				0.0	2.86	0.05		
4 - Coastal Link W		0.9	3.79	0.47				1.3	4.59	0.56		
	2029 with Committed Development and Machynys Hotel											
1 - The Avenue	D15	0.2	3.12	0.18	4.00	A	D16	0.4	3.62	0.30	4.61	A
2 - Coastal Link E		1.2	4.36	0.53				1.5	5.00	0.61		
3 - Nicklaus Avenue		0.0	2.61	0.01				0.0	2.90	0.05		
4 - Coastal Link W		0.9	3.90	0.48				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	3
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

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	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D15	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D16	2029 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

2024 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	3.21	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.21	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	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	2024 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	✓	177	100.000
2 - Coastal Link E		ONE HOUR	✓	644	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	671	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	130	2	45
	2 - Coastal Link E	154	0	18	472
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	78	587	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	2.80	0.2	0.5	A	162	244
2 - Coastal Link E	0.37	3.21	0.6	2.9	A	591	886
3 - Nicklaus Avenue	0.01	2.24	0.0	0.5	A	11	17
4 - Coastal Link W	0.40	3.34	0.7	2.7	A	616	924

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	447	1722	0.077	133	176	0.0	0.1	2.459	A
2 - Coastal Link E	485	121	40	1926	0.252	483	540	0.0	0.4	2.680	A
3 - Nicklaus Avenue	9	2	504	1771	0.005	9	19	0.0	0.0	2.043	A
4 - Coastal Link W	505	126	119	1880	0.269	504	394	0.0	0.4	2.686	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	159	40	535	1666	0.096	159	210	0.1	0.1	2.593	A
2 - Coastal Link E	579	145	48	1921	0.301	579	647	0.4	0.5	2.882	A
3 - Nicklaus Avenue	11	3	604	1706	0.006	11	22	0.0	0.0	2.123	A
4 - Coastal Link W	603	151	143	1865	0.323	603	472	0.4	0.5	2.930	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	195	49	656	1589	0.123	195	257	0.1	0.2	2.801	A
2 - Coastal Link E	709	177	58	1914	0.370	708	792	0.5	0.6	3.207	A
3 - Nicklaus Avenue	13	3	739	1618	0.008	13	27	0.0	0.0	2.243	A
4 - Coastal Link W	739	185	175	1845	0.400	738	578	0.5	0.7	3.340	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	195	49	656	1589	0.123	195	258	0.2	0.2	2.802	A
2 - Coastal Link E	709	177	58	1914	0.370	709	793	0.6	0.6	3.209	A
3 - Nicklaus Avenue	13	3	740	1617	0.008	13	28	0.0	0.0	2.244	A
4 - Coastal Link W	739	185	175	1845	0.400	739	578	0.7	0.7	3.343	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	159	40	536	1665	0.096	159	211	0.2	0.1	2.596	A
2 - Coastal Link E	579	145	48	1921	0.301	580	648	0.6	0.5	2.885	A
3 - Nicklaus Avenue	11	3	605	1705	0.006	11	23	0.0	0.0	2.125	A
4 - Coastal Link W	603	151	143	1865	0.323	604	472	0.7	0.5	2.936	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	449	1721	0.077	133	176	0.1	0.1	2.463	A
2 - Coastal Link E	485	121	40	1925	0.252	485	543	0.5	0.4	2.688	A
3 - Nicklaus Avenue	9	2	506	1769	0.005	9	19	0.0	0.0	2.046	A
4 - Coastal Link W	505	126	120	1879	0.269	506	396	0.5	0.4	2.692	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	0.38	0.00	0.00	0.38	0.38			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	0.49	0.00	0.00	0.49	0.49			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	0.63	0.03	0.27	0.63	0.63			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	0.68	0.03	0.26	0.68	0.68			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	0.63	0.03	0.31	1.29	2.86			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	0.89	2.71			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	0.12	0.00	0.00	0.12	0.12			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	0.01	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

2024 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	3.50	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.50	A

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	2024 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	✓	325	100.000
2 - Coastal Link E		ONE HOUR	✓	855	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	52	100.000
4 - Coastal Link W		ONE HOUR	✓	637	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	223	2	100
	2 - Coastal Link E	173	0	37	645
	3 - Nicklaus Avenue	5	34	0	13
	4 - Coastal Link W	72	555	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	0.23	2.95	0.3	1.2	A	298	447
2 - Coastal Link E	0.50	3.90	1.0	1.5	A	785	1177
3 - Nicklaus Avenue	0.04	2.60	0.0	0.5	A	48	72
4 - Coastal Link W	0.39	3.31	0.6	2.7	A	585	877

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	245	61	450	1721	0.142	244	188	0.0	0.2	2.453	A
2 - Coastal Link E	644	161	84	1898	0.339	642	610	0.0	0.5	2.888	A
3 - Nicklaus Avenue	39	10	689	1650	0.024	39	37	0.0	0.0	2.234	A
4 - Coastal Link W	480	120	159	1855	0.259	478	569	0.0	0.4	2.658	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	292	73	538	1664	0.176	292	225	0.2	0.2	2.641	A
2 - Coastal Link E	769	192	101	1887	0.407	768	729	0.5	0.7	3.245	A
3 - Nicklaus Avenue	47	12	825	1562	0.030	47	44	0.0	0.0	2.375	A
4 - Coastal Link W	573	143	190	1835	0.312	572	681	0.4	0.5	2.900	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	358	89	659	1587	0.225	358	275	0.2	0.3	2.947	A
2 - Coastal Link E	941	235	123	1873	0.503	940	893	0.7	1.0	3.889	A
3 - Nicklaus Avenue	57	14	1009	1441	0.040	57	54	0.0	0.0	2.600	A
4 - Coastal Link W	701	175	233	1808	0.388	701	833	0.5	0.6	3.304	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	358	89	660	1587	0.225	358	275	0.3	0.3	2.948	A
2 - Coastal Link E	941	235	123	1873	0.503	941	894	1.0	1.0	3.900	A
3 - Nicklaus Avenue	57	14	1011	1440	0.040	57	54	0.0	0.0	2.602	A
4 - Coastal Link W	701	175	233	1808	0.388	701	835	0.6	0.6	3.307	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	292	73	539	1664	0.176	292	225	0.3	0.2	2.645	A
2 - Coastal Link E	769	192	101	1887	0.407	770	731	1.0	0.7	3.255	A
3 - Nicklaus Avenue	47	12	827	1561	0.030	47	44	0.0	0.0	2.379	A
4 - Coastal Link W	573	143	191	1835	0.312	573	682	0.6	0.5	2.904	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	245	61	451	1720	0.142	245	188	0.2	0.2	2.459	A
2 - Coastal Link E	644	161	84	1898	0.339	644	612	0.7	0.5	2.903	A
3 - Nicklaus Avenue	39	10	692	1648	0.024	39	37	0.0	0.0	2.236	A
4 - Coastal Link W	480	120	160	1854	0.259	480	571	0.5	0.4	2.667	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	0.52	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

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	0.69	0.09	0.83	1.39	1.46			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	1.01	0.03	0.26	1.01	1.01			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	0.89	1.21			N/A	N/A
2 - Coastal Link E	1.02	0.03	0.27	1.02	1.39			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	1.08	2.74			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	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	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	0.36	0.00	0.00	0.36	0.36			N/A	N/A

2029 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	3.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.92	A

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	2029 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	✓	247	100.000
2 - Coastal Link E		ONE HOUR	✓	882	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	777	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	144	2	101
	2 - Coastal Link E	176	0	18	688
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	100	670	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	3.08	0.2	0.5	A	227	340
2 - Coastal Link E	0.52	4.28	1.1	1.6	A	809	1214
3 - Nicklaus Avenue	0.01	2.59	0.0	0.5	A	12	18
4 - Coastal Link W	0.47	3.79	0.9	1.7	A	713	1069

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	186	46	510	1682	0.111	185	209	0.0	0.1	2.593	A
2 - Coastal Link E	664	166	83	1899	0.350	662	613	0.0	0.6	3.120	A
3 - Nicklaus Avenue	10	2	725	1627	0.006	10	20	0.0	0.0	2.225	A
4 - Coastal Link W	585	146	136	1869	0.313	583	599	0.0	0.5	2.871	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	222	56	611	1618	0.137	222	250	0.1	0.2	2.779	A
2 - Coastal Link E	793	198	99	1888	0.420	792	734	0.6	0.8	3.524	A
3 - Nicklaus Avenue	12	3	868	1534	0.008	12	23	0.0	0.0	2.364	A
4 - Coastal Link W	699	175	163	1853	0.377	698	717	0.5	0.6	3.200	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	272	68	748	1531	0.178	272	306	0.2	0.2	3.082	A
2 - Coastal Link E	971	243	121	1875	0.518	970	898	0.8	1.1	4.264	A
3 - Nicklaus Avenue	14	4	1062	1407	0.010	14	29	0.0	0.0	2.584	A
4 - Coastal Link W	855	214	199	1830	0.468	854	877	0.6	0.9	3.788	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	272	68	749	1530	0.178	272	306	0.2	0.2	3.084	A
2 - Coastal Link E	971	243	121	1874	0.518	971	900	1.1	1.1	4.278	A
3 - Nicklaus Avenue	14	4	1064	1406	0.010	14	29	0.0	0.0	2.586	A
4 - Coastal Link W	855	214	199	1830	0.468	855	879	0.9	0.9	3.794	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	222	56	612	1617	0.137	222	250	0.2	0.2	2.784	A
2 - Coastal Link E	793	198	99	1888	0.420	794	736	1.1	0.8	3.537	A
3 - Nicklaus Avenue	12	3	870	1532	0.008	12	23	0.0	0.0	2.367	A
4 - Coastal Link W	699	175	163	1852	0.377	700	719	0.9	0.6	3.212	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	186	46	512	1681	0.111	186	210	0.2	0.1	2.598	A
2 - Coastal Link E	664	166	83	1898	0.350	665	616	0.8	0.6	3.134	A
3 - Nicklaus Avenue	10	2	728	1625	0.006	10	20	0.0	0.0	2.230	A
4 - Coastal Link W	585	146	136	1869	0.313	586	601	0.6	0.5	2.881	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	0.57	0.57	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	0.47	0.00	0.00	0.47	0.47			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	0.77	0.10	0.89	1.49	1.57			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	0.62	0.09	0.83	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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.14	0.03	0.27	1.14	1.14			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link W	0.89	0.03	0.26	0.89	0.89			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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.15	0.03	0.29	1.15	1.36			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	0.90	0.03	0.28	0.90	1.67			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	0.78	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	0.63	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	0.58	0.07	0.73	1.44	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	0.47	0.00	0.00	0.47	0.47			N/A	N/A

2029 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	4.48	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.48	A

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	2029 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	✓	385	100.000
2 - Coastal Link E		ONE HOUR	✓	994	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	54	100.000
4 - Coastal Link W		ONE HOUR	✓	908	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	249	2	134
	2 - Coastal Link E	187	0	39	768
	3 - Nicklaus Avenue	6	35	0	13
	4 - Coastal Link W	128	770	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	0.30	3.58	0.4	1.5	A	353	530
2 - Coastal Link E	0.59	4.81	1.5	1.9	A	912	1368
3 - Nicklaus Avenue	0.05	2.86	0.0	0.5	A	50	74
4 - Coastal Link W	0.56	4.59	1.3	1.5	A	833	1250

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	290	72	611	1618	0.179	289	241	0.0	0.2	2.726	A
2 - Coastal Link E	748	187	110	1882	0.398	746	791	0.0	0.7	3.193	A
3 - Nicklaus Avenue	41	10	817	1567	0.026	41	38	0.0	0.0	2.358	A
4 - Coastal Link W	684	171	171	1847	0.370	681	686	0.0	0.6	3.132	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	346	87	732	1541	0.225	346	288	0.2	0.3	3.031	A
2 - Coastal Link E	894	223	131	1868	0.478	893	947	0.7	0.9	3.722	A
3 - Nicklaus Avenue	49	12	978	1462	0.033	49	46	0.0	0.0	2.546	A
4 - Coastal Link W	816	204	205	1826	0.447	815	822	0.6	0.8	3.618	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	424	106	896	1436	0.295	423	353	0.3	0.4	3.574	A
2 - Coastal Link E	1094	274	161	1850	0.592	1092	1159	0.9	1.4	4.785	A
3 - Nicklaus Avenue	59	15	1197	1319	0.045	59	56	0.0	0.0	2.857	A
4 - Coastal Link W	1000	250	251	1798	0.556	998	1006	0.8	1.3	4.568	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	424	106	897	1435	0.295	424	353	0.4	0.4	3.580	A
2 - Coastal Link E	1094	274	161	1850	0.592	1094	1160	1.4	1.5	4.812	A
3 - Nicklaus Avenue	59	15	1199	1318	0.045	59	56	0.0	0.0	2.860	A
4 - Coastal Link W	1000	250	251	1797	0.556	1000	1007	1.3	1.3	4.589	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	346	87	734	1539	0.225	347	289	0.4	0.3	3.040	A
2 - Coastal Link E	894	223	131	1868	0.478	896	949	1.5	0.9	3.745	A
3 - Nicklaus Avenue	49	12	981	1460	0.033	49	46	0.0	0.0	2.550	A
4 - Coastal Link W	816	204	205	1826	0.447	818	824	1.3	0.8	3.640	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	290	72	614	1616	0.179	290	242	0.3	0.2	2.735	A
2 - Coastal Link E	748	187	110	1881	0.398	749	794	0.9	0.7	3.215	A
3 - Nicklaus Avenue	41	10	821	1564	0.026	41	38	0.0	0.0	2.362	A
4 - Coastal Link W	684	171	172	1847	0.370	684	690	0.8	0.6	3.151	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	0.66	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	0.59	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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.92	0.07	0.83	1.57	1.95			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	0.82	0.08	0.83	1.51	1.52			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	0.42	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.44	0.03	0.26	1.44	1.44			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	1.26	0.03	0.26	1.26	1.26			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	0.42	0.03	0.33	1.35	1.54			N/A	N/A
2 - Coastal Link E	1.45	0.03	0.27	1.45	1.45			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	1.27	0.03	0.27	1.27	1.27			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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.93	0.35	1.00	1.08	1.08			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	0.83	0.51	0.99	1.42	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 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.67	0.08	0.77	1.38	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	0.60	0.07	0.75	1.37	1.45			N/A	N/A

2029 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	4.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.00	A

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	2029 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	✓	247	100.000
2 - Coastal Link E		ONE HOUR	✓	897	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	800	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	144	2	101
	2 - Coastal Link E	176	0	18	703
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	100	693	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	3.12	0.2	0.5	A	227	340
2 - Coastal Link E	0.53	4.36	1.2	1.6	A	823	1235
3 - Nicklaus Avenue	0.01	2.61	0.0	0.5	A	12	18
4 - Coastal Link W	0.48	3.90	0.9	1.5	A	734	1101

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	186	46	528	1671	0.111	185	209	0.0	0.1	2.612	A
2 - Coastal Link E	675	169	83	1899	0.356	673	630	0.0	0.6	3.148	A
3 - Nicklaus Avenue	10	2	736	1620	0.006	10	20	0.0	0.0	2.235	A
4 - Coastal Link W	602	151	136	1869	0.322	600	610	0.0	0.5	2.910	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	222	56	631	1605	0.138	222	250	0.1	0.2	2.806	A
2 - Coastal Link E	806	202	99	1888	0.427	806	754	0.6	0.8	3.568	A
3 - Nicklaus Avenue	12	3	881	1525	0.008	12	23	0.0	0.0	2.378	A
4 - Coastal Link W	719	180	163	1853	0.388	719	730	0.5	0.6	3.259	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	272	68	773	1515	0.180	272	306	0.2	0.2	3.122	A
2 - Coastal Link E	988	247	121	1875	0.527	986	924	0.8	1.2	4.342	A
3 - Nicklaus Avenue	14	4	1078	1396	0.010	14	29	0.0	0.0	2.604	A
4 - Coastal Link W	881	220	199	1830	0.481	880	894	0.6	0.9	3.887	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	272	68	774	1514	0.180	272	306	0.2	0.2	3.124	A
2 - Coastal Link E	988	247	121	1874	0.527	988	925	1.2	1.2	4.357	A
3 - Nicklaus Avenue	14	4	1080	1395	0.010	14	29	0.0	0.0	2.606	A
4 - Coastal Link W	881	220	199	1830	0.481	881	895	0.9	0.9	3.897	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	222	56	633	1604	0.138	222	250	0.2	0.2	2.809	A
2 - Coastal Link E	806	202	99	1888	0.427	808	756	1.2	0.8	3.581	A
3 - Nicklaus Avenue	12	3	884	1523	0.008	12	23	0.0	0.0	2.380	A
4 - Coastal Link W	719	180	163	1852	0.388	720	732	0.9	0.7	3.271	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	186	46	530	1670	0.111	186	210	0.2	0.1	2.618	A
2 - Coastal Link E	675	169	83	1898	0.356	676	633	0.8	0.6	3.166	A
3 - Nicklaus Avenue	10	2	739	1617	0.006	10	20	0.0	0.0	2.238	A
4 - Coastal Link W	602	151	136	1869	0.322	603	613	0.7	0.5	2.924	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	0.59	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	0.79	0.10	0.89	1.51	1.59			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	0.65	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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.18	0.03	0.28	1.18	1.18			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	0.95	0.03	0.26	0.95	0.95			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	1.19	0.03	0.29	1.19	1.26			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	0.95	0.03	0.28	0.95	1.38			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	0.81	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	0.66	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	0.49	0.00	0.00	0.49	0.49			N/A	N/A

2029 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	4.61	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.61	A

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	2029 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	✓	385	100.000
2 - Coastal Link E		ONE HOUR	✓	1020	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	54	100.000
4 - Coastal Link W		ONE HOUR	✓	923	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	249	2	134
	2 - Coastal Link E	187	0	39	794
	3 - Nicklaus Avenue	6	35	0	13
	4 - Coastal Link W	128	785	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	0.30	3.62	0.4	1.6	A	353	530
2 - Coastal Link E	0.61	5.00	1.5	2.3	A	936	1404
3 - Nicklaus Avenue	0.05	2.90	0.0	0.5	A	50	74
4 - Coastal Link W	0.57	4.69	1.3	1.7	A	847	1270

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	290	72	623	1610	0.180	289	241	0.0	0.2	2.740	A
2 - Coastal Link E	768	192	110	1882	0.408	765	802	0.0	0.7	3.247	A
3 - Nicklaus Avenue	41	10	836	1554	0.026	41	38	0.0	0.0	2.378	A
4 - Coastal Link W	695	174	171	1847	0.376	692	706	0.0	0.6	3.163	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	346	87	745	1532	0.226	346	288	0.2	0.3	3.053	A
2 - Coastal Link E	917	229	131	1868	0.491	916	960	0.7	1.0	3.813	A
3 - Nicklaus Avenue	49	12	1001	1447	0.034	49	46	0.0	0.0	2.574	A
4 - Coastal Link W	830	207	205	1826	0.454	829	845	0.6	0.8	3.667	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	424	106	912	1426	0.297	423	353	0.3	0.4	3.612	A
2 - Coastal Link E	1123	281	161	1850	0.607	1121	1175	1.0	1.5	4.969	A
3 - Nicklaus Avenue	59	15	1225	1301	0.046	59	56	0.0	0.0	2.900	A
4 - Coastal Link W	1016	254	251	1798	0.565	1014	1034	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	424	106	914	1425	0.297	424	353	0.4	0.4	3.618	A
2 - Coastal Link E	1123	281	161	1850	0.607	1123	1177	1.5	1.5	5.001	A
3 - Nicklaus Avenue	59	15	1228	1299	0.046	59	56	0.0	0.0	2.903	A
4 - Coastal Link W	1016	254	251	1797	0.565	1016	1036	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	346	87	748	1531	0.226	347	289	0.4	0.3	3.062	A
2 - Coastal Link E	917	229	131	1868	0.491	919	963	1.5	1.0	3.839	A
3 - Nicklaus Avenue	49	12	1005	1444	0.034	49	46	0.0	0.0	2.580	A
4 - Coastal Link W	830	207	205	1826	0.454	832	848	1.3	0.9	3.688	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	290	72	626	1608	0.180	290	242	0.3	0.2	2.750	A
2 - Coastal Link E	768	192	110	1881	0.408	769	806	1.0	0.7	3.272	A
3 - Nicklaus Avenue	41	10	841	1551	0.026	41	38	0.0	0.0	2.382	A
4 - Coastal Link W	695	174	172	1847	0.376	696	709	0.9	0.6	3.182	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	0.69	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	0.61	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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.97	0.07	0.82	1.73	2.26			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	0.84	0.08	0.84	1.14	1.65			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	0.42	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.54	0.03	0.26	1.54	1.54			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	1.31	0.03	0.26	1.31	1.31			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	0.42	0.03	0.33	1.35	1.57			N/A	N/A
2 - Coastal Link E	1.55	0.03	0.27	1.55	1.55			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	1.32	0.03	0.27	1.32	1.32			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	0.98	0.28	1.02	1.51	1.52			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	0.85	0.47	0.99	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 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	0.07	0.77	1.40	1.48			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	1.37	1.45			N/A	N/A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 11. Morfa Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:32:41

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Lower Trostre Road	D1	0.7	5.88	0.39	6.16	A	D2	1.6	8.70	0.62	9.35	A
2 - N/A		1.1	11.00	0.51				2.5	20.46	0.72		
3 - Brickyard Row		0.2	6.12	0.14				0.1	6.99	0.09		
4 - B4304 Coastal Link Road		1.0	4.26	0.49				1.2	4.55	0.54		
	2029 with Committed Development											
1 - Lower Trostre Road	D3	1.5	8.75	0.59	8.59	A	D4	3.1	14.33	0.76	14.54	B
2 - N/A		1.9	16.91	0.65				4.4	34.41	0.83		
3 - Brickyard Row		0.3	8.14	0.22				0.1	8.23	0.11		
4 - B4304 Coastal Link Road		1.3	4.93	0.56				2.3	6.89	0.69		
	2029 with Committed Development and Machynys Hotel											
1 - Lower Trostre Road	D11	1.6	9.05	0.60	8.78	A	D12	3.6	15.85	0.79	15.49	C
2 - N/A		1.9	17.19	0.65				4.7	36.56	0.84		
3 - Brickyard Row		0.3	8.25	0.22				0.1	8.44	0.11		
4 - B4304 Coastal Link Road		1.4	5.11	0.57				2.4	7.11	0.70		

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	11
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL|Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

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	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D11	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D12	2029 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

2024 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	6.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.16	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	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	2024 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	✓	395	100.000
2 - N/A		ONE HOUR	✓	324	100.000
3 - Brickyard Row		ONE HOUR	✓	90	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	771	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	352
	2 - N/A	30	0	10	284
	3 - Brickyard Row	38	29	3	20
	4 - B4304 Coastal Link Road	436	325	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	5.88	0.7	A	362	544
2 - N/A	0.51	11.00	1.1	B	297	446
3 - Brickyard Row	0.14	6.12	0.2	A	83	124
4 - B4304 Coastal Link Road	0.49	4.26	1.0	A	707	1061

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	297	74	275	1173	0.254	296	379	0.0	0.4	4.498	A
2 - N/A	244	61	282	741	0.329	242	289	0.0	0.5	7.572	A
3 - Brickyard Row	68	17	500	833	0.081	67	25	0.0	0.1	4.932	A
4 - B4304 Coastal Link Road	580	145	76	1754	0.331	578	491	0.0	0.5	3.194	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	355	89	330	1145	0.310	355	454	0.4	0.5	4.997	A
2 - N/A	291	73	338	724	0.402	291	346	0.5	0.7	8.732	A
3 - Brickyard Row	81	20	599	784	0.103	81	30	0.1	0.1	5.375	A
4 - B4304 Coastal Link Road	693	173	92	1745	0.397	692	589	0.5	0.7	3.574	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	435	109	403	1106	0.393	434	556	0.5	0.7	5.867	A
2 - N/A	357	89	414	702	0.508	355	423	0.7	1.1	10.912	B
3 - Brickyard Row	99	25	733	718	0.138	99	36	0.1	0.2	6.106	A
4 - B4304 Coastal Link Road	849	212	112	1732	0.490	848	720	0.7	1.0	4.249	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	435	109	404	1106	0.393	435	557	0.7	0.7	5.884	A
2 - N/A	357	89	415	701	0.509	357	424	1.1	1.1	11.005	B
3 - Brickyard Row	99	25	735	717	0.138	99	36	0.2	0.2	6.118	A
4 - B4304 Coastal Link Road	849	212	112	1732	0.490	849	722	1.0	1.0	4.261	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	355	89	331	1144	0.310	356	456	0.7	0.5	5.018	A
2 - N/A	291	73	340	724	0.402	293	347	1.1	0.7	8.830	A
3 - Brickyard Row	81	20	603	782	0.103	81	30	0.2	0.1	5.392	A
4 - B4304 Coastal Link Road	693	173	92	1744	0.397	694	592	1.0	0.7	3.586	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	297	74	277	1172	0.254	298	381	0.5	0.4	4.521	A
2 - N/A	244	61	284	741	0.329	245	290	0.7	0.5	7.665	A
3 - Brickyard Row	68	17	504	831	0.082	68	25	0.1	0.1	4.954	A
4 - B4304 Coastal Link Road	580	145	77	1754	0.331	581	495	0.7	0.5	3.209	A

2024 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	9.35	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.35	A

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	2024 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	✓	618	100.000
2 - N/A		ONE HOUR	✓	413	100.000
3 - Brickyard Row		ONE HOUR	✓	45	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	848	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	529
	2 - N/A	43	0	18	352
	3 - Brickyard Row	36	9	0	0
	4 - B4304 Coastal Link Road	475	348	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	8.70	1.6	A	567	851
2 - N/A	0.72	20.46	2.5	C	379	568
3 - Brickyard Row	0.09	6.99	0.1	A	41	62
4 - B4304 Coastal Link Road	0.54	4.55	1.2	A	778	1167

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	465	116	287	1167	0.399	463	416	0.0	0.7	5.136	A
2 - N/A	311	78	439	694	0.448	308	310	0.0	0.8	9.392	A
3 - Brickyard Row	34	8	692	738	0.046	34	55	0.0	0.0	5.229	A
4 - B4304 Coastal Link Road	638	160	66	1760	0.363	636	659	0.0	0.6	3.257	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	556	139	343	1138	0.488	554	498	0.7	1.0	6.212	A
2 - N/A	371	93	527	668	0.556	370	371	0.8	1.2	12.185	B
3 - Brickyard Row	40	10	830	670	0.060	40	66	0.0	0.1	5.853	A
4 - B4304 Coastal Link Road	762	191	80	1752	0.435	762	790	0.6	0.8	3.701	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	680	170	420	1098	0.620	678	610	1.0	1.6	8.641	A
2 - N/A	455	114	644	633	0.718	450	454	1.2	2.4	19.496	C
3 - Brickyard Row	50	12	1013	580	0.086	49	81	0.1	0.1	6.949	A
4 - B4304 Coastal Link Road	934	233	97	1741	0.536	932	965	0.8	1.2	4.529	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	680	170	421	1098	0.620	680	611	1.6	1.6	8.697	A
2 - N/A	455	114	646	632	0.719	454	455	2.4	2.5	20.457	C
3 - Brickyard Row	50	12	1019	576	0.086	50	81	0.1	0.1	6.993	A
4 - B4304 Coastal Link Road	934	233	98	1741	0.536	934	971	1.2	1.2	4.547	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	556	139	344	1137	0.489	558	500	1.6	1.0	6.298	A
2 - N/A	371	93	530	667	0.557	376	372	2.5	1.3	12.769	B
3 - Brickyard Row	40	10	839	665	0.061	41	67	0.1	0.1	5.901	A
4 - B4304 Coastal Link Road	762	191	81	1752	0.435	764	799	1.2	0.8	3.723	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	465	116	288	1166	0.399	466	419	1.0	0.7	5.198	A
2 - N/A	311	78	443	693	0.449	313	311	1.3	0.8	9.671	A
3 - Brickyard Row	34	8	700	734	0.046	34	56	0.1	0.0	5.264	A
4 - B4304 Coastal Link Road	638	160	67	1760	0.363	639	667	0.8	0.6	3.276	A

2029 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	8.59	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.59	A

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	2029 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	✓	579	100.000
2 - N/A		ONE HOUR	✓	378	100.000
3 - Brickyard Row		ONE HOUR	✓	118	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	869	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	530
	2 - N/A	32	0	11	335
	3 - Brickyard Row	51	32	3	32
	4 - B4304 Coastal Link Road	507	348	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	0.59	8.75	1.5	A	531	797
2 - N/A	0.65	16.91	1.9	C	347	520
3 - Brickyard Row	0.22	8.14	0.3	A	108	162
4 - B4304 Coastal Link Road	0.56	4.93	1.3	A	797	1196

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	436	109	298	1161	0.375	433	444	0.0	0.7	5.412	A
2 - N/A	285	71	422	699	0.407	282	309	0.0	0.7	9.026	A
3 - Brickyard Row	89	22	672	748	0.119	88	32	0.0	0.1	5.685	A
4 - B4304 Coastal Link Road	654	164	90	1746	0.375	652	670	0.0	0.6	3.432	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	521	130	356	1131	0.460	519	531	0.7	0.9	6.455	A
2 - N/A	340	85	506	674	0.504	338	370	0.7	1.0	11.254	B
3 - Brickyard Row	106	27	806	682	0.156	106	39	0.1	0.2	6.518	A
4 - B4304 Coastal Link Road	781	195	108	1735	0.450	780	804	0.6	0.8	3.940	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	637	159	436	1090	0.585	635	650	0.9	1.5	8.655	A
2 - N/A	416	104	619	641	0.650	413	453	1.0	1.9	16.431	C
3 - Brickyard Row	130	32	984	593	0.219	130	47	0.2	0.3	8.086	A
4 - B4304 Coastal Link Road	957	239	132	1719	0.556	955	982	0.8	1.3	4.909	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	637	159	437	1089	0.585	637	652	1.5	1.5	8.748	A
2 - N/A	416	104	621	640	0.650	416	454	1.9	1.9	16.910	C
3 - Brickyard Row	130	32	990	591	0.220	130	47	0.3	0.3	8.142	A
4 - B4304 Coastal Link Road	957	239	132	1719	0.557	957	987	1.3	1.3	4.934	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	521	130	358	1130	0.461	523	534	1.5	1.0	6.537	A
2 - N/A	340	85	509	673	0.505	343	371	1.9	1.1	11.602	B
3 - Brickyard Row	106	27	813	678	0.156	106	39	0.3	0.2	6.575	A
4 - B4304 Coastal Link Road	781	195	108	1734	0.451	783	811	1.3	0.9	3.963	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	436	109	299	1160	0.376	437	446	1.0	0.7	5.474	A
2 - N/A	285	71	426	698	0.408	286	311	1.1	0.7	9.236	A
3 - Brickyard Row	89	22	679	744	0.119	89	32	0.2	0.1	5.733	A
4 - B4304 Coastal Link Road	654	164	91	1745	0.375	655	678	0.9	0.6	3.453	A

2029 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	14.54	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.54	B

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	2029 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	✓	736	100.000
2 - N/A		ONE HOUR	✓	444	100.000
3 - Brickyard Row		ONE HOUR	✓	51	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1092	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	58	42	634
	2 - N/A	45	0	20	379
	3 - Brickyard Row	41	10	0	0
	4 - B4304 Coastal Link Road	658	398	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	0.76	14.33	3.1	B	675	1013
2 - N/A	0.83	34.41	4.4	D	407	611
3 - Brickyard Row	0.11	8.23	0.1	A	47	70
4 - B4304 Coastal Link Road	0.69	6.89	2.3	A	1002	1503

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	554	139	333	1143	0.485	550	559	0.0	0.9	6.091	A
2 - N/A	334	84	534	666	0.502	330	349	0.0	1.0	10.779	B
3 - Brickyard Row	38	10	792	689	0.056	38	73	0.0	0.1	5.660	A
4 - B4304 Coastal Link Road	822	206	73	1756	0.468	819	757	0.0	0.9	3.898	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	662	165	398	1109	0.597	660	669	0.9	1.5	8.040	A
2 - N/A	399	100	640	634	0.629	397	418	1.0	1.7	15.221	C
3 - Brickyard Row	46	11	950	611	0.075	46	87	0.1	0.1	6.518	A
4 - B4304 Coastal Link Road	982	245	88	1747	0.562	980	908	0.9	1.3	4.775	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	810	203	487	1063	0.762	804	818	1.5	3.0	13.682	B
2 - N/A	489	122	780	592	0.825	479	511	1.7	4.1	30.087	D
3 - Brickyard Row	56	14	1154	510	0.110	56	106	0.1	0.1	8.113	A
4 - B4304 Coastal Link Road	1202	301	107	1735	0.693	1198	1103	1.3	2.2	6.789	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	810	203	489	1062	0.763	810	821	3.0	3.1	14.326	B
2 - N/A	489	122	786	591	0.828	487	513	4.1	4.4	34.415	D
3 - Brickyard Row	56	14	1166	504	0.112	56	107	0.1	0.1	8.232	A
4 - B4304 Coastal Link Road	1202	301	108	1734	0.693	1202	1115	2.2	2.3	6.889	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	662	165	401	1108	0.597	668	674	3.1	1.5	8.372	A
2 - N/A	399	100	648	632	0.632	409	421	4.4	1.8	17.149	C
3 - Brickyard Row	46	11	969	601	0.076	46	88	0.1	0.1	6.640	A
4 - B4304 Coastal Link Road	982	245	89	1746	0.562	985	926	2.3	1.3	4.848	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	554	139	335	1142	0.485	556	563	1.5	1.0	6.227	A
2 - N/A	334	84	540	664	0.503	337	352	1.8	1.1	11.297	B
3 - Brickyard Row	38	10	804	683	0.056	38	73	0.1	0.1	5.718	A
4 - B4304 Coastal Link Road	822	206	74	1756	0.468	824	768	1.3	0.9	3.946	A

2029 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	8.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.78	A

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	2029 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	✓	590	100.000
2 - N/A		ONE HOUR	✓	378	100.000
3 - Brickyard Row		ONE HOUR	✓	118	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	893	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	541
	2 - N/A	32	0	11	335
	3 - Brickyard Row	51	32	3	32
	4 - B4304 Coastal Link Road	526	353	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	9.05	1.6	A	541	812
2 - N/A	0.65	17.19	1.9	C	347	520
3 - Brickyard Row	0.22	8.25	0.3	A	108	162
4 - B4304 Coastal Link Road	0.57	5.11	1.4	A	819	1229

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	444	111	301	1159	0.383	441	458	0.0	0.7	5.488	A
2 - N/A	285	71	430	697	0.408	282	313	0.0	0.7	9.080	A
3 - Brickyard Row	89	22	680	744	0.119	88	32	0.0	0.1	5.720	A
4 - B4304 Coastal Link Road	672	168	90	1746	0.385	670	678	0.0	0.7	3.487	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	530	133	361	1128	0.470	529	548	0.7	1.0	6.587	A
2 - N/A	340	85	516	671	0.506	338	374	0.7	1.1	11.352	B
3 - Brickyard Row	106	27	816	677	0.157	106	39	0.1	0.2	6.574	A
4 - B4304 Coastal Link Road	803	201	108	1735	0.463	802	814	0.7	0.9	4.030	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	650	162	442	1087	0.598	647	671	1.0	1.6	8.940	A
2 - N/A	416	104	631	637	0.653	413	458	1.1	1.9	16.679	C
3 - Brickyard Row	130	32	996	588	0.221	130	47	0.2	0.3	8.188	A
4 - B4304 Coastal Link Road	983	246	132	1719	0.572	981	994	0.9	1.4	5.084	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	650	162	443	1086	0.598	650	673	1.6	1.6	9.048	A
2 - N/A	416	104	633	636	0.654	416	459	1.9	1.9	17.185	C
3 - Brickyard Row	130	32	1002	585	0.222	130	47	0.3	0.3	8.249	A
4 - B4304 Coastal Link Road	983	246	132	1719	0.572	983	999	1.4	1.4	5.112	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	530	133	362	1128	0.470	533	551	1.6	1.0	6.676	A
2 - N/A	340	85	519	670	0.507	343	376	1.9	1.1	11.715	B
3 - Brickyard Row	106	27	824	673	0.158	106	39	0.3	0.2	6.633	A
4 - B4304 Coastal Link Road	803	201	108	1734	0.463	805	822	1.4	0.9	4.058	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	444	111	303	1158	0.384	445	461	1.0	0.7	5.554	A
2 - N/A	285	71	434	696	0.409	286	314	1.1	0.7	9.296	A
3 - Brickyard Row	89	22	688	740	0.120	89	32	0.2	0.1	5.769	A
4 - B4304 Coastal Link Road	672	168	91	1745	0.385	673	686	0.9	0.7	3.515	A

2029 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	15.49	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.49	C

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	2029 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	✓	757	100.000
2 - N/A		ONE HOUR	✓	444	100.000
3 - Brickyard Row		ONE HOUR	✓	51	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1107	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	58	42	655
	2 - N/A	45	0	20	379
	3 - Brickyard Row	41	10	0	0
	4 - B4304 Coastal Link Road	670	401	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	0.79	15.85	3.6	C	695	1042
2 - N/A	0.84	36.56	4.7	E	407	611
3 - Brickyard Row	0.11	8.44	0.1	A	47	70
4 - B4304 Coastal Link Road	0.70	7.11	2.4	A	1016	1524

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	570	142	335	1142	0.499	566	568	0.0	1.0	6.264	A
2 - N/A	334	84	550	661	0.506	330	351	0.0	1.0	10.924	B
3 - Brickyard Row	38	10	807	681	0.056	38	73	0.0	0.1	5.728	A
4 - B4304 Coastal Link Road	833	208	73	1756	0.475	830	772	0.0	0.9	3.946	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	681	170	401	1108	0.614	678	680	1.0	1.6	8.410	A
2 - N/A	399	100	659	629	0.635	396	421	1.0	1.7	15.569	C
3 - Brickyard Row	46	11	968	602	0.076	46	87	0.1	0.1	6.626	A
4 - B4304 Coastal Link Road	995	249	88	1747	0.570	993	926	0.9	1.3	4.858	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	833	208	491	1062	0.785	826	831	1.6	3.4	14.962	B
2 - N/A	489	122	802	586	0.835	479	514	1.7	4.3	31.511	D
3 - Brickyard Row	56	14	1175	499	0.112	56	106	0.1	0.1	8.304	A
4 - B4304 Coastal Link Road	1219	305	107	1735	0.702	1215	1124	1.3	2.3	6.998	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	833	208	492	1061	0.786	833	834	3.4	3.6	15.851	C
2 - N/A	489	122	809	584	0.838	487	516	4.3	4.7	36.564	E
3 - Brickyard Row	56	14	1189	492	0.114	56	107	0.1	0.1	8.444	A
4 - B4304 Coastal Link Road	1219	305	108	1734	0.703	1219	1138	2.3	2.4	7.109	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	681	170	403	1106	0.615	688	685	3.6	1.7	8.833	A
2 - N/A	399	100	668	626	0.638	410	424	4.7	1.9	17.770	C
3 - Brickyard Row	46	11	990	591	0.078	46	88	0.1	0.1	6.762	A
4 - B4304 Coastal Link Road	995	249	89	1746	0.570	999	947	2.4	1.4	4.939	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	570	142	337	1141	0.500	572	572	1.7	1.0	6.417	A
2 - N/A	334	84	556	659	0.507	337	354	1.9	1.1	11.477	B
3 - Brickyard Row	38	10	820	675	0.057	38	73	0.1	0.1	5.790	A
4 - B4304 Coastal Link Road	833	208	74	1756	0.475	835	784	1.4	0.9	3.995	A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 01. Copperhouse Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:20:08

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Coastal Link N	D1	0.4	2.40	0.30	2.47	A	D2	0.5	2.52	0.33	2.67	A
2 - Copperhouse Road		0.0	2.65	0.03				0.0	2.54	0.03		
3 - Coastal Link S		0.4	2.53	0.27				0.6	2.81	0.36		
	2029 with Committed Development											
1 - Coastal Link N	D3	0.7	2.78	0.39	2.76	A	D4	0.6	2.71	0.37	3.02	A
2 - Copperhouse Road		0.0	2.90	0.03				0.0	2.65	0.04		
3 - Coastal Link S		0.5	2.72	0.32				0.9	3.32	0.46		
	2029 with Committed Development and Machynys Hotel											
1 - Coastal Link N	D13	0.7	2.80	0.40	2.78	A	D14	0.6	2.74	0.38	3.05	A
2 - Copperhouse Road		0.0	2.91	0.03				0.0	2.66	0.04		
3 - Coastal Link S		0.5	2.75	0.32				0.9	3.34	0.46		

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	1
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	Using the historical data in 2017	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	Using the historical data in 2017	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM		ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM		ONE HOUR	16:15	17:45	15	✓
D13	2029 with Committed Development and Machynys Hotel	AM		ONE HOUR	07:45	09:15	15	✓
D14	2029 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

2024 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.47	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.47	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	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	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	Using the historical data in 2017	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	✓	584	100.000
2 - Copperhouse Road		ONE HOUR	✓	39	100.000
3 - Coastal Link S		ONE HOUR	✓	492	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	555
	2 - Copperhouse Road	35	2	2
	3 - Coastal Link S	491	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	0.30	2.40	0.4	1.6	A	536	804
2 - Copperhouse Road	0.03	2.65	0.0	0.5	A	36	54
3 - Coastal Link S	0.27	2.53	0.4	1.5	A	451	677

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	440	110	2	2174	0.202	439	396	0.0	0.3	2.117	A
2 - Copperhouse Road	29	7	418	1724	0.017	29	23	0.0	0.0	2.442	A
3 - Coastal Link S	370	93	29	2043	0.181	369	418	0.0	0.2	2.257	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	525	131	3	2174	0.242	525	474	0.3	0.3	2.228	A
2 - Copperhouse Road	35	9	500	1673	0.021	35	28	0.0	0.0	2.526	A
3 - Coastal Link S	442	111	34	2040	0.217	442	500	0.2	0.3	2.365	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	643	161	3	2173	0.296	643	580	0.3	0.4	2.401	A
2 - Copperhouse Road	43	11	612	1603	0.027	43	34	0.0	0.0	2.652	A
3 - Coastal Link S	542	135	42	2035	0.266	541	613	0.3	0.4	2.531	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	643	161	3	2173	0.296	643	580	0.4	0.4	2.401	A
2 - Copperhouse Road	43	11	612	1603	0.027	43	34	0.0	0.0	2.652	A
3 - Coastal Link S	542	135	42	2035	0.266	542	613	0.4	0.4	2.531	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	525	131	3	2174	0.242	525	474	0.4	0.3	2.229	A
2 - Copperhouse Road	35	9	500	1673	0.021	35	28	0.0	0.0	2.527	A
3 - Coastal Link S	442	111	34	2040	0.217	443	501	0.4	0.3	2.368	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	440	110	2	2174	0.202	440	397	0.3	0.3	2.119	A
2 - Copperhouse Road	29	7	419	1723	0.017	29	23	0.0	0.0	2.443	A
3 - Coastal Link S	370	93	29	2043	0.181	371	420	0.3	0.2	2.261	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	0.43	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	0.43	0.03	0.33	1.37	1.58			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	1.26	1.52			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	0.33	0.00	0.00	0.33	0.33			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

2024 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.67	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2024 Base	PM	Using the historical data in 2017	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	✓	644	100.000
2 - Copperhouse Road		ONE HOUR	✓	46	100.000
3 - Coastal Link S		ONE HOUR	✓	672	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	603
	2 - Copperhouse Road	37	0	9
	3 - Coastal Link S	667	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	0.33	2.52	0.5	2.1	A	591	886
2 - Copperhouse Road	0.03	2.54	0.0	0.5	A	42	63
3 - Coastal Link S	0.36	2.81	0.6	2.7	A	617	925

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	485	121	4	2173	0.223	484	531	0.0	0.3	2.181	A
2 - Copperhouse Road	35	9	457	1700	0.020	35	31	0.0	0.0	2.317	A
3 - Coastal Link S	506	126	30	2042	0.248	505	461	0.0	0.3	2.366	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	579	145	4	2173	0.266	579	635	0.3	0.4	2.312	A
2 - Copperhouse Road	41	10	546	1644	0.025	41	37	0.0	0.0	2.408	A
3 - Coastal Link S	604	151	36	2038	0.296	604	552	0.3	0.4	2.538	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	709	177	6	2172	0.326	709	778	0.4	0.5	2.519	A
2 - Copperhouse Road	51	13	669	1568	0.032	51	45	0.0	0.0	2.543	A
3 - Coastal Link S	740	185	44	2033	0.364	739	676	0.4	0.6	2.812	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	709	177	6	2172	0.326	709	778	0.5	0.5	2.519	A
2 - Copperhouse Road	51	13	669	1568	0.032	51	45	0.0	0.0	2.544	A
3 - Coastal Link S	740	185	44	2033	0.364	740	676	0.6	0.6	2.814	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	579	145	4	2173	0.266	579	636	0.5	0.4	2.315	A
2 - Copperhouse Road	41	10	547	1644	0.025	41	37	0.0	0.0	2.410	A
3 - Coastal Link S	604	151	36	2038	0.296	605	552	0.6	0.4	2.542	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	485	121	4	2173	0.223	485	533	0.4	0.3	2.183	A
2 - Copperhouse Road	35	9	458	1699	0.020	35	31	0.0	0.0	2.320	A
3 - Coastal Link S	506	126	30	2042	0.248	506	463	0.4	0.3	2.371	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	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3 - Coastal Link S	0.58	0.03	0.25	0.58	0.58			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	0.50	0.03	0.32	1.45	2.12			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	0.58	0.03	0.30	1.30	2.68			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

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.76	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.76	A

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	2029 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	✓	774	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	586	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	34	739
	2 - Copperhouse Road	39	2	2
	3 - Coastal Link S	584	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	0.39	2.78	0.7	2.7	A	710	1065
2 - Copperhouse Road	0.03	2.90	0.0	0.5	A	39	59
3 - Coastal Link S	0.32	2.72	0.5	2.0	A	538	807

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	583	146	3	2173	0.268	581	469	0.0	0.4	2.306	A
2 - Copperhouse Road	32	8	556	1638	0.020	32	29	0.0	0.0	2.581	A
3 - Coastal Link S	441	110	32	2041	0.216	440	556	0.0	0.3	2.359	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	696	174	4	2173	0.320	695	561	0.4	0.5	2.487	A
2 - Copperhouse Road	39	10	665	1570	0.025	39	34	0.0	0.0	2.706	A
3 - Coastal Link S	527	132	38	2037	0.259	526	666	0.3	0.4	2.501	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	852	213	4	2173	0.392	851	687	0.5	0.7	2.780	A
2 - Copperhouse Road	47	12	814	1478	0.032	47	42	0.0	0.0	2.898	A
3 - Coastal Link S	645	161	46	2032	0.318	645	815	0.4	0.5	2.724	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	852	213	4	2173	0.392	852	687	0.7	0.7	2.782	A
2 - Copperhouse Road	47	12	815	1477	0.032	47	42	0.0	0.0	2.899	A
3 - Coastal Link S	645	161	46	2032	0.318	645	816	0.5	0.5	2.725	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	696	174	4	2173	0.320	697	561	0.7	0.5	2.489	A
2 - Copperhouse Road	39	10	666	1570	0.025	39	34	0.0	0.0	2.707	A
3 - Coastal Link S	527	132	38	2037	0.259	527	667	0.5	0.4	2.505	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	583	146	3	2173	0.268	583	470	0.5	0.4	2.311	A
2 - Copperhouse Road	32	8	558	1637	0.020	32	29	0.0	0.0	2.585	A
3 - Coastal Link S	441	110	32	2041	0.216	441	558	0.4	0.3	2.362	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	0.37	0.00	0.00	0.37	0.37			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

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	0.48	0.00	0.00	0.48	0.48			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	0.36	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 - Coastal Link N	0.66	0.03	0.26	0.66	0.66			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	0.49	0.03	0.26	0.49	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	0.66	0.03	0.29	0.97	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	0.49	0.03	0.33	1.47	2.02			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	0.48	0.00	0.00	0.48	0.48			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	0.37	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 - Coastal Link N	0.38	0.00	0.00	0.38	0.38			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

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.02	A

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	2029 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	✓	738	100.000
2 - Copperhouse Road		ONE HOUR	✓	53	100.000
3 - Coastal Link S		ONE HOUR	✓	846	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	44	691
	2 - Copperhouse Road	44	0	9
	3 - Coastal Link S	839	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	2.71	0.6	2.8	A	677	1016
2 - Copperhouse Road	0.04	2.65	0.0	0.5	A	49	73
3 - Coastal Link S	0.46	3.32	0.9	1.6	A	776	1164

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	556	139	5	2172	0.256	554	665	0.0	0.4	2.276	A
2 - Copperhouse Road	40	10	523	1659	0.024	40	37	0.0	0.0	2.371	A
3 - Coastal Link S	637	159	35	2039	0.312	635	527	0.0	0.5	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 - Coastal Link N	663	166	6	2171	0.306	663	796	0.4	0.4	2.443	A
2 - Copperhouse Road	48	12	625	1595	0.030	48	44	0.0	0.0	2.480	A
3 - Coastal Link S	761	190	42	2034	0.374	760	631	0.5	0.6	2.856	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	813	203	8	2170	0.374	812	974	0.4	0.6	2.711	A
2 - Copperhouse Road	58	15	766	1508	0.039	58	54	0.0	0.0	2.648	A
3 - Coastal Link S	931	233	52	2028	0.459	930	772	0.6	0.9	3.315	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	813	203	8	2170	0.374	813	975	0.6	0.6	2.713	A
2 - Copperhouse Road	58	15	766	1507	0.039	58	54	0.0	0.0	2.649	A
3 - Coastal Link S	931	233	52	2028	0.459	931	773	0.9	0.9	3.320	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	663	166	6	2171	0.306	664	798	0.6	0.5	2.446	A
2 - Copperhouse Road	48	12	626	1594	0.030	48	44	0.0	0.0	2.481	A
3 - Coastal Link S	761	190	42	2034	0.374	762	632	0.9	0.6	2.865	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	556	139	5	2172	0.256	556	668	0.5	0.4	2.282	A
2 - Copperhouse Road	40	10	524	1658	0.024	40	37	0.0	0.0	2.374	A
3 - Coastal Link S	637	159	35	2039	0.312	637	529	0.6	0.5	2.602	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	0.35	0.00	0.00	0.35	0.35			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	0.46	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 - Coastal Link N	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.60	0.09	0.80	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	0.61	0.03	0.26	0.61	0.61			N/A	N/A
2 - Copperhouse Road	0.04	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.85	0.03	0.26	0.85	0.85			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	0.61	0.03	0.30	1.22	2.76			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	0.86	0.03	0.27	0.86	1.61			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	0.45	0.00	0.00	0.45	0.45			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	0.61	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	0.35	0.00	0.00	0.35	0.35			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	0.46	0.00	0.00	0.46	0.46			N/A	N/A

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	2.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.78	A

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	2029 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	✓	780	100.000
2 - Copperhouse Road		ONE HOUR	✓	43	100.000
3 - Coastal Link S		ONE HOUR	✓	596	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	34	745
	2 - Copperhouse Road	39	2	2
	3 - Coastal Link S	594	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	0.40	2.80	0.7	2.7	A	716	1074
2 - Copperhouse Road	0.03	2.91	0.0	0.5	A	39	59
3 - Coastal Link S	0.32	2.75	0.5	2.1	A	547	820

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	587	147	3	2173	0.270	586	476	0.0	0.4	2.312	A
2 - Copperhouse Road	32	8	560	1635	0.020	32	29	0.0	0.0	2.585	A
3 - Coastal Link S	449	112	32	2041	0.220	448	561	0.0	0.3	2.370	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	701	175	4	2173	0.323	701	570	0.4	0.5	2.496	A
2 - Copperhouse Road	39	10	670	1567	0.025	39	34	0.0	0.0	2.712	A
3 - Coastal Link S	536	134	38	2037	0.263	535	671	0.3	0.4	2.516	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	859	215	4	2173	0.395	858	698	0.5	0.7	2.794	A
2 - Copperhouse Road	47	12	821	1474	0.032	47	42	0.0	0.0	2.906	A
3 - Coastal Link S	656	164	46	2032	0.323	656	822	0.4	0.5	2.746	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	859	215	4	2173	0.395	859	698	0.7	0.7	2.796	A
2 - Copperhouse Road	47	12	821	1473	0.032	47	42	0.0	0.0	2.907	A
3 - Coastal Link S	656	164	46	2032	0.323	656	822	0.5	0.5	2.746	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 - Coastal Link N	701	175	4	2173	0.323	702	570	0.7	0.5	2.500	A
2 - Copperhouse Road	39	10	671	1566	0.025	39	34	0.0	0.0	2.715	A
3 - Coastal Link S	536	134	38	2037	0.263	536	672	0.5	0.4	2.520	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	587	147	3	2173	0.270	588	478	0.5	0.4	2.319	A
2 - Copperhouse Road	32	8	562	1634	0.020	32	29	0.0	0.0	2.587	A
3 - Coastal Link S	449	112	32	2041	0.220	449	563	0.4	0.3	2.375	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	0.38	0.00	0.00	0.38	0.38			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

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	0.48	0.00	0.00	0.48	0.48			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	0.37	0.00	0.00	0.37	0.37			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	0.66	0.03	0.26	0.66	0.66			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	0.50	0.03	0.26	0.50	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	0.67	0.03	0.29	0.92	2.69			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	0.50	0.03	0.33	1.48	2.10			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	0.49	0.00	0.00	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	0.38	0.00	0.00	0.38	0.38			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	0.38	0.00	0.00	0.38	0.38			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	0.30	0.00	0.00	0.30	0.30			N/A	N/A

2029 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	Copperhourse Roundabout	Standard Roundabout		1, 2, 3	3.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.05	A

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	2029 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	✓	750	100.000
2 - Copperhouse Road		ONE HOUR	✓	53	100.000
3 - Coastal Link S		ONE HOUR	✓	853	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	44	703
	2 - Copperhouse Road	44	0	9
	3 - Coastal Link S	846	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	0.38	2.74	0.6	2.7	A	688	1032
2 - Copperhouse Road	0.04	2.66	0.0	0.5	A	49	73
3 - Coastal Link S	0.46	3.34	0.9	1.5	A	783	1174

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	565	141	5	2172	0.260	563	670	0.0	0.4	2.288	A
2 - Copperhouse Road	40	10	532	1653	0.024	40	37	0.0	0.0	2.379	A
3 - Coastal Link S	642	161	35	2039	0.315	640	536	0.0	0.5	2.601	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	674	169	6	2171	0.311	674	802	0.4	0.5	2.461	A
2 - Copperhouse Road	48	12	636	1588	0.030	48	44	0.0	0.0	2.491	A
3 - Coastal Link S	767	192	42	2034	0.377	766	641	0.5	0.6	2.871	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	826	206	8	2170	0.380	825	982	0.5	0.6	2.738	A
2 - Copperhouse Road	58	15	779	1500	0.039	58	54	0.0	0.0	2.663	A
3 - Coastal Link S	939	235	52	2028	0.463	938	785	0.6	0.9	3.338	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	826	206	8	2170	0.380	826	983	0.6	0.6	2.740	A
2 - Copperhouse Road	58	15	780	1499	0.039	58	54	0.0	0.0	2.664	A
3 - Coastal Link S	939	235	52	2028	0.463	939	786	0.9	0.9	3.343	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	674	169	6	2171	0.311	675	804	0.6	0.5	2.465	A
2 - Copperhouse Road	48	12	637	1588	0.030	48	44	0.0	0.0	2.494	A
3 - Coastal Link S	767	192	42	2034	0.377	768	642	0.9	0.6	2.880	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	565	141	5	2172	0.260	565	673	0.5	0.4	2.293	A
2 - Copperhouse Road	40	10	533	1652	0.024	40	37	0.0	0.0	2.382	A
3 - Coastal Link S	642	161	35	2039	0.315	643	538	0.6	0.5	2.612	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	0.46	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 - Coastal Link N	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Copperhouse Road	0.03	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	0.61	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	0.63	0.03	0.26	0.63	0.63			N/A	N/A
2 - Copperhouse Road	0.04	0.03	0.27	0.48	0.51			N/A	N/A
3 - Coastal Link S	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 - Coastal Link N	0.63	0.03	0.29	1.14	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	0.87	0.03	0.27	0.87	1.53			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 - 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	0.62	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	0.36	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

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 02. Delta Lakes Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:24:21

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Site Access	D13	0.0	2.61	0.03	3.05	A	D14	0.0	0.00	0.00	3.45	A
2 - Coastal Link Road E		0.5	3.07	0.32				0.9	3.72	0.46		
3 - Pentre Nicklaus		0.1	2.46	0.10				0.1	2.52	0.06		
4 - Coastal Link Road W		0.5	3.23	0.35				0.6	3.23	0.37		
	2029 with Committed Development											
1 - Site Access	D15	0.1	2.90	0.10	4.20	A	D16	0.4	3.58	0.28	4.29	A
2 - Coastal Link Road E		1.0	4.23	0.50				1.4	5.05	0.58		
3 - Pentre Nicklaus		0.2	2.96	0.14				0.1	2.91	0.07		
4 - Coastal Link Road W		1.1	4.70	0.51				0.8	3.85	0.45		
	2029 with Committed Development and Machynys Hotel											
1 - Site Access	D17	0.1	2.95	0.10	4.34	A	D18	0.4	3.64	0.28	4.42	A
2 - Coastal Link Road E		1.1	4.41	0.52				1.5	5.23	0.60		
3 - Pentre Nicklaus		0.2	3.02	0.14				0.1	2.94	0.07		
4 - Coastal Link Road W		1.1	4.84	0.52				0.9	3.94	0.46		

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	Delta Lakes Roundabout
Location	Machynys
Site number	2
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

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
D13	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D14	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D15	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D16	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D17	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D18	2029 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

2024 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	3.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.05	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	Exit only
1 - Site Access	3.66	7.81	14.0	40.0	60.0	17.0		
2 - Coastal Link Road E	3.74	7.83	11.0	41.0	60.0	16.0		
3 - Pentre Nicklaus	3.62	7.64	22.0	38.0	60.0	15.0		
4 - Coastal Link Road W	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 - Site Access	0.606	1876
2 - Coastal Link Road E	0.598	1824
3 - Pentre Nicklaus	0.630	2006
4 - Coastal Link Road W	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
D13	2024 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 - Site Access		ONE HOUR	✓	40	100.000
2 - Coastal Link Road E		ONE HOUR	✓	520	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	154	100.000
4 - Coastal Link Road W		ONE HOUR	✓	557	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	18	0	22
	2 - Coastal Link Road E	22	0	37	461
	3 - Pentre Nicklaus	0	123	0	31
	4 - Coastal Link Road W	0	544	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.03	2.61	0.0	0.5	A	37	55
2 - Coastal Link Road E	0.32	3.07	0.5	2.0	A	477	716
3 - Pentre Nicklaus	0.10	2.46	0.1	0.5	A	141	212
4 - Coastal Link Road W	0.35	3.23	0.5	2.6	A	511	767

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 - Site Access	30	8	510	1567	0.019	30	17	0.0	0.0	2.341	A
2 - Coastal Link Road E	391	98	26	1809	0.216	390	514	0.0	0.3	2.658	A
3 - Pentre Nicklaus	116	29	379	1767	0.066	116	38	0.0	0.1	2.214	A
4 - Coastal Link Road W	419	105	109	1779	0.236	418	386	0.0	0.3	2.693	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 - Site Access	36	9	611	1506	0.024	36	20	0.0	0.0	2.448	A
2 - Coastal Link Road E	467	117	31	1805	0.259	467	615	0.3	0.4	2.820	A
3 - Pentre Nicklaus	138	35	454	1720	0.080	138	45	0.1	0.1	2.311	A
4 - Coastal Link Road W	501	125	130	1767	0.283	500	462	0.3	0.4	2.898	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 - Site Access	44	11	748	1423	0.031	44	24	0.0	0.0	2.609	A
2 - Coastal Link Road E	573	143	39	1801	0.318	572	754	0.4	0.5	3.068	A
3 - Pentre Nicklaus	170	42	556	1656	0.102	169	55	0.1	0.1	2.460	A
4 - Coastal Link Road W	613	153	160	1749	0.351	613	565	0.4	0.5	3.228	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 - Site Access	44	11	749	1423	0.031	44	24	0.0	0.0	2.610	A
2 - Coastal Link Road E	573	143	39	1801	0.318	573	754	0.5	0.5	3.071	A
3 - Pentre Nicklaus	170	42	556	1656	0.102	170	55	0.1	0.1	2.460	A
4 - Coastal Link Road W	613	153	160	1749	0.351	613	566	0.5	0.5	3.231	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 - Site Access	36	9	612	1506	0.024	36	20	0.0	0.0	2.451	A
2 - Coastal Link Road E	467	117	31	1805	0.259	468	616	0.5	0.4	2.822	A
3 - Pentre Nicklaus	138	35	454	1720	0.081	139	45	0.1	0.1	2.314	A
4 - Coastal Link Road W	501	125	130	1766	0.283	501	463	0.5	0.4	2.901	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 - Site Access	30	8	512	1566	0.019	30	17	0.0	0.0	2.343	A
2 - Coastal Link Road E	391	98	26	1808	0.216	392	516	0.4	0.3	2.666	A
3 - Pentre Nicklaus	116	29	380	1766	0.066	116	38	0.1	0.1	2.216	A
4 - Coastal Link Road W	419	105	109	1779	0.236	420	387	0.4	0.3	2.699	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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - Pentre Nicklaus	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.02	0.02	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3 - Pentre Nicklaus	0.09	0.03	0.27	0.48	0.50			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2 - Coastal Link Road E	0.49	0.03	0.26	0.49	0.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.03	0.26	0.47	0.50			N/A	N/A
4 - Coastal Link Road W	0.55	0.03	0.26	0.55	0.55			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 - Site Access	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2 - Coastal Link Road E	0.49	0.03	0.33	1.46	2.04			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.55	0.03	0.30	1.38	2.57			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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.37	0.00	0.00	0.37	0.37			N/A	N/A
3 - Pentre Nicklaus	0.09	0.00	0.00	0.09	0.09			N/A	N/A
4 - Coastal Link Road W	0.41	0.00	0.00	0.41	0.41			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 - Site Access	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2 - Coastal Link Road E	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - Pentre Nicklaus	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4 - Coastal Link Road W	0.32	0.00	0.00	0.32	0.32			N/A	N/A

2024 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	3.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.45	A

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	2024 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 - Site Access		ONE HOUR	✓	1	100.000
2 - Coastal Link Road E		ONE HOUR	✓	754	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	83	100.000
4 - Coastal Link Road W		ONE HOUR	✓	607	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	1	0	0
	2 - Coastal Link Road E	0	2	109	643
	3 - Pentre Nicklaus	0	54	1	28
	4 - Coastal Link Road W	0	578	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.0	~1	A	0	0
2 - Coastal Link Road E	0.46	3.72	0.9	1.7	A	692	1038
3 - Pentre Nicklaus	0.06	2.52	0.1	0.5	A	76	114
4 - Coastal Link Road W	0.37	3.23	0.6	2.7	A	557	835

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 - Site Access	0	0	498	1574	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	568	142	23	1811	0.313	566	476	0.0	0.5	2.913	A
3 - Pentre Nicklaus	62	16	484	1701	0.037	62	104	0.0	0.0	2.253	A
4 - Coastal Link Road W	457	114	43	1819	0.251	456	504	0.0	0.3	2.693	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 - Site Access	0	0	597	1515	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	678	169	27	1808	0.375	677	570	0.5	0.6	3.208	A
3 - Pentre Nicklaus	75	19	579	1641	0.045	75	125	0.0	0.0	2.356	A
4 - Coastal Link Road W	546	136	51	1814	0.301	545	603	0.3	0.4	2.896	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 - Site Access	0	0	730	1434	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	830	208	33	1805	0.460	829	697	0.6	0.9	3.719	A
3 - Pentre Nicklaus	91	23	709	1559	0.059	91	153	0.0	0.1	2.515	A
4 - Coastal Link Road W	668	167	63	1807	0.370	668	738	0.4	0.6	3.223	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 - Site Access	0	0	731	1433	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	830	208	33	1804	0.460	830	698	0.9	0.9	3.725	A
3 - Pentre Nicklaus	91	23	710	1559	0.059	91	153	0.1	0.1	2.516	A
4 - Coastal Link Road W	668	167	63	1807	0.370	668	739	0.6	0.6	3.226	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 - Site Access	0	0	598	1514	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	678	169	27	1808	0.375	679	571	0.9	0.6	3.217	A
3 - Pentre Nicklaus	75	19	581	1640	0.045	75	125	0.1	0.0	2.360	A
4 - Coastal Link Road W	546	136	51	1814	0.301	546	604	0.6	0.4	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 - Site Access	0	0	500	1573	0.000	0	0	0.0	0.0	0.000	A
2 - Coastal Link Road E	568	142	23	1811	0.313	568	478	0.6	0.5	2.925	A
3 - Pentre Nicklaus	62	16	486	1700	0.037	63	105	0.0	0.0	2.254	A
4 - Coastal Link Road W	457	114	43	1819	0.251	457	506	0.4	0.3	2.701	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Pentre Nicklaus	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.60	0.09	0.82	1.37	1.44			N/A	N/A
3 - Pentre Nicklaus	0.05	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.44	0.00	0.00	0.44	0.44			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.85	0.03	0.26	0.85	0.85			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.27	0.48	0.50			N/A	N/A
4 - Coastal Link Road W	0.60	0.03	0.26	0.60	0.60			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.86	0.03	0.27	0.86	1.66			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	0.60	0.03	0.30	1.23	2.72			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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.61	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2 - Coastal Link Road E	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3 - Pentre Nicklaus	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4 - Coastal Link Road W	0.34	0.00	0.00	0.34	0.34			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.20	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.20	A

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	2029 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 - Site Access		ONE HOUR	✓	124	100.000
2 - Coastal Link Road E		ONE HOUR	✓	810	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	185	100.000
4 - Coastal Link Road W		ONE HOUR	✓	737	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	71	0	53
	2 - Coastal Link Road E	242	17	39	512
	3 - Pentre Nicklaus	0	128	0	57
	4 - Coastal Link Road W	133	578	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.10	2.90	0.1	0.5	A	114	171
2 - Coastal Link Road E	0.50	4.23	1.0	1.5	A	743	1115
3 - Pentre Nicklaus	0.14	2.96	0.2	0.5	A	170	255
4 - Coastal Link Road W	0.51	4.70	1.1	1.5	A	676	1014

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 - Site Access	93	23	562	1536	0.061	93	281	0.0	0.1	2.495	A
2 - Coastal Link Road E	610	152	59	1789	0.341	608	596	0.0	0.5	3.146	A
3 - Pentre Nicklaus	139	35	618	1616	0.086	139	49	0.0	0.1	2.470	A
4 - Coastal Link Road W	555	139	290	1670	0.332	553	467	0.0	0.5	3.266	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 - Site Access	111	28	673	1469	0.076	111	337	0.1	0.1	2.651	A
2 - Coastal Link Road E	728	182	71	1782	0.409	727	713	0.5	0.7	3.529	A
3 - Pentre Nicklaus	166	42	740	1540	0.108	166	58	0.1	0.1	2.656	A
4 - Coastal Link Road W	663	166	348	1636	0.405	662	559	0.5	0.7	3.752	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 - Site Access	137	34	823	1377	0.099	136	412	0.1	0.1	2.900	A
2 - Coastal Link Road E	892	223	87	1772	0.503	891	873	0.7	1.0	4.215	A
3 - Pentre Nicklaus	204	51	906	1435	0.142	204	71	0.1	0.2	2.962	A
4 - Coastal Link Road W	811	203	426	1589	0.511	810	684	0.7	1.0	4.685	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 - Site Access	137	34	825	1377	0.099	137	413	0.1	0.1	2.902	A
2 - Coastal Link Road E	892	223	87	1772	0.503	892	874	1.0	1.0	4.227	A
3 - Pentre Nicklaus	204	51	907	1434	0.142	204	72	0.2	0.2	2.964	A
4 - Coastal Link Road W	811	203	426	1589	0.511	811	685	1.0	1.1	4.703	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 - Site Access	111	28	675	1468	0.076	112	338	0.1	0.1	2.656	A
2 - Coastal Link Road E	728	182	71	1782	0.409	729	715	1.0	0.7	3.543	A
3 - Pentre Nicklaus	166	42	742	1538	0.108	166	59	0.2	0.1	2.659	A
4 - Coastal Link Road W	663	166	348	1635	0.405	664	560	1.1	0.7	3.768	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 - Site Access	93	23	565	1534	0.061	93	283	0.1	0.1	2.498	A
2 - Coastal Link Road E	610	152	60	1789	0.341	611	598	0.7	0.5	3.163	A
3 - Pentre Nicklaus	139	35	621	1615	0.086	139	49	0.1	0.1	2.473	A
4 - Coastal Link Road W	555	139	292	1670	0.332	556	469	0.7	0.5	3.286	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 - Site Access	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2 - Coastal Link Road E	0.53	0.53	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.50	0.00	0.00	0.50	0.50			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 - Site Access	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	0.71	0.10	0.86	1.42	1.49			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.69	0.09	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 - Site Access	0.11	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	1.04	0.03	0.26	1.04	1.04			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link Road W	1.05	0.03	0.26	1.05	1.05			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 - Site Access	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link Road E	1.04	0.03	0.28	1.04	1.47			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link Road W	1.05	0.03	0.27	1.05	1.22			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 - Site Access	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link Road E	0.72	0.57	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.70	0.51	0.99	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 - Site Access	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2 - Coastal Link Road E	0.54	0.06	0.62	1.37	1.46			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.51	0.05	0.48	1.31	1.42			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.29	A

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	2029 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 - Site Access		ONE HOUR	✓	354	100.000
2 - Coastal Link Road E		ONE HOUR	✓	907	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	88	100.000
4 - Coastal Link Road W		ONE HOUR	✓	710	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	224	1	129
	2 - Coastal Link Road E	101	8	113	685
	3 - Pentre Nicklaus	1	56	1	30
	4 - Coastal Link Road W	53	624	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.28	3.58	0.4	1.2	A	325	487
2 - Coastal Link Road E	0.58	5.05	1.4	1.8	A	832	1248
3 - Pentre Nicklaus	0.07	2.91	0.1	0.5	A	81	121
4 - Coastal Link Road W	0.45	3.85	0.8	2.0	A	652	977

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 - Site Access	267	67	542	1548	0.172	266	116	0.0	0.2	2.806	A
2 - Coastal Link Road E	683	171	123	1751	0.390	680	684	0.0	0.6	3.380	A
3 - Pentre Nicklaus	66	17	692	1570	0.042	66	111	0.0	0.0	2.455	A
4 - Coastal Link Road W	535	134	125	1770	0.302	533	633	0.0	0.4	2.963	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 - Site Access	318	80	649	1483	0.215	318	139	0.2	0.3	3.088	A
2 - Coastal Link Road E	815	204	147	1736	0.470	814	819	0.6	0.9	3.931	A
3 - Pentre Nicklaus	79	20	829	1484	0.053	79	133	0.0	0.1	2.628	A
4 - Coastal Link Road W	638	160	150	1755	0.364	638	758	0.4	0.6	3.283	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 - Site Access	390	97	794	1395	0.279	389	170	0.3	0.4	3.576	A
2 - Coastal Link Road E	999	250	180	1716	0.582	997	1003	0.9	1.4	5.025	A
3 - Pentre Nicklaus	97	24	1014	1367	0.071	97	163	0.1	0.1	2.907	A
4 - Coastal Link Road W	782	195	184	1735	0.451	781	928	0.6	0.8	3.843	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 - Site Access	390	97	795	1395	0.279	390	171	0.4	0.4	3.581	A
2 - Coastal Link Road E	999	250	181	1716	0.582	999	1004	1.4	1.4	5.053	A
3 - Pentre Nicklaus	97	24	1016	1366	0.071	97	163	0.1	0.1	2.909	A
4 - Coastal Link Road W	782	195	184	1734	0.451	782	929	0.8	0.8	3.851	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 - Site Access	318	80	650	1482	0.215	319	140	0.4	0.3	3.093	A
2 - Coastal Link Road E	815	204	148	1736	0.470	817	821	1.4	0.9	3.958	A
3 - Pentre Nicklaus	79	20	832	1482	0.053	79	133	0.1	0.1	2.634	A
4 - Coastal Link Road W	638	160	150	1754	0.364	639	760	0.8	0.6	3.292	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 - Site Access	267	67	544	1547	0.172	267	117	0.3	0.2	2.812	A
2 - Coastal Link Road E	683	171	124	1750	0.390	684	687	0.9	0.6	3.403	A
3 - Pentre Nicklaus	66	17	696	1568	0.042	66	112	0.1	0.0	2.459	A
4 - Coastal Link Road W	535	134	126	1769	0.302	535	636	0.6	0.4	2.974	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.64	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link Road E	0.89	0.08	0.84	1.40	1.81			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.58	0.08	0.80	1.38	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 - Site Access	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	1.38	0.03	0.26	1.38	1.38			N/A	N/A
3 - Pentre Nicklaus	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4 - Coastal Link Road W	0.83	0.03	0.26	0.83	0.83			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 - Site Access	0.39	0.03	0.33	1.20	1.20			N/A	N/A
2 - Coastal Link Road E	1.39	0.03	0.27	1.39	1.39			N/A	N/A
3 - Pentre Nicklaus	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4 - Coastal Link Road W	0.83	0.03	0.28	0.83	1.97			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 - Site Access	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Coastal Link Road E	0.90	0.32	0.99	1.44	1.50			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	0.59	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.65	0.07	0.75	1.37	1.45			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.44	0.00	0.00	0.44	0.44			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.34	A

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	2029 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 - Site Access		ONE HOUR	✓	124	100.000
2 - Coastal Link Road E		ONE HOUR	✓	843	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	185	100.000
4 - Coastal Link Road W		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	71	0	53
	2 - Coastal Link Road E	242	40	39	522
	3 - Pentre Nicklaus	0	128	0	57
	4 - Coastal Link Road W	133	584	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	6	5
	3 - Pentre Nicklaus	0	2	0	0
	4 - Coastal Link Road 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 - Site Access	0.10	2.95	0.1	0.5	A	114	171
2 - Coastal Link Road E	0.52	4.41	1.1	1.5	A	774	1160
3 - Pentre Nicklaus	0.14	3.02	0.2	0.5	A	170	255
4 - Coastal Link Road W	0.52	4.84	1.1	1.5	A	682	1023

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 - Site Access	93	23	584	1523	0.061	93	281	0.0	0.1	2.518	A
2 - Coastal Link Road E	635	159	59	1789	0.355	632	617	0.0	0.6	3.211	A
3 - Pentre Nicklaus	139	35	643	1601	0.087	139	49	0.0	0.1	2.496	A
4 - Coastal Link Road W	559	140	308	1660	0.337	557	474	0.0	0.5	3.311	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 - Site Access	111	28	699	1453	0.077	111	337	0.1	0.1	2.682	A
2 - Coastal Link Road E	758	189	71	1782	0.425	757	739	0.6	0.8	3.628	A
3 - Pentre Nicklaus	166	42	770	1521	0.109	166	58	0.1	0.1	2.693	A
4 - Coastal Link Road W	668	167	368	1624	0.411	667	568	0.5	0.7	3.819	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 - Site Access	137	34	855	1358	0.101	136	412	0.1	0.1	2.946	A
2 - Coastal Link Road E	928	232	87	1772	0.524	927	905	0.8	1.1	4.392	A
3 - Pentre Nicklaus	204	51	942	1412	0.144	204	71	0.1	0.2	3.018	A
4 - Coastal Link Road W	818	205	451	1574	0.520	817	695	0.7	1.1	4.818	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 - Site Access	137	34	857	1357	0.101	137	413	0.1	0.1	2.948	A
2 - Coastal Link Road E	928	232	87	1772	0.524	928	906	1.1	1.1	4.406	A
3 - Pentre Nicklaus	204	51	944	1412	0.144	204	72	0.2	0.2	3.020	A
4 - Coastal Link Road W	818	205	451	1573	0.520	818	696	1.1	1.1	4.839	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 - Site Access	111	28	701	1452	0.077	112	338	0.1	0.1	2.686	A
2 - Coastal Link Road E	758	189	71	1782	0.425	759	741	1.1	0.8	3.642	A
3 - Pentre Nicklaus	166	42	772	1520	0.109	166	59	0.2	0.1	2.698	A
4 - Coastal Link Road W	668	167	369	1623	0.412	669	569	1.1	0.7	3.842	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 - Site Access	93	23	586	1521	0.061	93	283	0.1	0.1	2.521	A
2 - Coastal Link Road E	635	159	60	1789	0.355	635	620	0.8	0.6	3.226	A
3 - Pentre Nicklaus	139	35	646	1599	0.087	139	49	0.1	0.1	2.502	A
4 - Coastal Link Road W	559	140	309	1659	0.337	560	476	0.7	0.5	3.328	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 - Site Access	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2 - Coastal Link Road E	0.57	0.57	1.03	1.45	1.50			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.51	0.51	1.02	1.42	1.47			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 - Site Access	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	0.76	0.10	0.86	1.45	1.52			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.70	0.09	0.83	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 - Site Access	0.11	0.03	0.26	0.46	0.49			N/A	N/A
2 - Coastal Link Road E	1.12	0.03	0.26	1.12	1.12			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link Road W	1.09	0.03	0.26	1.09	1.09			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 - Site Access	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2 - Coastal Link Road E	1.13	0.03	0.27	1.13	1.25			N/A	N/A
3 - Pentre Nicklaus	0.17	0.03	0.25	0.46	0.48			N/A	N/A
4 - Coastal Link Road W	1.09	0.03	0.27	1.09	1.11			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 - Site Access	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2 - Coastal Link Road E	0.77	0.54	1.02	1.44	1.50			N/A	N/A
3 - Pentre Nicklaus	0.12	0.00	0.00	0.12	0.12			N/A	N/A
4 - Coastal Link Road W	0.72	0.45	0.99	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 - Site Access	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2 - Coastal Link Road E	0.57	0.07	0.73	1.39	1.47			N/A	N/A
3 - Pentre Nicklaus	0.10	0.00	0.00	0.10	0.10			N/A	N/A
4 - Coastal Link Road W	0.52	0.05	0.51	1.32	1.42			N/A	N/A

2029 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	Delta Lakes Roundabout	Standard Roundabout		1, 2, 3, 4	4.42	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.42	A

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	2029 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 - Site Access		ONE HOUR	✓	354	100.000
2 - Coastal Link Road E		ONE HOUR	✓	929	100.000
3 - Pentre Nicklaus		ONE HOUR	✓	88	100.000
4 - Coastal Link Road W		ONE HOUR	✓	721	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	224	1	129
	2 - Coastal Link Road E	101	23	113	692
	3 - Pentre Nicklaus	1	56	1	30
	4 - Coastal Link Road W	53	635	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Site Access	2 - Coastal Link Road E	3 - Pentre Nicklaus	4 - Coastal Link Road W
From	1 - Site Access	0	0	0	0
	2 - Coastal Link Road E	0	0	0	1
	3 - Pentre Nicklaus	0	0	0	8
	4 - Coastal Link Road W	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 - Site Access	0.28	3.64	0.4	1.3	A	325	487
2 - Coastal Link Road E	0.60	5.23	1.5	1.9	A	852	1279
3 - Pentre Nicklaus	0.07	2.94	0.1	0.5	A	81	121
4 - Coastal Link Road W	0.46	3.94	0.9	1.8	A	662	992

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 - Site Access	267	67	561	1536	0.173	266	116	0.0	0.2	2.832	A
2 - Coastal Link Road E	699	175	123	1751	0.400	697	704	0.0	0.7	3.432	A
3 - Pentre Nicklaus	66	17	709	1559	0.042	66	111	0.0	0.0	2.473	A
4 - Coastal Link Road W	543	136	137	1763	0.308	541	638	0.0	0.5	3.000	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 - Site Access	318	80	672	1469	0.217	318	139	0.2	0.3	3.126	A
2 - Coastal Link Road E	835	209	147	1736	0.481	834	843	0.7	0.9	4.017	A
3 - Pentre Nicklaus	79	20	849	1471	0.054	79	133	0.0	0.1	2.652	A
4 - Coastal Link Road W	648	162	163	1747	0.371	648	764	0.5	0.6	3.337	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 - Site Access	390	97	822	1378	0.283	389	170	0.3	0.4	3.639	A
2 - Coastal Link Road E	1023	256	180	1716	0.596	1021	1031	0.9	1.5	5.197	A
3 - Pentre Nicklaus	97	24	1038	1352	0.072	97	163	0.1	0.1	2.942	A
4 - Coastal Link Road W	794	198	200	1725	0.460	793	935	0.6	0.9	3.934	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 - Site Access	390	97	824	1377	0.283	390	171	0.4	0.4	3.644	A
2 - Coastal Link Road E	1023	256	181	1716	0.596	1023	1033	1.5	1.5	5.229	A
3 - Pentre Nicklaus	97	24	1040	1351	0.072	97	163	0.1	0.1	2.945	A
4 - Coastal Link Road W	794	198	200	1724	0.460	794	937	0.9	0.9	3.943	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 - Site Access	318	80	674	1468	0.217	319	140	0.4	0.3	3.132	A
2 - Coastal Link Road E	835	209	148	1736	0.481	837	845	1.5	0.9	4.046	A
3 - Pentre Nicklaus	79	20	852	1469	0.054	79	133	0.1	0.1	2.656	A
4 - Coastal Link Road W	648	162	164	1746	0.371	649	767	0.9	0.6	3.347	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 - Site Access	267	67	564	1535	0.174	267	117	0.3	0.2	2.841	A
2 - Coastal Link Road E	699	175	124	1750	0.400	700	707	0.9	0.7	3.457	A
3 - Pentre Nicklaus	66	17	712	1557	0.043	66	112	0.1	0.0	2.477	A
4 - Coastal Link Road W	543	136	137	1762	0.308	543	642	0.6	0.5	3.011	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.67	0.55	1.01	1.41	1.46			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.45	0.00	0.00	0.45	0.45			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 - Site Access	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link Road E	0.93	0.07	0.84	1.58	1.95			N/A	N/A
3 - Pentre Nicklaus	0.06	0.03	0.26	0.46	0.49			N/A	N/A
4 - Coastal Link Road W	0.60	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 - Site Access	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2 - Coastal Link Road E	1.47	0.03	0.26	1.47	1.47			N/A	N/A
3 - Pentre Nicklaus	0.08	0.03	0.27	0.48	0.51			N/A	N/A
4 - Coastal Link Road W	0.86	0.03	0.26	0.86	0.86			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 - Site Access	0.39	0.03	0.33	1.28	1.29			N/A	N/A
2 - Coastal Link Road E	1.48	0.03	0.27	1.48	1.48			N/A	N/A
3 - Pentre Nicklaus	0.08	0.00	0.00	0.08	0.08			N/A	N/A
4 - Coastal Link Road W	0.87	0.03	0.28	0.87	1.83			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 - Site Access	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Coastal Link Road E	0.94	0.27	1.00	1.35	1.35			N/A	N/A
3 - Pentre Nicklaus	0.06	0.00	0.00	0.06	0.06			N/A	N/A
4 - Coastal Link Road W	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 - Site Access	0.21	0.00	0.00	0.21	0.21			N/A	N/A
2 - Coastal Link Road E	0.67	0.07	0.75	1.39	1.47			N/A	N/A
3 - Pentre Nicklaus	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4 - Coastal Link Road W	0.46	0.00	0.00	0.46	0.46			N/A	N/A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 03. Machynys Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:27:55

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - The Avenue	D1	0.2	2.80	0.12	3.21	A	D2	0.3	2.95	0.23	3.50	A
2 - Coastal Link E		0.6	3.21	0.37				1.0	3.90	0.50		
3 - Nicklaus Avenue		0.0	2.24	0.01				0.0	2.60	0.04		
4 - Coastal Link W		0.7	3.34	0.40				0.6	3.31	0.39		
	2029 with Committed Development											
1 - The Avenue	D3	0.2	3.08	0.18	3.92	A	D4	0.4	3.58	0.30	4.48	A
2 - Coastal Link E		1.1	4.28	0.52				1.5	4.81	0.59		
3 - Nicklaus Avenue		0.0	2.59	0.01				0.0	2.86	0.05		
4 - Coastal Link W		0.9	3.79	0.47				1.3	4.59	0.56		
	2029 with Committed Development and Machynys Hotel											
1 - The Avenue	D15	0.2	3.12	0.18	4.00	A	D16	0.4	3.62	0.30	4.61	A
2 - Coastal Link E		1.2	4.36	0.53				1.5	5.00	0.61		
3 - Nicklaus Avenue		0.0	2.61	0.01				0.0	2.90	0.05		
4 - Coastal Link W		0.9	3.90	0.48				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	3
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL\Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓					0.85	36.00	20.00		500

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	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D15	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D16	2029 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

2024 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	3.21	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.21	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	Entry only	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	2024 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	✓	177	100.000
2 - Coastal Link E		ONE HOUR	✓	644	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	12	100.000
4 - Coastal Link W		ONE HOUR	✓	671	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	130	2	45
	2 - Coastal Link E	154	0	18	472
	3 - Nicklaus Avenue	2	3	0	7
	4 - Coastal Link W	78	587	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	2.80	0.2	0.5	A	162	244
2 - Coastal Link E	0.37	3.21	0.6	2.9	A	591	886
3 - Nicklaus Avenue	0.01	2.24	0.0	0.5	A	11	17
4 - Coastal Link W	0.40	3.34	0.7	2.7	A	616	924

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	447	1722	0.077	133	176	0.0	0.1	2.459	A
2 - Coastal Link E	485	121	40	1926	0.252	483	540	0.0	0.4	2.680	A
3 - Nicklaus Avenue	9	2	504	1771	0.005	9	19	0.0	0.0	2.043	A
4 - Coastal Link W	505	126	119	1880	0.269	504	394	0.0	0.4	2.686	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	159	40	535	1666	0.096	159	210	0.1	0.1	2.593	A
2 - Coastal Link E	579	145	48	1921	0.301	579	647	0.4	0.5	2.882	A
3 - Nicklaus Avenue	11	3	604	1706	0.006	11	22	0.0	0.0	2.123	A
4 - Coastal Link W	603	151	143	1865	0.323	603	472	0.4	0.5	2.930	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	195	49	656	1589	0.123	195	257	0.1	0.2	2.801	A
2 - Coastal Link E	709	177	58	1914	0.370	708	792	0.5	0.6	3.207	A
3 - Nicklaus Avenue	13	3	739	1618	0.008	13	27	0.0	0.0	2.243	A
4 - Coastal Link W	739	185	175	1845	0.400	738	578	0.5	0.7	3.340	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	195	49	656	1589	0.123	195	258	0.2	0.2	2.802	A
2 - Coastal Link E	709	177	58	1914	0.370	709	793	0.6	0.6	3.209	A
3 - Nicklaus Avenue	13	3	740	1617	0.008	13	28	0.0	0.0	2.244	A
4 - Coastal Link W	739	185	175	1845	0.400	739	578	0.7	0.7	3.343	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	159	40	536	1665	0.096	159	211	0.2	0.1	2.596	A
2 - Coastal Link E	579	145	48	1921	0.301	580	648	0.6	0.5	2.885	A
3 - Nicklaus Avenue	11	3	605	1705	0.006	11	23	0.0	0.0	2.125	A
4 - Coastal Link W	603	151	143	1865	0.323	604	472	0.7	0.5	2.936	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	449	1721	0.077	133	176	0.1	0.1	2.463	A
2 - Coastal Link E	485	121	40	1925	0.252	485	543	0.5	0.4	2.688	A
3 - Nicklaus Avenue	9	2	506	1769	0.005	9	19	0.0	0.0	2.046	A
4 - Coastal Link W	505	126	120	1879	0.269	506	396	0.5	0.4	2.692	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	0.38	0.00	0.00	0.38	0.38			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	0.49	0.00	0.00	0.49	0.49			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	0.63	0.03	0.27	0.63	0.63			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	0.68	0.03	0.26	0.68	0.68			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	0.63	0.03	0.31	1.29	2.86			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	0.89	2.71			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	0.12	0.00	0.00	0.12	0.12			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	0.01	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

2024 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	3.50	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.50	A

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	2024 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	✓	325	100.000
2 - Coastal Link E		ONE HOUR	✓	855	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	52	100.000
4 - Coastal Link W		ONE HOUR	✓	637	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	223	2	100
	2 - Coastal Link E	173	0	37	645
	3 - Nicklaus Avenue	5	34	0	13
	4 - Coastal Link W	72	555	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	0.23	2.95	0.3	1.2	A	298	447
2 - Coastal Link E	0.50	3.90	1.0	1.5	A	785	1177
3 - Nicklaus Avenue	0.04	2.60	0.0	0.5	A	48	72
4 - Coastal Link W	0.39	3.31	0.6	2.7	A	585	877

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	245	61	450	1721	0.142	244	188	0.0	0.2	2.453	A
2 - Coastal Link E	644	161	84	1898	0.339	642	610	0.0	0.5	2.888	A
3 - Nicklaus Avenue	39	10	689	1650	0.024	39	37	0.0	0.0	2.234	A
4 - Coastal Link W	480	120	159	1855	0.259	478	569	0.0	0.4	2.658	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	292	73	538	1664	0.176	292	225	0.2	0.2	2.641	A
2 - Coastal Link E	769	192	101	1887	0.407	768	729	0.5	0.7	3.245	A
3 - Nicklaus Avenue	47	12	825	1562	0.030	47	44	0.0	0.0	2.375	A
4 - Coastal Link W	573	143	190	1835	0.312	572	681	0.4	0.5	2.900	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	358	89	659	1587	0.225	358	275	0.2	0.3	2.947	A
2 - Coastal Link E	941	235	123	1873	0.503	940	893	0.7	1.0	3.889	A
3 - Nicklaus Avenue	57	14	1009	1441	0.040	57	54	0.0	0.0	2.600	A
4 - Coastal Link W	701	175	233	1808	0.388	701	833	0.5	0.6	3.304	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	358	89	660	1587	0.225	358	275	0.3	0.3	2.948	A
2 - Coastal Link E	941	235	123	1873	0.503	941	894	1.0	1.0	3.900	A
3 - Nicklaus Avenue	57	14	1011	1440	0.040	57	54	0.0	0.0	2.602	A
4 - Coastal Link W	701	175	233	1808	0.388	701	835	0.6	0.6	3.307	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	292	73	539	1664	0.176	292	225	0.3	0.2	2.645	A
2 - Coastal Link E	769	192	101	1887	0.407	770	731	1.0	0.7	3.255	A
3 - Nicklaus Avenue	47	12	827	1561	0.030	47	44	0.0	0.0	2.379	A
4 - Coastal Link W	573	143	191	1835	0.312	573	682	0.6	0.5	2.904	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	245	61	451	1720	0.142	245	188	0.2	0.2	2.459	A
2 - Coastal Link E	644	161	84	1898	0.339	644	612	0.7	0.5	2.903	A
3 - Nicklaus Avenue	39	10	692	1648	0.024	39	37	0.0	0.0	2.236	A
4 - Coastal Link W	480	120	160	1854	0.259	480	571	0.5	0.4	2.667	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	0.52	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

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	0.69	0.09	0.83	1.39	1.46			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	1.01	0.03	0.26	1.01	1.01			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	0.89	1.21			N/A	N/A
2 - Coastal Link E	1.02	0.03	0.27	1.02	1.39			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	1.08	2.74			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	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	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	0.36	0.00	0.00	0.36	0.36			N/A	N/A

2029 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	3.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.92	A

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	2029 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	✓	247	100.000
2 - Coastal Link E		ONE HOUR	✓	882	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	777	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	144	2	101
	2 - Coastal Link E	176	0	18	688
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	100	670	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	3.08	0.2	0.5	A	227	340
2 - Coastal Link E	0.52	4.28	1.1	1.6	A	809	1214
3 - Nicklaus Avenue	0.01	2.59	0.0	0.5	A	12	18
4 - Coastal Link W	0.47	3.79	0.9	1.7	A	713	1069

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	186	46	510	1682	0.111	185	209	0.0	0.1	2.593	A
2 - Coastal Link E	664	166	83	1899	0.350	662	613	0.0	0.6	3.120	A
3 - Nicklaus Avenue	10	2	725	1627	0.006	10	20	0.0	0.0	2.225	A
4 - Coastal Link W	585	146	136	1869	0.313	583	599	0.0	0.5	2.871	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	222	56	611	1618	0.137	222	250	0.1	0.2	2.779	A
2 - Coastal Link E	793	198	99	1888	0.420	792	734	0.6	0.8	3.524	A
3 - Nicklaus Avenue	12	3	868	1534	0.008	12	23	0.0	0.0	2.364	A
4 - Coastal Link W	699	175	163	1853	0.377	698	717	0.5	0.6	3.200	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	272	68	748	1531	0.178	272	306	0.2	0.2	3.082	A
2 - Coastal Link E	971	243	121	1875	0.518	970	898	0.8	1.1	4.264	A
3 - Nicklaus Avenue	14	4	1062	1407	0.010	14	29	0.0	0.0	2.584	A
4 - Coastal Link W	855	214	199	1830	0.468	854	877	0.6	0.9	3.788	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	272	68	749	1530	0.178	272	306	0.2	0.2	3.084	A
2 - Coastal Link E	971	243	121	1874	0.518	971	900	1.1	1.1	4.278	A
3 - Nicklaus Avenue	14	4	1064	1406	0.010	14	29	0.0	0.0	2.586	A
4 - Coastal Link W	855	214	199	1830	0.468	855	879	0.9	0.9	3.794	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	222	56	612	1617	0.137	222	250	0.2	0.2	2.784	A
2 - Coastal Link E	793	198	99	1888	0.420	794	736	1.1	0.8	3.537	A
3 - Nicklaus Avenue	12	3	870	1532	0.008	12	23	0.0	0.0	2.367	A
4 - Coastal Link W	699	175	163	1852	0.377	700	719	0.9	0.6	3.212	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	186	46	512	1681	0.111	186	210	0.2	0.1	2.598	A
2 - Coastal Link E	664	166	83	1898	0.350	665	616	0.8	0.6	3.134	A
3 - Nicklaus Avenue	10	2	728	1625	0.006	10	20	0.0	0.0	2.230	A
4 - Coastal Link W	585	146	136	1869	0.313	586	601	0.6	0.5	2.881	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	0.57	0.57	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	0.47	0.00	0.00	0.47	0.47			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	0.77	0.10	0.89	1.49	1.57			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	0.62	0.09	0.83	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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.14	0.03	0.27	1.14	1.14			N/A	N/A
3 - Nicklaus Avenue	0.01	0.01	0.26	0.47	0.49			N/A	N/A
4 - Coastal Link W	0.89	0.03	0.26	0.89	0.89			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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.15	0.03	0.29	1.15	1.36			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	0.90	0.03	0.28	0.90	1.67			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	0.78	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	0.63	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	0.58	0.07	0.73	1.44	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	0.47	0.00	0.00	0.47	0.47			N/A	N/A

2029 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	4.48	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.48	A

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	2029 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	✓	385	100.000
2 - Coastal Link E		ONE HOUR	✓	994	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	54	100.000
4 - Coastal Link W		ONE HOUR	✓	908	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	249	2	134
	2 - Coastal Link E	187	0	39	768
	3 - Nicklaus Avenue	6	35	0	13
	4 - Coastal Link W	128	770	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	0.30	3.58	0.4	1.5	A	353	530
2 - Coastal Link E	0.59	4.81	1.5	1.9	A	912	1368
3 - Nicklaus Avenue	0.05	2.86	0.0	0.5	A	50	74
4 - Coastal Link W	0.56	4.59	1.3	1.5	A	833	1250

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	290	72	611	1618	0.179	289	241	0.0	0.2	2.726	A
2 - Coastal Link E	748	187	110	1882	0.398	746	791	0.0	0.7	3.193	A
3 - Nicklaus Avenue	41	10	817	1567	0.026	41	38	0.0	0.0	2.358	A
4 - Coastal Link W	684	171	171	1847	0.370	681	686	0.0	0.6	3.132	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	346	87	732	1541	0.225	346	288	0.2	0.3	3.031	A
2 - Coastal Link E	894	223	131	1868	0.478	893	947	0.7	0.9	3.722	A
3 - Nicklaus Avenue	49	12	978	1462	0.033	49	46	0.0	0.0	2.546	A
4 - Coastal Link W	816	204	205	1826	0.447	815	822	0.6	0.8	3.618	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	424	106	896	1436	0.295	423	353	0.3	0.4	3.574	A
2 - Coastal Link E	1094	274	161	1850	0.592	1092	1159	0.9	1.4	4.785	A
3 - Nicklaus Avenue	59	15	1197	1319	0.045	59	56	0.0	0.0	2.857	A
4 - Coastal Link W	1000	250	251	1798	0.556	998	1006	0.8	1.3	4.568	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	424	106	897	1435	0.295	424	353	0.4	0.4	3.580	A
2 - Coastal Link E	1094	274	161	1850	0.592	1094	1160	1.4	1.5	4.812	A
3 - Nicklaus Avenue	59	15	1199	1318	0.045	59	56	0.0	0.0	2.860	A
4 - Coastal Link W	1000	250	251	1797	0.556	1000	1007	1.3	1.3	4.589	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	346	87	734	1539	0.225	347	289	0.4	0.3	3.040	A
2 - Coastal Link E	894	223	131	1868	0.478	896	949	1.5	0.9	3.745	A
3 - Nicklaus Avenue	49	12	981	1460	0.033	49	46	0.0	0.0	2.550	A
4 - Coastal Link W	816	204	205	1826	0.447	818	824	1.3	0.8	3.640	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	290	72	614	1616	0.179	290	242	0.3	0.2	2.735	A
2 - Coastal Link E	748	187	110	1881	0.398	749	794	0.9	0.7	3.215	A
3 - Nicklaus Avenue	41	10	821	1564	0.026	41	38	0.0	0.0	2.362	A
4 - Coastal Link W	684	171	172	1847	0.370	684	690	0.8	0.6	3.151	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	0.66	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	0.59	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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.92	0.07	0.83	1.57	1.95			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	0.82	0.08	0.83	1.51	1.52			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	0.42	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.44	0.03	0.26	1.44	1.44			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	1.26	0.03	0.26	1.26	1.26			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	0.42	0.03	0.33	1.35	1.54			N/A	N/A
2 - Coastal Link E	1.45	0.03	0.27	1.45	1.45			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	1.27	0.03	0.27	1.27	1.27			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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.93	0.35	1.00	1.08	1.08			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	0.83	0.51	0.99	1.42	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 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.67	0.08	0.77	1.38	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	0.60	0.07	0.75	1.37	1.45			N/A	N/A

2029 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	4.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.00	A

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	2029 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	✓	247	100.000
2 - Coastal Link E		ONE HOUR	✓	897	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	13	100.000
4 - Coastal Link W		ONE HOUR	✓	800	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	144	2	101
	2 - Coastal Link E	176	0	18	703
	3 - Nicklaus Avenue	2	3	0	8
	4 - Coastal Link W	100	693	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	3.12	0.2	0.5	A	227	340
2 - Coastal Link E	0.53	4.36	1.2	1.6	A	823	1235
3 - Nicklaus Avenue	0.01	2.61	0.0	0.5	A	12	18
4 - Coastal Link W	0.48	3.90	0.9	1.5	A	734	1101

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	186	46	528	1671	0.111	185	209	0.0	0.1	2.612	A
2 - Coastal Link E	675	169	83	1899	0.356	673	630	0.0	0.6	3.148	A
3 - Nicklaus Avenue	10	2	736	1620	0.006	10	20	0.0	0.0	2.235	A
4 - Coastal Link W	602	151	136	1869	0.322	600	610	0.0	0.5	2.910	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	222	56	631	1605	0.138	222	250	0.1	0.2	2.806	A
2 - Coastal Link E	806	202	99	1888	0.427	806	754	0.6	0.8	3.568	A
3 - Nicklaus Avenue	12	3	881	1525	0.008	12	23	0.0	0.0	2.378	A
4 - Coastal Link W	719	180	163	1853	0.388	719	730	0.5	0.6	3.259	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	272	68	773	1515	0.180	272	306	0.2	0.2	3.122	A
2 - Coastal Link E	988	247	121	1875	0.527	986	924	0.8	1.2	4.342	A
3 - Nicklaus Avenue	14	4	1078	1396	0.010	14	29	0.0	0.0	2.604	A
4 - Coastal Link W	881	220	199	1830	0.481	880	894	0.6	0.9	3.887	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	272	68	774	1514	0.180	272	306	0.2	0.2	3.124	A
2 - Coastal Link E	988	247	121	1874	0.527	988	925	1.2	1.2	4.357	A
3 - Nicklaus Avenue	14	4	1080	1395	0.010	14	29	0.0	0.0	2.606	A
4 - Coastal Link W	881	220	199	1830	0.481	881	895	0.9	0.9	3.897	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	222	56	633	1604	0.138	222	250	0.2	0.2	2.809	A
2 - Coastal Link E	806	202	99	1888	0.427	808	756	1.2	0.8	3.581	A
3 - Nicklaus Avenue	12	3	884	1523	0.008	12	23	0.0	0.0	2.380	A
4 - Coastal Link W	719	180	163	1852	0.388	720	732	0.9	0.7	3.271	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	186	46	530	1670	0.111	186	210	0.2	0.1	2.618	A
2 - Coastal Link E	675	169	83	1898	0.356	676	633	0.8	0.6	3.166	A
3 - Nicklaus Avenue	10	2	739	1617	0.006	10	20	0.0	0.0	2.238	A
4 - Coastal Link W	602	151	136	1869	0.322	603	613	0.7	0.5	2.924	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	0.59	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	0.79	0.10	0.89	1.51	1.59			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	0.65	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	0.23	0.03	0.27	0.49	0.52			N/A	N/A
2 - Coastal Link E	1.18	0.03	0.28	1.18	1.18			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	0.95	0.03	0.26	0.95	0.95			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	1.19	0.03	0.29	1.19	1.26			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	0.95	0.03	0.28	0.95	1.38			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	0.81	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	0.66	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	0.49	0.00	0.00	0.49	0.49			N/A	N/A

2029 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	4.61	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.61	A

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	2029 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	✓	385	100.000
2 - Coastal Link E		ONE HOUR	✓	1020	100.000
3 - Nicklaus Avenue		ONE HOUR	✓	54	100.000
4 - Coastal Link W		ONE HOUR	✓	923	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	249	2	134
	2 - Coastal Link E	187	0	39	794
	3 - Nicklaus Avenue	6	35	0	13
	4 - Coastal Link W	128	785	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	0.30	3.62	0.4	1.6	A	353	530
2 - Coastal Link E	0.61	5.00	1.5	2.3	A	936	1404
3 - Nicklaus Avenue	0.05	2.90	0.0	0.5	A	50	74
4 - Coastal Link W	0.57	4.69	1.3	1.7	A	847	1270

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	290	72	623	1610	0.180	289	241	0.0	0.2	2.740	A
2 - Coastal Link E	768	192	110	1882	0.408	765	802	0.0	0.7	3.247	A
3 - Nicklaus Avenue	41	10	836	1554	0.026	41	38	0.0	0.0	2.378	A
4 - Coastal Link W	695	174	171	1847	0.376	692	706	0.0	0.6	3.163	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	346	87	745	1532	0.226	346	288	0.2	0.3	3.053	A
2 - Coastal Link E	917	229	131	1868	0.491	916	960	0.7	1.0	3.813	A
3 - Nicklaus Avenue	49	12	1001	1447	0.034	49	46	0.0	0.0	2.574	A
4 - Coastal Link W	830	207	205	1826	0.454	829	845	0.6	0.8	3.667	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	424	106	912	1426	0.297	423	353	0.3	0.4	3.612	A
2 - Coastal Link E	1123	281	161	1850	0.607	1121	1175	1.0	1.5	4.969	A
3 - Nicklaus Avenue	59	15	1225	1301	0.046	59	56	0.0	0.0	2.900	A
4 - Coastal Link W	1016	254	251	1798	0.565	1014	1034	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	424	106	914	1425	0.297	424	353	0.4	0.4	3.618	A
2 - Coastal Link E	1123	281	161	1850	0.607	1123	1177	1.5	1.5	5.001	A
3 - Nicklaus Avenue	59	15	1228	1299	0.046	59	56	0.0	0.0	2.903	A
4 - Coastal Link W	1016	254	251	1797	0.565	1016	1036	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	346	87	748	1531	0.226	347	289	0.4	0.3	3.062	A
2 - Coastal Link E	917	229	131	1868	0.491	919	963	1.5	1.0	3.839	A
3 - Nicklaus Avenue	49	12	1005	1444	0.034	49	46	0.0	0.0	2.580	A
4 - Coastal Link W	830	207	205	1826	0.454	832	848	1.3	0.9	3.688	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	290	72	626	1608	0.180	290	242	0.3	0.2	2.750	A
2 - Coastal Link E	768	192	110	1881	0.408	769	806	1.0	0.7	3.272	A
3 - Nicklaus Avenue	41	10	841	1551	0.026	41	38	0.0	0.0	2.382	A
4 - Coastal Link W	695	174	172	1847	0.376	696	709	0.9	0.6	3.182	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	0.69	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	0.61	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	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Coastal Link E	0.97	0.07	0.82	1.73	2.26			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	0.84	0.08	0.84	1.14	1.65			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	0.42	0.03	0.25	0.46	0.48			N/A	N/A
2 - Coastal Link E	1.54	0.03	0.26	1.54	1.54			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	1.31	0.03	0.26	1.31	1.31			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	0.42	0.03	0.33	1.35	1.57			N/A	N/A
2 - Coastal Link E	1.55	0.03	0.27	1.55	1.55			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	1.32	0.03	0.27	1.32	1.32			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	0.98	0.28	1.02	1.51	1.52			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	0.85	0.47	0.99	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 - The Avenue	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Coastal Link E	0.70	0.07	0.77	1.40	1.48			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	1.37	1.45			N/A	N/A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 11. Morfa Roundabout.j10
Path: \\global\europe\Cardiff\Jobs\278000\278688-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Modelling - 2024
Report generation date: 27/09/2024 15:32:41

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS	Set ID	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Junction LOS
	2024 Base											
1 - Lower Trostre Road	D1	0.7	5.88	0.39	6.16	A	D2	1.6	8.70	0.62	9.35	A
2 - N/A		1.1	11.00	0.51				2.5	20.46	0.72		
3 - Brickyard Row		0.2	6.12	0.14				0.1	6.99	0.09		
4 - B4304 Coastal Link Road		1.0	4.26	0.49				1.2	4.55	0.54		
	2029 with Committed Development											
1 - Lower Trostre Road	D3	1.5	8.75	0.59	8.59	A	D4	3.1	14.33	0.76	14.54	B
2 - N/A		1.9	16.91	0.65				4.4	34.41	0.83		
3 - Brickyard Row		0.3	8.14	0.22				0.1	8.23	0.11		
4 - B4304 Coastal Link Road		1.3	4.93	0.56				2.3	6.89	0.69		
	2029 with Committed Development and Machynys Hotel											
1 - Lower Trostre Road	D11	1.6	9.05	0.60	8.78	A	D12	3.6	15.85	0.79	15.49	C
2 - N/A		1.9	17.19	0.65				4.7	36.56	0.84		
3 - Brickyard Row		0.3	8.25	0.22				0.1	8.44	0.11		
4 - B4304 Coastal Link Road		1.4	5.11	0.57				2.4	7.11	0.70		

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	11
Date	27/09/2024
Version	2
Status	For Planning
Identifier	Machynys Hotel
Client	Carmarthen County Council
Jobnumber	278688
Enumerator	GLOBAL|Shelly Lau
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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

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	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2029 with Committed Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D11	2029 with Committed Development and Machynys Hotel	AM	ONE HOUR	07:45	09:15	15	✓
D12	2029 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

2024 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	6.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.16	A

Arms

Arms

Arm	Name	Description	No give-way line
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)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	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	2024 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	✓	395	100.000
2 - N/A		ONE HOUR	✓	324	100.000
3 - Brickyard Row		ONE HOUR	✓	90	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	771	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	352
	2 - N/A	30	0	10	284
	3 - Brickyard Row	38	29	3	20
	4 - B4304 Coastal Link Road	436	325	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	5.88	0.7	A	362	544
2 - N/A	0.51	11.00	1.1	B	297	446
3 - Brickyard Row	0.14	6.12	0.2	A	83	124
4 - B4304 Coastal Link Road	0.49	4.26	1.0	A	707	1061

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	297	74	275	1173	0.254	296	379	0.0	0.4	4.498	A
2 - N/A	244	61	282	741	0.329	242	289	0.0	0.5	7.572	A
3 - Brickyard Row	68	17	500	833	0.081	67	25	0.0	0.1	4.932	A
4 - B4304 Coastal Link Road	580	145	76	1754	0.331	578	491	0.0	0.5	3.194	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	355	89	330	1145	0.310	355	454	0.4	0.5	4.997	A
2 - N/A	291	73	338	724	0.402	291	346	0.5	0.7	8.732	A
3 - Brickyard Row	81	20	599	784	0.103	81	30	0.1	0.1	5.375	A
4 - B4304 Coastal Link Road	693	173	92	1745	0.397	692	589	0.5	0.7	3.574	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	435	109	403	1106	0.393	434	556	0.5	0.7	5.867	A
2 - N/A	357	89	414	702	0.508	355	423	0.7	1.1	10.912	B
3 - Brickyard Row	99	25	733	718	0.138	99	36	0.1	0.2	6.106	A
4 - B4304 Coastal Link Road	849	212	112	1732	0.490	848	720	0.7	1.0	4.249	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	435	109	404	1106	0.393	435	557	0.7	0.7	5.884	A
2 - N/A	357	89	415	701	0.509	357	424	1.1	1.1	11.005	B
3 - Brickyard Row	99	25	735	717	0.138	99	36	0.2	0.2	6.118	A
4 - B4304 Coastal Link Road	849	212	112	1732	0.490	849	722	1.0	1.0	4.261	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	355	89	331	1144	0.310	356	456	0.7	0.5	5.018	A
2 - N/A	291	73	340	724	0.402	293	347	1.1	0.7	8.830	A
3 - Brickyard Row	81	20	603	782	0.103	81	30	0.2	0.1	5.392	A
4 - B4304 Coastal Link Road	693	173	92	1744	0.397	694	592	1.0	0.7	3.586	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	297	74	277	1172	0.254	298	381	0.5	0.4	4.521	A
2 - N/A	244	61	284	741	0.329	245	290	0.7	0.5	7.665	A
3 - Brickyard Row	68	17	504	831	0.082	68	25	0.1	0.1	4.954	A
4 - B4304 Coastal Link Road	580	145	77	1754	0.331	581	495	0.7	0.5	3.209	A

2024 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	9.35	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.35	A

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	2024 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	✓	618	100.000
2 - N/A		ONE HOUR	✓	413	100.000
3 - Brickyard Row		ONE HOUR	✓	45	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	848	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	529
	2 - N/A	43	0	18	352
	3 - Brickyard Row	36	9	0	0
	4 - B4304 Coastal Link Road	475	348	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	8.70	1.6	A	567	851
2 - N/A	0.72	20.46	2.5	C	379	568
3 - Brickyard Row	0.09	6.99	0.1	A	41	62
4 - B4304 Coastal Link Road	0.54	4.55	1.2	A	778	1167

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	465	116	287	1167	0.399	463	416	0.0	0.7	5.136	A
2 - N/A	311	78	439	694	0.448	308	310	0.0	0.8	9.392	A
3 - Brickyard Row	34	8	692	738	0.046	34	55	0.0	0.0	5.229	A
4 - B4304 Coastal Link Road	638	160	66	1760	0.363	636	659	0.0	0.6	3.257	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	556	139	343	1138	0.488	554	498	0.7	1.0	6.212	A
2 - N/A	371	93	527	668	0.556	370	371	0.8	1.2	12.185	B
3 - Brickyard Row	40	10	830	670	0.060	40	66	0.0	0.1	5.853	A
4 - B4304 Coastal Link Road	762	191	80	1752	0.435	762	790	0.6	0.8	3.701	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	680	170	420	1098	0.620	678	610	1.0	1.6	8.641	A
2 - N/A	455	114	644	633	0.718	450	454	1.2	2.4	19.496	C
3 - Brickyard Row	50	12	1013	580	0.086	49	81	0.1	0.1	6.949	A
4 - B4304 Coastal Link Road	934	233	97	1741	0.536	932	965	0.8	1.2	4.529	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	680	170	421	1098	0.620	680	611	1.6	1.6	8.697	A
2 - N/A	455	114	646	632	0.719	454	455	2.4	2.5	20.457	C
3 - Brickyard Row	50	12	1019	576	0.086	50	81	0.1	0.1	6.993	A
4 - B4304 Coastal Link Road	934	233	98	1741	0.536	934	971	1.2	1.2	4.547	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	556	139	344	1137	0.489	558	500	1.6	1.0	6.298	A
2 - N/A	371	93	530	667	0.557	376	372	2.5	1.3	12.769	B
3 - Brickyard Row	40	10	839	665	0.061	41	67	0.1	0.1	5.901	A
4 - B4304 Coastal Link Road	762	191	81	1752	0.435	764	799	1.2	0.8	3.723	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	465	116	288	1166	0.399	466	419	1.0	0.7	5.198	A
2 - N/A	311	78	443	693	0.449	313	311	1.3	0.8	9.671	A
3 - Brickyard Row	34	8	700	734	0.046	34	56	0.1	0.0	5.264	A
4 - B4304 Coastal Link Road	638	160	67	1760	0.363	639	667	0.8	0.6	3.276	A

2029 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	8.59	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.59	A

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	2029 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	✓	579	100.000
2 - N/A		ONE HOUR	✓	378	100.000
3 - Brickyard Row		ONE HOUR	✓	118	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	869	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	530
	2 - N/A	32	0	11	335
	3 - Brickyard Row	51	32	3	32
	4 - B4304 Coastal Link Road	507	348	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	0.59	8.75	1.5	A	531	797
2 - N/A	0.65	16.91	1.9	C	347	520
3 - Brickyard Row	0.22	8.14	0.3	A	108	162
4 - B4304 Coastal Link Road	0.56	4.93	1.3	A	797	1196

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	436	109	298	1161	0.375	433	444	0.0	0.7	5.412	A
2 - N/A	285	71	422	699	0.407	282	309	0.0	0.7	9.026	A
3 - Brickyard Row	89	22	672	748	0.119	88	32	0.0	0.1	5.685	A
4 - B4304 Coastal Link Road	654	164	90	1746	0.375	652	670	0.0	0.6	3.432	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	521	130	356	1131	0.460	519	531	0.7	0.9	6.455	A
2 - N/A	340	85	506	674	0.504	338	370	0.7	1.0	11.254	B
3 - Brickyard Row	106	27	806	682	0.156	106	39	0.1	0.2	6.518	A
4 - B4304 Coastal Link Road	781	195	108	1735	0.450	780	804	0.6	0.8	3.940	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	637	159	436	1090	0.585	635	650	0.9	1.5	8.655	A
2 - N/A	416	104	619	641	0.650	413	453	1.0	1.9	16.431	C
3 - Brickyard Row	130	32	984	593	0.219	130	47	0.2	0.3	8.086	A
4 - B4304 Coastal Link Road	957	239	132	1719	0.556	955	982	0.8	1.3	4.909	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	637	159	437	1089	0.585	637	652	1.5	1.5	8.748	A
2 - N/A	416	104	621	640	0.650	416	454	1.9	1.9	16.910	C
3 - Brickyard Row	130	32	990	591	0.220	130	47	0.3	0.3	8.142	A
4 - B4304 Coastal Link Road	957	239	132	1719	0.557	957	987	1.3	1.3	4.934	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	521	130	358	1130	0.461	523	534	1.5	1.0	6.537	A
2 - N/A	340	85	509	673	0.505	343	371	1.9	1.1	11.602	B
3 - Brickyard Row	106	27	813	678	0.156	106	39	0.3	0.2	6.575	A
4 - B4304 Coastal Link Road	781	195	108	1734	0.451	783	811	1.3	0.9	3.963	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	436	109	299	1160	0.376	437	446	1.0	0.7	5.474	A
2 - N/A	285	71	426	698	0.408	286	311	1.1	0.7	9.236	A
3 - Brickyard Row	89	22	679	744	0.119	89	32	0.2	0.1	5.733	A
4 - B4304 Coastal Link Road	654	164	91	1745	0.375	655	678	0.9	0.6	3.453	A

2029 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	14.54	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.54	B

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	2029 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	✓	736	100.000
2 - N/A		ONE HOUR	✓	444	100.000
3 - Brickyard Row		ONE HOUR	✓	51	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1092	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	58	42	634
	2 - N/A	45	0	20	379
	3 - Brickyard Row	41	10	0	0
	4 - B4304 Coastal Link Road	658	398	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	0.76	14.33	3.1	B	675	1013
2 - N/A	0.83	34.41	4.4	D	407	611
3 - Brickyard Row	0.11	8.23	0.1	A	47	70
4 - B4304 Coastal Link Road	0.69	6.89	2.3	A	1002	1503

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	554	139	333	1143	0.485	550	559	0.0	0.9	6.091	A
2 - N/A	334	84	534	666	0.502	330	349	0.0	1.0	10.779	B
3 - Brickyard Row	38	10	792	689	0.056	38	73	0.0	0.1	5.660	A
4 - B4304 Coastal Link Road	822	206	73	1756	0.468	819	757	0.0	0.9	3.898	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	662	165	398	1109	0.597	660	669	0.9	1.5	8.040	A
2 - N/A	399	100	640	634	0.629	397	418	1.0	1.7	15.221	C
3 - Brickyard Row	46	11	950	611	0.075	46	87	0.1	0.1	6.518	A
4 - B4304 Coastal Link Road	982	245	88	1747	0.562	980	908	0.9	1.3	4.775	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	810	203	487	1063	0.762	804	818	1.5	3.0	13.682	B
2 - N/A	489	122	780	592	0.825	479	511	1.7	4.1	30.087	D
3 - Brickyard Row	56	14	1154	510	0.110	56	106	0.1	0.1	8.113	A
4 - B4304 Coastal Link Road	1202	301	107	1735	0.693	1198	1103	1.3	2.2	6.789	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	810	203	489	1062	0.763	810	821	3.0	3.1	14.326	B
2 - N/A	489	122	786	591	0.828	487	513	4.1	4.4	34.415	D
3 - Brickyard Row	56	14	1166	504	0.112	56	107	0.1	0.1	8.232	A
4 - B4304 Coastal Link Road	1202	301	108	1734	0.693	1202	1115	2.2	2.3	6.889	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	662	165	401	1108	0.597	668	674	3.1	1.5	8.372	A
2 - N/A	399	100	648	632	0.632	409	421	4.4	1.8	17.149	C
3 - Brickyard Row	46	11	969	601	0.076	46	88	0.1	0.1	6.640	A
4 - B4304 Coastal Link Road	982	245	89	1746	0.562	985	926	2.3	1.3	4.848	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	554	139	335	1142	0.485	556	563	1.5	1.0	6.227	A
2 - N/A	334	84	540	664	0.503	337	352	1.8	1.1	11.297	B
3 - Brickyard Row	38	10	804	683	0.056	38	73	0.1	0.1	5.718	A
4 - B4304 Coastal Link Road	822	206	74	1756	0.468	824	768	1.3	0.9	3.946	A

2029 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	8.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.78	A

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	2029 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	✓	590	100.000
2 - N/A		ONE HOUR	✓	378	100.000
3 - Brickyard Row		ONE HOUR	✓	118	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	893	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	541
	2 - N/A	32	0	11	335
	3 - Brickyard Row	51	32	3	32
	4 - B4304 Coastal Link Road	526	353	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	9.05	1.6	A	541	812
2 - N/A	0.65	17.19	1.9	C	347	520
3 - Brickyard Row	0.22	8.25	0.3	A	108	162
4 - B4304 Coastal Link Road	0.57	5.11	1.4	A	819	1229

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	444	111	301	1159	0.383	441	458	0.0	0.7	5.488	A
2 - N/A	285	71	430	697	0.408	282	313	0.0	0.7	9.080	A
3 - Brickyard Row	89	22	680	744	0.119	88	32	0.0	0.1	5.720	A
4 - B4304 Coastal Link Road	672	168	90	1746	0.385	670	678	0.0	0.7	3.487	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	530	133	361	1128	0.470	529	548	0.7	1.0	6.587	A
2 - N/A	340	85	516	671	0.506	338	374	0.7	1.1	11.352	B
3 - Brickyard Row	106	27	816	677	0.157	106	39	0.1	0.2	6.574	A
4 - B4304 Coastal Link Road	803	201	108	1735	0.463	802	814	0.7	0.9	4.030	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	650	162	442	1087	0.598	647	671	1.0	1.6	8.940	A
2 - N/A	416	104	631	637	0.653	413	458	1.1	1.9	16.679	C
3 - Brickyard Row	130	32	996	588	0.221	130	47	0.2	0.3	8.188	A
4 - B4304 Coastal Link Road	983	246	132	1719	0.572	981	994	0.9	1.4	5.084	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	650	162	443	1086	0.598	650	673	1.6	1.6	9.048	A
2 - N/A	416	104	633	636	0.654	416	459	1.9	1.9	17.185	C
3 - Brickyard Row	130	32	1002	585	0.222	130	47	0.3	0.3	8.249	A
4 - B4304 Coastal Link Road	983	246	132	1719	0.572	983	999	1.4	1.4	5.112	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	530	133	362	1128	0.470	533	551	1.6	1.0	6.676	A
2 - N/A	340	85	519	670	0.507	343	376	1.9	1.1	11.715	B
3 - Brickyard Row	106	27	824	673	0.158	106	39	0.3	0.2	6.633	A
4 - B4304 Coastal Link Road	803	201	108	1734	0.463	805	822	1.4	0.9	4.058	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	444	111	303	1158	0.384	445	461	1.0	0.7	5.554	A
2 - N/A	285	71	434	696	0.409	286	314	1.1	0.7	9.296	A
3 - Brickyard Row	89	22	688	740	0.120	89	32	0.2	0.1	5.769	A
4 - B4304 Coastal Link Road	672	168	91	1745	0.385	673	686	0.9	0.7	3.515	A

2029 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	15.49	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.49	C

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	2029 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	✓	757	100.000
2 - N/A		ONE HOUR	✓	444	100.000
3 - Brickyard Row		ONE HOUR	✓	51	100.000
4 - B4304 Coastal Link Road		ONE HOUR	✓	1107	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	58	42	655
	2 - N/A	45	0	20	379
	3 - Brickyard Row	41	10	0	0
	4 - B4304 Coastal Link Road	670	401	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	0.79	15.85	3.6	C	695	1042
2 - N/A	0.84	36.56	4.7	E	407	611
3 - Brickyard Row	0.11	8.44	0.1	A	47	70
4 - B4304 Coastal Link Road	0.70	7.11	2.4	A	1016	1524

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	570	142	335	1142	0.499	566	568	0.0	1.0	6.264	A
2 - N/A	334	84	550	661	0.506	330	351	0.0	1.0	10.924	B
3 - Brickyard Row	38	10	807	681	0.056	38	73	0.0	0.1	5.728	A
4 - B4304 Coastal Link Road	833	208	73	1756	0.475	830	772	0.0	0.9	3.946	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	681	170	401	1108	0.614	678	680	1.0	1.6	8.410	A
2 - N/A	399	100	659	629	0.635	396	421	1.0	1.7	15.569	C
3 - Brickyard Row	46	11	968	602	0.076	46	87	0.1	0.1	6.626	A
4 - B4304 Coastal Link Road	995	249	88	1747	0.570	993	926	0.9	1.3	4.858	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	833	208	491	1062	0.785	826	831	1.6	3.4	14.962	B
2 - N/A	489	122	802	586	0.835	479	514	1.7	4.3	31.511	D
3 - Brickyard Row	56	14	1175	499	0.112	56	106	0.1	0.1	8.304	A
4 - B4304 Coastal Link Road	1219	305	107	1735	0.702	1215	1124	1.3	2.3	6.998	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	833	208	492	1061	0.786	833	834	3.4	3.6	15.851	C
2 - N/A	489	122	809	584	0.838	487	516	4.3	4.7	36.564	E
3 - Brickyard Row	56	14	1189	492	0.114	56	107	0.1	0.1	8.444	A
4 - B4304 Coastal Link Road	1219	305	108	1734	0.703	1219	1138	2.3	2.4	7.109	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	681	170	403	1106	0.615	688	685	3.6	1.7	8.833	A
2 - N/A	399	100	668	626	0.638	410	424	4.7	1.9	17.770	C
3 - Brickyard Row	46	11	990	591	0.078	46	88	0.1	0.1	6.762	A
4 - B4304 Coastal Link Road	995	249	89	1746	0.570	999	947	2.4	1.4	4.939	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	570	142	337	1141	0.500	572	572	1.7	1.0	6.417	A
2 - N/A	334	84	556	659	0.507	337	354	1.9	1.1	11.477	B
3 - Brickyard Row	38	10	820	675	0.057	38	73	0.1	0.1	5.790	A
4 - B4304 Coastal Link Road	833	208	74	1756	0.475	835	784	1.4	0.9	3.995	A