Craig-Y-Parcau
Bridgend

Transport Assessment

Bellway Homes

OCTOBER 2025

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Project no.	24090
Document ref.	24090d1
Status	Final
Date	30 October 2025

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1 Introduction

1.1 Background

1.1.1 Lime Transport has been appointed by Bellway Homes to produce a Transport Assessment (TA) in support of a planning application for the construction of 120 dwellings on land to the south of the A48 in Bridgend.

1.1.2 The site, which is an allocated site (COM1(1)) within the Replacement Bridgend Local Development Plan 2018 to 2033, is shown in **Figure 1.1**.

Figure 1.1 Site location

1.2 Development proposals

1.2.1 As part of the development, it is proposed to provide 120 dwellings - with 24 affordable dwellings (20%) and 96 private/open sales dwellings (80%) – together with:

- Car parking in accordance with adopted parking standards;
- Cycle parking in accordance (or excess of) the adopted parking standards;
- Improvements to pedestrian and cycle infrastructure in the vicinity of the site;
- Landscaping, formal and informal open space; and,
- Associated infrastructure.

1.2.2 It is anticipated that, in accordance with the allocation, the proposed development will be accessed from the A48 Bypass Road/B4622 (Broadlands) roundabout. It is also proposed to provide the following measures to improve active travel to/from the site:

- Provision of a formal crossing across the A48 (at the eastern boundary of the site) that links the Public Right of Way on either side of the A48;
- Provision of a shared cycleway/footway along the southern edge of the A48, linking the main site access with the proposed crossing across the A48; and
- Upgrade the informal crossings (dropped kerbs and tactile paving) across all approaches to the roundabout.

1.2.3 It should be noted that at a recent pre-app meeting with the planning and highway authority on Monday 7th October 2025, the highways officer expressed concerns regarding the proposed access strategy, including:

- The proposed access strategy will prejudice the delivery of the strategic allocations (SP2(2) and SP2(3)) as the existing roundabout is already operating at capacity and does not have sufficient capacity to accommodate the strategic allocations;
- The proposed access strategy will not provide the same level of improvements to active travel to/from the Craig Y Parcau site as the staggered signal-controlled junction arrangements, identified as part of the RLDP process and proposed as off-site mitigation as part of the strategic allocation (SP2(3)); and,
- The existing roundabout is unsafe.

1.2.4 Each of these issues is addressed as part of this Transport Assessment.

1.3 Purpose of the report

1.3.1 As detailed above, this report has been prepared in support of a residential development on land to the south of the A48. This TA, therefore, assesses the impact of the potential development of 120 dwellings on the surrounding highway network, and identifies mitigation measures to reduce the impact of development generated traffic where required.

1.3.2 It should be noted that, for the purposes of consistency, the future year assessments have been based on those undertaken as part of the Transport Assessment produced in support of the strategic allocation SP2(3) (Parc Llangewydd), as detailed below:

- 2026 the anticipated year of opening (of the Parc Llangewydd development);
- 2035 just beyond the RLDP period.

1.4 Structure of the report

1.1.3 Following this introductory section, the report is structured as follows:

- Section 2 reviews the development proposals against the relevant national, regional and local planning policies;
- Section 3 details the characteristics of the transport network surrounding the proposed development;
- Section 4 outlines the development proposals in more detail, including the proposed access strategy and measures to improve active travel both within and surrounding the site;
- Section 5 describes the likely demand generated by the proposed development;
- Section 6 assesses the impact of the proposed development on the surrounding transport network;
- Section 7 outlines the Transportation Implementation Strategy; and,
- Section 8 provides the conclusions of the report.

2 Policy context

2.1 Introduction

2.1.1 Current transport policies at the national, regional and local level are built around the central themes of long-term sustainable development, sustained investment in transport and improved accessibility at all levels. These policies promote continued economic growth through the provision of an efficient and reliable transport system, a reduction in traffic congestion, improvements in highway safety, and enhancements to the accessibility of sustainable modes of travel.

2.1.2 This section of the report reviews the relevant national, regional and local planning policies relating to transport, and includes:

- Future Wales – The National Plan 2040.
- Planning Policy Wales.
- Technical Advice Note 18: Transport.
- One Wales: Connecting the Nation.
- Wales Active Travel Act.
- Bridgend County Borough Local Development Plan (2018 – 2033)

2.2 Future Wales – The National Plan 2040

2.2.1 Future Wales The National Plan was adopted in February 2021 and sets out a framework and direction for development in Wales up to 2040. Future Wales is a spatial plan, which means it sets a direction for investment in infrastructure and development. It aims to ensure that new infrastructure and development are complementary rather than competing priorities, ensuring that opportunities are maximised and multiple benefits are achieved. The document also sets out opportunities for each region within Wales.

2.2.2 For south-east region (Blaenau Gwent, **Bridgend**, Caerphilly, Cardiff, Merthyr Tydfil, Monmouthshire, Newport, Rhondda Cynon Taf, Torfaen and the Vale of Glamorgan), the key issues are:

- Urban growth and housing pressure
  - **Cardiff, Newport, and the Valleys** are designated as a National Growth Area, expected to accommodate significant population and housing growth.
  - There is a need to **deliver new homes at scale**, especially affordable housing, while managing urban expansion sustainably.
  - The plan emphasizes **densification and regeneration** over urban sprawl, aiming to protect green spaces and reduce car dependency..

- Transport and Connectivity
  - The region faces **congestion and poor public transport integration**, particularly between Cardiff, Newport, and surrounding communities.
  - Future Wales calls for **investment in sustainable transport**, including rail upgrades, active travel networks, and better bus services.
  - Improving **cross-border connectivity** with England is also a priority, especially links to Bristol and the M4 corridor.
- Environmental Protection and Climate Resilience
  - The **Gwent Levels and other sensitive landscapes** are under pressure from development and climate change.
  - Future Wales proposes **Green Belts** to manage urban growth and protect biodiversity.
  - There's a strong focus on **low-carbon development**, flood resilience, and renewable energy infrastructure.
- Economic Disparities and Opportunity
  - While Cardiff is a major economic hub, **parts of the Valleys and Newport lag behind** in employment and investment.
  - The plan promotes **inclusive growth**, aiming to spread economic benefits across the region through strategic planning and infrastructure investment.
  - Support for **innovation, education, and digital connectivity** is seen as key to unlocking regional potential.
- Strategic Planning and Collaboration
  - The South East is expected to lead in **regional collaboration**, with local authorities working together on housing, transport, and environmental goals.
  - Future Wales encourages **place-making and community engagement** to ensure development reflects local needs and aspirations.

Travelling in Wales

2.2.3 Future Wales states that:

> *'The Welsh Government's aim is to reduce the need to travel, particularly by private vehicles, and support a modal shift to walking, cycling and public transport. The sustainable transport hierarchy in Planning Policy Wales, which prioritises active travel and public transport, is a fundamental Welsh Government principle that underpins Future Wales.'*

2.2.4 Future Wales also states that:

> *'Transport in Wales is currently dominated by the car. Our reliance on travelling by car is limiting the opportunity for physical activity and social contact to be built into people's everyday lives and is exacerbating air and noise pollution, particularly along major routes and at busy destinations.'*

Policy 12 - Regional connectivity

2.2.5 Future Wales states that in order to support growth and regeneration in urban areas, the priority is to improve and better integrate active travel and public transport, and in rural areas the priority is to increase the uptake of ultra-low emission vehicles and diversifying and sustaining local bus services.

2.2.6 In terms of car parking the document states that:

> *'Planning authorities must act to reduce levels of car parking in urban areas, including supporting car-free developments in accessible locations and developments with car parking spaces that allow them to be converted to other uses over time.'*

And,

> *'Planning authorities should also challenge perceptions that housing needs to be built with parking on plots, which promotes car-dominated developments, and promote different ways of dealing with cars that encourage a reduction in car use and increase active travel and use of public transport.'*

2.3 Planning Policy Wales – Edition 12

2.3.1 Planning Policy Wales (PPW) was adopted in February 2021. The document sets out the land use planning policies of the Welsh Assembly Government. It is supplemented by a series of Technical Advice Notes (TANs) and procedural advice is given in circulars and policy clarification letters.

2.3.2 PPW states:

> *'The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:*
>
> - *Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;*
> - *Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and*
> - *Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles.'*

Movement

2.3.3 At paragraph 3.12, PPW states that:

> 'Good design is about avoiding the creation of car-based developments. It contributes to minimising the need to travel and reliance on the car, whilst maximising opportunities for people to make sustainable and healthy travel choices for their daily journeys. Achieving these objectives requires the selection of sites which can be made easily accessible by sustainable modes as well as incorporating appropriate, safe and sustainable links (including

active travel networks) within and between developments using legal agreements where appropriate'.

2.3.4 At paragraph 3.45, PPW states that:

'As well ensuring all services needed for the expectant levels of growth are provided, an important consideration will be minimising the need to travel, reducing reliance on the private car and increasing walking, cycling and use of public transport.'

2.3.5 At paragraph 4.1.1, PPW states that:

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

2.3.6 At paragraph 4.1.4, PPW states that:

'Land use and transport planning must be integrated. The planning system must ensure it enables integration:

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

Sustainable transport

2.3.7 At paragraph 4.1.8, PPW states that:

'The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the well-being of Future Generations Act.'

2.3.8 At paragraph 4.1.12, PPW states that:

'It is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport ahead of private motor vehicles. The transport hierarchy recognises that Ultra Low Emission Vehicles also have an important role to play in the decarbonisation of transport, particularly in rural areas with limited public transport services.'

2.3.9 Finally, at paragraph 4.1.13 PPW states that:

*'The sustainable transport hierarchy [see **Figure 2.1** below] should be used to reduce the need to travel, prevent car-dependent developments in unsustainable locations, and support the delivery of schemes located, designed and supported by infrastructure which prioritises access and movement by active and sustainable transport.'*

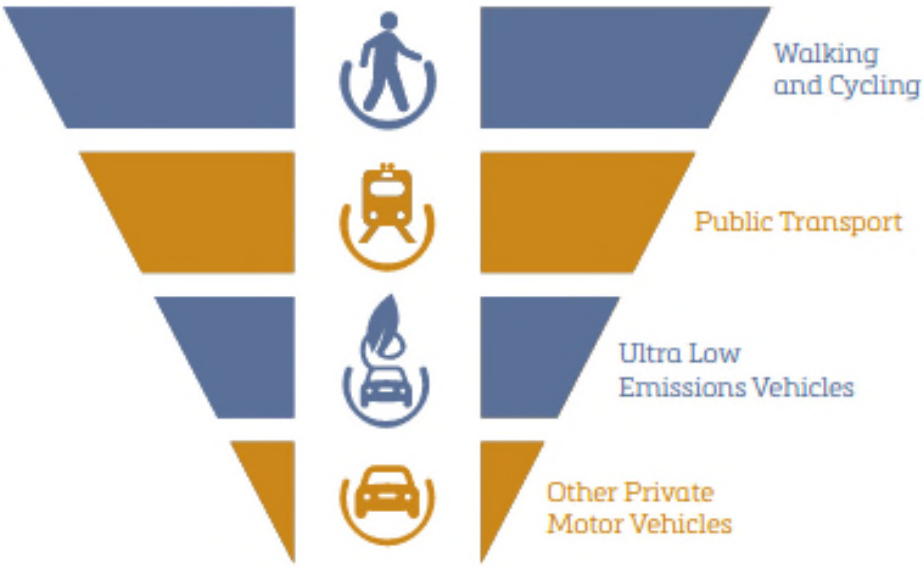

Figure 2.1 The sustainable transport hierarchy for planning

Parking

2.3.10 At paragraph 4.1.50, PPW states that:

> *'Car parking provision is a major influence on how people choose to travel and the pattern of development. Where and how cars are parked can in turn be a major factor in the quality of a place'.*

2.3.11 Paragraph 4.1.51:

> *'A design-led approach to the provision of car parking should be taken, which ensures an appropriate level of car parking is integrated in a way which does not dominate the development'. Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport'. PWW encourages that 'Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed'.*

2.3.12 At paragraph 4.1.53, PPW states that:

> *'Parking standards should be applied flexibly and allow for the provision of lower levels of parking and the creation of high quality places'.*

2.4 One Wales: Connecting the Nation

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

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

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

2.4.3 The policy aims to promote active travel (walking and cycling) for short journeys to promote healthy lifestyle. In addition to active travel, the use of public transport is also promoted.

2.5 Technical Advice Note 18: Transport

2.5.1 Technical Advice Note (TAN) 18 identifies that Planning Policy Wales and the Wales Transport Strategy both aim to secure the provision of transport infrastructure and services, which improve accessibility, build a stronger economy, improve road safety and foster more sustainable communities.

2.5.2 To achieve this and the core objectives, the following initiatives relevant to the proposed development are:

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

2.6 Welsh Government's announcement

2.6.1 In September 2020, the Welsh Government announced that its long-term ambition is to see 30% of Welsh workers working from home or near to home, including after the threat of Covid-19 lessens. It states that working from home would provide the choice to work in a way, which benefits productivity and work-life balance, whilst reducing road congestion, pollution and the use of the private car, and potentially drive regeneration and economic activity in communities.

2.6.2 It is considered that this could also drive more innovative housing design as well as community-based remote working hubs, within easy walk or cycle distance.

2.7 Wales Active Travel Act 2013

2.7.1 The Active Travel Act (2013) encourages local authorities to promote active travel, such as walking and cycling, and to improve active travel routes in regard to the needs of walkers and cyclists. The Act also encourages local authorities to improve the highway to enhance the provision for cyclists and pedestrians.

2.7.2 The Active Travel Act makes provision for:

- Approved maps of existing active travel routes and related facilities in the local authority's area;
- Approved integrated network maps of the new and improved active travel routes and related facilities needed to create integrated networks of active travel routes and related facilities in a local authority's area;
- Requiring local authorities to have regard to integrated network maps in preparing transport policies and to ensure that there are new and improved active travel routes and related facilities;
- Requiring the Welsh Ministers to report on active travel in Wales;
- Requiring the Welsh Ministers and local authorities, in the performance of functions under the Highways Act 1980, to take reasonable steps to enhance the provision made for walkers and cyclists and to have regard to the needs of walkers and cyclists in the exercise of certain other functions; and,
- Requiring the Welsh Ministers and local authorities to exercise their functions under the Act so as to promote active travel journeys and secure new and improved active travel routes and related facilities.

2.8 Bridgend County Borough Local Development Plan 2018-2033.

2.8.1 The Bridgend County Borough Local Development Plan 2018-2033 was adopted in March 2024 and forms the statutory development plan for the Council.

2.8.2 The Plan aims to provide a clear framework to address key planning issues in the County including transport measures and infrastructure. It states that:

'The Strategic Objectives have been defined to reflect identified key issues, align with national policy and ensure an appropriate balance between the different elements of sustainability. They are cross-cutting in their nature and also cross-reference the goals and objectives of the Wellbeing of Future Generations (Wales) Act 2015 and Bridgend Local Well-being Plan (LWBP). Acting together, the Vision and Strategic Objectives provide an overarching framework to underpin all other components of the Replacement LDP. Reflecting their importance, the Strategic Objectives have been subject to iterative testing and refinement through the SA process in tandem with preparing the LDP. Whilst necessarily high level, the resulting Strategic Objectives provide good coverage of all key sustainability issues which the Replacement LDP needs to address. The relevant Transport policies are summarised below.'

Policy SP3: Good Design and Sustainable Placemaking

'All development must contribute to creating high quality, attractive, sustainable places that support active and healthy lives and enhance the community in which they are located, whilst having full regard to the natural, historic and built environment, by:

1) *Demonstrating alignment with the principles of Good Design; and,*
2) *Demonstrating a Sustainable Placemaking approach to their siting, design, construction and operation.'*

Policy SP4 4: Mitigating the Impact of Climate Change

'All development proposals must make a positive contribution towards tackling the cause of, and adapting to, the impacts of Climate Change. Means of achieving this may include:

1) *Having a location and layout which reflects sustainable transport and access principles, thereby reducing the overall need to travel (active travel);*
2) *Having low/zero carbon energy requirements by reducing energy demand, and promoting energy efficiency;*
3) *Utilising low carbon, local materials and supplies (adopting circular economy principles);*
4) *Encouraging the development of renewable and low/zero carbon energy generation;*
5) *Having a design, layout and landscaping which: (i) helps wildlife and habitats to adapt to the changing climate; (ii) assists cooling of the urban environment, including the use of passive building techniques where appropriate;*
6) *Using resources more effectively, including averting waste generated from demolition and minimising waste water use and pollution;*
7) *Directing development away from flood risk areas, and avoiding development that increases the risk of flood and coastal erosion, including through the deployment of sustainable urban drainage systems where relevant.*

All applications for development proposals must clearly demonstrate how they contribute to climate change mitigation and adaption.'

Policy SP5: Sustainable Transport and Accessibility

'Development must be located and designed in a way that minimises the need to travel, reduces dependency on the private car and enables sustainable access to employment, education, local services and community facilities. Development must also be supported by appropriate transport measures and infrastructure, and depending on the nature, scale and siting of the proposal will be required to:

1) *Accord with the sustainable transport hierarchy for planning;*
2) *Be designed to provide safe and efficient access to the transport network, which includes the active travel, public transport and street networks;*
3) *Safeguard, enhance and expand the active travel networks identified in the Council's Existing Routes Map and ATNM, including links to those networks as a means of improving connectivity;*
4) *Prioritising the delivery of the key transport measures and schemes identified in the Bridgend Local Transport Plan, which must be delivered in an efficient and timely manner in accordance with land use development. This includes resolving localised junction capacity issues where they restrain growth;*
5) *Reduce reliance on private car use by maximising the potential of movement to/from the development by public transport, including for the urban area ensuring developments are served by walking routes to public transport networks;*
6) *Adopt a placemaking approach in the identification, design and delivery of all transport measures in order to maximise their contribution to sustainable development;*
7) *Provide new transport infrastructure and improvement measures to mitigate the impact of the development and demonstrate the level and acceptability of impacts on the surrounding road network;*
8) *Help reduce transport related airborne pollution by enabling more sustainable travel*

9) *Ensure that developments are served by appropriate parking provision, in accordance with the Council's parking guidance, including infrastructure which caters for future technological developments such as electric vehicle charging points, and circulation areas, including adequate road widths to all access for service vehicles.*

Development that would have a negative impact on the safe and efficient operation of the transport network will not be permitted.'

Policy SP6: Sustainable Housing Strategy

'The plan makes provision for The plan makes provision for 8,628 homes to promote the creation and enhancement of sustainable communities and meet the housing requirement of 7,575 homes for the Plan period, of which, 1,711 of these homes will be affordable. Development will be distributed in accordance with Strategic Policy SP1, based on the Sustainable Housing Strategy that will:

1) *Prioritise the re-use of previously developed (Brownfield) land;*
2) *Enable delivery of Strategic Sites, including Regeneration Sites within existing settlement boundaries and Sustainable Urban Extensions (SUEs) on the edge of established settlements;*
3) *Enable Edge of Settlement Sites within, and on the edge of, established settlements;*
4) *Support windfall residential development at appropriate sites within the settlement, focussing on the re-use of previously developed land; LDP Objectives Future Wales SOBJ: 1, 2 OBJ: 2c*
5) *Enable exception sites within or adjoining settlement boundaries to deliver affordable housing and homes that provide for an identified local need; and*
6) *Support use of Place Plans to identify small, local development sites that reflect local distinctiveness and address local, specific community scale issues and promote self and custom build opportunities'*

Policy PLA12: Active Travel

'Development must maximise walking and cycling access by prioritising the provision within the site, and providing or making financial contributions towards the delivery offsite, of the following measures as appropriate:

1) *Permeable, legible, direct, convenient, attractive and safe walking and cycling routes that connect the proposed development to surrounding settlements, public transport nodes, community facilities, tourism facilities and destinations and leisure opportunities;*
2) *Delivery of proposals identified within the Council's Active Travel Network Map;*
3) *Improvements, connections and/or extensions to routes and proposals identified on the Existing Routes Map and Active Travel Network Map, the National Cycle Network, existing Public Rights of Way, existing and proposed Safe Routes to School and routes forming part of the green infrastructure network;*
4) *The delivery of infrastructure designed in accordance with the Welsh Government's Active Travel Act Design Standards, or its replacement , and any appropriate supporting standards; and,*
5) *Facilities that encourage the uptake of walking and cycling, including but not limited to: appropriate signage, secure and convenient cycle parking, seating, on-street cycle maintenance facilities and changing and shower facilities.'*

Policy SP10: Infrastructure

'All development proposals must be supported by sufficient existing or new infrastructure. In order to mitigate likely adverse impacts and/or to integrate a development proposal with its surroundings reasonable infrastructure provision or financial contributions to infrastructure must be provided by developers where necessary. This will be secured by means or planning agreements/obligations where appropriate. The requirements for such agreements will include consideration of the appropriate provisions for:

1) *Affordable housing;*
2) *Economic infrastructure such as telecommunication/broadband infrastructure;*
3) *Utilities;*
4) *Educational facilities and/or their upgrades;*
5) *Green infrastructure and outdoor recreation;*
6) *Renewable energy and low carbon technologies;*
7) *Transportation infrastructure such as improvements to the highway network, including walking and cycling routes (Active Travel) and public transport;*
8) *Protection, enhancement and management of the natural, historic and built environment;*
9) *Community facilities, health facilities and/or their upgrades*
10) *Waste management and recycling facilities;*
11) *Initiatives to manage and mitigate the impact of climate change;*
12) *Improvements to the public realm; and,*
13) *Welsh Language.*

Infrastructure providers will be consulted on relevant planning applications.'

Policy SP12:

2.8.3 Promotes the Town, District and Local Centres as hubs of socio-economic activity and the focal points for a diverse range of services which support the needs of the communities they serve. They act as the most appropriate and sustainable locations for new retail, leisure and supporting commercial development.

Policy ENT15: Waste Movement in New Development

'All proposals for new built development must include provision for the proper design, location, storage and management of waste generated by the development both during construction and operation of the site. Development must incorporate, as appropriate, adequate and effective provision for the storage, recycling and other sustainable management of waste, and allow for appropriate access arrangements for recycling and refuse collection vehicles and personnel.'

2.9 Bridgend Local Transport Plan (2015 – 2030)

2.9.1 The Bridgend Local Transport Plan 2015-2030 was adopted in September 2015 and operates in line with guidance provided by the Welsh Government by creating a framework for identifying local transport schemes for improvement.

2.9.2 The LTP aims to integrate Bridgend with the South Wales Metro project which plans to improve rail and bus services across the South Wales region as well as creating an integrated ticketing/smart card system.

2.9.3 The LTP notes that Bridgend is included in the Wales Spatial Plan (WSP) for South-East Wales as part of the 'Networked City Region' which includes Swansea, Cardiff and Newport as well as surrounding towns. This operates in conjunction with the Wales Transport Strategy which aims to:

- Reduce greenhouse gas emissions and other environmental impacts;
- Integrate local transport;
- Improve access between key settlements and sites;
- Enhance international connectivity; and,
- Increase safety and security.

2.10 Summary

2.10.1 It is considered that the proposed development is in accordance with he relevant national, regional and local policies, as the development:

- Is allocated in the replacement Local Development Plan – site COM1(1);
- Provides essential affordable dwellings;
- Provides improvements to Active Travel both within the and surrounding the site, promoting both walking and cycling;
- Provides levels of car parking provision to accommodate essential residential parking demand without encouraging excess car ownership;
- Provides essential infrastructure improvements, without over-providing capacity; and,
- Promotes the use of Ultra Low Emissions vehicles by incorporating EV charging infrastructure.

3 Existing situation and accessibility

3.1 Site location

3.1.1 This section of the report describes the existing transport network within the vicinity of the site, detailing the accessibility by walking, cycling, public transport and the local highway network.

3.1.2 The site is located approximately 2km to the west of Bridgend town centre as is bounded by:

- The A48 Bypass Road to the north;
- Open land to the west;
- New Inn Road to the south; and,
- The River Ogwr to the east

3.1.3 The location of the development site together with the local highway network is shown in Figure 3.1 below.

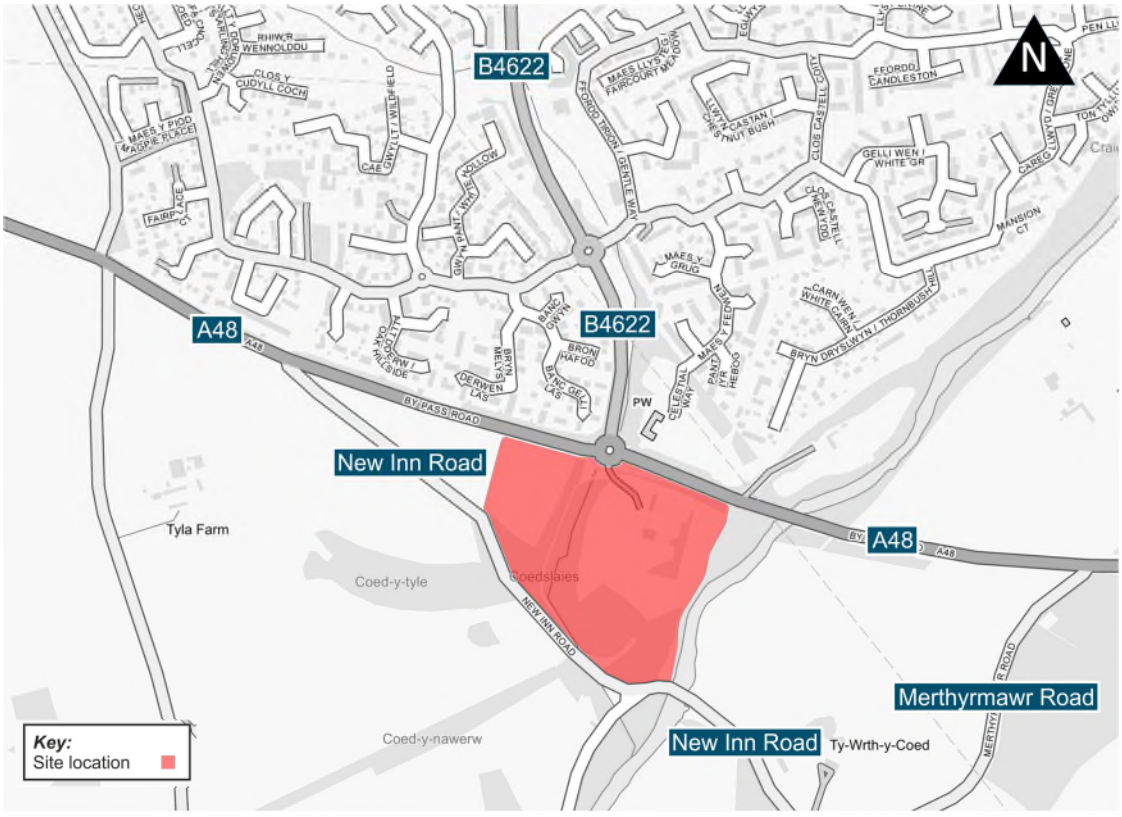

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Figure 3.1 Local highway network

3.2 Travel characteristics

3.2.1 Travel to Work data from the 2011 Census has been used to establish the mode of travel to work for existing residents in the area[1].

3.2.2 The census data is divided into output areas, Lower Super Output Areas (LSOA) and Middle Super Output Areas (MSOA). LSOAs are geographical areas built from contiguous output areas, which are consistent in population size. Between four to six output areas make up LSOAs and between four to six LSOAs make up MSOAs.

3.2.3 Table 3.1 below shows the travel to work mode split for the Lower Super Output Area (LSOA Bridgend 017G), the Middle Super Output Area (MSOA 017) and Bridgend as a whole. It should be noted that although the site technically falls into MSOA Bridgend 013, the rural nature of this area means that the travel characteristics of MSOA Bridgend 017 will more accurately represent those of the proposed development. In addition, this data excludes those that work from home and those not in employment.

Table 3.1 Mode split for journey to work

	Mode split (%)		
	LSOA (017G)	**MSOA (017)**	**Bridgend**
Train	3	3	2
Bus, minibus or coach	1	1	3
Taxi	0	0	1
Motorbike	1	0	1
Driving a car or van	86	81	75
Passenger in a car or van	5	6	7
Bicycle	0	1	1
On foot	4	7	9
Other	0	1	1
Total		**100**	

3.2.4 It should be noted that Census Travel to Work data differs from the trip generation survey data, as the survey data records vehicle journeys for all purposes, not just work related.

3.2.5 It can be seen from the table above that:

- 86% of existing residents that live within the lower super output area, adjacent to where the site is located, travel to work by car (as driver), with a further 5% travelling as a passenger;
- Only 4% of residents travel to work by public transport (3% by rail and only 1% by bus), which reflects the lack of public transport (and in particular bus) within the LSOA; and,

[1] It should be noted that whilst 2021 Census 'Method of Travel to Work' data is available, the Office for National Statistics (ONS) has issued a warning that care should be taken when interpreting the results. This is because the 2021 Census was undertaken during the Covid-19 pandemic, when a large proportion of population worked from home and people were discouraged from using public transport.

- Only 4% of residents travel to work by active travel modes (walking), albeit no residents within the LSOA use a bicycle to access their places of work.

3.2.6 It should be noted that based on 2011 Census data, approximately 64% of those living on the MSOA adjacent to the site drive to work within Bridgend with a further 14% driving to work in Cardiff, 6% to Neath Port Talbot, 6% to the Vale of Glamorgan, 55 to Rhondda Cynon Taff and 3% drive to Swansea.

3.2.7 Of those that drive to work, approximately 64% work within 8km of the site, which is an easy cycle distance, with an approximate cycle journey time of 22 minutes. This includes areas such as Bridgend town centre and industrial estate, Porthcawl, Brackla Industrial Estate and Princess of Wales Hospital. Based on this data and given that such a large proportion of people live and work nearby, it is considered that there is significant scope to encourage the use of more sustainable modes and in particular active travel modes (i.e. walking and cycling).

3.3 Car ownership

3.3.1 Car ownership data from the 2011 and 2021 Census has been used to establish the local car ownership rate for existing residents. Car ownership for the Lower Super Output Area (LSOA 017G), Middle Super Output Area (MSOA 017) and Bridgend has been established and is presented in Table 3.2 below.

Table 3.2 Car and van availability

Census year	LSOA 017G	MSOA 017	Bridgend
2011	1.77	1.47	1.22
2021	1.73	1.51	1.32
% difference	**-2%**	**+3%**	**+8%**

3.3.2 It can be seen from the table above that the car and van availability in the LSOA has seen a slight reduction from 1.77 in 2011 to 1.73 cars and vans per household in 2021 whereas, in contrast, car ownership has increased across both the MSOA and Bridgend from 1.47 to 1.51 and 1.22 to 1.32 cars and vans per household respectively.

3.3.3 However, it should be noted that, based on 2021 Census, in the LSOA (adjacent to which the site is located) only 2% of properties are affordable (socially rented/shared ownership), compared to the proposed development where 20% of properties will be affordable. Given that the proportion of affordable dwellings on site is greater than the surrounding area, it is likely that car ownership of future residents will be lower than that of existing residents.

3.4 Connectivity

Walking

3.4.1 The development site is located within Bridgend approximately 2.5km walking distance from Bridgend town centre. The main accesses into the development site will be provided via the A48 to the north, with additional pedestrian links to New Inn Road to the south and the Public Right of Way (PRoW) to the east of the site following the River Ogwr. These will provide connections to public transport facilities, local amenities and services within the vicinity of the site, as well as a significant area of retail and employment uses within Bridgend.

3.4.2 There are footways provided on both sides of the A48 with the footway on the north side of the carriageway extending approximately 250m east of the site access, where it connects to a PRoW (that runs along the eastern boundary of the site and provides access to Bridgend Town Centre). The footway on the southern side of the carriageway continues eastwards and connects to the strategic allocation (SP2(2) – Island Farm), as well as residential, employment and commercial areas to the south of Bridgend and, to the west of the site, the footway continues along the A48 towards New Inn Road and the A473.

3.4.3 There are informal pedestrian crossings featuring dropped kerbs and tactile paving at each entry and exit arm to the A48/B4622 roundabout. There is also an informal crossing across the A48 linking the PRoW to the north and south of the carriageway.

3.4.4 There are no formal pedestrian crossing points within the vicinity of the site.

Access to facilities

3.4.5 The Chartered Institution of Highways and Transportation (CIHT) guidelines 'Providing for Journeys on Foot' indicates that the desirable walking distance for commuting and school journeys is 500m, the acceptable walking distance is 1km and 2km is the preferred maximum.

3.4.6 The CIHT guidelines indicate that the desirable walking distance for 'Elsewhere', including local amenities, is 400m, the acceptable walking distance is 800m and 1.2km is the preferred maximum.

3.4.7 In addition, the concept of 20-minute neighbourhoods, is about 'living locally' and giving people the ability to access most of their needs within a 20-minute walk or cycle from their home, with safe access to cycling and local public transport options.

3.4.8 Creating 20-minute neighbourhoods means that walking, cycling and public transport journeys will be preferred as the routes will be more direct to these facilities. In addition, creating 20-minute neighbourhoods would reduce traffic and provide safer environments for people and children and also create social, health and environmental benefits.

3.4.9 The location of facilities and amenities within a 20-minute walk and cycle distance of the site are shown in Figure 3.2 below, which includes:

- Primary School - 750m to the north;
- Green space - provided as part of the development;
- Dentist - 650m to the north;
- Pharmacy - 650m to the north;
- Places of worship - 800m to the north;
- Post Office - 1.3km to the north;
- Local centre - 650m to the north:
- Supermarket - 650m to the north:
- Public House - 650m to the north;
- Restaurant/cafes/takeaways - 650m to the north;
- Retail - 650m to the north;
- Gym - 1.5km to the north-east;
- Existing Active Travel Route to the north, adjacent to the site along the A48; and,
- Electric vehicle charging point - 650m to the north

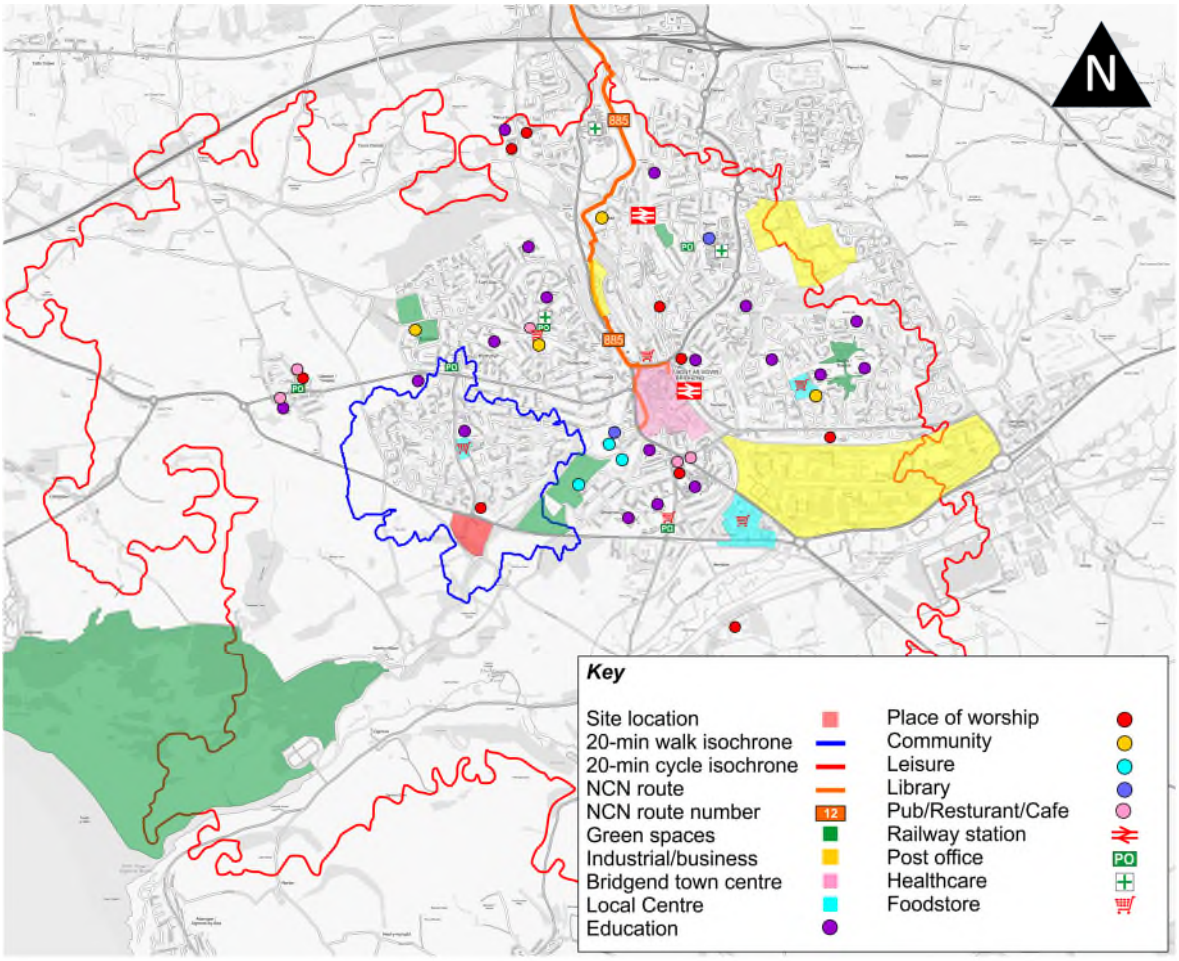

Figure 3.2 Location of facilities within a 20-minute walk or 15-minute cycle of the site

3.4.10 It can be seen from the above that the site is located within an easy walk distance of a local centre approximately 650m to the north of the centre of the site where some local facilities are located including a Post Office, food stores and a restaurant. Within a 20-minute cycle journey, there are additional facilities located in Bridgend town centre, including retail opportunities, a railway station, local cafes/restaurants, pubs and industrial and employment areas

Public Rights of Way (PRoW)

3.4.11 In addition to existing footways, there are a number of PRoWs provided within the vicinity of the site, which can be used for recreational purposes. The PRoW network is shown in Figure 3.3 over the page. The closest PRoW to the site runs along the eastern boundary of the site, connecting to Bridgend town centre to the north.

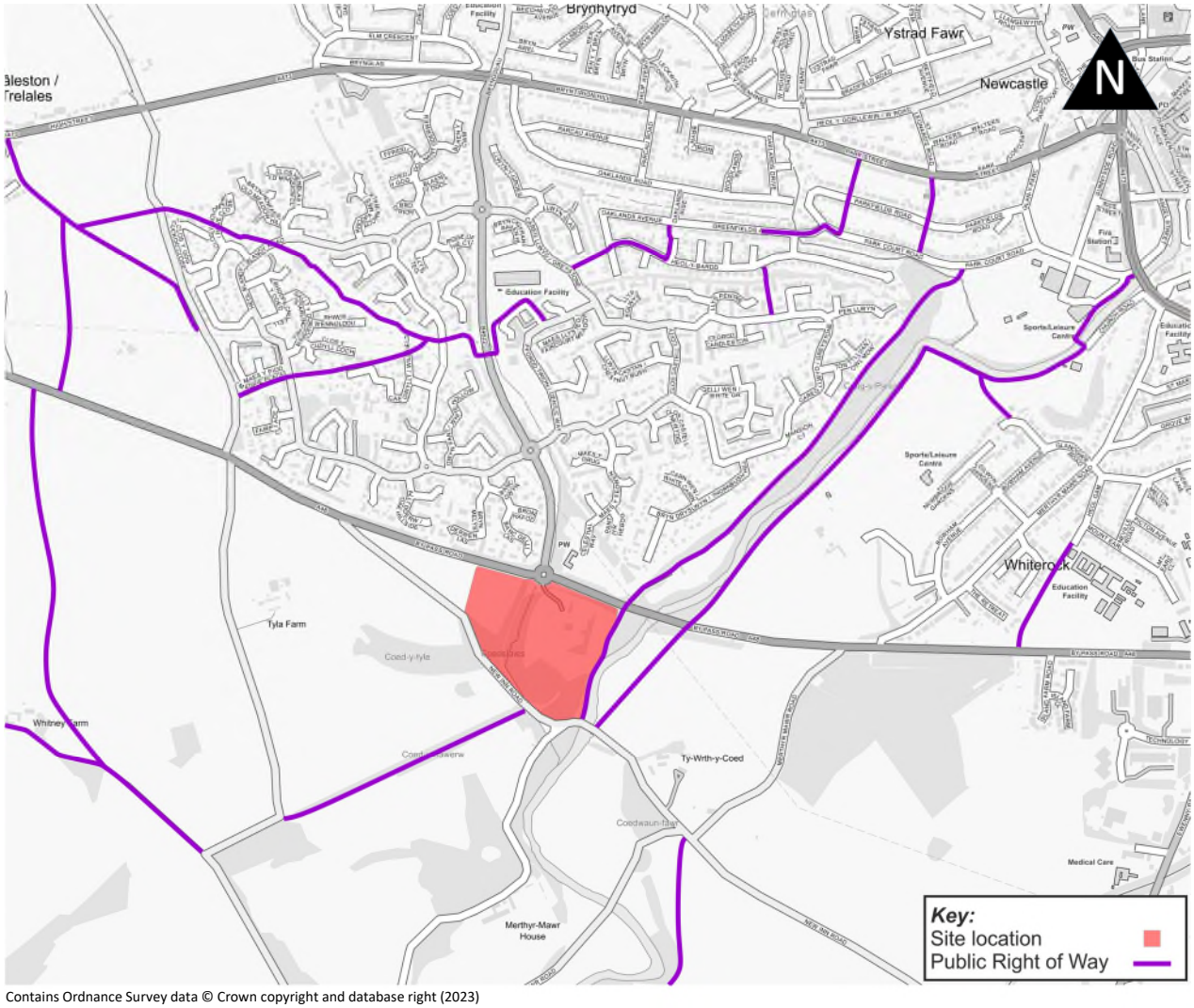

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Figure 3.3 Public Rights of Way in the vicinity

Cycling

3.4.12 Local cycle routes within close proximity of the site are shown in Figure 3.4 below.

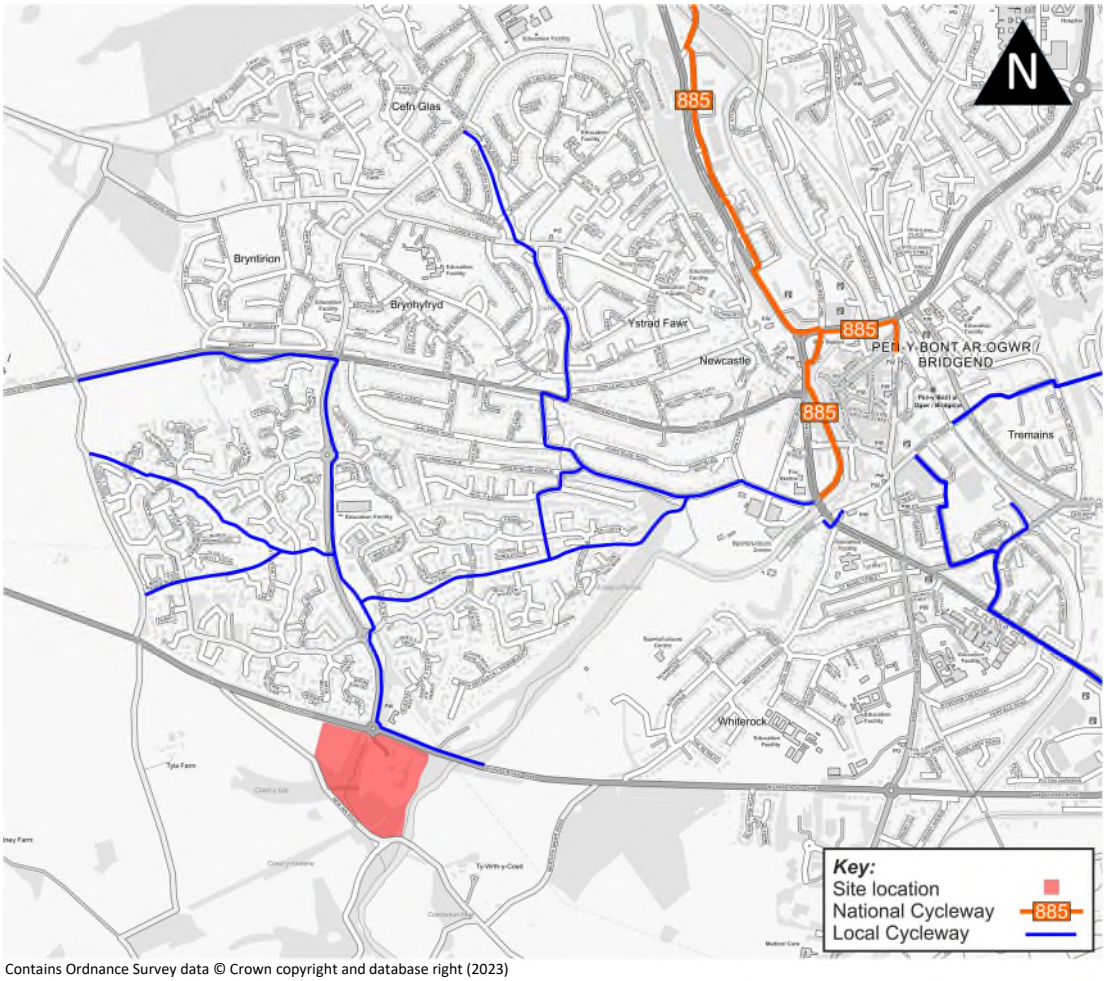

Figure 3.4 Cycle routes

3.4.13 The nearest National Cycle Network (NCN) route – Route 885 is located approximately 2km to the east of the site. This route is a combination of traffic-free and on-road links and locally connects Bridgend Town Centre with Sarn to the north. Beyond Sarn, the route continues to Croeserw to the north although is disconnected between Sarn and Maesteg.

3.4.14 The closest cycle route to the site runs along the northern edge of the A48, before continuing north along the eastern side of the B4622 and continuing along the southern side of the A473 to the west. The route is a predominantly off-road/traffic free and connects with two routes that run through the Broadlands Estate to the north.

Bus services

3.4.15 The nearest bus stop is located along the A473, approximately 1.5km to the north of the site. The location of the nearest bus stops to the site, together with bus routes that call at these stops is shown in Figure 3.5 and the frequency of services that call at these stops detailed in Table 3.2 below.

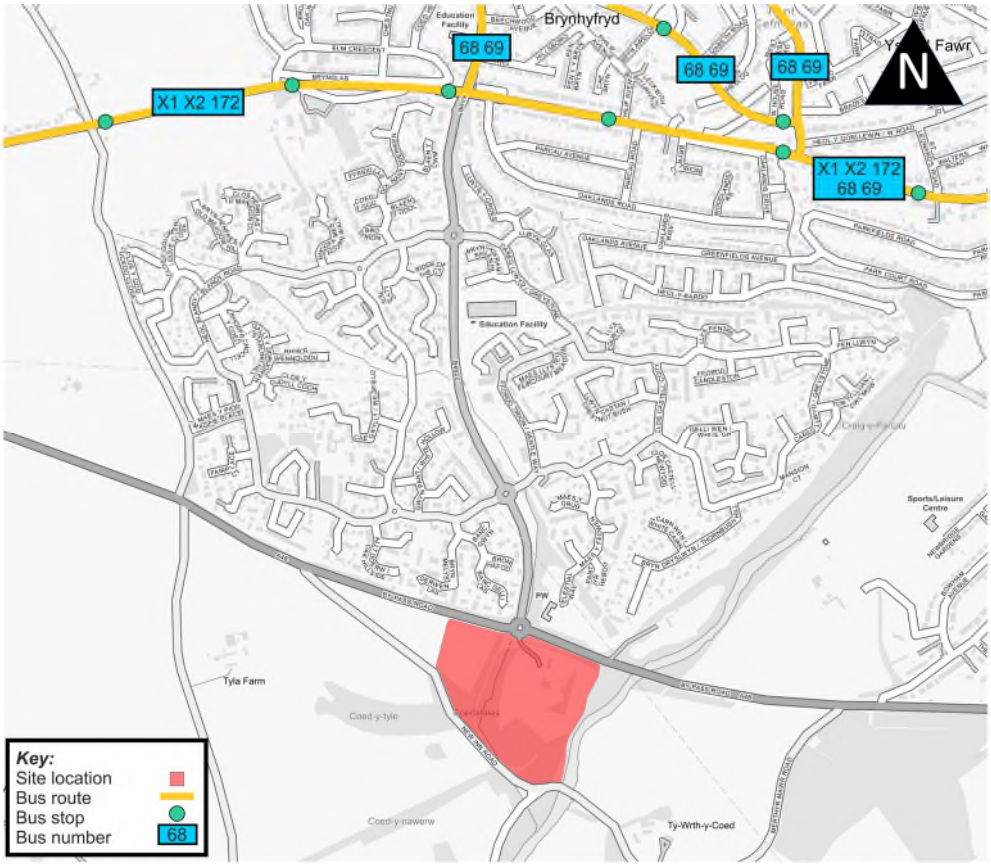

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Figure 3.5 Local public transport infrastructure

Table 3.2 Summary of bus services

Route No.	Distance to the site (km)	Route	Weekday frequency
A473			
X1	1.5	Swansea – Bridgend via Briton Ferry, Port Talbot, Margam and Pyle	1 per hour
X2	1.5	Porthcawl – Cardiff via Laleston, Bridgend, Cowbridge, Bonvilston and Culverhouse Cross	2 per hour
172	1.5	Bridgend – Merthyr Tydfil via Ynysawdre, Tonyrefail, Tonypandy, Maerdy and Aberdare	1 per hour

Rail services

3.4.16 The closest train station to the site is Bridgend, which is located 2.7km to the west of the proposed development. The station is on the South Wales Mainline and is operated by Transport for Wales with services from Transport for Wales and GWR. The daytime, weekday service pattern is as follows:

- Maesteg – 1 service per hour
- Ebbw Vale Town – 1 service per hour
- Cardiff Central – 5 services per hour
- Rhymney via Barry and Cardiff Central – 1 service per hour
- London Paddington – 1 service per hour
- Manchester Piccadilly – 1 service every 2 hours
- Swansea – 3/4 services per hour
- Carmarthen – 2 services per hour
- Milford Haven – 1 service every 2 hours
- Pembroke Dock – 1 service every 2 hours
- Fishguard Harbour – 3 services per day

3.4.17 Facilities available at Bridgend station are as follows:

- Ticket office and ticket machines, including accessible variants
- Step free access to all platforms
- Ramps for train access
- Toilets, including accessible
- Impaired mobility set down/pick up
- 99 space car park with 5 accessible spaces
- Shops and refreshment facilities
- 30 sheltered cycle parking spaces in the form of Sheffield Stands

3.5 Local highway network

3.5.1 A description of the local highway network is outlined in Table 3.3 below.

Table 3.3 Local highway network

	Description
A48 Bypass Road	
Description	Wide, single carriageway district distributor road with limited accesses. There are footways provided along the northern side of the carriageway to the east of the Broadlands Roundabout, and along the southern side of the carriageway to the west and east of the Broadlands Roundabout.
Width	Varies along its length, generally 10m in the vicinity of the site
Speed limit	50mph
Street lighting	Along its length within the vicinity of the site.

Crossing facilities	Dropped kerbs and tactile paving provided at the Broadlands Roundabout, and an informal crossing adjacent to the eastern boundary of the site.
Bus route	No
Character	Within the vicinity of the site and heading westwards, the road is rural in character, with no direct frontages. As the road heads east it becomes more urban, with residential properties (with direct frontage access) as well as commercial /employment uses.
On-street parking	There is no on-street parking in the vicinity of the site, however, there is a layby on the northern edge of the carriageway, west of Broadlands Roundabout.
B4622	
Description	Single carriageway local distributor road, connecting the A48 in the south with the A473 to the north. The road provides the main vehicular access to the Broadlands Estate. There is a footway on the western side of the carriageway (that runs between the A48 and the Careg Llwyd roundabout only) and a combined cycleway/footway on the eastern side of the carriageway (along the entire length of the road).
Width	Generally 7.5m wide
Speed limit	30mph
Street lighting	Along its length.
Crossing facilities	Dropped kerbs and tactile paving provided at all roundabouts, and a formalised (pedestrian phase) at the B4622/A473/Bryngolau signal-controlled junction at the northern end of the road.
Bus route	It is no longer an active bus route, albeit there is a northbound and southbound bus stop (on either side of the carriageway) north of the Careg Llwyd roundabout, with bus layby and passenger waiting facilities within each stop.
Character	The road is inter-urban in nature, with no frontage development along its length.
On-street parking	No parking

3.6 Collision analysis

3.6.1 Personal injury collision data has been obtained for the period 2019 to 2023 (inclusive) for the study area. The study area, which includes key routes and junctions surrounding the site, together with the location and severity of collisions that occurred within it, is shown in Figure 3.6 below and summarised in Table 3.4.

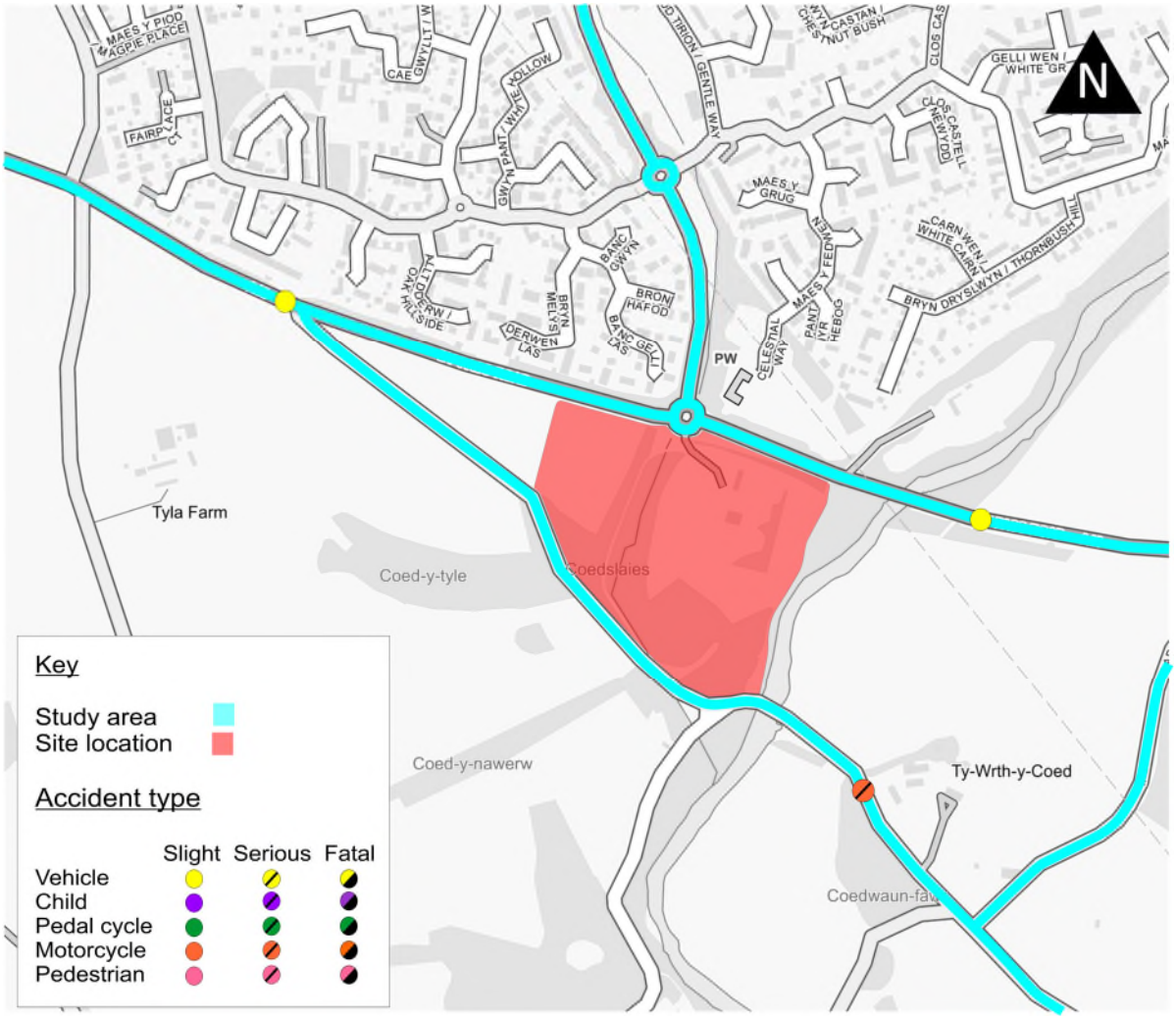


Figure 3.6 Personal injury collision data

Table 3.4 Summary of collisions

Year	Personal injury			No. of casualties	Collisions involving vulnerable users			
	Fatal	Serious	Slight		Cyclist	Child	M/cyclist	Pedestrian
2019	0	0	1	3	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	1	2	0	0	0	0
2022	0	1	0	1	0	0	1	0
2023	0	0	0	0	0	0	0	0
Total	**0**	**1**	**2**	**6**	**0**	**0**	**1**	**0**

3.6.2 It can be seen from the figure above that a total of three collisions (two slight and one serious) occurred within the study area over the most recent five-year period (2019-2023), resulting in a total of six casualties. Out of a total of three collisions, one involved a vulnerable road user (motorcyclist) and occurred on New Inn Road to the south-east of the site.

3.6.3 There are no collision clusters within the surrounding highway network, that would require further investigation or indicate a serious road safety concern, and it is considered that the proposed development will have a minimal impact on the road safety in the vicinity of the site.

4 Development proposals

4.1.1 As outlined above, it is proposed to construct 120 dwellings on the site, with 75 dwellings on the larger (eastern) portion of the site and the remaining 45 dwellings on the smaller (western) portion.

4.1.2 The mix of units on site comprises:

- 24 affordable dwellings
  - 14 No. 1-bed flats
  - Five No. 2-bed dwellings
  - Four No. 3-bed dwellings
  - One No. 4-bed dwelling
- 96 private/open sales dwellings
  - 29 No. 3-bed dwellings
  - 60 No. 4-bed dwellings
  - 7 No. 5-bed dwellings

4.1.3 In addition, the proposed development includes:

- Car parking in accordance with adopted parking standards;
- Cycle parking in accordance (or excess of) the adopted parking standards;
- Improvements to pedestrian and cycle infrastructure in the vicinity of the site;
- Landscaping, formal and informal open space; and,
- Associated infrastructure.

4.1.4 The proposed development is shown in **Figure 4.**1 over the page.

Figure 4.1 Development concept plan

4.2 Access

4.2.1 As part of the re-development of the site, it is proposed to provide:

- Upgrades to the existing access to the site onto the A48 Bypass Road/B4622 Broadlands roundabout to accommodate the range of vehicles likely to access the site;
- An internal connection, across the ancient woodland, to link the two portions of the site;
- A formal crossing across the A48 (at the eastern boundary of the site) that links the Public Right of Way either side of the A48;
- A shared cycleway/footway along the southern edge of the A48 (to link the vehicle access to the proposed signal-controlled crossing); and,
- Upgrades to the informal crossings (dropped kerbs and tactile paving) across all approaches to the roundabout.

4.2.2 The proposed access is shown in **Figure 4.2** below.

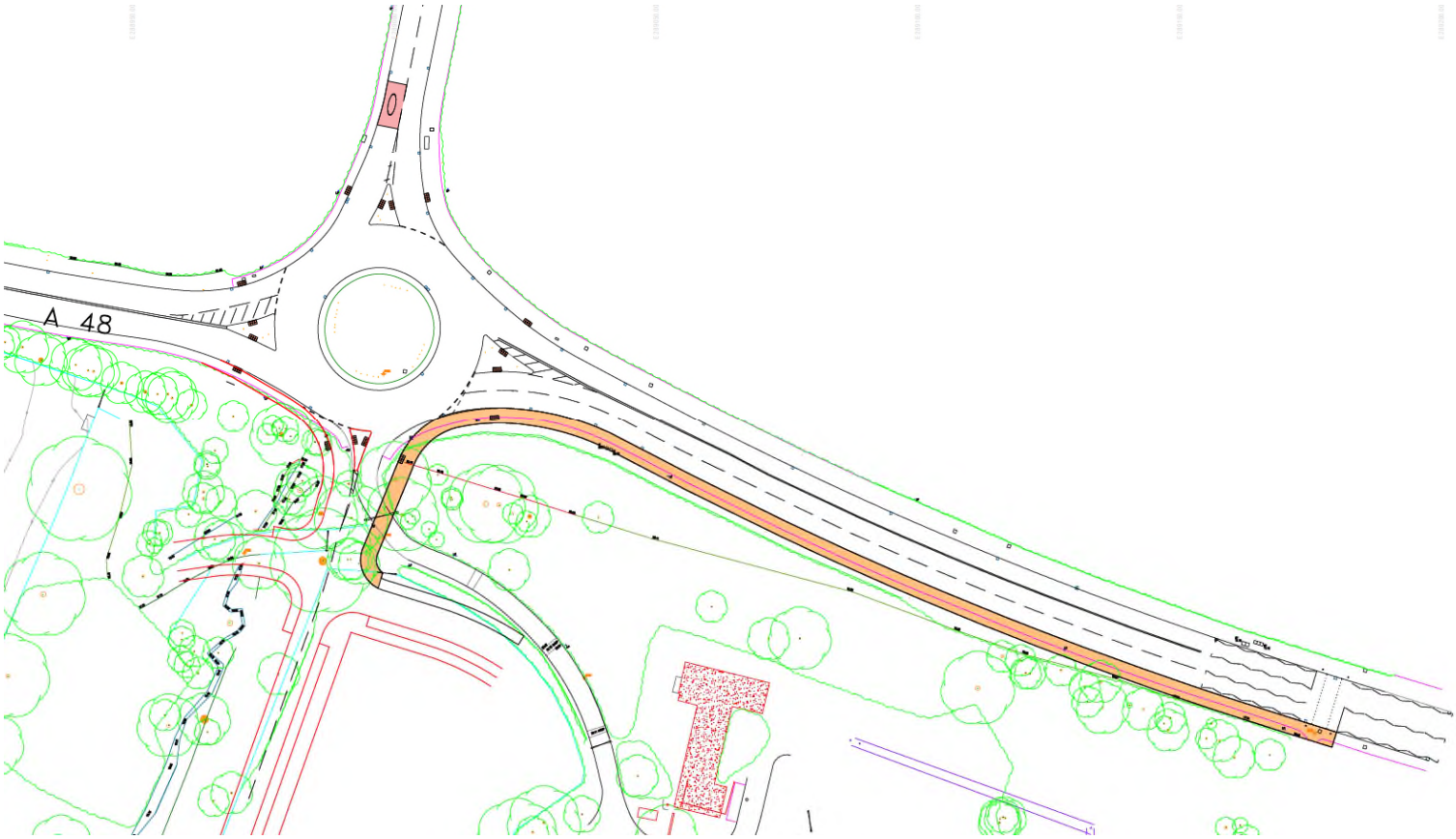


Figure 4.2 Proposed site access from the A48 Bypass Road/B4622 roundabout

4.2.3 It should be noted that the local highway authority has raised an objection to the proposed access strategy, stating:

- The proposed access strategy will prejudice the delivery of the strategic allocations (SP2(2) and SP2(3)) as the existing roundabout is already operating at capacity and does not have sufficient capacity to accommodate the strategic allocations;
- The proposed access strategy will not provide the same level of improvements to active travel to/from the Craig Y Parcau site as the staggered signal-controlled junction arrangements, identified as part of the RLDP process and proposed as off-site mitigation as part of the strategic allocation (SP2(3)); and,
- The existing roundabout is unsafe.

4.2.4 As outlined in section 3.6 above, there have been no recorded collisions resulting in personal injury at the roundabout within the most recent 5-year period (2019-2023). There have been two collisions along the A48 (closest to the site), one occurred approximately 400m east of the roundabout and the other occurred west of the junction with New Inn Road (more than 500m west of the roundabout). It is therefore considered that there is no evidence that the existing roundabout is unsafe.

4.2.5 The impact of the proposed access strategy on active travel is discussed in Section 5, and the impact on the delivery of both strategic allocations is discussed in detail in section 6 below.

4.3 Active Travel

On-site

4.3.1 Streets fulfil a complex variety of functions to meet living and movement needs, and well-designed streets have a crucial role in the delivery of sustainable communities.

4.3.2 As outlined above, the main site accesses into the sites will accommodate pedestrians and cyclists, with footway on the western side and a shared cycle footway on the eastern side.

4.3.3 Other streets within the site will be either shared surface streets or streets with footways on at least one side of the carriageway. It is also anticipated that key streets will be designed as quietways (i.e. low speed/low traffic volume streets that are suitable for cyclists).

4.3.4 The layout also incorporates a pedestrian footpath around the eastern boundary of the site, with a number of accesses to/from the PRoW to the east.

Off-site

4.3.5 As part of the development, it is proposed to provide the following improvements to active travel within the vicinity of the site, including:

- A formal crossing across the A48 (at the eastern boundary of the site) that links the Public Right of Way either side of the A48;
- A shared cycleway/footway along the southern edge of the A48 (to link the vehicle access to the proposed signal-controlled crossing); and,
- Upgrades to the informal crossings (dropped kerbs and tactile paving) across all approaches to the roundabout.

4.4 Car parking

4.4.1 Car parking will be provided in accordance with the Bridgend County Borough Council Parking Standards (SPG17). Bridgend parking standards are defined by four zones, based on distance to commercial centres, as follows:

- Zone 2 – Town Centre (Sub-regional Shopping Centre)
- Zone 3 – Urban (District Shopping Centre)
- Zone 4 – Suburban (Local Shopping Centre)
- Zone 5 – Countryside (All other areas)

4.4.2 The area in which the site is located is classified as 'Zone 4 – Suburban'. Residential parking standards for Zone 4 – Suburban are set out in Table 4.1 over the page.

Table 4.1 Zone 4 parking standards

Dwelling type	Total no. of Dwellings	Standard	Required no. of spaces	Proposed no. of spaces
1-bedroom	14	1 space per dwelling (up to a maximum of 3 spaces)	14	14
2-bedroom	5		10	10
3-bedroom	33		99	66
4-bedroom	61		183	182
5-bedroom	7		21	30
Residents parking provision			327	302
Visitor parking spaces (1 space per 5dwellings)			24	24
Total	**120**		**351**	**326**

4.4.3 In accordance with the adopted parking standards, the proposed development of 120 dwellings will require a maximum of 327 parking spaces (together with an additional 24 visitor parking spaces). As part of the development, it is proposed to provide a total of 326 designated residential parking spaces, which equates to a parking provision (across the site) of 2.72 spaces per dwelling.

4.4.4 It is anticipated that the visitor parking spaces will be accommodated on-street throughout the proposed development, rather than in designated parking spaces. It is also anticipated that, based on the existing car ownership within the vicinity of the site (i.e. 1.77 cars or vans per dwelling), an element of visitor parking can be accommodated on plot.

4.4.5 It is considered that the proposed provision is in accordance with the maximum parking standards, and can be justified for the following reasons:

- The proposed development is within easy walking and cycling distance (as set out in the CIHT Guidelines 'Providing for journeys on Foot') of a range of local facilities and amenities within the Broadlands Estate;
- The proposed development comprises 20% affordable dwellings, which are characterised by lower car ownership rates than private dwellings; and
- The existing car ownership within the vicinity of the site is 1.77 cars or vans per dwelling. The existing car ownership would need to increase by 54% to exceed the proposed parking provision, and as stated in Section 3 above, car ownership within the vicinity of the site decreased by 2% (between 2011 and 2021).

4.4.6 The parking provision for each dwelling is set out in Appendix A.

4.5 Cycle parking

4.5.1 Cycle parking standards in Bridgend are very low. There is no requirement for cycle parking provision for houses or any short-stay visitor spaces.

4.5.2 Therefore, cycle parking will be provided in accordance with the Wales Active Travel Act Guidance (July 2021), with one space per bedroom.

4.5.3 All cycle parking will be provided in secure, convenient and accessible locations, likely at the front of the dwelling to ensure that access to a bicycle is just as convenient as access to the car (as outlined in Cambridge Cycle parking standards). If communal cycle parking is provided, it will be secure, covered and well overlooked.

4.5.4 Visitor cycle parking will be provided throughout the development in form of a wall ring (or similar) or Sheffield stands. Provision of cycle stands immediately adjacent to the carriageway will be carefully considered as there is a risk of cyclists stopping and wheeling bikes into and out of the stand. Stands will not be places in areas where they obstruct the flow of pedestrian traffic or reduce available footway width for pedestrians beyond the recommended minimum.

4.6 Deliveries, emergency vehicle access and refuse collection

4.6.1 The internal street layout of the proposed development site will be designed to accommodate appropriate servicing, emergency (fire) and refuse vehicle access.

4.6.2 It is anticipated that the proposed development could generate up to a maximum of 13 service (delivery and service) vehicle trips per day (6-days/week), as outlined in Section 5. All deliveries will be undertaken from the internal street network, and it is not proposed to provide any dedicated off-street facilities.

4.6.3 It is likely that the maximum size of vehicle that would be reasonably expected to deliver to any residential development will be a 10m rigid vehicle. However, in practice, it is more likely that the maximum size of vehicle will be an 8m rigid vehicle, with transit sized vehicles (5.3m) being much more commonly used.

4.6.4 It is also anticipated that residential refuse generated by the proposed development will be collected by the local authority from the internal street network and bin collection points will be provided in convenient locations where necessary.

5 Analysis of active travel improvements

5.1 Introduction

5.1.1 As outlined above, the proposed access strategy includes:

- Upgrades to the existing access to the site onto the A48 Bypass Road/B4622 Broadlands roundabout to accommodate the range of vehicles likely to access the site;
- Provision of a traffic signal-controlled crossing across the A48 (at the eastern boundary of the site) that links the Public Right of Way either side of the A48;
- Provision of a shared cycleway/footway along the southern edge of the A48 (to link the vehicle access to the proposed signal-controlled crossing); and,
- Upgrades to the informal crossings (dropped kerbs and tactile paving) across all approaches to the roundabout).

5.1.2 However, at the recent pre-app meeting, the highway authority raised concerns that the proposed access strategy does not provide the same level of improvements for active travel between the site and local facilities (particularly the local centre and primary school within the Broadlands estate) as the proposed staggered traffic-signal controlled junction.

5.1.3 The staggered traffic-signal controlled junction, proposed as part of the Parc Llangewydd development is shown in Figure 5.1 over the page, and includes:

- A staggered crossing across the A48 westbound approach to the site access;
- A staggered crossing across the B4622 approach to the junction; and,
- A staggered un-controlled crossing across the A48 adjacent to the eastern boundary of the site.

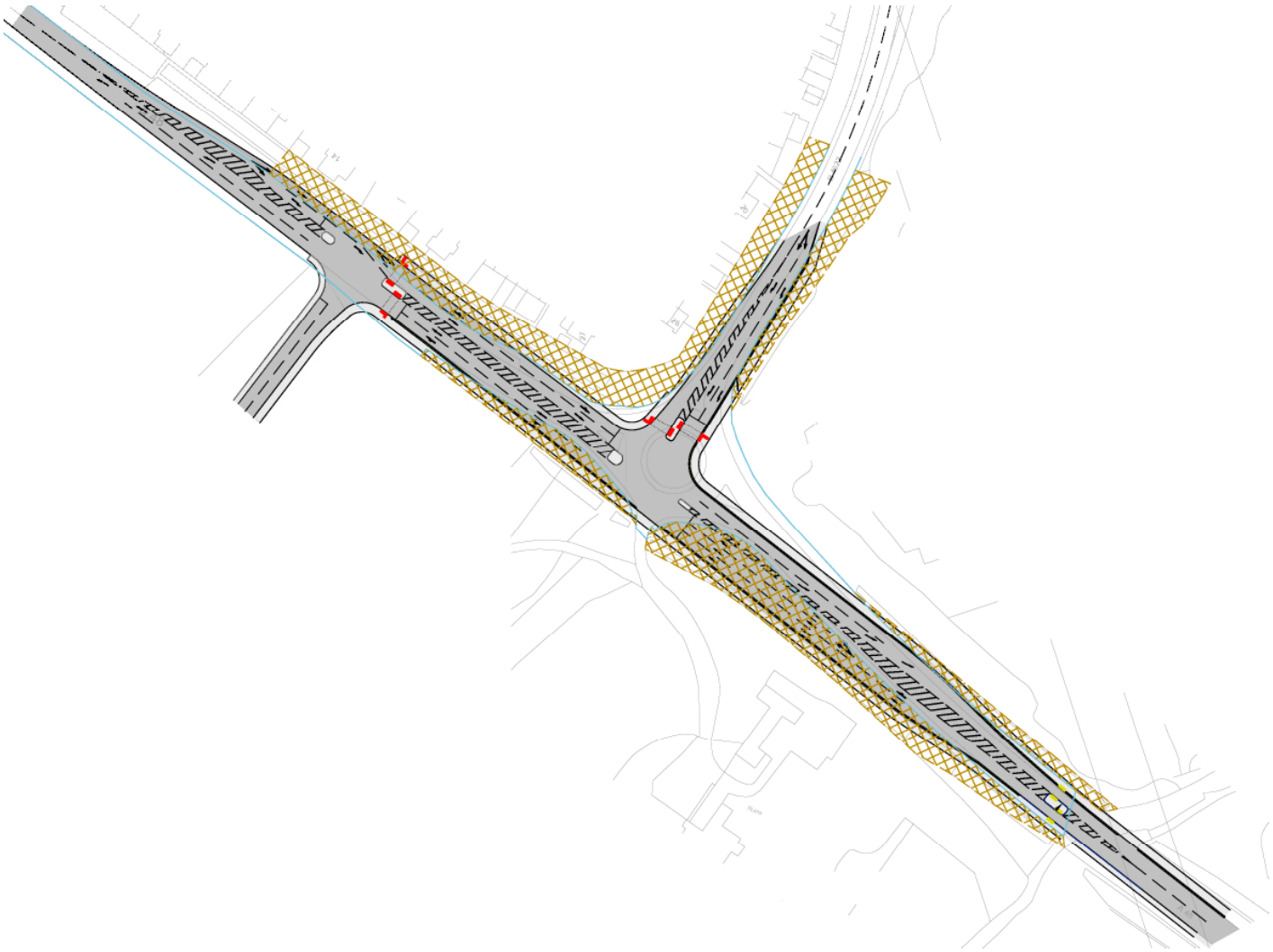


Figure 5.1 Staggered traffic-signal controlled junction, proposed as part of the Parc Llangewydd development

5.2 Walk-distance/journey time

5.2.1 In order to determine the effectiveness of the active travel improvements proposed as part of the Craig Y Parcau development with those proposed as part of the Parc Llangewydd Development, the walk-distance and journey time to a point on the eastern kerbline of the B4622 (approximately 25m north of the A48) has been measured from the following two plots:

- Plot 116 at the south-west corner of the site (the smaller portion of the overall masterplan area); and,
- Plot 75 at the south-east corner of the site (covering the larger portion of the overall masterplan area).

5.2.2 These two dwellings represent the furthest dwellings from the surrounding local facilities and amenities.

5.2.3 The routes are identified in **Figure 5.2** below, and the walk-distance and journey times for both access options are outlined in **Table 5.1** over the page.

5.2.4 The journey time has been calculated by dividing the walk-distance by an average walk speed of 1.4m/s and includes the delays inherent in traffic signal-controlled junctions. The calculation of journey times is shown graphically in **Appendix B**.

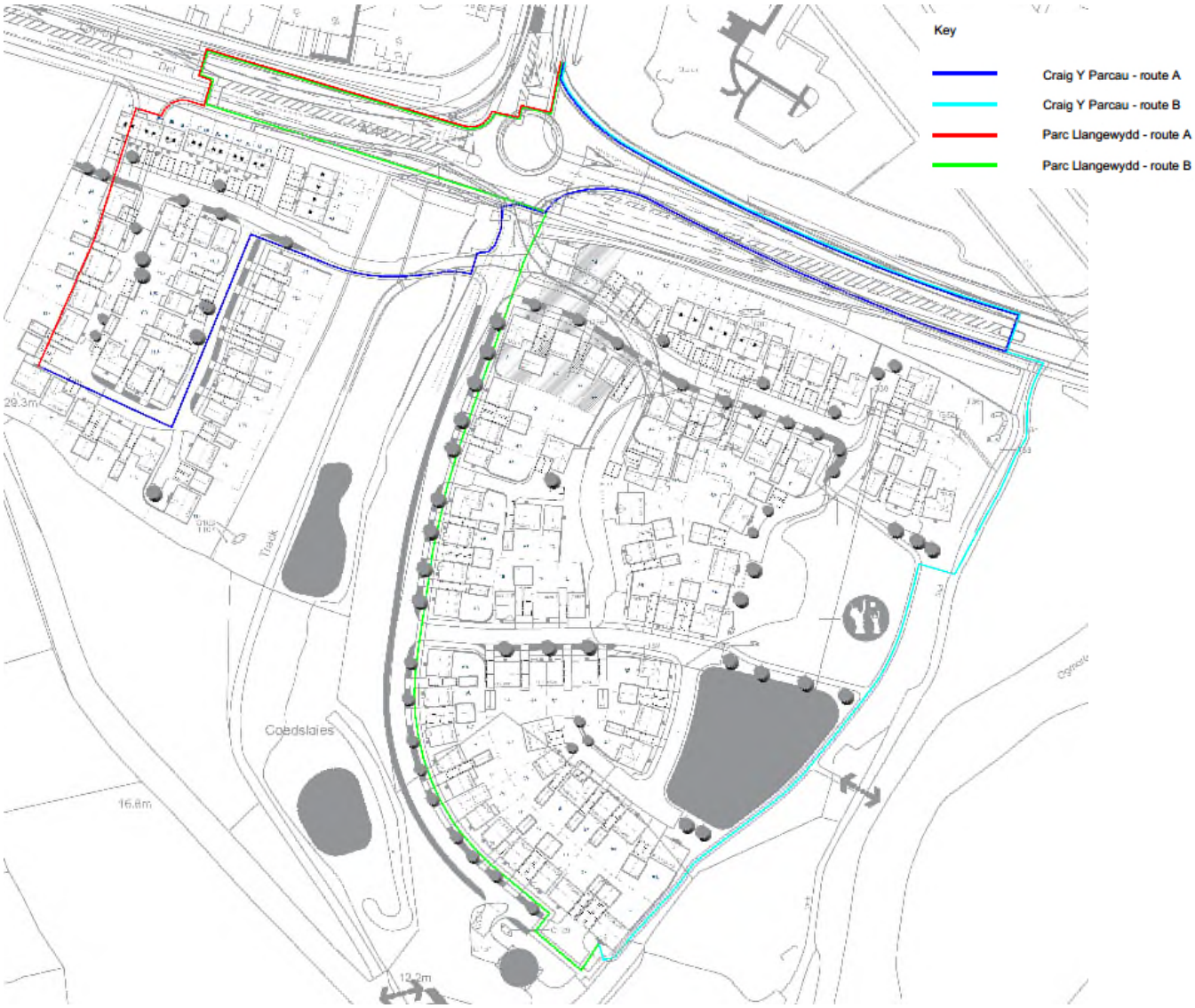


Figure 5.1 Walking routes to plots 116 and 75

Table 5.1 Walk-distance/journey time

Access strategy	Routes	Walk-distance (m)	Journey time
Craig Y Parcau	Route A (from plot 116)	647	7.7mins/462secs[1]
	Route B (from plot 75)	463	5.5mins/331secs
Parc Llangewydd	Route A (from plot 116)	333	5.5mins/330secs[2]
			7.2mins/432secs
	Route B (from plot 75)	633	9mins/540secs[2]
			10.9mins/654secs

Notes: 1. This assumes that no pedestrians will cross at the informal crossings on each approach to the roundabout

2. This assumes that a pedestrian reaches the first crossing point (A48 w'bd) just as the corresponding pedestrian stage is called.

5.2.5 It can be seen from the table above that whilst the walk distances for the Parc Llangewydd proposals are shorter than those with the proposed access strategy, the journey times are longer for the majority of the masterplan area as a result of the delays inherent in the method of operation of the traffic signal-controlled junction (phasing, staging and staging plan).

5.2.6 It should also be noted that the Parc Llangewydd proposals incorporate a crossing at either end of the site, whereas the access strategy proposed as part of the Craig Y Parcau development incorporates informal crossings on each approach to the roundabout (in the centre of the site) as well as an on-call pedestrian crossing at the eastern edge of the site.

5.2.7 It is therefore considered that, in terms of Active Travel, the access strategy proposed as part of the Craig Y Parcau development is better than the strategy proposed as part of the Parc Llangewydd proposals.

6 Potential impact

6.1 Introduction

6.1.1 As outlined above, it is proposed to construct a total of 120 dwellings on site, with 96 open market/private sales and 24 affordable units.

6.1.2 This section of the report, therefore, outlines the methodology used to predict the likely person trips, generated by a residential development of up to 120 dwellings, together with distribution and assignment of vehicle trips.

6.2 When will people travel and why

6.2.1 It is anticipated that the trip profiles of residents will fluctuate across the day with weekday peaks as follows:

- Morning (8am to 9am) – predominantly departures for employment and education;
- Mid-afternoon (3pm to 4pm) – predominantly arrivals for education; and,
- Evening (5pm to 7pm) – predominantly arrivals for employment and departures for retail and leisure.

6.2.2 During the weekend, trips will be more consistent across the day with trips for retail and leisure purposes.

6.2.3 **Figure 6.1** over the page shows the likely profile for weekday daytime trips based on comparable sites within the TRICS trip generation database.

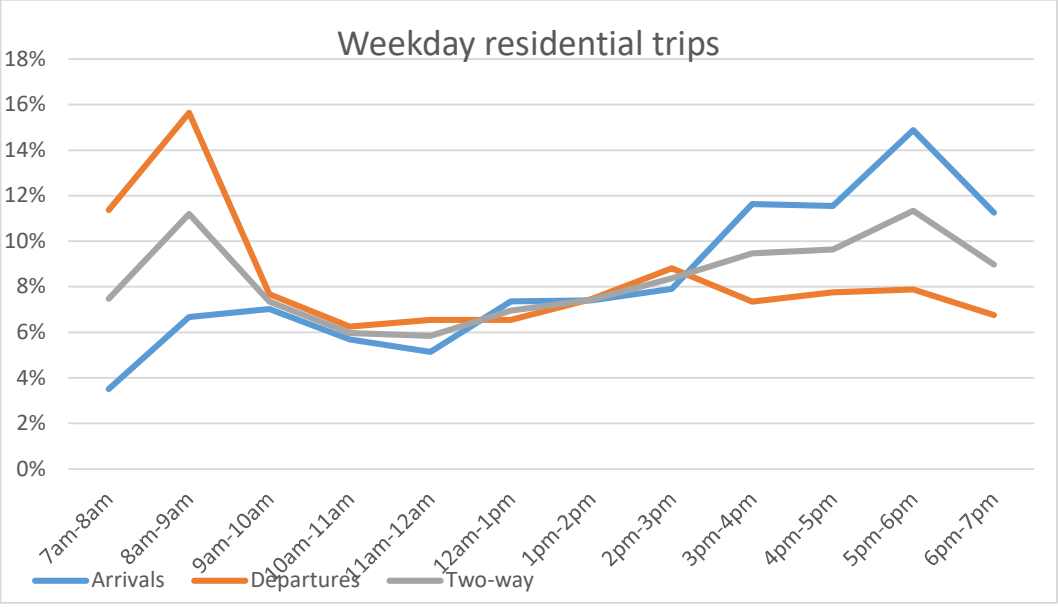


Figure 6.1 Profile of weekday trips for residential use

6.3 Trip generation

Privately owned housing (96 dwellings)

6.3.1 The TRICS (v.8.25.5) trip generation database has been reviewed to predict the likely level of trips generated by the proposed development. Sites were selected on the basis of the following criteria:

- Land use: residential – houses privately owned;
- Survey type: Manual Count
- Survey days: Monday – Friday
- Number of units: 75 to 120 dwellings
- Type of location: Edge of Town, Edge of Town Centre, Neighbourhood Centre Suburban area

6.3.2 A total of 20 sites have been selected, and the AM, PM and daily trips generated by the proposed 96 privately owned dwellings is summarised in Table 6.1 below, and presented in full in Appendix C. It should be noted that in order to provide a robust assessment, 85th percentile trip rates have been used.

Table 6.1 Weekday persons trip rates – privately owned housing

Time period	Arrival trip rate	No. of arrivals	Depart trip rate	No. of departs	Total trip rate	Total no. of movements
Total people						
8am-9am	0.222	21	0.719	69	0.941	90
5pm-6pm	0.564	54	0.286	27	0.850	82
7am-7pm	3.700	355	3.783	363	7.483	718
Pedestrians						
8am-9am	0.032	3	0.093	9	0.125	12
5pm-6pm	0.062	6	0.041	4	0.103	10
7am-7pm	0.492	47	0.515	49	1.007	97
Cyclists						
8am-9am	0.001	0	0.009	1	0.010	1
5pm-6pm	0.005	0	0.002	0	0.007	1
7am-7pm	0.040	4	0.043	4	0.083	8
Public transport users						
8am-9am	0.002	0	0.015	1	0.017	2
5pm-6pm	0.013	1	0.002	0	0.015	1
7am-7pm	0.070	7	0.071	7	0.141	14

Vehicles						
8am-9am	0.156	15	0.373	36	0.529	51
5pm-6pm	0.348	33	0.188	18	0.536	51
7am-7pm	2.338	224	2.385	229	4.723	453

6.3.3 It can be seen from the table above that the 96 private dwellings could generate up to 51 vehicle movements (two-way) in the AM peak and PM peak with up to 453 vehicle movements (two-way) throughout the day. It can also be seen that travelling by vehicle equates to approximately 63% of total person trips.

Affordable/local authority housing (24)

6.3.4 The TRICS (v.8.25.6) trip generation database has been reviewed to predict the likely level of trips generated by the proposed development. Sites were selected on the basis of the following criteria:

- Land use: residential – affordable/local authority housing;
- Survey type: Manual count
- Survey days: Tuesday – Wednesday
- Number of units: 14 to 50 dwellings
- Type of location: Edge of Town, Suburban area

6.3.5 A total of six sites have been selected, and the AM, PM and daily trips generated by the proposed 24 dwellings is summarised in Table 6.2 below, and presented in full in Appendix D.

Table 6.2 Weekday persons trip rates – affordable/local authority housing

Time period	Arrival trip rate	No. of arrivals	Depart trip rate	No. of departs	Total trip rate	Total no. of movements
Total people						
8am-9am	0.238	6	0.946	23	1.184	28
5pm-6pm	0.714	17	0.551	13	1.265	30
7am-7pm	5.445	131	5.562	133	11.007	264
Pedestrians						
8am-9am	0.097	2	0.497	12	0.594	14
5pm-6pm	0.062	6	0.292	7	0.541	13
7am-7pm	2.200	53	2.421	58	4.621	111
Cyclists						
8am-9am	0.000	0	0.000	0	0.000	0
5pm-6pm	0.027	1	0.022	1	0.049	1
7am-7pm	0.162	4	0.157	4	0.319	8

Public transport users						
8am-9am	0.000	0	0.076	2	0.076	2
5pm-6pm	0.032	1	0.005	0	0.037	1
7am-7pm	0.237	6	0.233	6	0.470	11
Vehicles						
8am-9am	0.097	2	0.227	5	0.324	8
5pm-6pm	0.314	8	0.189	5	0.503	12
7am-7pm	2.069	50	2.081	50	4.150	100

6.3.6 It can be seen from the table above that the 24 affordable dwellings could generate up to eight vehicle movements (two-way) in the AM peak and 12 vehicle movements (two-way) in the PM peak with up to 100 vehicle movements (two-way) throughout the day. It can also be seen that travelling by vehicle equates to approximately 38% of total person trips.

Summary

6.3.7 Based on the Tables 5.1 and 5.2, Table 6.3 below summarises the total number of trips generated by the proposed development of 120 dwellings.

Table 6.3 Total number of trips – 375 dwellings

Time period	No. of arrivals	No. of departs	Total no. of movements
Total people			
8am-9am	27	92	119
5pm-6pm	71	41	112
7am-7pm	486	497	983
Pedestrians			
8am-9am	5	21	26
5pm-6pm	12	11	23
7am-7pm	100	108	208
Cyclists			
8am-9am	0	1	1
5pm-6pm	1	1	2
7am-7pm	8	8	16
Public transport users			
8am-9am	0	3	3
5pm-6pm	2	0	2
7am-7pm	12	12	25

Vehicles			
8am-9am	17	41	59
5pm-6pm	41	23	64
7am-7pm	274	279	553

6.3.8 It can be seen from the table above that the proposed development could generate up to 553 total person trips (two-way) throughout the day, with up to 59 vehicle trips in the AM peak (two-way) and 64 vehicle trips in the PM peak (two-way).

6.3.9 Walking and car trips are likely to be the most popular modes of travel, with walking and cycling representing 23% of daily trips and vehicles representing approximately 56% of daily trips.

6.4 Deliveries and servicing

6.4.1 The likely number of deliveries is based on a survey undertaken at a residential development in a high-density urban area of more than 300 dwellings (in July 2020) and with access to good public transport links. The surveys were undertaken during a period when restrictions in relation to COVID-19 were still in place, with the number of deliveries likely to be higher than usual. This corresponded with increased proportion of people either working from home or being furloughed, and when the shops and restaurants were not fully open, therefore, resulting in higher number of food and other deliveries.

6.4.2 The survey includes deliveries (by LGVs, HGVs, motorbikes and cars) as well as maintenance and security vehicles data also showed that 85% of deliveries were undertaken by LGV vehicles (small vans less than 3.5t) and 15% by OGV and HGV vehicles (3.5t or more). The busiest time for deliveries was between 10am and 3pm after 7pm, which is outside the AM and PM peak hours. The survey results are set out in Table 6.4 below.

Table 5.4 Predicted delivery trips for the development

Time period	Total trip rate	Total no. of trips per day
LGVs		
8am–9am	0	0
5pm-6pm	0.003	0
7am-7pm	0.0667	8
7am-10pm	0.0737	9
OGVs		
8am–9am	0	0
5pm-6pm	0.003	0
7am-7pm	0.017	2
7am-10pm	0.017	2

Motorbikes		
8am–9am	0	0
5pm-6pm	0	0
7am-7pm	0.007	1
7am-10pm	0.007	1
Cars		
8am–9am	0	0
5pm-6pm	0	0
7am-7pm	0	0
7am-10pm	0.01	1
Total		
8am–9am	0	0
5pm-6pm	0.006	1
7am-7pm	0.0907	11
7am-10pm	0.1077	13

6.4.3 It can be seen from the table above, that the proposed residential development could generate up to 13 deliveries per day. It is anticipated that deliveries will be undertaken on-street, from the internal road network. Of these approximately two will be undertaken by OGVs, nine by LGVs and two by cars and motorbikes.

6.5 Summary of additional trips generated by the development

6.5.1 Based on the information provided in Section 5.3, the impact on each mode of transport and the additional number of trips generated by the development is outlined below.

Walking

6.5.2 The proposed development (120 dwellings) is likely to generate 26 pedestrian movements (two-way) in the AM peak, 23 movements (two-way) in the PM peak and 208 movements (two-way) throughout the day. In addition, it is estimated that public transport users (e.g. bus users), walking to/from the site to reach the bus stops, will generate an additional three movements (two-way) in the AM peak, two movements (two-way) in the PM peak and 25 movements (two-way) throughout the day.

6.5.3 The walking trips will be spread across a number of local roads, and it is anticipated that there will be no adverse impact to the pedestrian network.

Cycling

6.5.4 It is estimated that the proposed development (120 dwellings) could generate 16 cycle movements (two-way) throughout the day. It is likely that any cycling trips will be spread across a number of local routes, and it is anticipated that there will be no adverse impact to the cycle network.

Public transport

6.5.5 The development (120 dwellings) could generate up to three movements (two-way) in the AM peak, two movements in the PM peak and 25 movements (two-way) throughout the day. It is likely that majority of public transport trips will be undertaken by bus or train, and it is considered that this level of additional passengers will not have a material impact on the public transport network.

Deliveries, servicing and refuse

6.5.6 Finally, is it anticipated that all deliveries to the development will be undertaken from within the internal road network and it is likely that the development could generate a combined total of 13 service vehicle trips per day, with the majority of trips occurring between 7am and 7pm.

6.5.7 It should be noted that the impact of the development can be further reduced with the implementation of a robust Travel Plan that seeks to encourage sustainable travel habits.

6.6 Assignment and distribution of development generated traffic

6.6.1 Following the information set out above, this section outlines the distribution of development generated traffic based on the Journey to Work statistics from the 2011 Census for the area in which the site is located (MSOA Bridgend 017).

6.6.2 Each destination has been assigned a route/s, based on local knowledge and Google maps, with the most direct and appropriate routes available. The routes are summarised as follows and are shown on Figure 6.2 below:

- Route A (14%) – Towards Neath, Port Talbot, Swansea and Pyle
- Route B (1%) – Towards Cefn Glas
- Route C (3%) – Towards Broadlands
- Route D (29%) – Towards Tondu, Maesteg and Brackla
- Route E (52%) – Bridgend industrial estates, Cardiff, Treforest and Newport
- Route F (1%) – Towards Vale Business Park

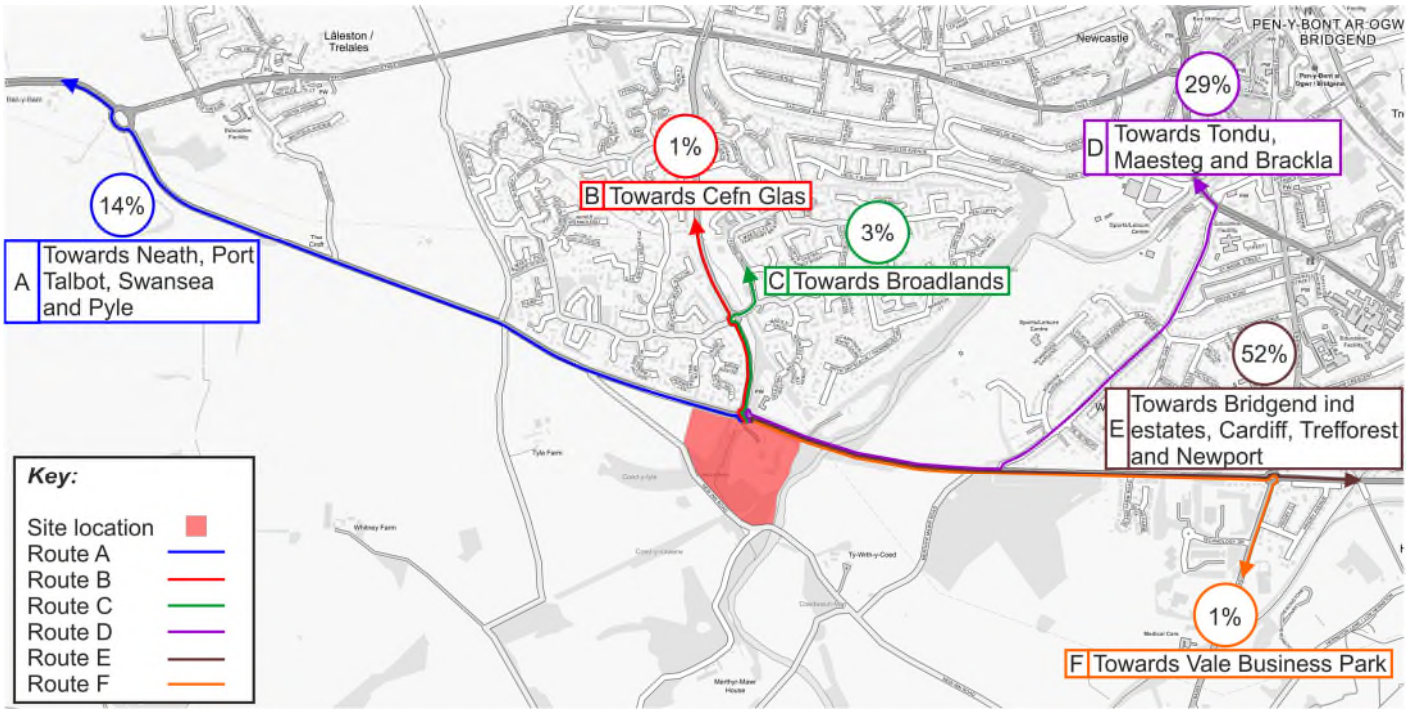


Figure 6.2 Distribution of development generated traffic

6.6.3 For the purpose of this assessment, it is assumed that all trips generated by the development in the peak periods are journey to work trips. However, it is likely that trips in the peak periods will be for other purposes as well, including education, shopping and leisure.

6.6.4 The development generated trips during the AM and PM peak periods are outlined in Appendix E.

6.7 Future traffic flows

6.7.1 As outlined in section 1.3 above, for the purposes of consistency, the future year assessments have been based on those undertaken as part of the Transport Assessment produced in support of the strategic allocation SP2(3) (Parc Llangewydd), as detailed below:

- 2026 the anticipated year of opening (of the Parc Llangewydd development);
- 2035 just beyond the RLDP period.

6.7.2 In order to obtain the base traffic flows (i.e. with no development traffic) in 2026 and 2035, the 2024 traffic flows surveyed as part of the Parc Llangewydd development (refer to Appendix F) have been factored using locally adjusted NTM growth factors, version 7.2c for Bridgend. It should be noted that the development site, together with the adjacent Local Plan sites at Island Farm and Parc Llangewydd have been removed from the housing projections, to avoid double-counting.

6.7.3 The factors to be applied to the base (surveyed) flows are identified in Table 6.5 below.

Table 6.5 NTM growth factors

Period	No. of dwellings constructed on the Local Plan sites	Adjusted NTM growth factors
2025 to 2026		
Weekday AM	300[1]	1.0717
Weekday PM		1.0703
2025 to 2035		
Weekday AM	1698	1.1768
Weekday PM		1.1718

Notes: 1. It is assumed that the developments will be built at an average of 100 dwellings per annum

6.7.4 The base 2024, 2026 and 2035 traffic flows are set out in Appendix G.

Local Plans sites

6.7.5 The traffic generated by the following strategic allocations has been included as part of the analysis:

- SP2(2) – Land south of Bridgend (Island Farm); and,
- SP2(3) – Land west of Bridgend (Parc Llangewydd)

6.7.6 The traffic generated by these two sites has been extracted from the Transport Assessment produced in support of the Parc Llangewydd Development, and are outlined in Appendix H.

6.7.7 All other strategic/local plan/committed developments are included within the TEMPro growth factors, including the proposed development at Lane East of Pyle, Pyle, Kenfig Hill and North Cornelly Sustainable Growth Area.

Final future traffic flows

6.7.8 The base traffic flows together with development generated traffic (refer to Appendix I) have been obtained by combining:

- the development generated traffic flows (identified in Appendix E); with the,
- 2026 and 2035 base traffic flows (identified in Appendix G).

6.7.9 The base traffic flows, with the traffic generated by the proposed development and both strategic allocations (refer to Appendix J) have been obtained by combining:

- the development generated traffic flows (identified in Appendix E); with the
- 2026 and 2035 base traffic flows (identified in Appendix G); and,
- Strategic allocations (Appendix H).

7 Potential impact

7.1 Introduction

7.1.1 This section of the report considers the potential impact of the development proposals on the surrounding highway network. It also identifies any mitigation measures required to reduce the impact of development generated traffic, should these be required.

7.1.2 In order to assess the impact of the proposed development on the surrounding highway network, fully classified turning count surveys were undertaken in September 2025 at the junctions outlined in **Table 7.1** and identified in **Figure 7.1** below.

Table 7.1 Surveyed junctions

Junction no.	Junction name
1	A48 Bypass Road/A473 roundabout
2	A48 Bypass Road/B4622 (Broadlands) roundabout
3	B4622/Careg Llwyd roundabout
4	A48 Bypass Road/Merthyr Mawr Road priority junction
5	A48 Bypass Road/B4625 Ewenny Road roundabout

Figure 7.1 Surveyed junction locations

7.2 Percentage impact analysis

7.2.1 A percentage impact analysis has been undertaken to consider the impact of the proposed development traffic on the surrounding highway network, and the results are outlined in full in Appendix K and summarised in Table 7.2 below.

Table 7.2 Percentage increase in traffic flows within the study area

Year	Peak period	Junction 1 – A48 Bypass Road/A473 roundabout				Junction 2 – A48 Bypass Road/B4622 (Broadlands) roundabout			
		Base traffic flows	Dev. trips	Base + dev.	%age increase	Base traffic flows	Dev. trips	Base + dev.	%age increase
2026	AM	2306	9	2315	0.4	2112	62	2174	2.9
	PM	2497	10	2507	0.4	2485	67	2552	2.7
2035	AM	2449	9	2458	0.4	2243	62	2305	2.8
	PM	2651	10	2661	0.4	2638	67	2705	2.5
		Junction 3 – B4622/Careg Llwyd roundabout				Junction 4 – A48 Bypass Road/Merthyr Mawr Road priority junction			
		Base traffic flows	Dev. trips	Base + dev.	%age increase	Base traffic flows	Dev. trips	Base + dev.	%age increase
2027	AM	1073	3	1076	0.2	2050	50	2101	2.5
	PM	1420	3	1423	0.2	2294	54	2348	2.4
2035	AM	1140	3	1143	0.2	2177	50	2228	2.3
	PM	1508	3	1510	0.2	2436	54	2490	2.2
		Junction 5 – A48 Bypass Road/B4625 Ewenny Road roundabout							
		Base traffic flows	Dev. trips	Base + dev.	%age increase				
2026	AM	2672	38	2709	1.4				
	PM	2865	48	2912	1.7				
2035	AM	2837	38	2875	1.3				
	PM	3042	48	3089	1.6				

7.2.2 In accordance with Technical Advice Note (TAN) 18 – Transport:

'… an increase in turning movements in the order of 5% as material in most cases, that is a 5% increase of traffic using any link of the junction.'

7.2.3 It is considered that in accordance with TAN 18, that detailed junction capacity analysis will be undertaken at junctions where the total junction flows comprise 5% or less.

7.2.4 Based on the estimated increases in traffic flows outlined in Table 7.2 above, it can be seen that none of the off-site junctions are predicted to experience increases in traffic flows of more than 2.5%. Therefore, other than the site access, no additional junction analysis is required.

7.3 Junction capacity analysis

7.3.1 As set out above, the impact of the proposed development has been assessed at the proposed site access (junction 2), where the predicted increases in traffic flows as a result of the proposed development exceed 5% of the base traffic flows.

7.3.2 The operation of the existing junction has been assessed below.

Traffic and queue length surveys

7.3.3 In order to provide a robust, calibrated 'base' model, we have relied on the fully classified turning count surveys and queue length surveys that were undertaken by Paul castle Consultancy (on behalf of Llanmoor Homes) on Wednesday 7th of February 2024.

7.3.4 The surveys, which were undertaken between 7am-9am and 4pm-6pm, recorded the turning movements from each approach to the roundabout, and the results of the updated traffic surveys are presented in full in Appendix F.

7.3.5 The observed queue lengths, on each approach to the roundabouts are presented in full in Appendix F, and the mean maximum queues are summarised in Table 7.3 below.

Table 7.3 Observed queue lengths (7th February 2024)

Arm Name	AM peak (7.45am-9am)		PM peak (4.45pm-6pm)	
	Nearside lane	Offside lane	Nearside lane	Offside lane
B4622	14	1	0	0
A48 Bypass Road (e)	0	0	0	0
A48 Bypass Rad (w)	1	/	1	/

Calibrated ARCADY model

7.3.6 The operation of the existing roundabout has been assessed using Junctions 9 – ARCADY, based on the 2024 surveyed flows. After an initial model run, the capacities of each arm at each junction were manually adjusted (increased or decreased), and the model re-run until the modelled queues replicated the observed queues (iterative process).

7.3.7 It should be noted that in order to provide a more robust assessment, the model has been based on DIRECT flows, i.e. the traffic flows have been input for each 15-minute period (from the survey data) throughout the model period (i.e. 90 minutes), rather than assuming a 'normal' distribution which distorts the model results.

7.3.8 The results of the calibrated baseline scenario are presented in full in Appendix L and summarised in Table 7.4 below.

Table 7.4 Junction capacity results – calibrated 2024 base model

Approach arm	AM peak		PM peak	
	RFC	Mean Max Queue	RFC	Mean Max Queue
B4622	1.01	14	0.50	1
A48 Bypass Road (e)	0.61	2	0.66	2
A48 Bypass Rad (w)	0.80	4	0.57	1

7.3.9 It can be seen by comparing the observed queue lengths in Table 3.1 with the modelled results in Table 7.4, that the calibrated base model is representative of the observed conditions. This has been achieved by reducing the capacity of the B4622 approach (to the junction) by 27%.

7.3.10 The operation of the existing junction has then been assessed for the 2026 and 2035 future year scenarios, and the results are presented in full in Appendix L and summarised in **Table 7.5** below.

Table 7.5 Junction capacity analysis – Existing roundabout

Approach arm	2026 base				2035 Base			
	AM		PM		AM		PM	
	RFC	Max Queue	RFC	Max Queue	RFC	Max Queue	RFC	Max Queue
B4622	*1.03*	*16*	*0.51*	*1*	*1.17*	*36*	*0.57*	*1*
A48 Bypass Road (e)	*0.62*	*2*	*0.66*	*2*	*0.67*	*2*	*0.73*	*3*
A48 Bypass Road (w)	*0.81*	*4*	*0.58*	*1*	*0.90*	*7*	*0.65*	*2*

7.3.11 It can be seen from the analysis above that with the anticipated growth in background traffic, the level of queues and delays at the existing roundabout will increase in 2026 and 2035, with a maximum RFC of 1.17 and a mean maximum queue of 36 vehicles on the B4622 approach to the junction in 2035.

Future year assessments

7.3.12 As outlined above it is proposed to upgrade the existing access to Craig Y Parcau from the roundabout to accommodate the demand generated by the proposed development and to accommodate the swept-path of a range of vehicles likely to access the site. The modified junction is shown in **Figure 7.2** over the page.

Figure 7.2 Modified A48 Bypass Road/B4622 (Broadlands) roundabout with access to Craig Y Parcau

7.3.13 The operation to the modified roundabout has been assessed for the 2026 'opening year' and 2035 'design year' together with:

- The traffic generated by the proposed (Craig Y Parcau) development; and,
- The traffic generated by the strategic allocations.

7.3.14 The results of the assessments are presented in full in Appendix M and summarised in Table 7.6 below.

Table 7.6 Junction capacity analysis – 2026 'opening year' assessments

Approach arm	2026 base + Craig Y Parcau				2026 base + Craig Y Parcau + allocated sites			
	AM		PM		AM		PM	
	RFC	Max Queue	RFC	Max Queue	RFC	Max Queue	RFC	Max Queue
B4622	1.04	18	0.51	1	1.16	34	0.62	2
A48 Bypass Road (e)	0.63	2	0.68	2	0.70	2	0.75	3
Site access	0.09	<1	0.04	0	0.11	<1	0.05	<1
A48 Bypass Road (w)	0.83	5	0.59	1	0.85	5	0.67	2
	2035 base + Craig Y Parcau				2035 base + Craig Y Parcau + allocated sites			
	AM		PM		AM		PM	
	RFC	Max Queue	RFC	Max Queue	RFC	Max Queue	RFC	Max Queue
B4622	1.20	38	0.57	1	1.32	106	0.74	
A48 Bypass Road (e)	0.69	2	0.74	3	0.75	3	0.81	
Site access	0.10	<1	0.05	<1	0.13	<1	0.49	
A48 Bypass Road (w)	0.92	9	0.66	2	0.94	11	0.75	

7.3.15 It can be seen from the table above, that the introduction of traffic generated by the proposed Craig Y Parcau development will have a marginal impact on the operation of the junction, increasing the RFC on the B4622 approach from 1.17 to 1.20, and increasing queues from 36 vehicles to 38 vehicles in the 2035 design year scenarios.

7.3.16 It can also be seen that the additional traffic generated by the strategic allocations will have a significant impact on the operation on the junction, increasing the RFC on the B4622 approach from 1.17 to 1.32, and increasing queues from 36 vehicles to 106 vehicles.

7.3.17 It is acknowledged, therefore, that the existing roundabout and, in particular the B4622 approach to the junction, does not have sufficient capacity to accommodate the additional traffic generated by the strategic allocations, and therefore mitigation is required.

7.4 Mitigation measures

7.4.1 Potential modifications to the existing roundabout, which are shown in **Figure 7.3** over the page, include realigning and widening the B4622 approach to the junction to increase the length of flare to approximately 50m.

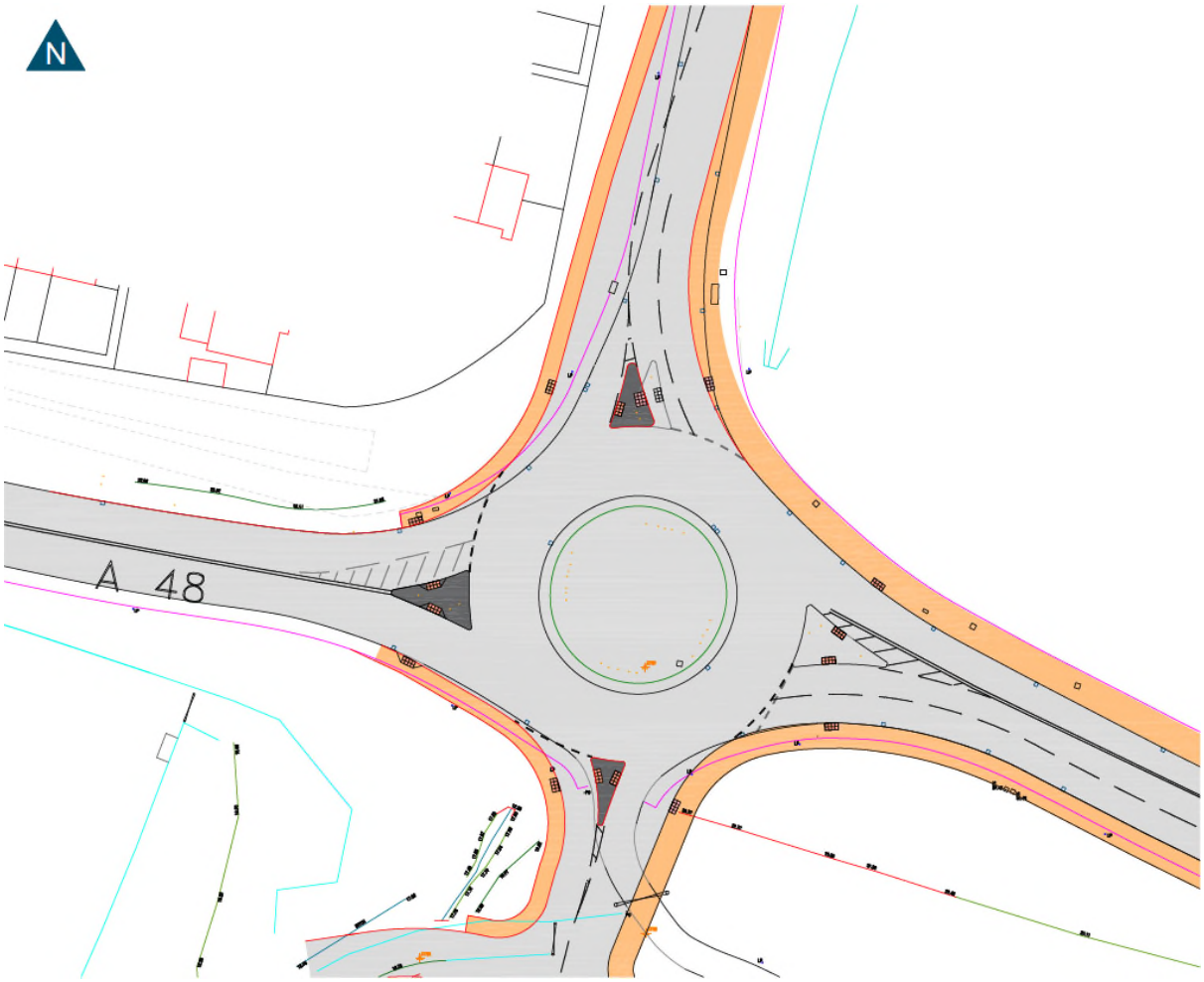


Figure 7.3 Potential modifications to the existing A48 Bypass Road/B4622 (Broadlands) roundabout

7.4.2 The operation to the modified junction has been assessed for the 2035 'design year' scenarios, and the results are presented in full in Appendix N and summarised in Table 7.7 below.

Table 7.7 Junction capacity analysis – with mitigation measures

Approach arm	*2035 Base + CraigY Parcau + allocated sites*			
	AM		*PM*	
	RFC	*Max Queue*	*RFC*	*Max Queue*
B4622	0.66	2	0.36	1
A48 Bypass Road (e)	0.75	3	0.81	4
Site access	0.13	<1	0.06	<1
A48 Bypass Rad (w)	0.95	12	0.76	3

7.4.3 It can be seen from the table above that the modified junction has sufficient capacity to accommodate base traffic flows to 2035 together with the additional traffic generated by the proposed development (Craig Y Parcau) and the strategic allocations, with a maximum RFC of 0.95 and a maximum queue of 12 vehicles on the A48 Bypass Road (w).

7.4.4 This compares favourably with the operation of the staggered traffic-signal controlled junction (as reported in Appendix L of the Parc Llangewydd Transport Assessment) and summarised in Table 7.8 below.

Table 7.8 LinSig analysis – modified A48 Bypass Road/B4622 traffic signal-controlled junction (extracted from the Parc Llangewydd TA, July 2024)

Approach Arm		*2035 Base + CraigY Parcau + allocated sites*			
		AM		*PM*	
		Deg of Sat. (%)	*Mean max queue*	*Deg of Sat.*	*Mean max queue*
B4622	*Right + left*	*74.5*	*18*	*52.1*	*7*
A48 Bypass Road (e)	*Ahead*	*32.7*	*4*	*57.1*	*10*
	Ahead + right	*42.6*	*6*	*72.5*	*20*
Site access	*Right left*	*25.5*	*1*	*14.8*	*1*
A48 Bypass Rad (w)	*Ahead + right*	*77.8*	*24*	*57.6*	*13*

* It should be noted that the above table includes the external approaches to the junction only

7.5 Summary

7.5.1 Based on the results of the analysis, it can be seen that the existing A48 Bypass Road/B4622 (Broadlands) roundabout has sufficient capacity to accommodate the additional traffic generated by the proposed (Craig Y Parcau) development.

7.5.2 It can also be seen that the potential modifications to the existing roundabout have sufficient capacity to accommodate the proposed Craig Y Parcau development together with the strategic allocations.

7.5.3 Importantly, it can be seen from the analysis that the proposed access to Craig Y Parcau will not prejudice the delivery of the two strategic allocations.

7.5.4 Furthermore, the impact of the development could be further reduced with the implementation of a robust travel plan and improvements to public transport, pedestrian or cycle facilities in the area.

8 Transportation implementation strategy

8.1 Introduction

8.1.1 In accordance with TAN 18, a Transport Implementation Strategy needs to be included in the Transport Assessment process, which sets the objectives and targets relating to manging travel demand.

8.2 Transport implementation strategy

8.2.1 Table 8.1 below outlines the Transport Implementation Strategy for the proposed development, which provides additional details on the measures outlined in Section 4 and Section 7. These measures are organised into four categories and include likely timescales for implementation. The four categories are:

- Pedestrians;
- Cyclists;
- Public transport users; and,
- Travel Plan measures.

Table 8.1 Transport Implementation Strategy

	Measure	Commentary	Timescale for implementation
Pedestrian users' provision			
A	The internal pedestrian network will be designed to ensure pedestrians can travel safely around the site, via footways or via the shared surfaces.	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	This will need to be completed prior to the beneficial occupation of the site.
B	Footways at the site access connect the site to Napier Road and the wider network throughout Pontarddulais.		
C	Provision of 'Active Travel' information within Travel Plan Welcome Pack, including walk distances/times to local amenities and facilities within 2km as well as a 20-minute cycle isochrone, highlighting the benefits of walking and cycling to work.		
Cycle users			
A	Provision of secure cycle parking spaces in accordance with the Wales Active Travel Act guidance (July 2021), located in secure/covered cycle storage facilities for each dwelling, that is as convenient as access to any on-plot car parking space	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	This will need to be completed prior to the beneficial occupation of the site.
B	Visitor cycle parking located throughout the development.		
C	Provision of 'Active Travel' information within the Travel Plan Welcome Pack, including cycle distances/times from local amenities and facilities within the 20-mintue cycle isochrone of the site, as well as neighbouring settlements, and public transport facilities.		

Public transport users			
A	Provision of Public Transport Taster tickets for up to one month of free travel (one ticket per household)	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	This will be provided beyond first occupation of the site.
B	Provision of public transport information within Travel Plan Welcome Pack, including the nearest bus stops, the nearest rail station and routes to/from local facilities within the town centre and public transport timetables.		
Travel Plan and other measures			
A	Encouraging the use of more sustainable modes (walking, cycling car sharing and public transport)	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	The Travel Plan will need to be completed prior to 50% occupation of the site.
B	Setting mode share targets		
C	On-going monitoring		
D	Encourage working from home and provide a co-working hub as part of the wider allocation to reduce the need to travel to work by car.		This will need to be completed prior to beneficial occupation of the site

9 Summary and conclusions

9.1 Background

1.1.4 Lime Transport has been appointed by Bellway Homes to produce a Transport Assessment (TA) in support of a planning application for a development of 120 dwellings a planning application for the construction of 120 dwellings on land to the south of the A48 in Bridgend (Local Plan allocation (COM1(1)).

9.2 Development proposals

9.2.1 As outlined above, it is proposed to construct 120 dwellings on the site (24 affordable dwellings/96 private dwellings), with 75 dwellings on the larger (eastern) portion of the site and the remaining 45 dwellings on the smaller (western) portion.

9.2.2 In addition, the proposed development includes:

- Car parking in accordance with adopted parking standards;
- Cycle parking in accordance (or excess of) the adopted parking standards;
- Improvements to pedestrian and cycle infrastructure in the vicinity of the site;
- Landscaping, formal and informal open space; and,
- Associated infrastructure.

9.2.3 As part of the wider masterplan there are proposals for a local centre, a primary school with sports pitches and a park and ride facility.

Access strategy

9.2.4 As part of the re-development of the site, it is proposed to provide:

- Upgrades to the existing access to the site onto the A48 Bypass Road/B4622 Broadlands roundabout to accommodate the range of vehicles likely to access the site;
- A formal crossing across the A48 (at the eastern boundary of the site) that links the Public Right of Way either side of the A48;
- A shared cycleway/footway along the southern edge of the A48 (to link the vehicle access to the proposed signal-controlled crossing); and,
- Upgrades to the informal crossings (dropped kerbs and tactile paving) across all approaches to the roundabout.

Pedestrian access

9.2.5 As part of the development, it is proposed to provide the following improvements to active travel within the vicinity of the site, including:

- A formal crossing across the A48 (at the eastern boundary of the site) that links the Public Right of Way either side of the A48;
- A shared cycleway/footway along the southern edge of the A48 (to link the vehicle access to the proposed signal-controlled crossing); and,
- Upgrades to the informal crossings (dropped kerbs and tactile paving) across all approaches to the roundabout.

Car parking

9.2.6 As part of the development, it is proposed to provide a total of 326 designated residential parking spaces, which equates to a parking provision (across the site) of 2.72 spaces per dwelling.

9.2.7 It is anticipated that the visitor parking spaces will be accommodated on-street throughout the proposed development, rather than in designated parking spaces. It is also anticipated that, based on the existing car ownership within the vicinity of the site (i.e. 1.77 cars or vans per dwelling), an element of visitor parking can be accommodated on plot.

9.2.8 It is considered that the proposed provision is in accordance with the maximum parking standards, and can be justified, particularly when considering that the existing car ownership within the vicinity of the site is 1.77 cars or vans per dwelling. The existing car ownership would need to increase by 54% to exceed the proposed parking provision, and as stated in Section 3 above, car ownership within the vicinity of the site decreased by 2% (between 2011 and 2021)

Cycle parking

9.2.9 cycle parking will be provided in accordance with the Wales Active Travel Act Guidance (July 2021), with one space per bedroom.

9.2.10 All cycle parking will be provided in secure, convenient and accessible locations, likely at the front of the dwelling to ensure that access to a bicycle is just as convenient as access to the car (as outlined in Cambridge Cycle parking standards). If communal cycle parking is provided, it will be secure, covered and well overlooked

9.2.11 Visitor cycle parking will be provided throughout the development in form of a wall ring (or similar) or Sheffield stands.

9.3 Travel characteristics

Trip generation

9.3.1 It can be seen from the table above that the proposed development could generate up to 553 total person trips (two-way) throughout the day, with up to 59 vehicle trips in the AM peak (two-way) and 64 vehicle trips in the PM peak (two-way).

9.3.2 Walking and car trips are likely to be the most popular modes of travel, with walking and cycling representing 23% of daily trips and vehicles representing approximately 56% of daily trips.

Distribution

9.3.3 The distribution of development generated traffic has been based on the 2011 Journey to Work census data for the lower super output area in which the site is located. Each destination has been assigned routes based on the most direct and appropriate direction of travel.

9.4 Likely impact

9.4.1 The analysis indicates that the existing A48 Bypass Road/B4622 (Broadlands) roundabout has sufficient capacity to accommodate the additional traffic generated by the proposed (Craig Y Parcau) development.

9.4.2 It can also be seen that the potential modifications to the existing roundabout would provide sufficient capacity to accommodate the proposed Craig Y Parcau development together with the strategic allocations (SP2(2) and SP2(3)).

9.4.3 Importantly, it can be seen from the analysis that the proposed access to Craig Y Parcau will not prejudice the delivery of the two strategic allocations.

9.4.4 Furthermore, the impact of the development could be further reduced with the implementation of a robust travel plan and improvements to public transport, pedestrian or cycle facilities in the area.

Appendices

Appendix A

Plot	Type	No. beds	No. spaces	Plot	Type	No. beds	No. spaces	Plot	Type	No. beds	No. spaces
1	Forester	4	3	51	Lymner	3	2	101	Lymner	3	2
2	Mason	3	2	52	Weaver	4	3	102	Mason	3	2
3	Mason	3	2	53	Goldsmith	4	3	103	Goldsmith	4	3
4	Watchmaker	5	4	54	Weaver	4	3	104	Scriviner	4	3
5	Goldsmith	4	3	55	Weaver	4	3	105	Scriviner	4	3
6	Lymner	3	2	56	Goldsmith	4	3	106	Lymner	3	2
7	Weaver	4	3	57	Scriviner	4	3	107	Scriviner	4	3
8	Mason	3	2	58	Forester	4	3	108	Mason	3	2
9	Chandler	3	2	59	Scriviner	4	3	109	Mason	3	2
10	Chandler	3	2	60	Forester	4	3	110	Goldsmith	4	3
11	5P3B	3	2	61	Goldsmith	4	3	111	Watchmaker	5	4
12	4P2B	2	2	62	Chandler	3	2	112	Weaver	4	3
13	5P3B	3	2	63	Chandler	3	2	113	Goldsmith	4	3
14	5P3B	3	2	64	Goldsmith	4	3	114	Scriviner	4	3
15	4P2B	2	2	65	Goldsmith	4	3	115	Forester	4	3
16	6P4B	4	2	66	Scriviner	4	3	116	Watchmaker	5	4
17	Chandler	3	2	67	Scriviner	4	3	117	Goldsmith	4	3
18	Mason	3	2	68	Scriviner	4	3	118	Mason	3	2
19	Lymner	3	2	69	Mason	3	2	119	Scriviner	4	3
20	Chandler	3	2	70	Mason	3	2	120	Weaver	4	3
21	Weaver	4	3	71	Scriviner	4	3				
22	Goldsmith	4	3	72	Scriviner	4	3				
23	Mason	3	2	73	Scriviner	4	3				
24	Scriviner	4	3	74	Goldsmith	4	3				
25	Scriviner	4	3	75	Watchmaker	5	6				
26	Scriviner	4	3	76	5P3B	3	2				
27	Mason	3	2	77	4P2B	2	2				
28	Goldsmith	4	3	78	4P2B	2	2				
29	Forester	4	3	79	4P2B	2	2				
30	Weaver	4	3	80	1B2P FF	1	1				
31	Watchmaker	5	4	81	1B2P GF	1	1				
32	Watchmaker	5	4	82	1B2P FF	1	1				
33	Weaver	4	3	83	1B2P GF	1	1				
34	Scriviner	4	3	84	1B2P FF	1	1				
35	Lymner	3	2	85	1B2P GF	1	1				
36	Scriviner	4	3	86	1B2P FF	1	1				
37	Goldsmith	4	3	87	1B2P GF	1	1				
38	Watchmaker	5	4	88	1B2P FF	1	1				
39	Forester	4	3	89	1B2P GF	1	1				
40	Mason	3	2	90	1B2P FF	1	1				
41	Goldsmith	4	3	91	1B2P GF	1	1				
42	Goldsmith	4	3	92	1B2P GF	1	1				
43	Scriviner	4	3	93	1B2P FF	1	1				
44	Lymner	3	2	94	Lymner	3	2				
45	Weaver	4	3	95	Goldsmith	4	3				
46	Scriviner	4	3	96	Goldsmith	4	3				
47	Scriviner	4	3	97	Goldsmith	4	3				
48	Goldsmith	4	3	98	Lymner	3	2				
49	Scriviner	4	3	99	Scriviner	4	3				
50	Goldsmith	4	3	100	Lymner	3	2				

Chandler	3
Lymner	3
Mason	3
Scriviner	4
Goldsmith	4
Forester	4
Weaver	4
Watchmaker	5
1B2P GF	1
1B2P FF	1
4P2B	2
5P3B	3
6P4B	4

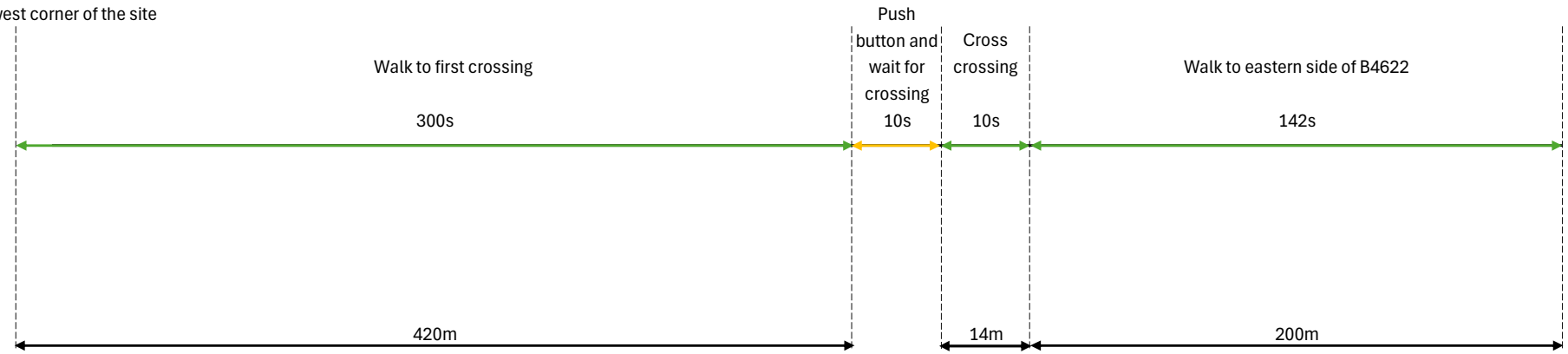
133 113 56 302

Appendix B

Craig Y Parcau access strategy

Route A - from plot 116 at the south-west corner of the site

Crossing time - 7.7 min

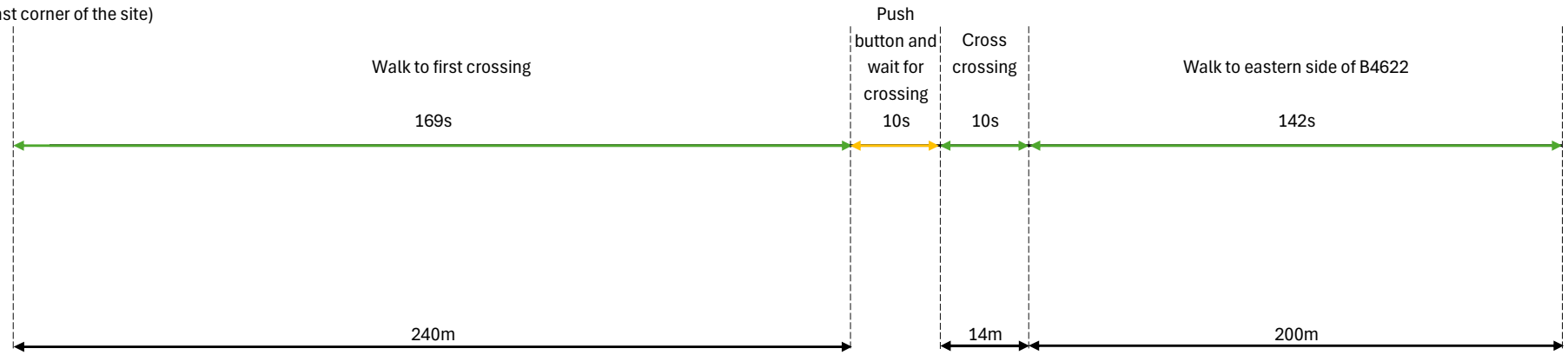


Craig Y Parcau - Route A

Craig Y Parcau access strategy

Route B - from plot 75 (at the south-east corner of the site)

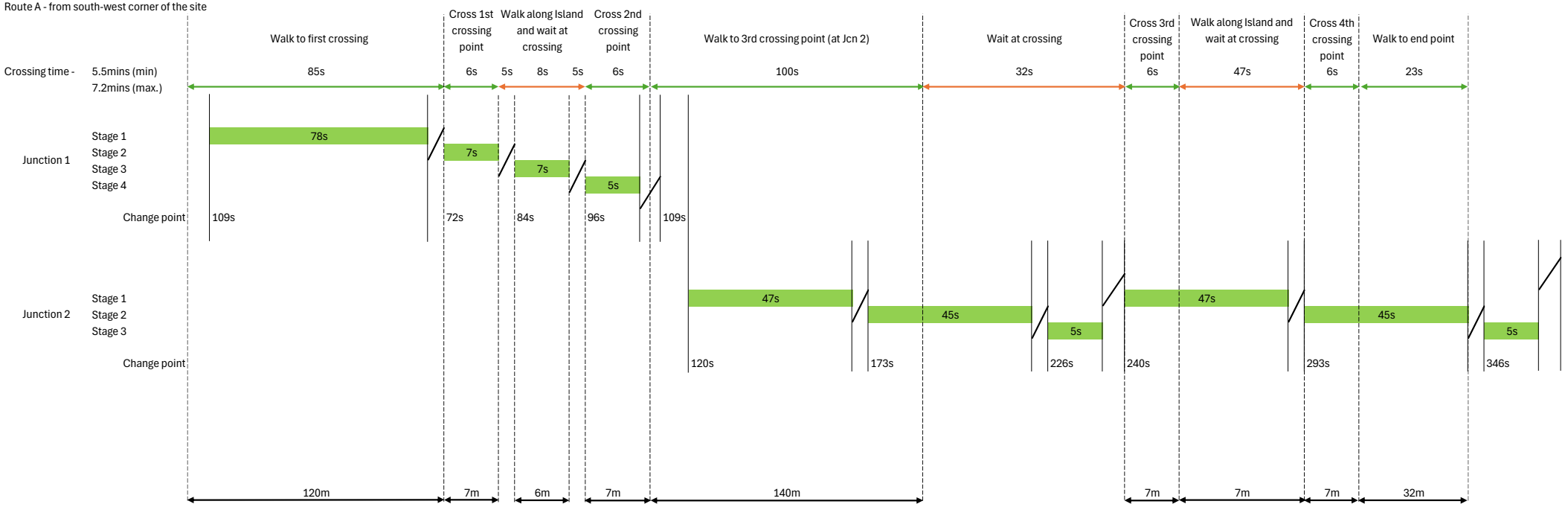
Crossing time - 5.51 min



Craig Y Parcau - Route B

Parc Llangewydd - staggered traffic signal-controlled junction

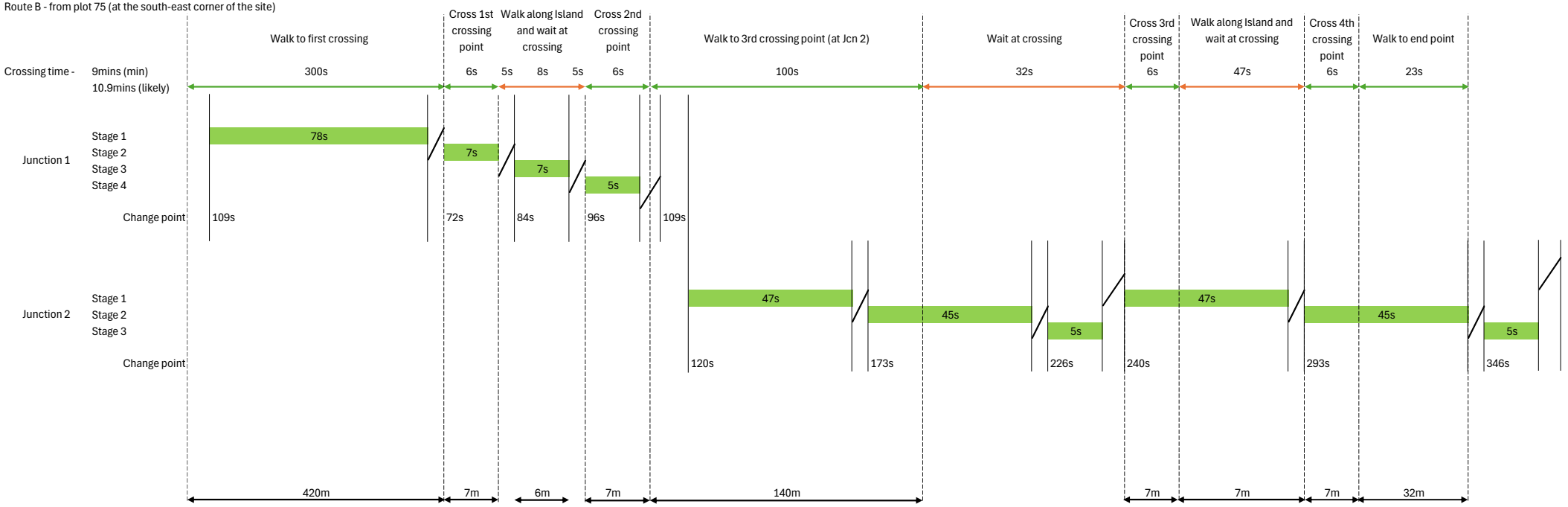
Route A - from south-west corner of the site



Parc Llangewydd - Route A

Parc Llangewydd - staggered traffic signal-controlled junction

Route B - from plot 75 (at the south-east corner of the site)



Parc Llangewydd - Route B

Appendix C

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 03 - RESIDENTIAL

Category: A - HOUSES PRIVATELY OWNED

Total Vehicles

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	3 days
	KC	KENT	1 day
	SC	SURREY	1 day
	WS	WEST SUSSEX	3 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 day
	NF	NORFOLK	3 days
05	**EAST MIDLANDS**		
	LE	LEICESTERSHIRE	1 day
08	**NORTH WEST**		
	AC	CHESHIRE WEST & CHESTER	1 day
09	**NORTH**		
	IM	ISLE OF MAN	1 day
13	**MUNSTER**		
	TI	TIPPERARY	1 day
14	**LEINSTER**		
	LU	LOUTH	1 day
16	**ULSTER (REPUBLIC OF IRELAND)**		
	CV	CAVAN	1 day
	MG	MONAGHAN	1 day
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	1 day

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:	DWELLS
Actual Range:	1.4 to 47 (units:DWELLS)
Range Selected by User:	75 to 120 (units:DWELLS)
Parking Spaces Range:	6 - 2604

Public Transport Provision:

Selection by:	All Surveys Included
Date Range:	01/01/16 to 17/09/24

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

Selected survey days:

Friday	2 days
Monday	2 days
Thursday	8 days
Tuesday	6 days
Wednesday	2 days

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

Selected survey types:

Manual count	20
Direction ATC Count	0

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	9 days
Edge of Town Centre	2 days
Neighbourhood Centre (PPS6 Local Centre)	8 days
Suburban Area (PPS6 Out of Centre)	1 days

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:

No Sub Category	3 days
Out of Town	2 days
Residential Zone	8 days
Village	7 days

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 Vehicle Counts:

Servicing vehicles Excluded	17 days
Servicing vehicles Included	3 days

Secondary Filtering Selection:

Use Class:

C3	20 surveys

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:

220 - 4096

Population within 1 mile:

1,001 to 5,000	5 surveys
10,001 to 15,000	2 surveys
15,001 to 20,000	1 surveys
5,001 to 10,000	12 surveys

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

Population within 5 miles:

100,001 to 125,000	1 surveys
25,001 to 50,000	5 surveys
5,001 to 25,000	5 surveys
50,001 to 75,000	6 surveys
75,001 to 100,000	3 surveys

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 surveys
1.1 to 1.5	13 surveys
1.6 to 2.0	6 surveys

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.

Petrol filling station:

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	8 surveys
Yes	12 surveys

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	20 surveys

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

COVID-19 Restrictions:

Yes - At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

1	**AC-03-A-06**	**DETACHED HOUSES**	**CHESHIRE WEST & CHESTER**

COMMON LANE
NEAR CHESTER
WAVERTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 6.8 hect
Survey date: Friday 29/04/2022 Survey Type: Manual

2	**AN-03-A-10**	**DETACHED & SEMI-DETACHED**	**ANTRIM**

FERRARD GRANGE
ANTRIM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Site area: 3.5 hect
Survey date: Friday 07/06/2024 Survey Type: Manual

3	**CA-03-A-08**	**DETACHED & SEMI-DETACHED**	**CAMBRIDGESHIRE**

GIDDING ROAD
SAWTRY
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 2.68 hect
Survey date: Thursday 13/10/2022 Survey Type: Manual

4	**CV-03-A-02**	**DETACHED & SEMI DETACHED**	**CAVAN**

R212 DUBLIN ROAD
CAVAN
KILLYNEBBER
Edge of Town
No Sub Category
Site area: 47 hect
Survey date: Monday 22/05/2017 Survey Type: Manual

5	**ES-03-A-07**	**MIXED HOUSES & FLATS**	**EAST SUSSEX**

NEW ROAD
HAILSHAM
HELLINGLY
Edge of Town
Residential Zone
Site area: 3.49 hect
Survey date: Thursday 07/11/2019 Survey Type: Manual

6	**ES-03-A-11**	**MIXED HOUSES**	**EAST SUSSEX**

BISHOPS LANE
RINGMER
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 4.34 hect
Survey date: Thursday 28/09/2023 Survey Type: Manual

7	**ES-03-A-16**	**MIXED HOUSES & FLATS**	**EAST SUSSEX**

RAILWAY ROAD
NEWHAVEN
Edge of Town Centre
No Sub Category
Site area: 1.4 hect
Survey date: Tuesday 14/03/2023 Survey Type: Manual

8	**IM-03-A-03**	**MIXED HOUSES**	**ISLE OF MAN**

MAIN ROAD
COLBY
Neighbourhood Centre (PPS6 Local Centre)

Village
Site area: 6.99 hect
Survey date: Tuesday 21/05/2024 Survey Type: Manual

9	**KC-03-A-10**	**MIXED HOUSES**	**KENT**

HEADCORN ROAD
STAPLEHURST
Edge of Town
Residential Zone
Site area: 3.91 hect
Survey date: Tuesday 09/05/2023 Survey Type: Manual

10	**LE-03-A-02**	**DETACHED & OTHERS**	**LEICESTERSHIRE**

MELBOURNE ROAD
IBSTOCK
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 3.297 hect
Survey date: Thursday 28/06/2018 Survey Type: Manual

11	**LU-03-A-01**	**TERRACED & SEMI-DETACHED**	**LOUTH**

RATHMULLAN ROAD
DROGHEDA
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Site area: 3.67 hect
Survey date: Tuesday 21/09/2021 Survey Type: Manual

12	**MG-03-A-02**	**MIXED HOUSES**	**MONAGHAN**

GLEN ROAD
MONAGHAN
Edge of Town Centre
Residential Zone
Site area: 5.45 hect
Survey date: Tuesday 12/10/2021 Survey Type: Manual

13	**NF-03-A-27**	**MIXED HOUSES & FLATS**	**NORFOLK**

YARMOUTH ROAD
NEAR NORWICH
BLOFIELD
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 3.69 hect
Survey date: Thursday 16/09/2021 Survey Type: Manual

14	**NF-03-A-34**	**MIXED HOUSES**	**NORFOLK**

NORWICH ROAD
SWAFFHAM
Edge of Town
Out of Town
Site area: 3.15 hect
Survey date: Tuesday 27/09/2022 Survey Type: Manual

15	**NF-03-A-36**	**MIXED HOUSES**	**NORFOLK**

LONDON ROAD
WYMONDHAM
Edge of Town
No Sub Category
Site area: 3.2 hect
Survey date: Thursday 29/09/2022 Survey Type: Manual

16	**SC-03-A-06**	**MIXED HOUSES & FLATS**	**SURREY**

AMLETS LANE

CRANLEIGH
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 13.16 hect
Survey date: Thursday 08/10/2020 Survey Type: Manual

17 **TI-03-A-01** **MIXED HOUSES** **TIPPERARY**
BRITTAS ROAD
THURLES
Edge of Town
Out of Town
Site area: 3.43 hect
Survey date: Thursday 17/06/2021 Survey Type: Manual

18 **WS-03-A-14** **MIXED HOUSES** **WEST SUSSEX**
TODDINGTON LANE
LITTLEHAMPTON
WICK
Edge of Town
Residential Zone
Site area: 2.83 hect
Survey date: Wednesday 20/10/2021 Survey Type: Manual

19 **WS-03-A-17** **MIXED HOUSES & FLATS** **WEST SUSSEX**
SHOPWHYKE ROAD
CHICHESTER
Edge of Town
Residential Zone
Site area: 2.9 hect
Survey date: Wednesday 01/03/2023 Survey Type: Manual

20 **WS-03-A-19** **MIXED HOUSES & FLATS** **WEST SUSSEX**
TURNERS HILL ROAD
EAST GRINSTEAD
Edge of Town
Residential Zone
Site area: 5.16 hect
Survey date: Monday 15/05/2023 Survey Type: Manual

DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
WS-03-A-10	07-11-2018	Removed: Site re-surveyed by WS-03-A-14

Parameter Summary:

Trip rate parameter range selected:	75 - 120 (units: DWELLS)
Survey date date range:	22/05/2017 - 07/06/2024
Number of weekdays (Monday-Friday):	20
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

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

Total People

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	20	93	0.112	0.418	0.530
08:00-09:00	20	93	0.222	0.719	0.941
09:00-10:00	20	93	0.228	0.270	0.498
10:00-11:00	20	93	0.181	0.226	0.407
11:00-12:00	20	93	0.187	0.245	0.432
12:00-13:00	20	93	0.246	0.226	0.472
13:00-14:00	20	93	0.260	0.260	0.520
14:00-15:00	20	93	0.283	0.312	0.595
15:00-16:00	20	93	0.543	0.278	0.821
16:00-17:00	20	93	0.483	0.291	0.774
17:00-18:00	20	93	0.564	0.286	0.850
18:00-19:00	20	93	0.391	0.252	0.643
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			3.700	3.783	7.483

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

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

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

Pedestrians

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**20**	**93**	**0.018**	**0.043**	**0.061**
08:00-09:00	**20**	**93**	**0.032**	**0.093**	**0.125**
09:00-10:00	**20**	**93**	**0.034**	**0.030**	**0.064**
10:00-11:00	**20**	**93**	**0.019**	**0.034**	**0.053**
11:00-12:00	**20**	**93**	**0.035**	**0.038**	**0.073**
12:00-13:00	**20**	**93**	**0.031**	**0.031**	**0.062**
13:00-14:00	**20**	**93**	**0.031**	**0.031**	**0.062**
14:00-15:00	**20**	**93**	**0.044**	**0.041**	**0.085**
15:00-16:00	**20**	**93**	**0.078**	**0.048**	**0.126**
16:00-17:00	**20**	**93**	**0.067**	**0.048**	**0.115**
17:00-18:00	**20**	**93**	**0.062**	**0.041**	**0.103**
18:00-19:00	**20**	**93**	**0.041**	**0.037**	**0.078**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.492**	**0.515**	**1.007**

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

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

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

Cyclists

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	20	93	0.001	0.006	0.007
08:00-09:00	20	93	0.001	0.009	0.010
09:00-10:00	20	93	0.001	0.003	0.004
10:00-11:00	20	93	0.004	0.002	0.006
11:00-12:00	20	93	0.002	0.002	0.004
12:00-13:00	20	93	0.003	0.001	0.004
13:00-14:00	20	93	0.003	0.004	0.007
14:00-15:00	20	93	0.003	0.001	0.004
15:00-16:00	20	93	0.008	0.003	0.011
16:00-17:00	20	93	0.004	0.004	0.008
17:00-18:00	20	93	0.005	0.002	0.007
18:00-19:00	20	93	0.005	0.006	0.011
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			0.040	0.043	0.083

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

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

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

Public Transport Users

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**20**	**93**	**0.001**	**0.024**	**0.025**
08:00-09:00	**20**	**93**	**0.002**	**0.015**	**0.017**
09:00-10:00	**20**	**93**	**0.002**	**0.008**	**0.010**
10:00-11:00	**20**	**93**	**0.002**	**0.005**	**0.007**
11:00-12:00	**20**	**93**	**0.002**	**0.003**	**0.005**
12:00-13:00	**20**	**93**	**0.003**	**0.005**	**0.008**
13:00-14:00	**20**	**93**	**0.005**	**0.001**	**0.006**
14:00-15:00	**20**	**93**	**0.005**	**0.004**	**0.009**
15:00-16:00	**20**	**93**	**0.015**	**0.001**	**0.016**
16:00-17:00	**20**	**93**	**0.015**	**0.003**	**0.018**
17:00-18:00	**20**	**93**	**0.013**	**0.002**	**0.015**
18:00-19:00	**20**	**93**	**0.005**	**0.000**	**0.005**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.070**	**0.071**	**0.141**

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

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

Total Vehicles

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**20**	**93**	**0.082**	**0.271**	**0.353**
08:00-09:00	**20**	**93**	**0.156**	**0.373**	**0.529**
09:00-10:00	**20**	**93**	**0.164**	**0.183**	**0.347**
10:00-11:00	**20**	**93**	**0.133**	**0.149**	**0.282**
11:00-12:00	**20**	**93**	**0.120**	**0.156**	**0.276**
12:00-13:00	**20**	**93**	**0.172**	**0.156**	**0.328**
13:00-14:00	**20**	**93**	**0.173**	**0.178**	**0.351**
14:00-15:00	**20**	**93**	**0.185**	**0.210**	**0.395**
15:00-16:00	**20**	**93**	**0.272**	**0.175**	**0.447**
16:00-17:00	**20**	**93**	**0.270**	**0.185**	**0.455**
17:00-18:00	**20**	**93**	**0.348**	**0.188**	**0.536**
18:00-19:00	**20**	**93**	**0.263**	**0.161**	**0.424**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**2.338**	**2.385**	**4.723**

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 D

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 03 - RESIDENTIAL

Category: A - HOUSES PRIVATELY OWNED

Total Vehicles

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	3 days
	KC	KENT	1 day
	SC	SURREY	1 day
	WS	WEST SUSSEX	3 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 day
	NF	NORFOLK	3 days
05	**EAST MIDLANDS**		
	LE	LEICESTERSHIRE	1 day
08	**NORTH WEST**		
	AC	CHESHIRE WEST & CHESTER	1 day
09	**NORTH**		
	IM	ISLE OF MAN	1 day
13	**MUNSTER**		
	TI	TIPPERARY	1 day
14	**LEINSTER**		
	LU	LOUTH	1 day
16	**ULSTER (REPUBLIC OF IRELAND)**		
	CV	CAVAN	1 day
	MG	MONAGHAN	1 day
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	1 day

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:	DWELLS
Actual Range:	1.4 to 47 (units:DWELLS)
Range Selected by User:	75 to 120 (units:DWELLS)
Parking Spaces Range:	6 - 2604

Public Transport Provision:

Selection by:	All Surveys Included
Date Range:	01/01/16 to 17/09/24

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

Selected survey days:

Friday	2 days
Monday	2 days
Thursday	8 days
Tuesday	6 days
Wednesday	2 days

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

Selected survey types:

Manual count	20
Direction ATC Count	0

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	9 days
Edge of Town Centre	2 days
Neighbourhood Centre (PPS6 Local Centre)	8 days
Suburban Area (PPS6 Out of Centre)	1 days

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:

No Sub Category	3 days
Out of Town	2 days
Residential Zone	8 days
Village	7 days

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 Vehicle Counts:

Servicing vehicles Excluded	17 days
Servicing vehicles Included	3 days

Secondary Filtering Selection:

Use Class:

C3	20 surveys

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:

220 - 4096

Population within 1 mile:

1,001 to 5,000	5 surveys
10,001 to 15,000	2 surveys
15,001 to 20,000	1 surveys
5,001 to 10,000	12 surveys

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

Population within 5 miles:

100,001 to 125,000	1 surveys
25,001 to 50,000	5 surveys
5,001 to 25,000	5 surveys
50,001 to 75,000	6 surveys
75,001 to 100,000	3 surveys

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 surveys
1.1 to 1.5	13 surveys
1.6 to 2.0	6 surveys

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.

Petrol filling station:

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	8 surveys
Yes	12 surveys

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	20 surveys

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

COVID-19 Restrictions:

Yes - At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

1	**AC-03-A-06**	**DETACHED HOUSES**	**CHESHIRE WEST & CHESTER**

COMMON LANE
NEAR CHESTER
WAVERTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 6.8 hect
Survey date: Friday 29/04/2022 Survey Type: Manual

2	**AN-03-A-10**	**DETACHED & SEMI-DETACHED**	**ANTRIM**

FERRARD GRANGE
ANTRIM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Site area: 3.5 hect
Survey date: Friday 07/06/2024 Survey Type: Manual

3	**CA-03-A-08**	**DETACHED & SEMI-DETACHED**	**CAMBRIDGESHIRE**

GIDDING ROAD
SAWTRY
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 2.68 hect
Survey date: Thursday 13/10/2022 Survey Type: Manual

4	**CV-03-A-02**	**DETACHED & SEMI DETACHED**	**CAVAN**

R212 DUBLIN ROAD
CAVAN
KILLYNEBBER
Edge of Town
No Sub Category
Site area: 47 hect
Survey date: Monday 22/05/2017 Survey Type: Manual

5	**ES-03-A-07**	**MIXED HOUSES & FLATS**	**EAST SUSSEX**

NEW ROAD
HAILSHAM
HELLINGLY
Edge of Town
Residential Zone
Site area: 3.49 hect
Survey date: Thursday 07/11/2019 Survey Type: Manual

6	**ES-03-A-11**	**MIXED HOUSES**	**EAST SUSSEX**

BISHOPS LANE
RINGMER
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 4.34 hect
Survey date: Thursday 28/09/2023 Survey Type: Manual

7	**ES-03-A-16**	**MIXED HOUSES & FLATS**	**EAST SUSSEX**

RAILWAY ROAD
NEWHAVEN
Edge of Town Centre
No Sub Category
Site area: 1.4 hect
Survey date: Tuesday 14/03/2023 Survey Type: Manual

8	**IM-03-A-03**	**MIXED HOUSES**	**ISLE OF MAN**

MAIN ROAD
COLBY
Neighbourhood Centre (PPS6 Local Centre)

Village
Site area: 6.99 hect
Survey date: Tuesday 21/05/2024 Survey Type: Manual

9	**KC-03-A-10**	**MIXED HOUSES**	**KENT**

HEADCORN ROAD
STAPLEHURST
Edge of Town
Residential Zone
Site area: 3.91 hect
Survey date: Tuesday 09/05/2023 Survey Type: Manual

10	**LE-03-A-02**	**DETACHED & OTHERS**	**LEICESTERSHIRE**

MELBOURNE ROAD
IBSTOCK
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 3.297 hect
Survey date: Thursday 28/06/2018 Survey Type: Manual

11	**LU-03-A-01**	**TERRACED & SEMI-DETACHED**	**LOUTH**

RATHMULLAN ROAD
DROGHEDA
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Site area: 3.67 hect
Survey date: Tuesday 21/09/2021 Survey Type: Manual

12	**MG-03-A-02**	**MIXED HOUSES**	**MONAGHAN**

GLEN ROAD
MONAGHAN
Edge of Town Centre
Residential Zone
Site area: 5.45 hect
Survey date: Tuesday 12/10/2021 Survey Type: Manual

13	**NF-03-A-27**	**MIXED HOUSES & FLATS**	**NORFOLK**

YARMOUTH ROAD
NEAR NORWICH
BLOFIELD
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 3.69 hect
Survey date: Thursday 16/09/2021 Survey Type: Manual

14	**NF-03-A-34**	**MIXED HOUSES**	**NORFOLK**

NORWICH ROAD
SWAFFHAM
Edge of Town
Out of Town
Site area: 3.15 hect
Survey date: Tuesday 27/09/2022 Survey Type: Manual

15	**NF-03-A-36**	**MIXED HOUSES**	**NORFOLK**

LONDON ROAD
WYMONDHAM
Edge of Town
No Sub Category
Site area: 3.2 hect
Survey date: Thursday 29/09/2022 Survey Type: Manual

16	**SC-03-A-06**	**MIXED HOUSES & FLATS**	**SURREY**

AMLETS LANE

CRANLEIGH
Neighbourhood Centre (PPS6 Local Centre)
Village
Site area: 13.16 hect
Survey date: Thursday 08/10/2020 Survey Type: Manual

17 **TI-03-A-01** **MIXED HOUSES** **TIPPERARY**
BRITTAS ROAD
THURLES
Edge of Town
Out of Town
Site area: 3.43 hect
Survey date: Thursday 17/06/2021 Survey Type: Manual

18 **WS-03-A-14** **MIXED HOUSES** **WEST SUSSEX**
TODDINGTON LANE
LITTLEHAMPTON
WICK
Edge of Town
Residential Zone
Site area: 2.83 hect
Survey date: Wednesday 20/10/2021 Survey Type: Manual

19 **WS-03-A-17** **MIXED HOUSES & FLATS** **WEST SUSSEX**
SHOPWHYKE ROAD
CHICHESTER
Edge of Town
Residential Zone
Site area: 2.9 hect
Survey date: Wednesday 01/03/2023 Survey Type: Manual

20 **WS-03-A-19** **MIXED HOUSES & FLATS** **WEST SUSSEX**
TURNERS HILL ROAD
EAST GRINSTEAD
Edge of Town
Residential Zone
Site area: 5.16 hect
Survey date: Monday 15/05/2023 Survey Type: Manual

DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
WS-03-A-10	07-11-2018	Removed: Site re-surveyed by WS-03-A-14

Parameter Summary:

Trip rate parameter range selected:	75 - 120 (units: DWELLS)
Survey date date range:	22/05/2017 - 07/06/2024
Number of weekdays (Monday-Friday):	20
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

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

Total People

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	20	93	0.112	0.418	0.530
08:00-09:00	20	93	0.222	0.719	0.941
09:00-10:00	20	93	0.228	0.270	0.498
10:00-11:00	20	93	0.181	0.226	0.407
11:00-12:00	20	93	0.187	0.245	0.432
12:00-13:00	20	93	0.246	0.226	0.472
13:00-14:00	20	93	0.260	0.260	0.520
14:00-15:00	20	93	0.283	0.312	0.595
15:00-16:00	20	93	0.543	0.278	0.821
16:00-17:00	20	93	0.483	0.291	0.774
17:00-18:00	20	93	0.564	0.286	0.850
18:00-19:00	20	93	0.391	0.252	0.643
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			3.700	3.783	7.483

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

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

Pedestrians

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**20**	**93**	**0.018**	**0.043**	**0.061**
08:00-09:00	**20**	**93**	**0.032**	**0.093**	**0.125**
09:00-10:00	**20**	**93**	**0.034**	**0.030**	**0.064**
10:00-11:00	**20**	**93**	**0.019**	**0.034**	**0.053**
11:00-12:00	**20**	**93**	**0.035**	**0.038**	**0.073**
12:00-13:00	**20**	**93**	**0.031**	**0.031**	**0.062**
13:00-14:00	**20**	**93**	**0.031**	**0.031**	**0.062**
14:00-15:00	**20**	**93**	**0.044**	**0.041**	**0.085**
15:00-16:00	**20**	**93**	**0.078**	**0.048**	**0.126**
16:00-17:00	**20**	**93**	**0.067**	**0.048**	**0.115**
17:00-18:00	**20**	**93**	**0.062**	**0.041**	**0.103**
18:00-19:00	**20**	**93**	**0.041**	**0.037**	**0.078**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.492**	**0.515**	**1.007**

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

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

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

Cyclists

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	20	93	0.001	0.006	0.007
08:00-09:00	20	93	0.001	0.009	0.010
09:00-10:00	20	93	0.001	0.003	0.004
10:00-11:00	20	93	0.004	0.002	0.006
11:00-12:00	20	93	0.002	0.002	0.004
12:00-13:00	20	93	0.003	0.001	0.004
13:00-14:00	20	93	0.003	0.004	0.007
14:00-15:00	20	93	0.003	0.001	0.004
15:00-16:00	20	93	0.008	0.003	0.011
16:00-17:00	20	93	0.004	0.004	0.008
17:00-18:00	20	93	0.005	0.002	0.007
18:00-19:00	20	93	0.005	0.006	0.011
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			0.040	0.043	0.083

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

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

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

Public Transport Users

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**20**	**93**	**0.001**	**0.024**	**0.025**
08:00-09:00	**20**	**93**	**0.002**	**0.015**	**0.017**
09:00-10:00	**20**	**93**	**0.002**	**0.008**	**0.010**
10:00-11:00	**20**	**93**	**0.002**	**0.005**	**0.007**
11:00-12:00	**20**	**93**	**0.002**	**0.003**	**0.005**
12:00-13:00	**20**	**93**	**0.003**	**0.005**	**0.008**
13:00-14:00	**20**	**93**	**0.005**	**0.001**	**0.006**
14:00-15:00	**20**	**93**	**0.005**	**0.004**	**0.009**
15:00-16:00	**20**	**93**	**0.015**	**0.001**	**0.016**
16:00-17:00	**20**	**93**	**0.015**	**0.003**	**0.018**
17:00-18:00	**20**	**93**	**0.013**	**0.002**	**0.015**
18:00-19:00	**20**	**93**	**0.005**	**0.000**	**0.005**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.070**	**0.071**	**0.141**

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

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

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

Total Vehicles

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**20**	**93**	**0.082**	**0.271**	**0.353**
08:00-09:00	**20**	**93**	**0.156**	**0.373**	**0.529**
09:00-10:00	**20**	**93**	**0.164**	**0.183**	**0.347**
10:00-11:00	**20**	**93**	**0.133**	**0.149**	**0.282**
11:00-12:00	**20**	**93**	**0.120**	**0.156**	**0.276**
12:00-13:00	**20**	**93**	**0.172**	**0.156**	**0.328**
13:00-14:00	**20**	**93**	**0.173**	**0.178**	**0.351**
14:00-15:00	**20**	**93**	**0.185**	**0.210**	**0.395**
15:00-16:00	**20**	**93**	**0.272**	**0.175**	**0.447**
16:00-17:00	**20**	**93**	**0.270**	**0.185**	**0.455**
17:00-18:00	**20**	**93**	**0.348**	**0.188**	**0.536**
18:00-19:00	**20**	**93**	**0.263**	**0.161**	**0.424**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**2.338**	**2.385**	**4.723**

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 E

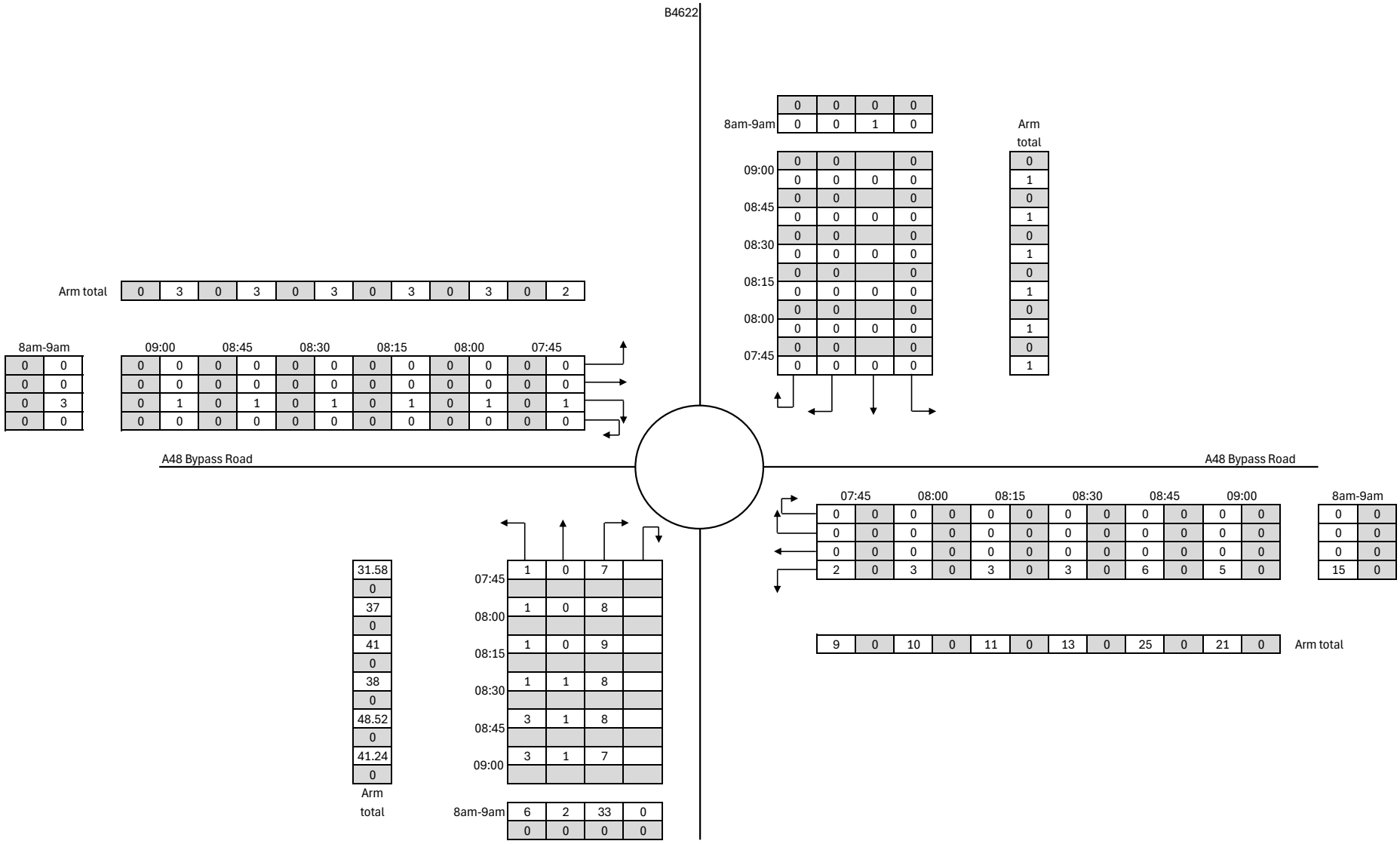

Figure 2.1 Craig Y Parcau development flows - AM

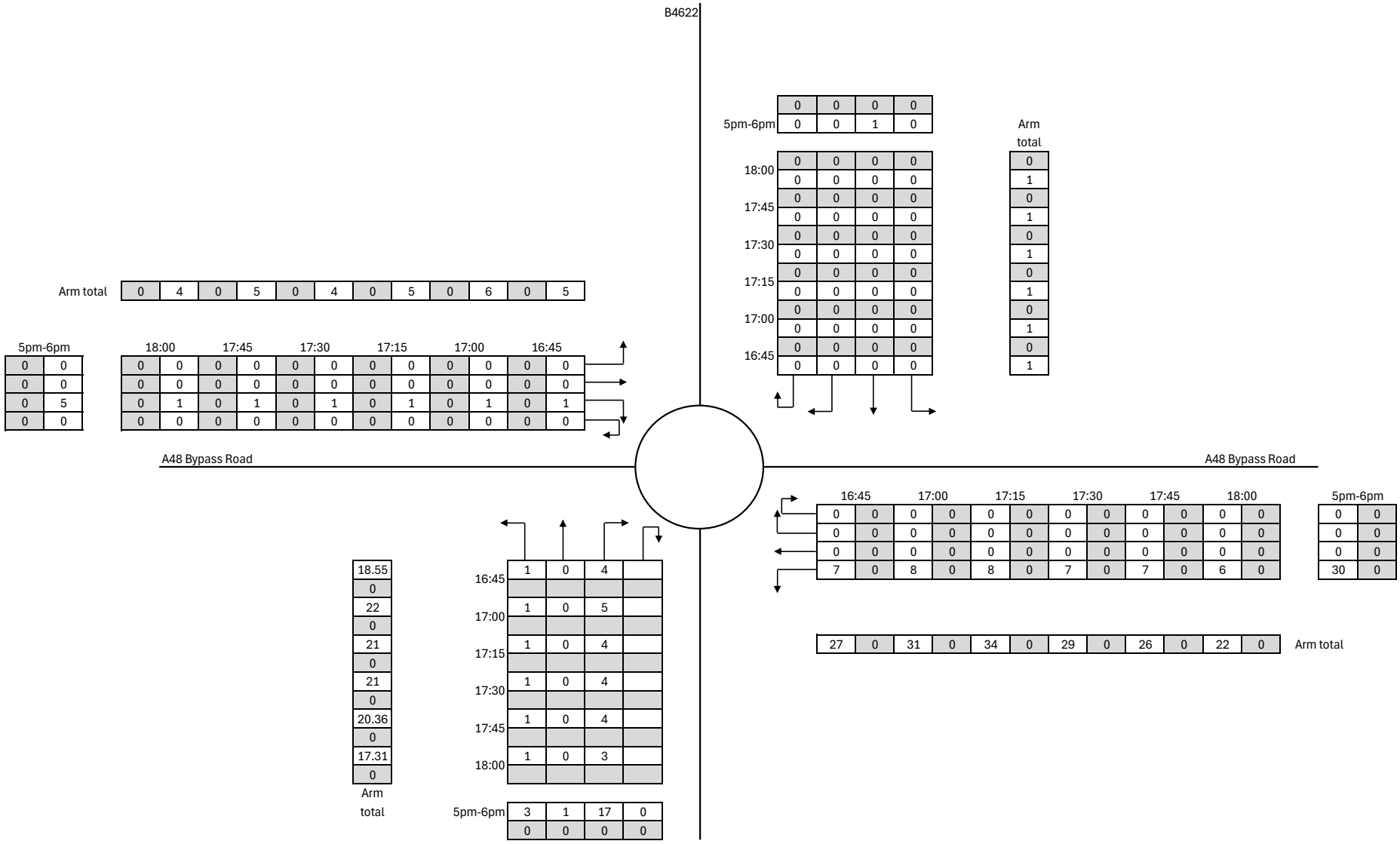

Figure 2.2 Craig Y Parcau development flows - AM

Appendix F

Bridgend, Wednesday 7th February 2024

Junction: 5
Approach: B4622

	Left to A48 (East)					Right to A48 (West)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	101	0	1	102	103.0	14	0	0	14	14.0
07:15 - 07:30	120	0	0	120	120.0	20	0	0	20	20.0
07:30 - 07:45	119	2	0	121	123.6	23	0	0	23	23.0
07:45 - 08:00	155	0	0	155	155.0	32	0	0	32	32.0
Hourly Total	**495**	**2**	**1**	**498**	**501.6**	**89**	**0**	**0**	**89**	**89.0**
08:00 - 08:15	109	0	0	109	109.0	16	0	0	16	16.0
08:15 - 08:30	126	0	0	126	126.0	24	0	0	24	24.0
08:30 - 08:45	118	0	0	118	118.0	29	0	0	29	29.0
08:45 - 09:00	113	2	0	115	117.6	25	0	0	25	25.0
Hourly Total	**466**	**2**	**0**	**468**	**470.6**	**94**	**0**	**0**	**94**	**94.0**
TOTAL	**961**	**4**	**1**	**966**	**972.2**	**183**	**0**	**0**	**183**	**183.0**
16:00 - 16:15	79	0	0	79	79.0	18	0	0	18	18.0
16:15 - 16:30	83	0	0	83	83.0	21	0	0	21	21.0
16:30 - 16:45	74	0	0	74	74.0	23	0	0	23	23.0
16:45 - 17:00	67	0	0	67	67.0	12	0	0	12	12.0
Hourly Total	**303**	**0**	**0**	**303**	**303.0**	**74**	**0**	**0**	**74**	**74.0**
17:00 - 17:15	79	0	0	79	79.0	19	0	0	19	19.0
17:15 - 17:30	73	1	0	74	75.3	14	0	0	14	14.0
17:30 - 17:45	91	0	0	91	91.0	23	0	0	23	23.0
17:45 - 18:00	76	0	0	76	76.0	17	0	0	17	17.0
Hourly Total	**319**	**1**	**0**	**320**	**321.3**	**73**	**0**	**0**	**73**	**73.0**
TOTAL	**622**	**1**	**0**	**623**	**624.3**	**147**	**0**	**0**	**147**	**147.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Bridgend, Wednesday 7th February 2024

Junction: 5
Approach: A48 East

	Ahead to A48 (West)					Right to B4622					U-Turn				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	46	2	0	**48**	**50.6**	12	0	0	**12**	**12.0**	0	0	0	**0**	**0.0**
07:15 - 07:30	57	2	0	**59**	**61.6**	21	0	0	**21**	**21.0**	0	0	0	**0**	**0.0**
07:30 - 07:45	65	5	2	**72**	**80.5**	21	1	0	**22**	**23.3**	0	0	0	**0**	**0.0**
07:45 - 08:00	91	2	1	**94**	**97.6**	28	0	0	**28**	**28.0**	0	0	0	**0**	**0.0**
Hourly Total	**259**	**11**	**3**	**273**	**290.3**	**82**	**1**	**0**	**83**	**84.3**	**0**	**0**	**0**	**0**	**0.0**
08:00 - 08:15	103	1	0	**104**	**105.3**	32	0	0	**32**	**32.0**	1	0	0	**1**	**1.0**
08:15 - 08:30	102	5	0	**107**	**113.5**	40	1	0	**41**	**42.3**	0	0	0	**0**	**0.0**
08:30 - 08:45	122	7	0	**129**	**138.1**	47	0	0	**47**	**47.0**	0	0	0	**0**	**0.0**
08:45 - 09:00	233	13	0	**246**	**262.9**	80	0	0	**80**	**80.0**	0	0	0	**0**	**0.0**
Hourly Total	**560**	**26**	**0**	**586**	**619.8**	**199**	**1**	**0**	**200**	**201.3**	**1**	**0**	**0**	**1**	**1.0**
TOTAL	**819**	**37**	**3**	**859**	**910.1**	**281**	**2**	**0**	**283**	**285.6**	**1**	**0**	**0**	**1**	**1.0**
16:00 - 16:15	224	4	0	**228**	**233.2**	109	0	0	**109**	**109.0**	0	0	0	**0**	**0.0**
16:15 - 16:30	231	3	0	**234**	**237.9**	111	0	0	**111**	**111.0**	0	0	0	**0**	**0.0**
16:30 - 16:45	215	2	1	**218**	**221.6**	121	0	0	**121**	**121.0**	0	0	0	**0**	**0.0**
16:45 - 17:00	182	6	0	**188**	**195.8**	145	0	0	**145**	**145.0**	0	0	0	**0**	**0.0**
Hourly Total	**852**	**15**	**1**	**868**	**888.5**	**486**	**0**	**0**	**486**	**486.0**	**0**	**0**	**0**	**0**	**0.0**
17:00 - 17:15	204	1	1	**206**	**208.3**	125	0	0	**125**	**125.0**	0	0	0	**0**	**0.0**
17:15 - 17:30	213	0	0	**213**	**213.0**	143	0	0	**143**	**143.0**	0	0	0	**0**	**0.0**
17:30 - 17:45	177	0	0	**177**	**177.0**	123	0	0	**123**	**123.0**	0	0	0	**0**	**0.0**
17:45 - 18:00	149	1	0	**150**	**151.3**	125	0	0	**125**	**125.0**	0	0	0	**0**	**0.0**
Hourly Total	**743**	**2**	**1**	**746**	**749.6**	**516**	**0**	**0**	**516**	**516.0**	**0**	**0**	**0**	**0**	**0.0**
TOTAL	**1595**	**17**	**2**	**1614**	**1638.1**	**1002**	**0**	**0**	**1002**	**1002.0**	**0**	**0**	**0**	**0**	**0.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Bridgend, Wednesday 7th February 2024

Junction: 5
Approach: A48 West

	Left to B4622					Ahead to A48 (East)					U-Turn				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	13	0	0	**13**	**13.0**	108	5	0	**113**	**119.5**	0	0	0	**0**	**0.0**
07:15 - 07:30	20	0	0	**20**	**20.0**	140	4	0	**144**	**149.2**	0	0	0	**0**	**0.0**
07:30 - 07:45	19	1	0	**20**	**21.3**	202	8	0	**210**	**220.4**	0	0	0	**0**	**0.0**
07:45 - 08:00	32	0	0	**32**	**32.0**	217	3	0	**220**	**223.9**	0	0	0	**0**	**0.0**
Hourly Total	**84**	**1**	**0**	**85**	**86.3**	**667**	**20**	**0**	**687**	**713.0**	**0**	**0**	**0**	**0**	**0.0**
08:00 - 08:15	25	0	0	**25**	**25.0**	219	5	0	**224**	**230.5**	0	0	0	**0**	**0.0**
08:15 - 08:30	26	1	1	**28**	**30.3**	228	9	0	**237**	**248.7**	1	0	0	**1**	**1.0**
08:30 - 08:45	42	0	0	**42**	**42.0**	202	2	0	**204**	**206.6**	1	0	0	**1**	**1.0**
08:45 - 09:00	40	0	0	**40**	**40.0**	214	4	0	**218**	**223.2**	3	0	0	**3**	**3.0**
Hourly Total	**133**	**1**	**1**	**135**	**137.3**	**863**	**20**	**0**	**883**	**909.0**	**5**	**0**	**0**	**5**	**5.0**
TOTAL	**217**	**2**	**1**	**220**	**223.6**	**1530**	**40**	**0**	**1570**	**1622.0**	**5**	**0**	**0**	**5**	**5.0**
16:00 - 16:15	50	0	0	**50**	**50.0**	117	5	0	**122**	**128.5**	1	0	0	**1**	**1.0**
16:15 - 16:30	30	1	0	**31**	**32.3**	129	3	1	**133**	**137.9**	0	0	0	**0**	**0.0**
16:30 - 16:45	32	0	0	**32**	**32.0**	158	5	1	**164**	**171.5**	0	0	0	**0**	**0.0**
16:45 - 17:00	21	0	0	**21**	**21.0**	137	7	0	**144**	**153.1**	0	0	0	**0**	**0.0**
Hourly Total	**133**	**1**	**0**	**134**	**135.3**	**541**	**20**	**2**	**563**	**591.0**	**1**	**0**	**0**	**1**	**1.0**
17:00 - 17:15	23	0	0	**23**	**23.0**	145	3	0	**148**	**151.9**	0	0	0	**0**	**0.0**
17:15 - 17:30	18	0	0	**18**	**18.0**	141	2	0	**143**	**145.6**	0	0	0	**0**	**0.0**
17:30 - 17:45	12	1	0	**13**	**14.3**	125	1	0	**126**	**127.3**	2	0	0	**2**	**2.0**
17:45 - 18:00	30	0	0	**30**	**30.0**	115	3	0	**118**	**121.9**	0	0	0	**0**	**0.0**
Hourly Total	**83**	**1**	**0**	**84**	**85.3**	**526**	**9**	**0**	**535**	**546.7**	**2**	**0**	**0**	**2**	**2.0**
TOTAL	**216**	**2**	**0**	**218**	**220.6**	**1067**	**29**	**2**	**1098**	**1137.7**	**3**	**0**	**0**	**3**	**3.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Bridgend, Wednesday 7th February 2024

Site 5

Queues are stationary vehicles each 5 minutes
LANE 1 is nearside lane

	B4622		A48 (East)		A48 (West)
TIME	LANE 1	LANE 2	LANE 1	LANE 2	
07:00	0	0	0	0	0
07:05	0	0	0	0	0
07:10	0	0	0	0	0
07:15	0	0	0	0	0
07:20	0	0	0	0	0
07:25	1	2	0	0	0
07:30	0	0	0	0	0
07:35	5	0	0	0	0
07:40	0	0	0	0	0
07:45	9	3	0	0	0
07:50	1	2	0	0	0
07:55	4	0	0	0	0
08:00	15	0	0	0	15
08:05	18	2	0	0	6
08:10	16	0	0	0	0
08:15	16	0	0	0	0
08:20	20	0	0	0	0
08:25	15	0	0	0	0
08:30	17	3	0	0	0
08:35	17	0	7	0	0
08:40	19	0	0	0	0
08:45	15	0	0	0	0
08:50	15	0	0	0	0
08:55	11	3	0	0	0
09:00	16	0	0	0	0
16:00	0	0	0	0	0
16:05	0	0	0	0	0
16:10	0	0	0	0	0
16:15	0	0	0	0	0
16:20	1	1	0	0	0
16:25	0	0	0	0	5
16:30	0	0	0	0	0
16:35	1	0	0	0	0
16:40	0	0	0	0	9
16:45	0	0	0	0	0
16:50	0	0	0	0	0
16:55	0	0	0	0	0
17:00	0	0	0	0	5
17:05	0	0	0	0	6
17:10	1	0	0	0	0
17:15	2	1	0	0	0
17:20	0	0	0	0	6
17:25	0	0	0	0	0
17:30	3	0	0	0	0
17:35	0	0	0	0	0
17:40	0	0	0	0	2
17:45	0	0	0	0	0
17:50	0	0	0	0	0
17:55	1	0	0	0	1
18:00	0	0	0	0	0

Appendix G

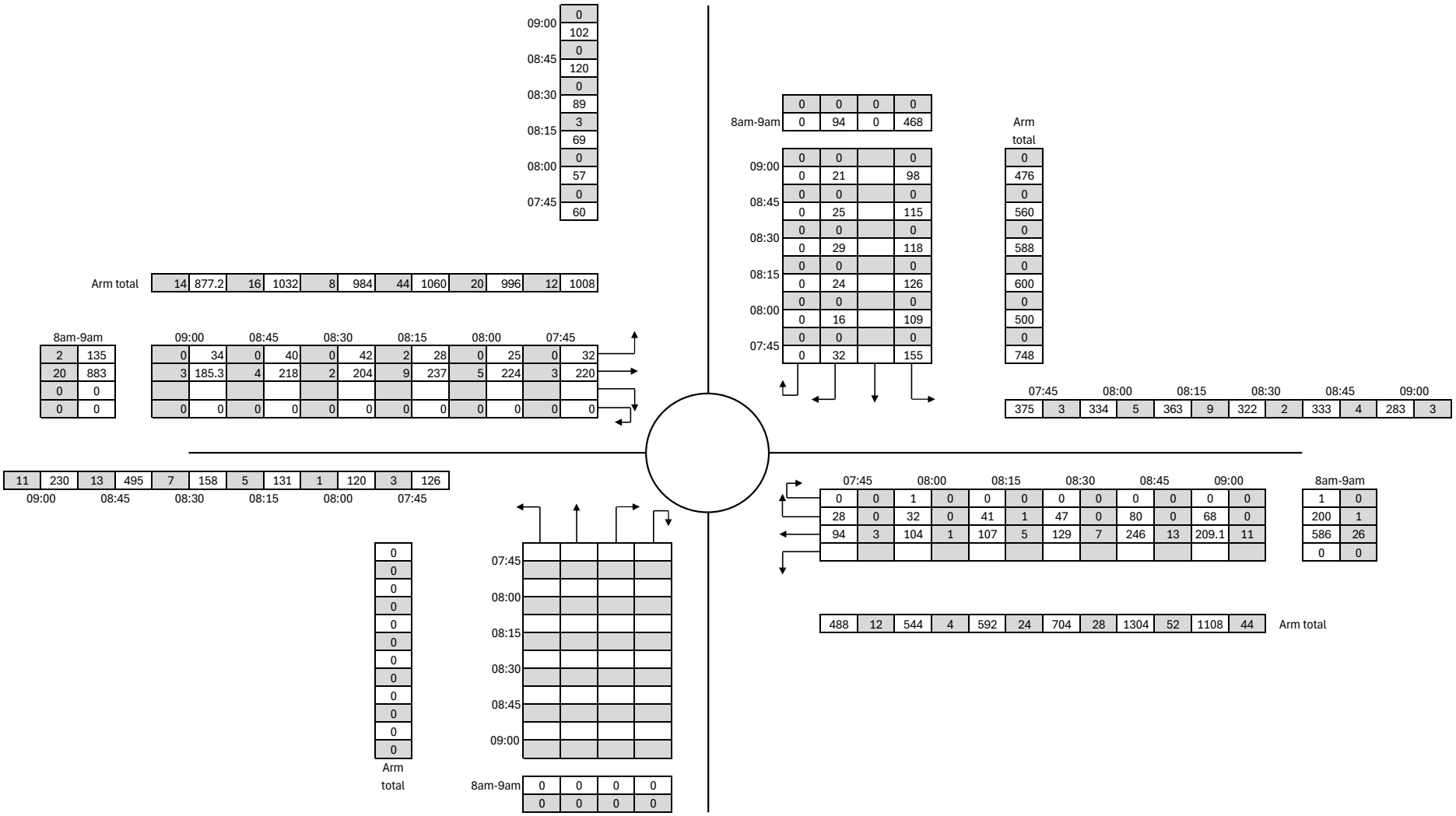

Figure 2.7 Base (surveyed) flows - AM

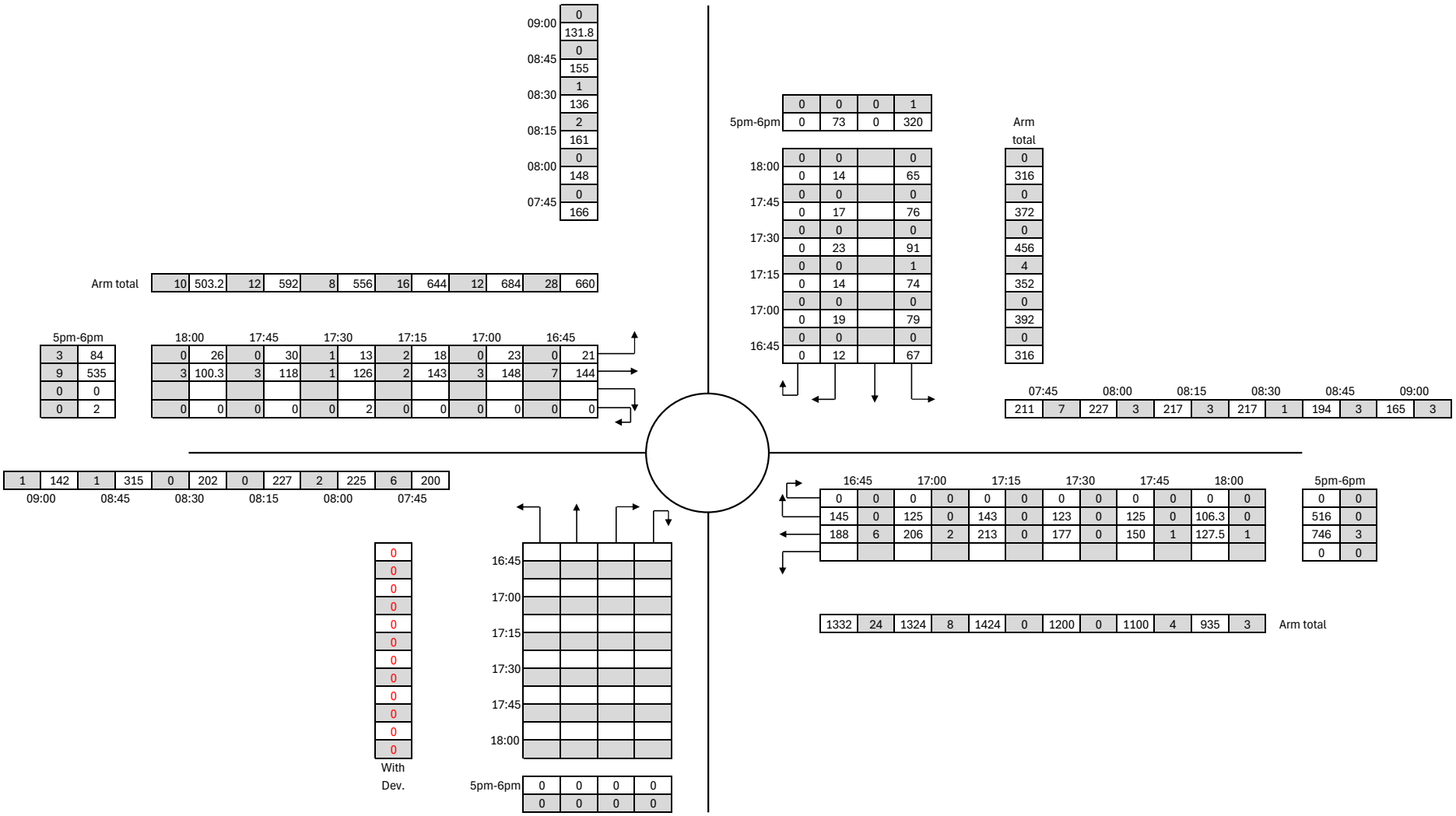

Figure 2.8 2024 Base (surveyed) flows - PM

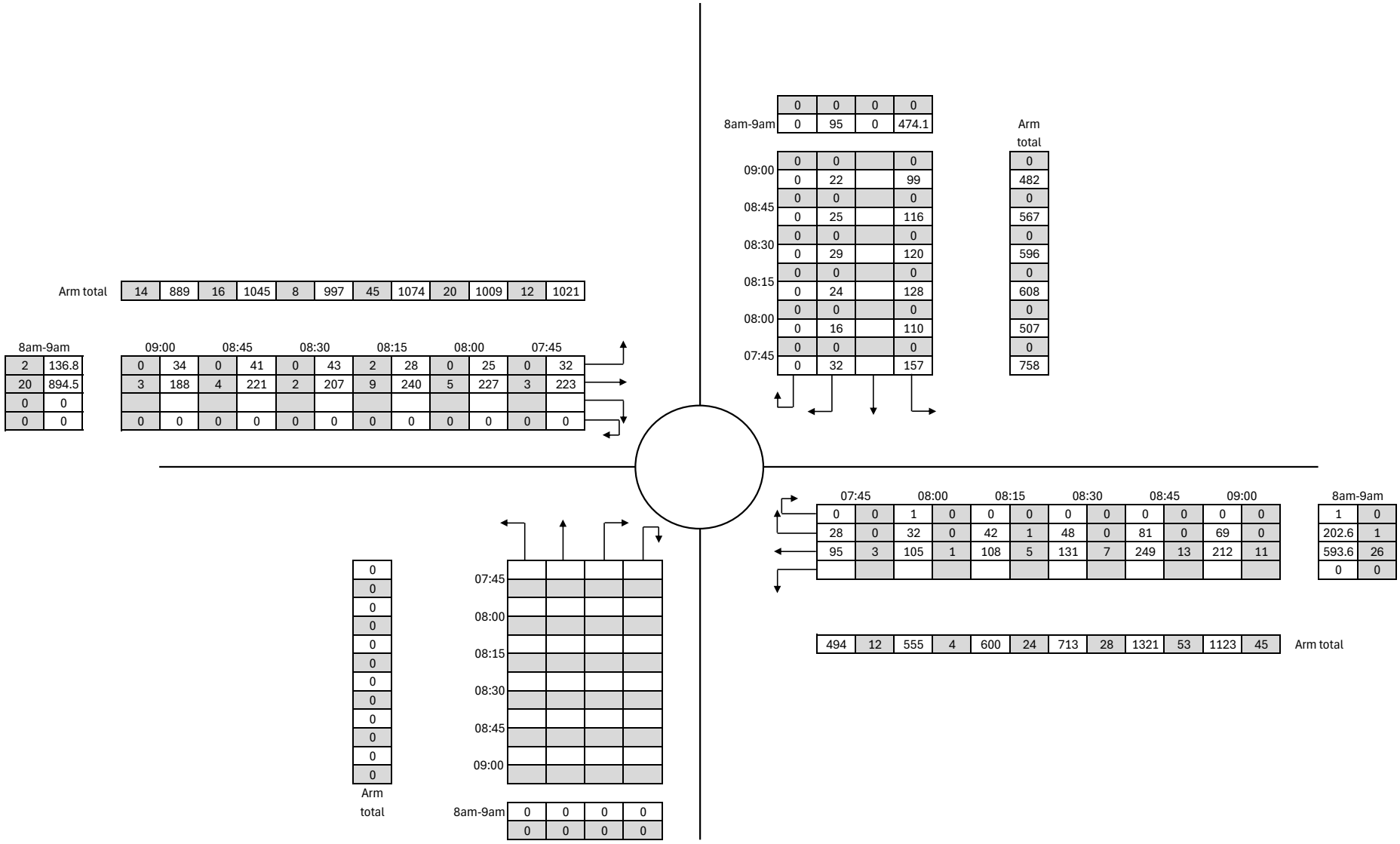

Figure 2.9 2026 Base flows - AM

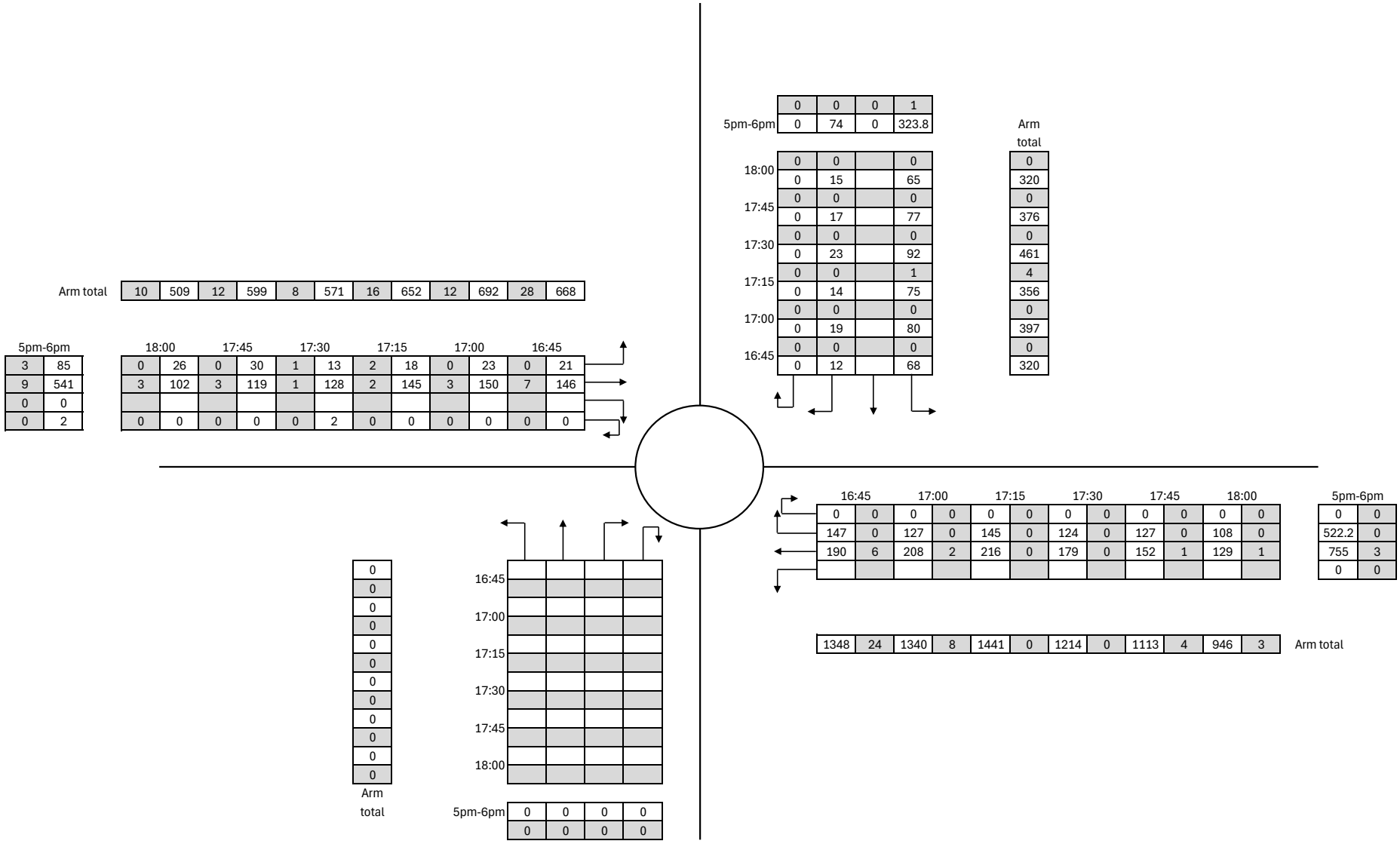

Figure 2.10 2026 Base flows - PM

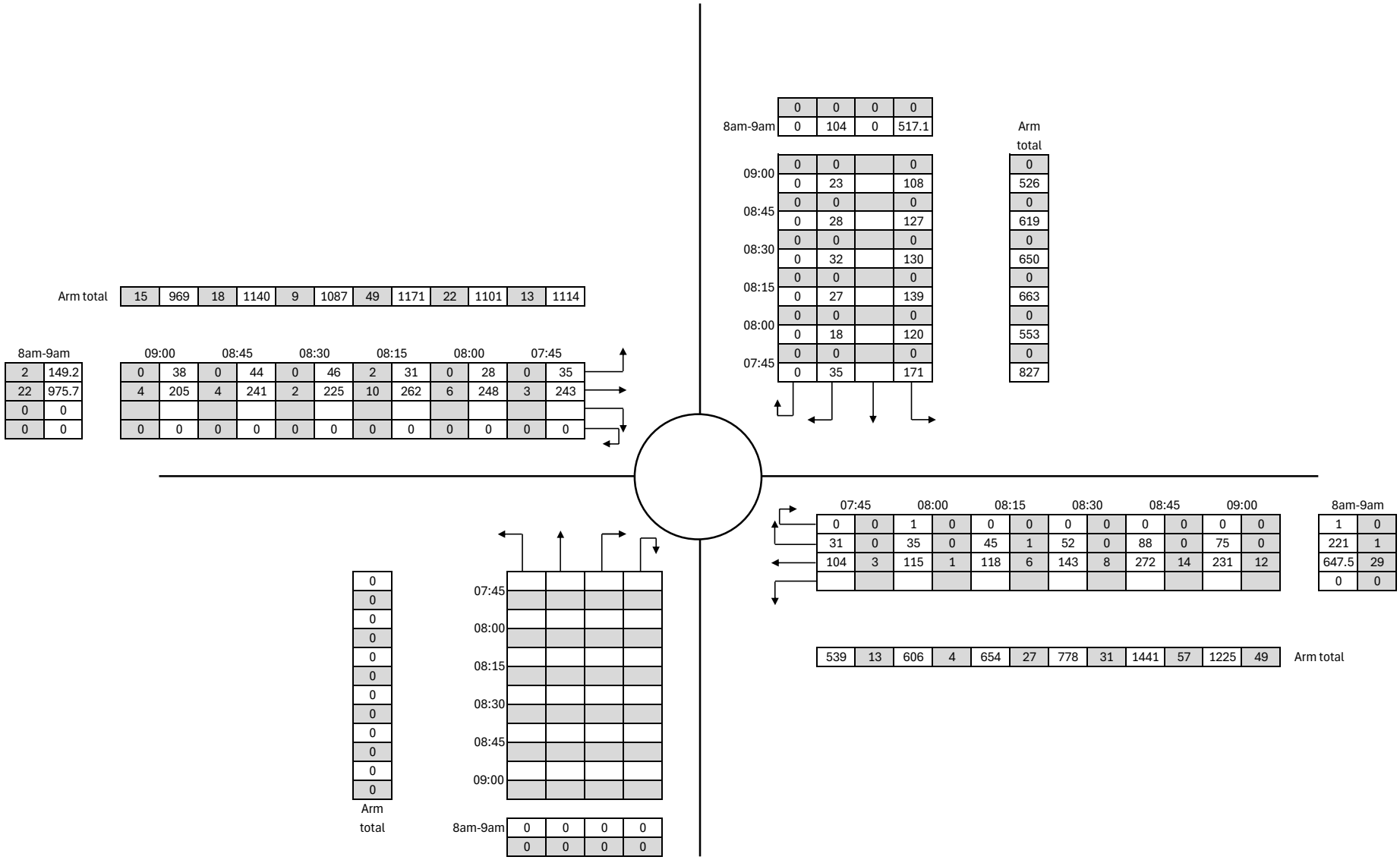

Figure 2.17 2035 Base flows - AM

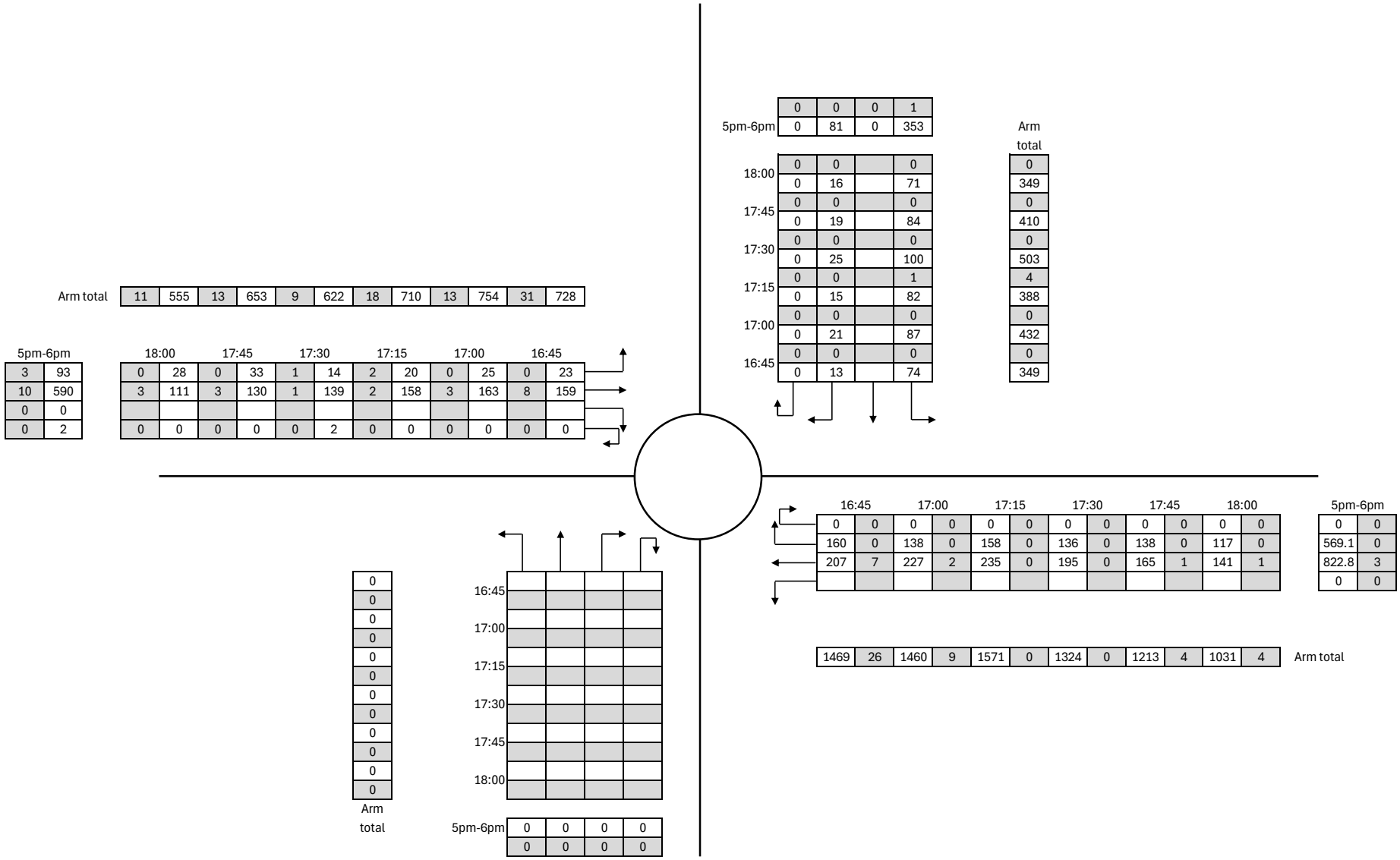

Figure 2.18 2035 Base flows - PM

Appendix H

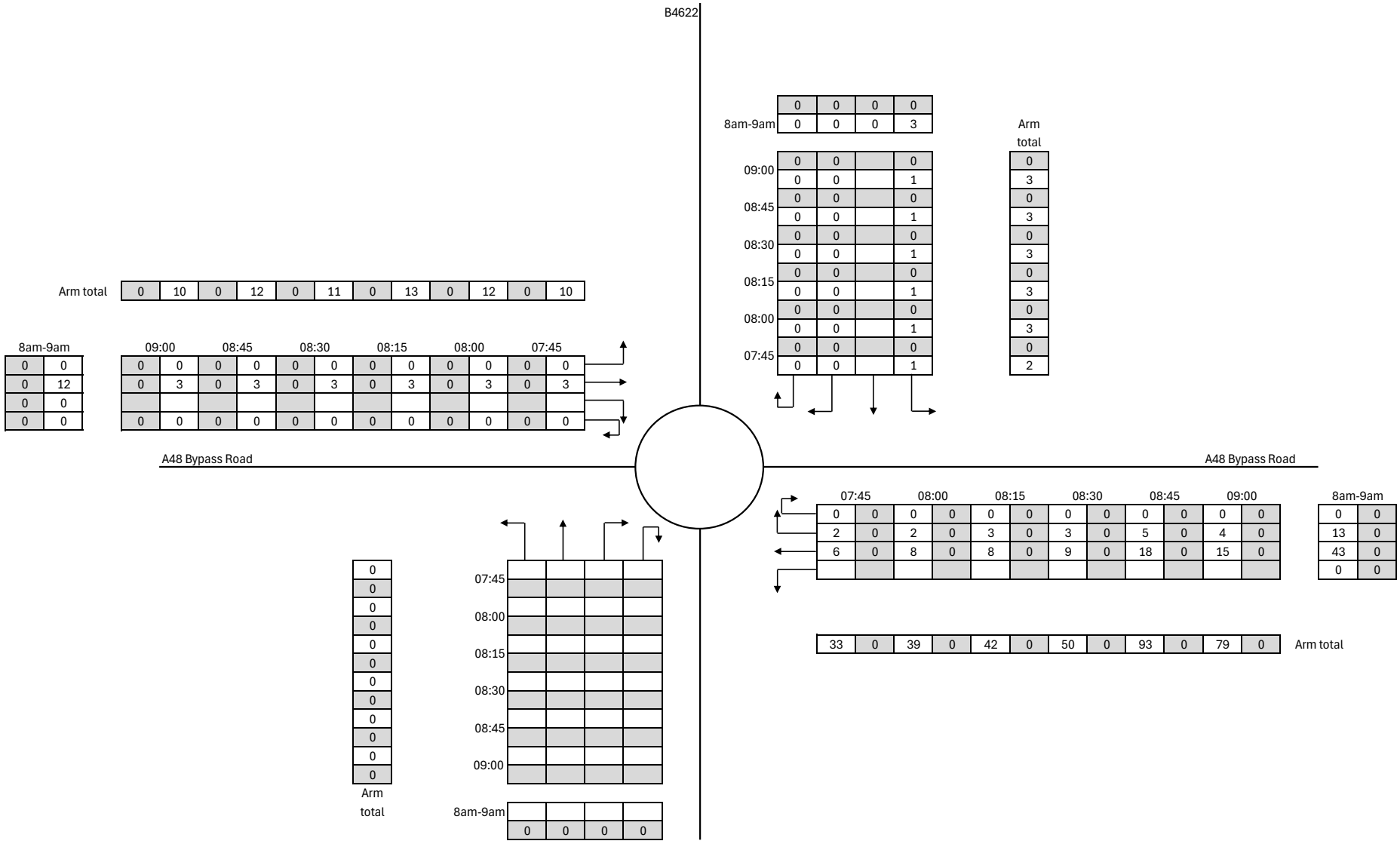

Figure 2.3 Island Farm development flows - AM

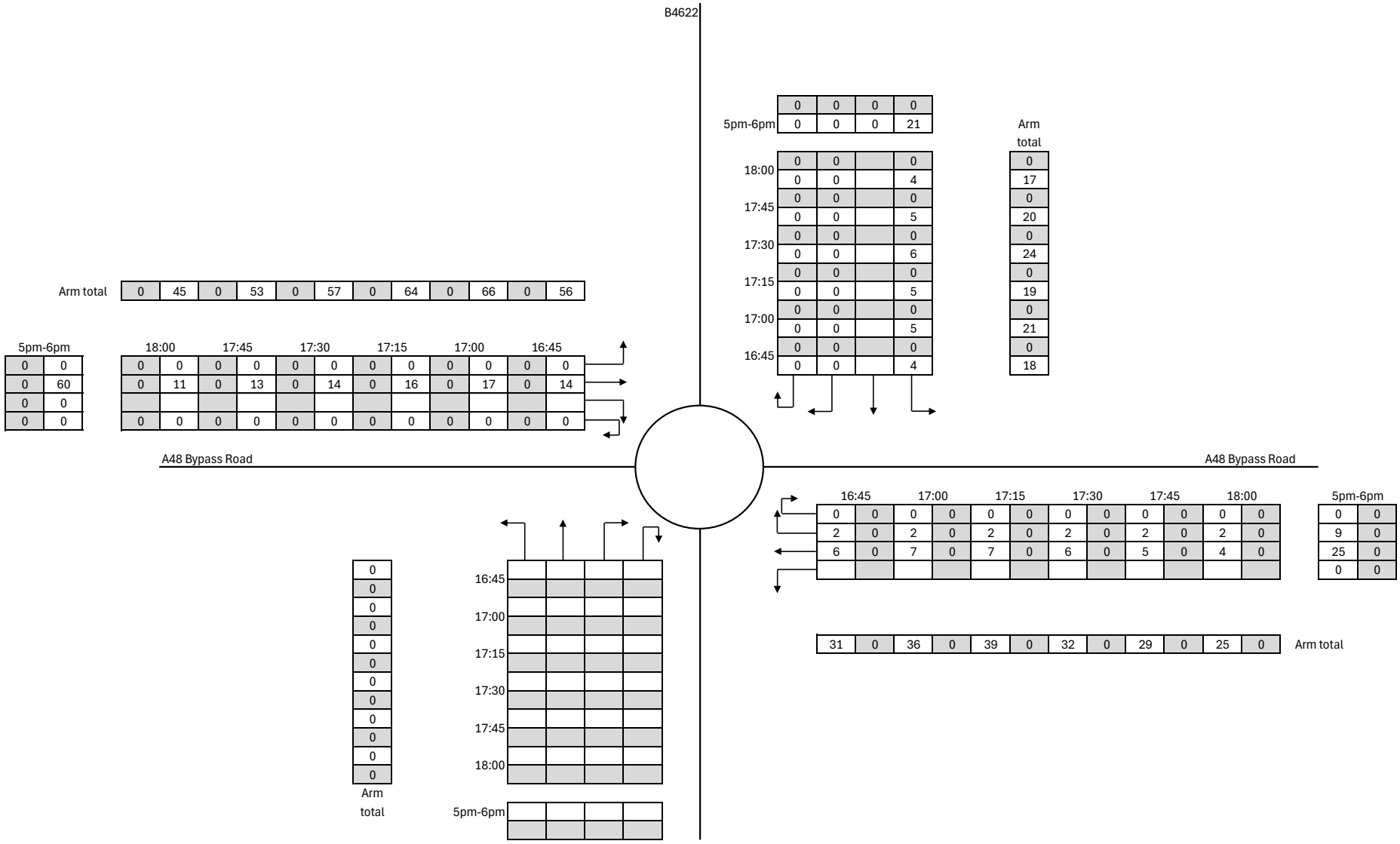

Figure 2.4 Island Farm development flows - PM

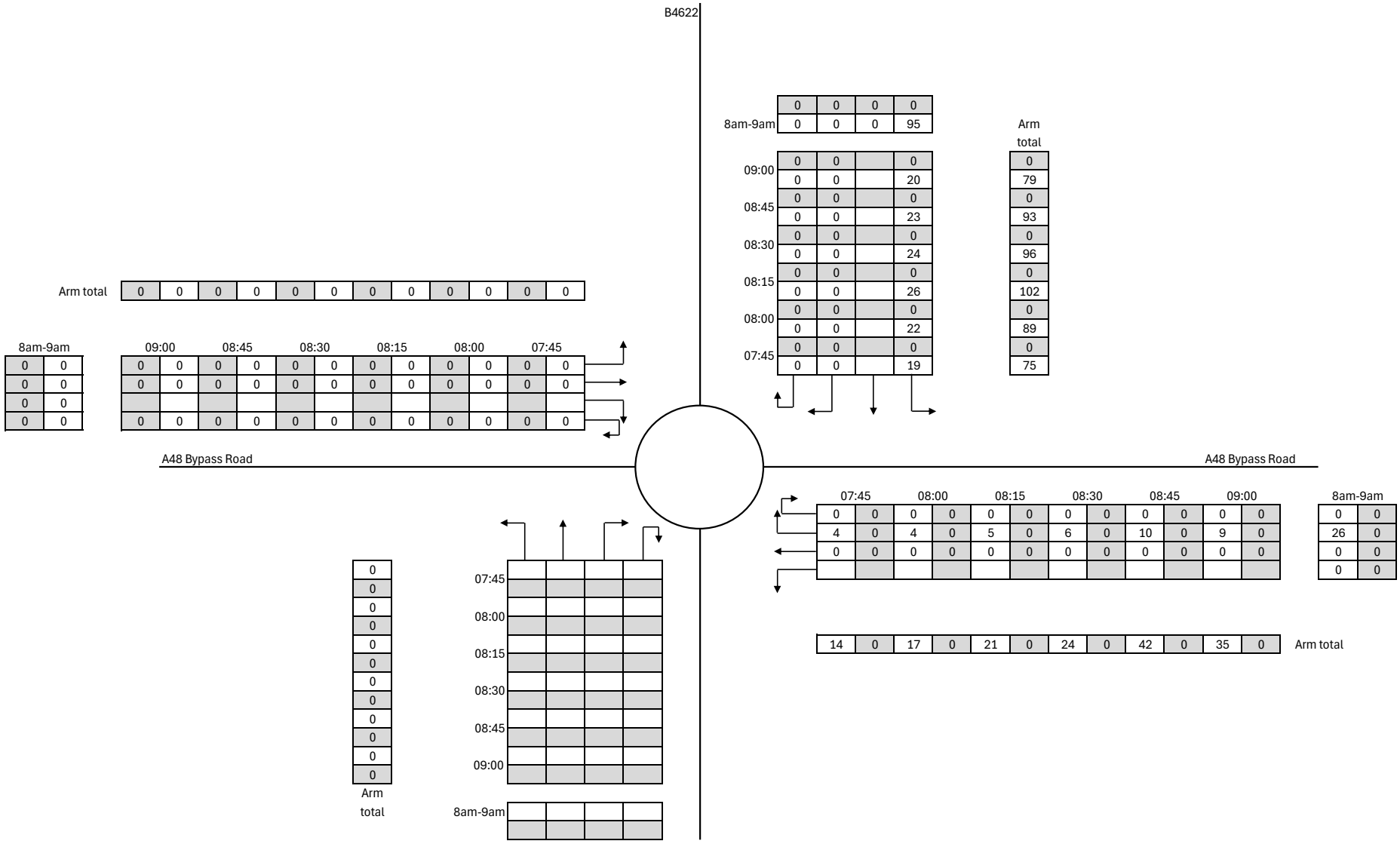

Figure 2.5 Parc Llangewydd development flows - AM

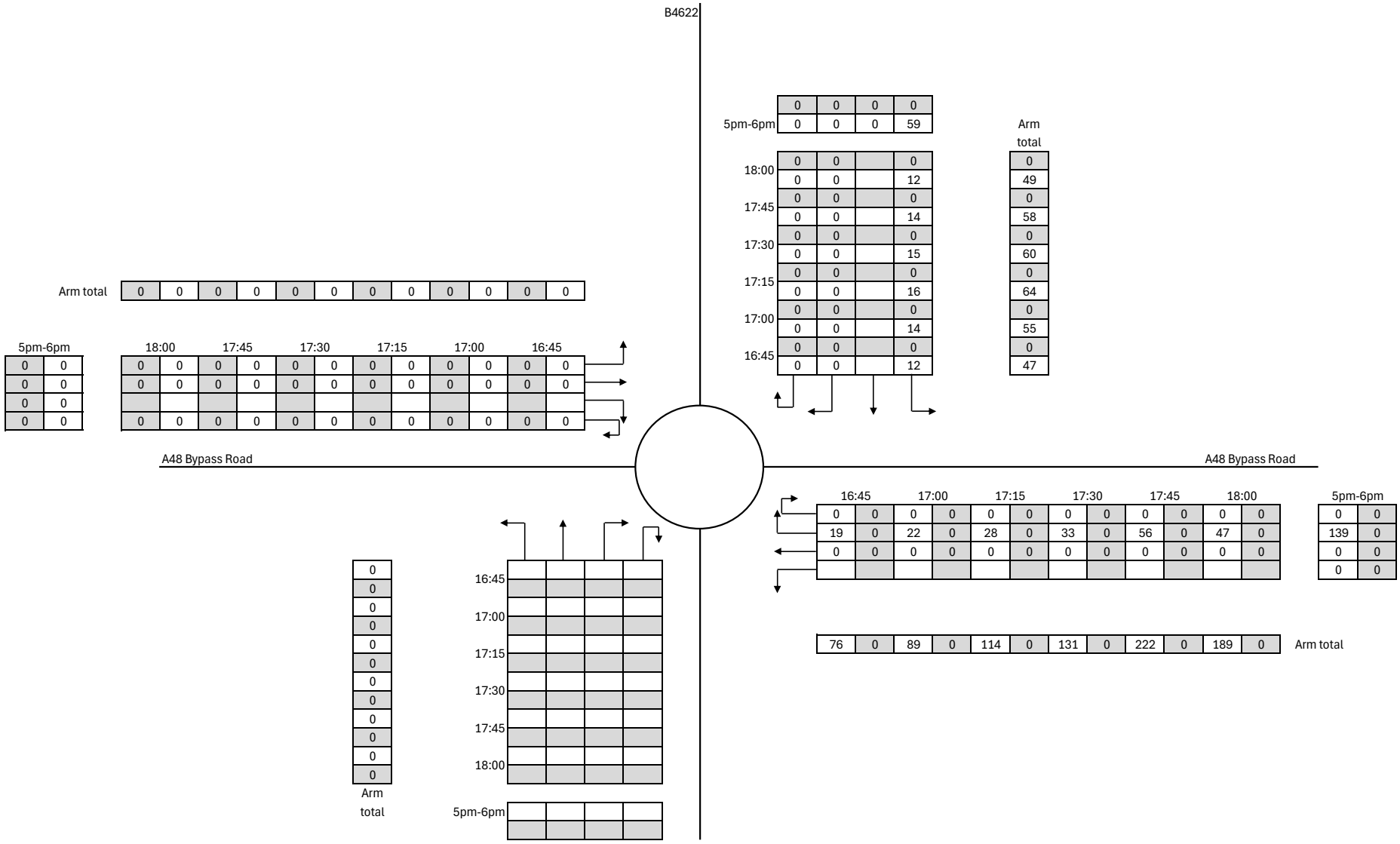

Figure 2.6 Parc Llangewydd development flows - PM

Appendix I

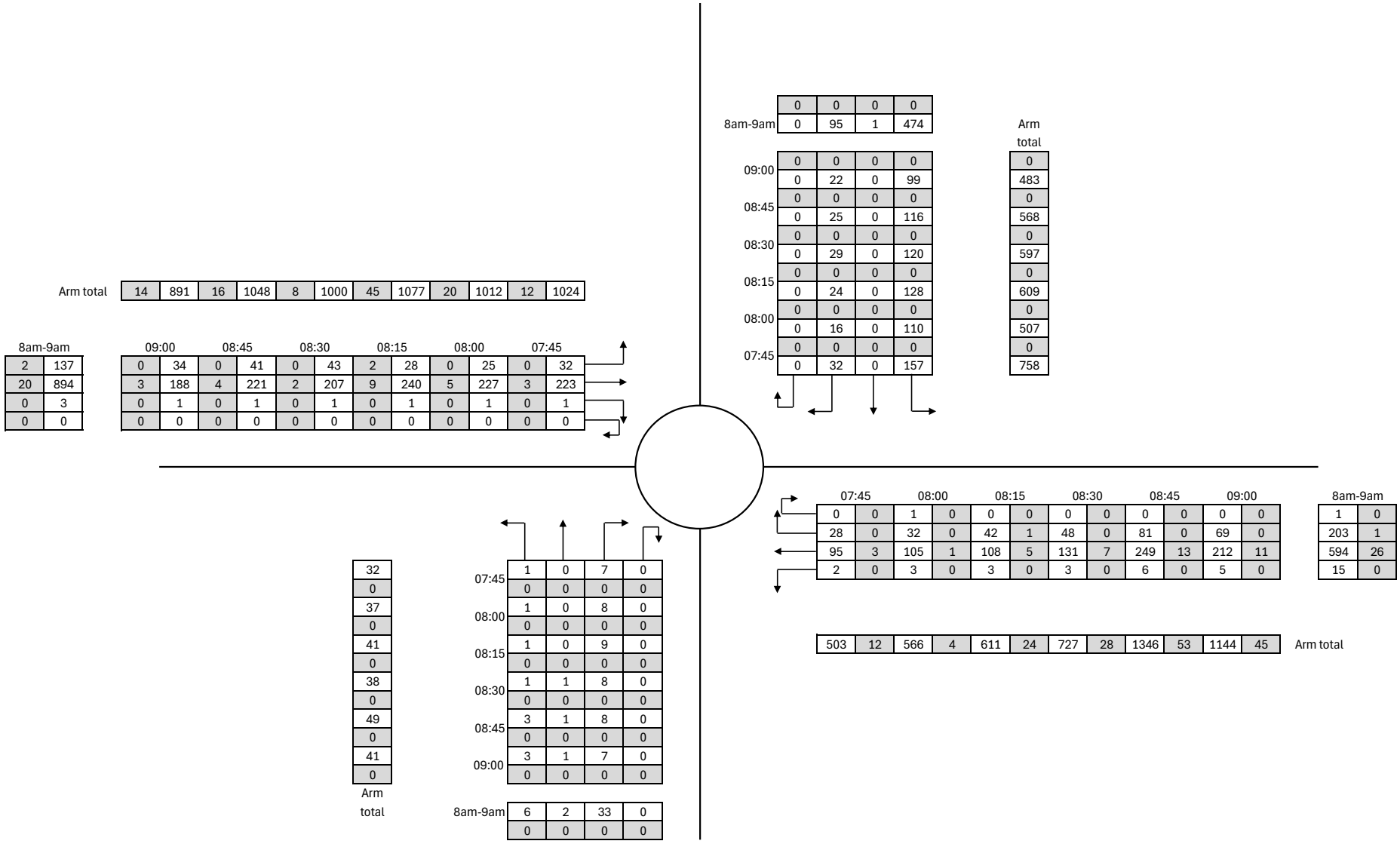

Figure 2.11 2026 Base + Craig Y Parcau flows - AM

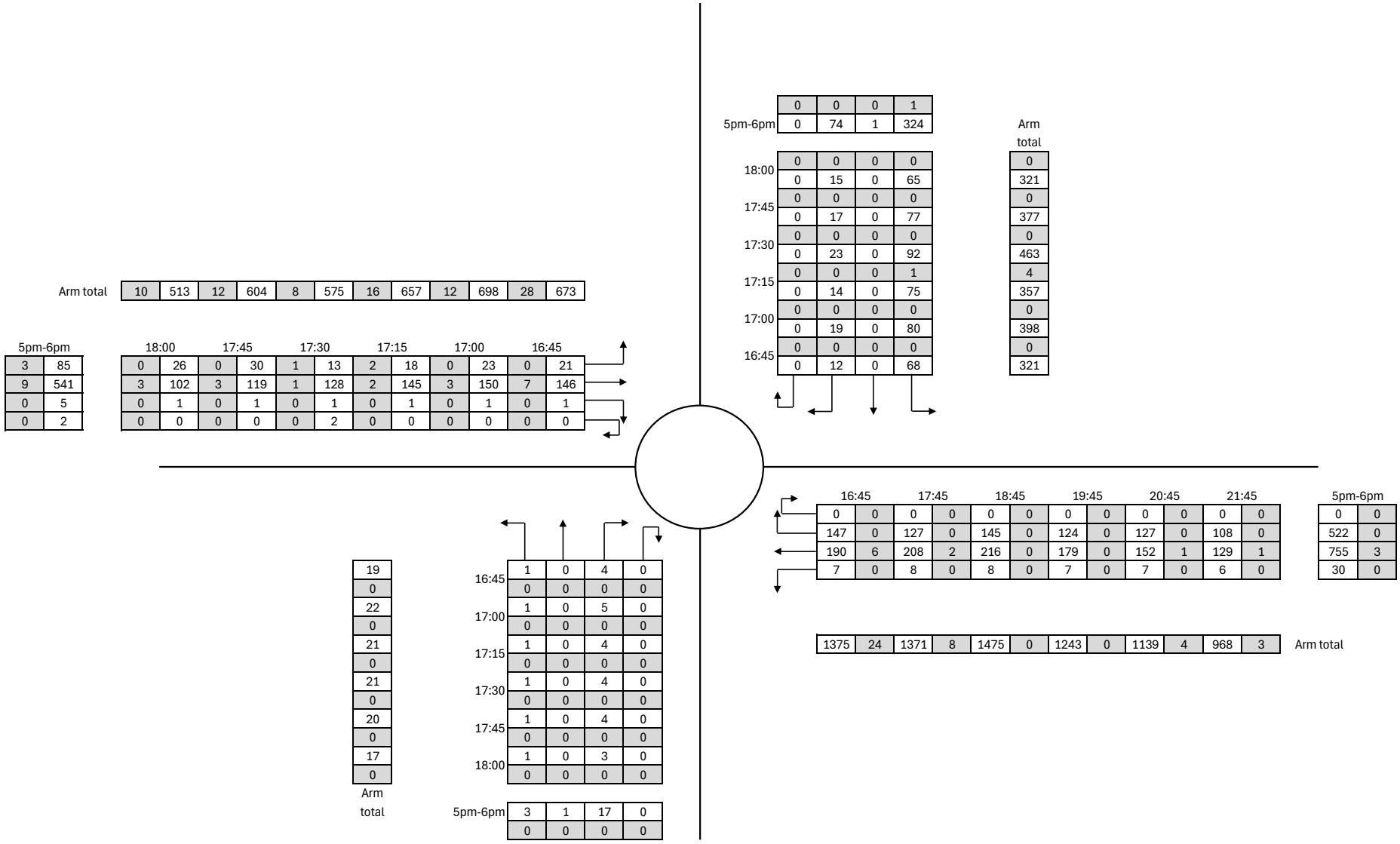

Figure 2.12 2026 Base + Craig Y Parcau flows - PM

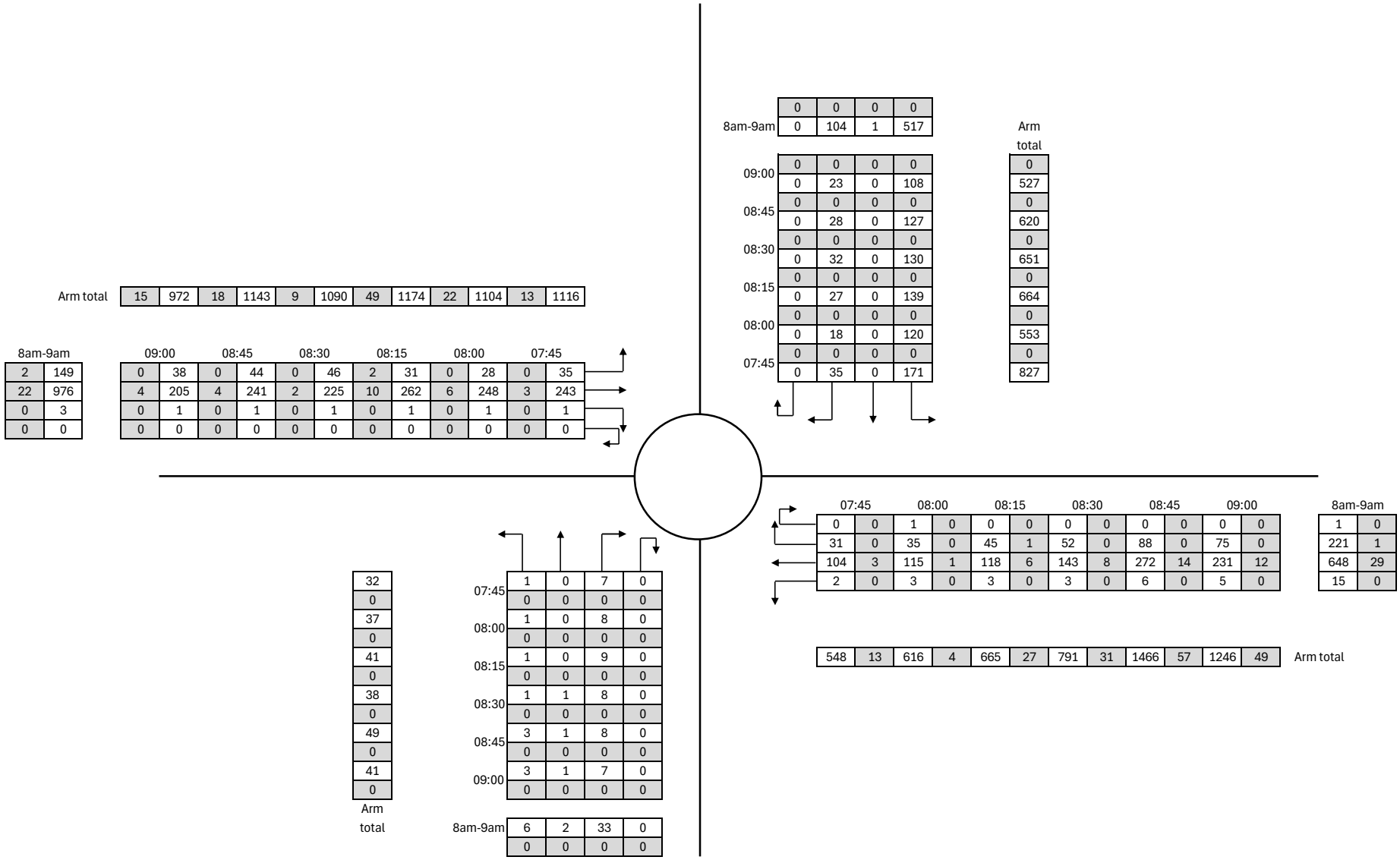

Figure 2.19 2035 Base + Craig Y Parcau - AM

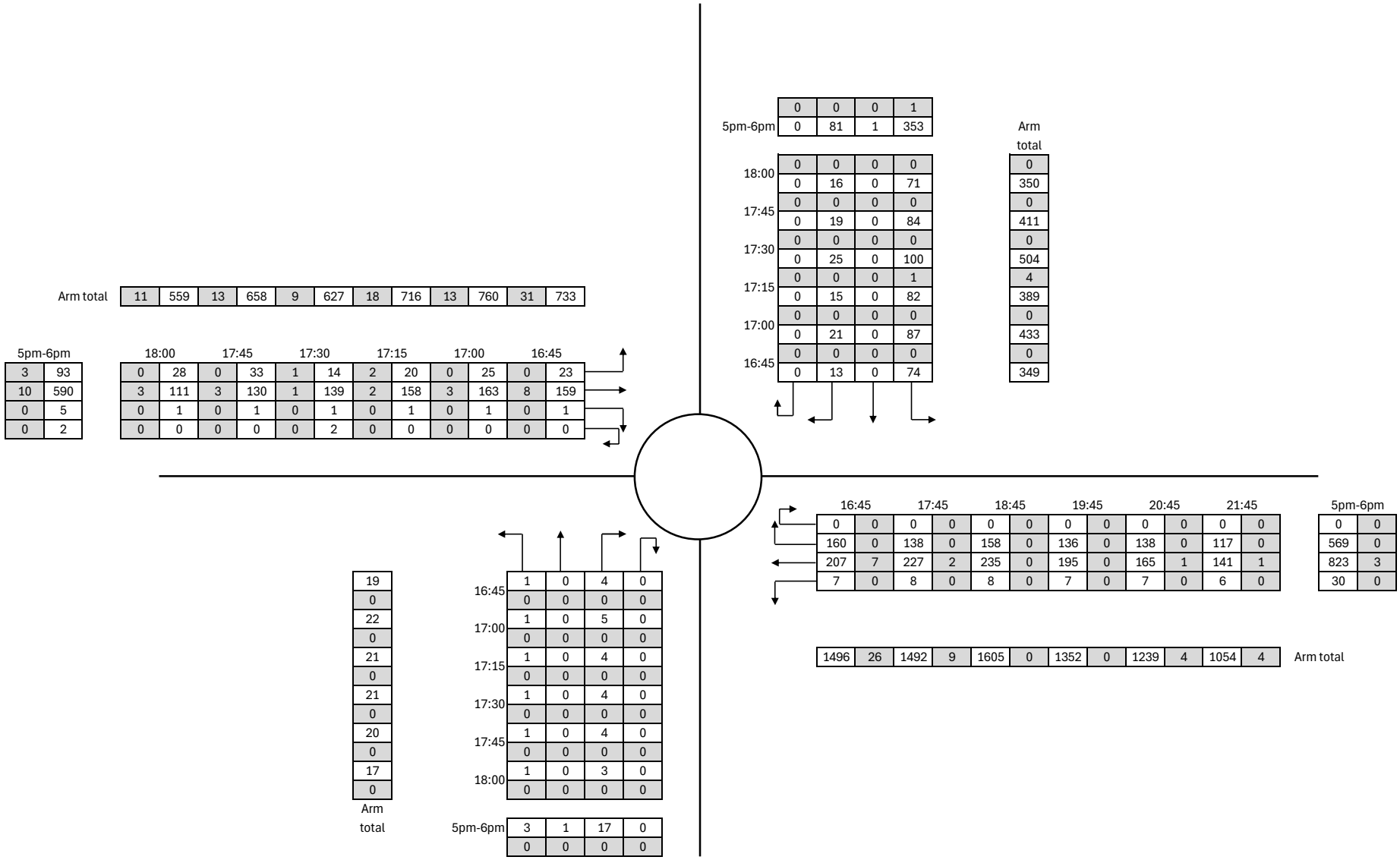

Figure 2.20 2035 Base + Craig Y Parcau - PM

Appendix J

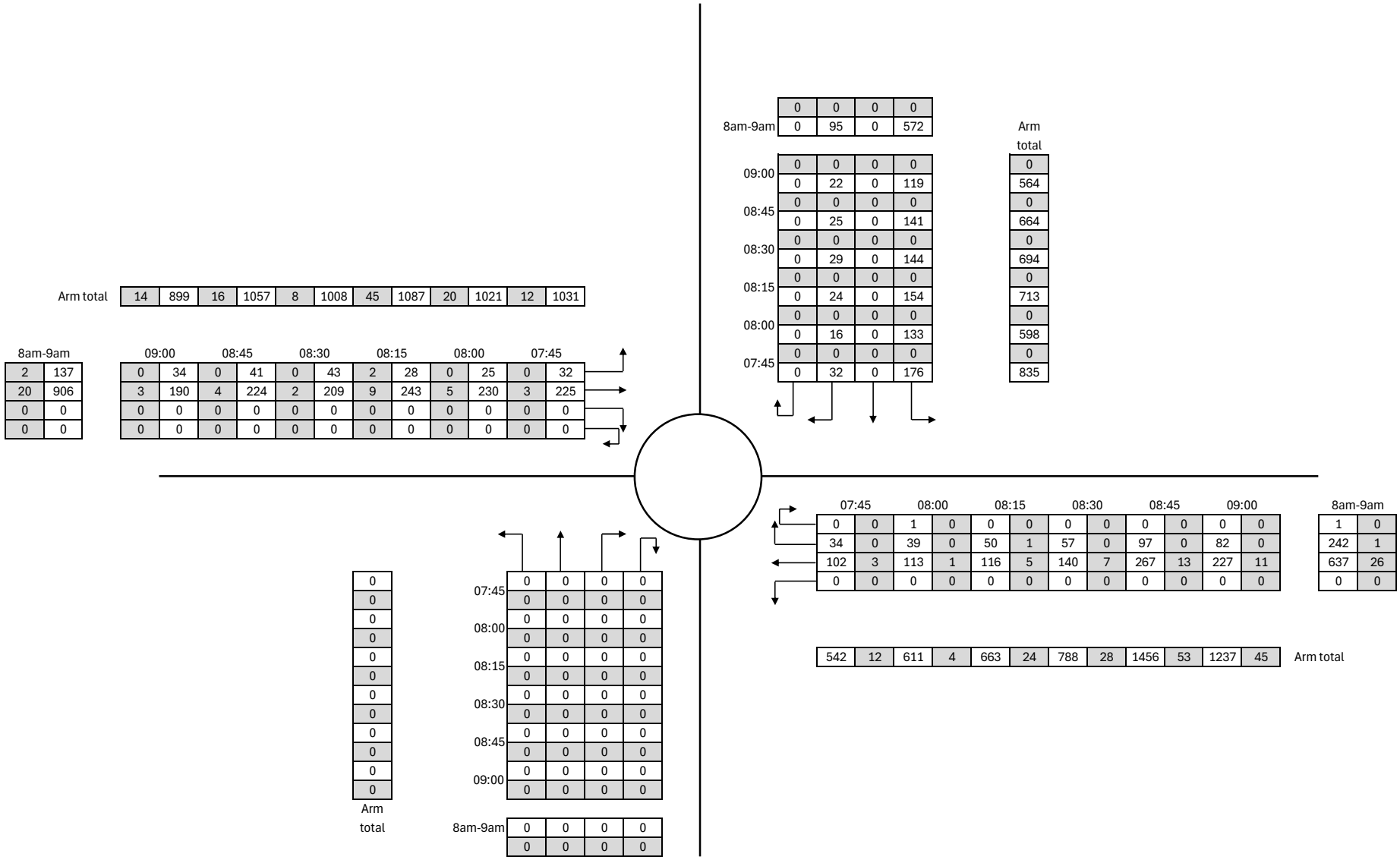

Figure 2.13 2026 Base + allocated sites - AM

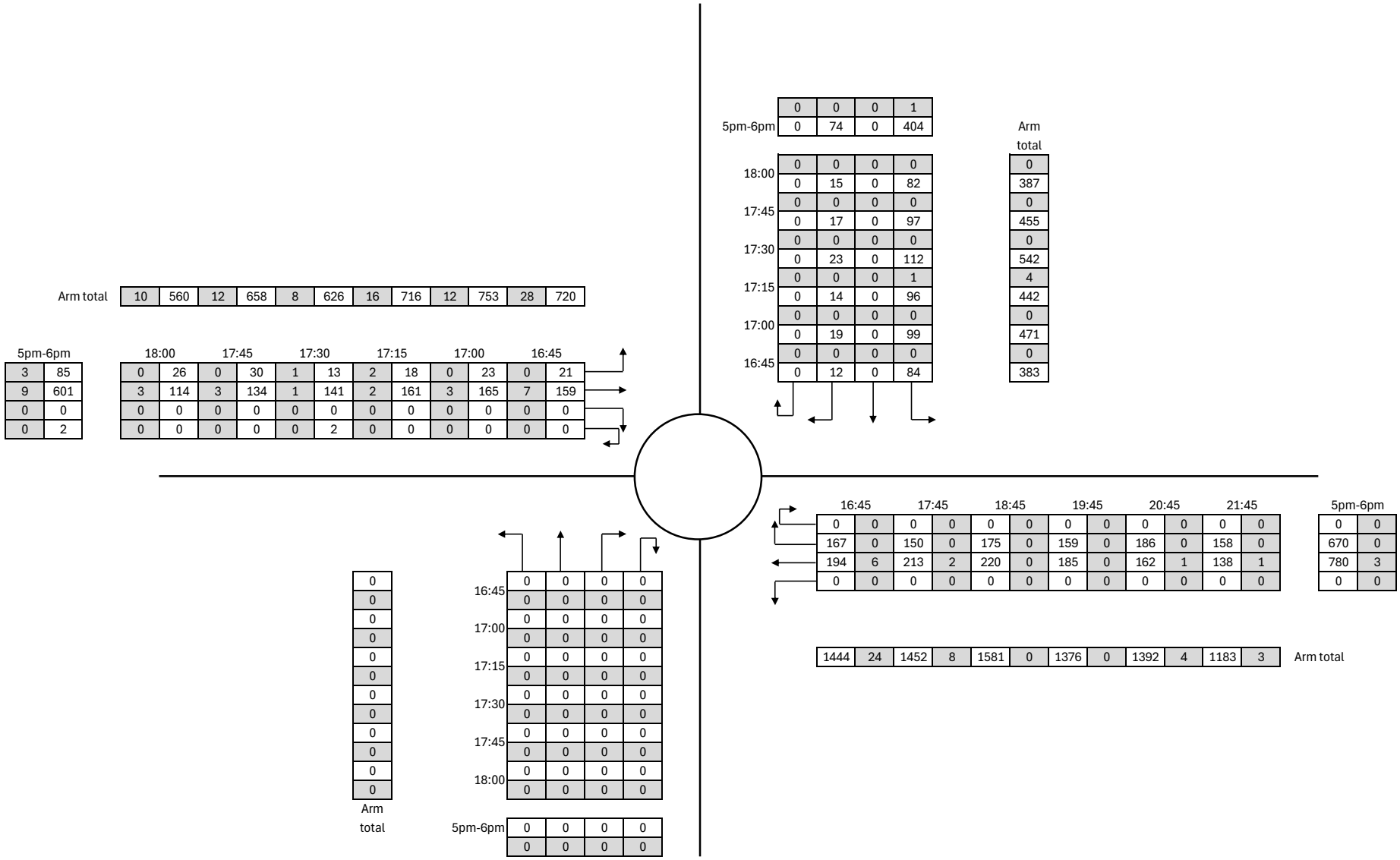

Figure 2.14 2026 Base + allocated sites - PM

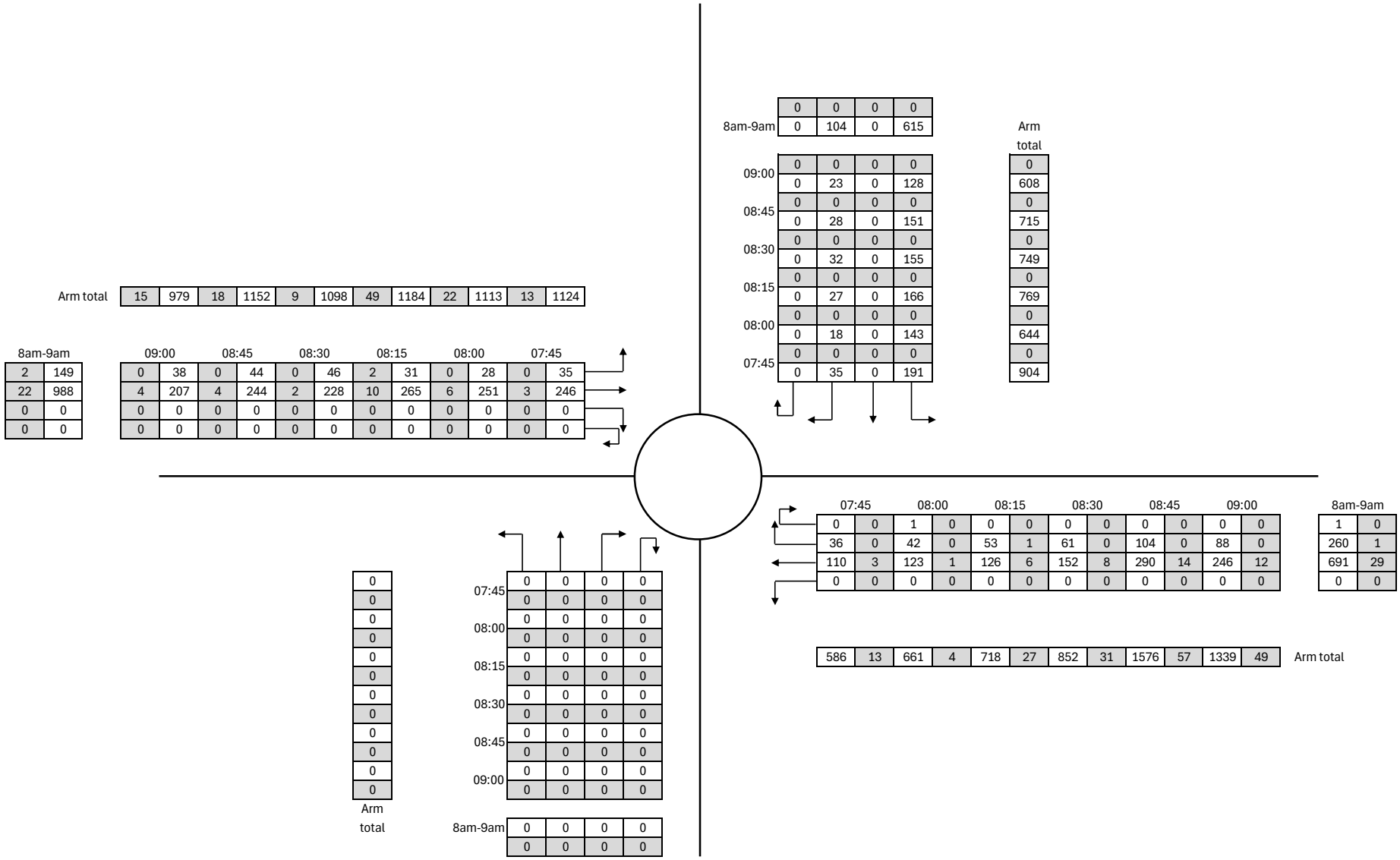

Figure 2.21 2035 Base + allocated sites - AM

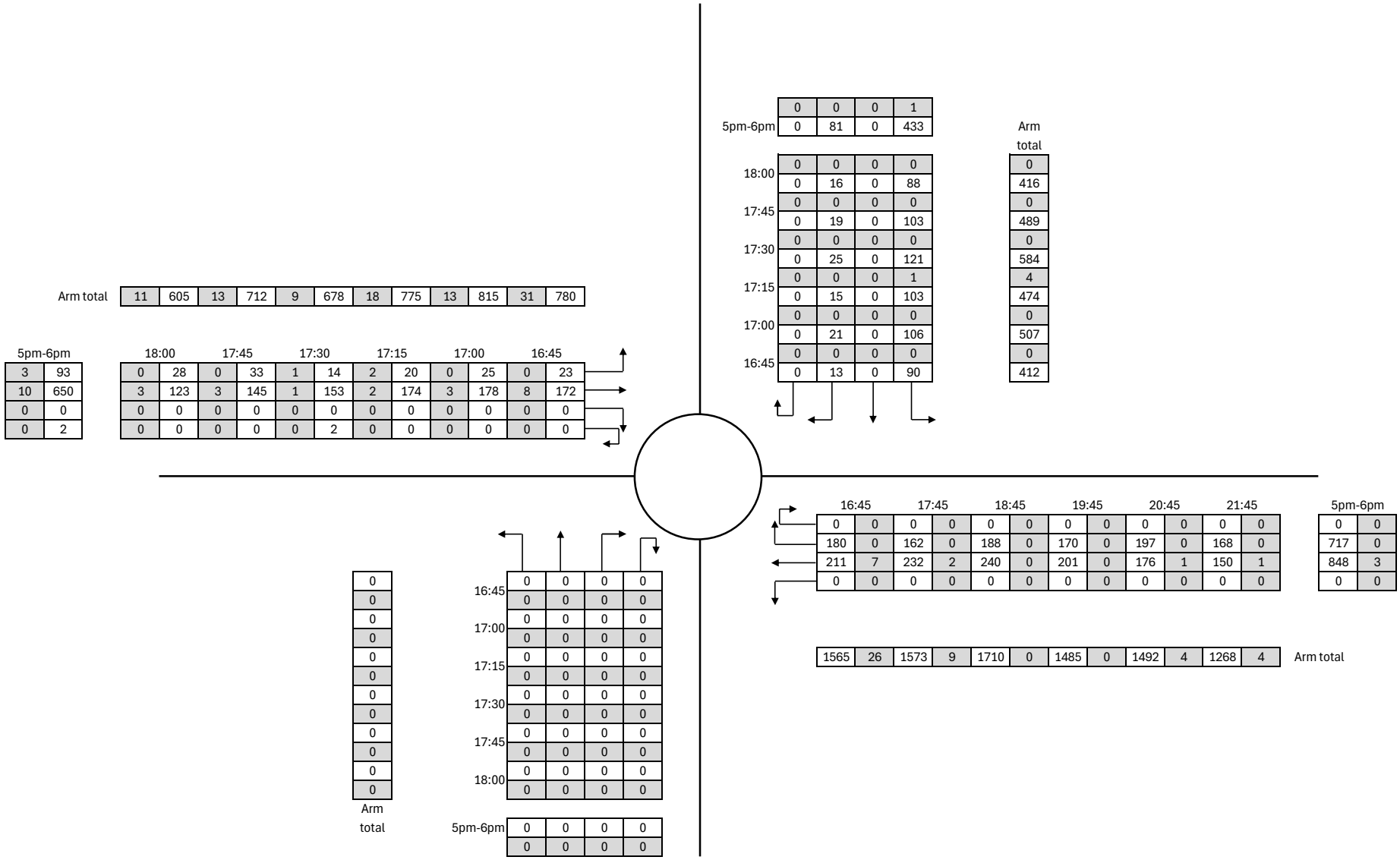

Figure 2.22 2035 Base + allocated sites - PM

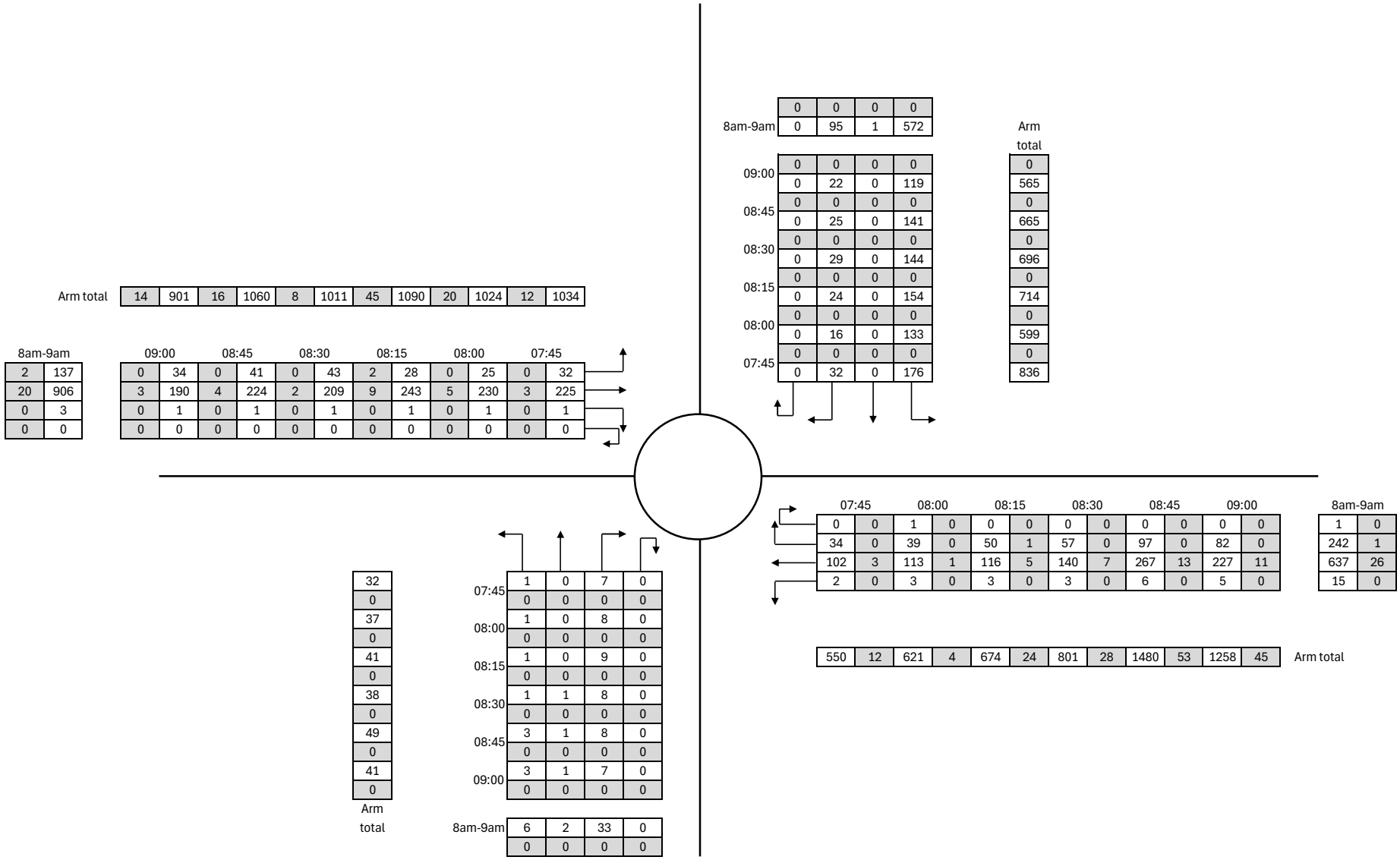

Figure 2.15 2026 Base + Craig Y Parcau + allocated sites - AM

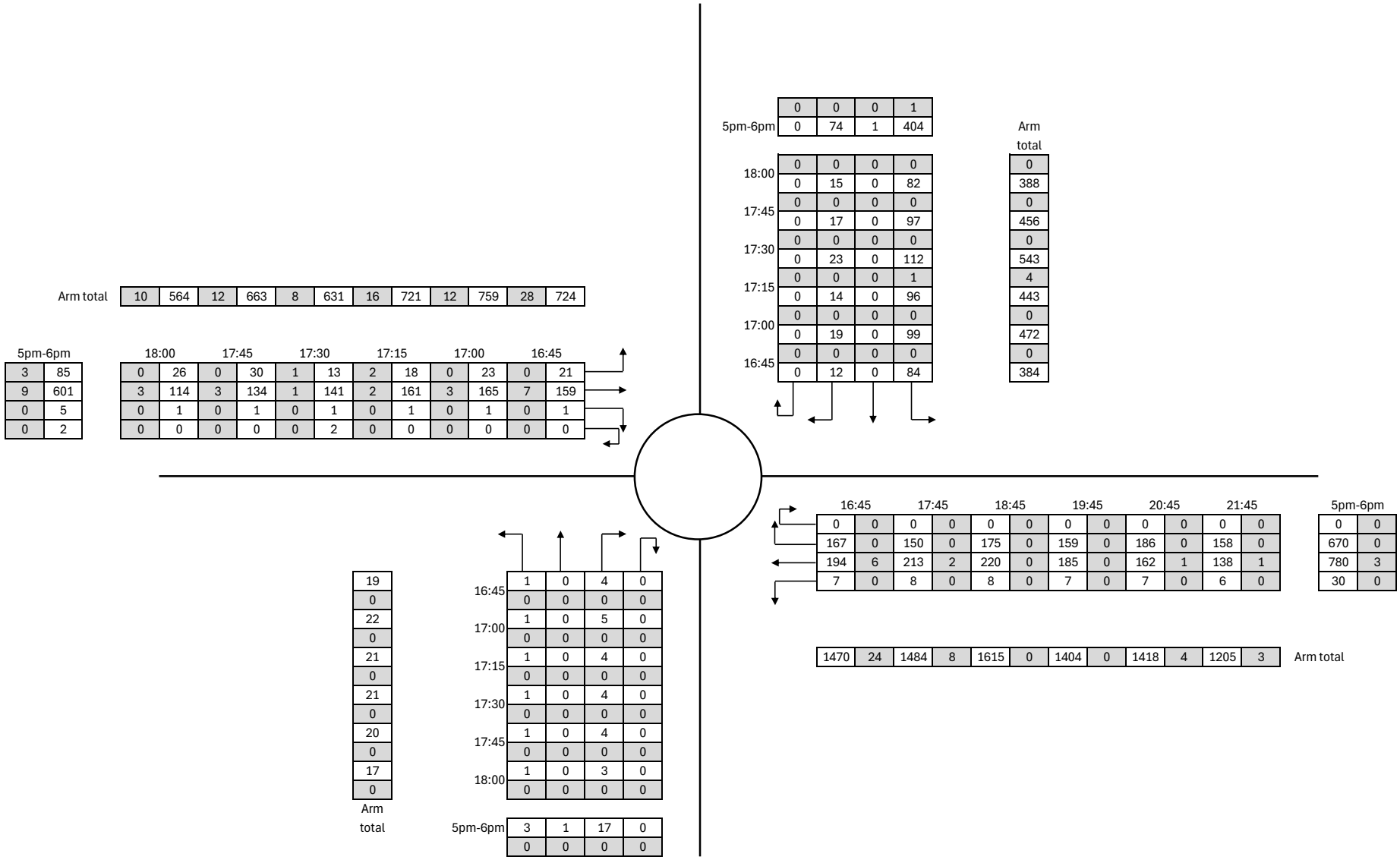

Figure 2.16 2026 Base + Craig Y Parcau + allocated sites - PM

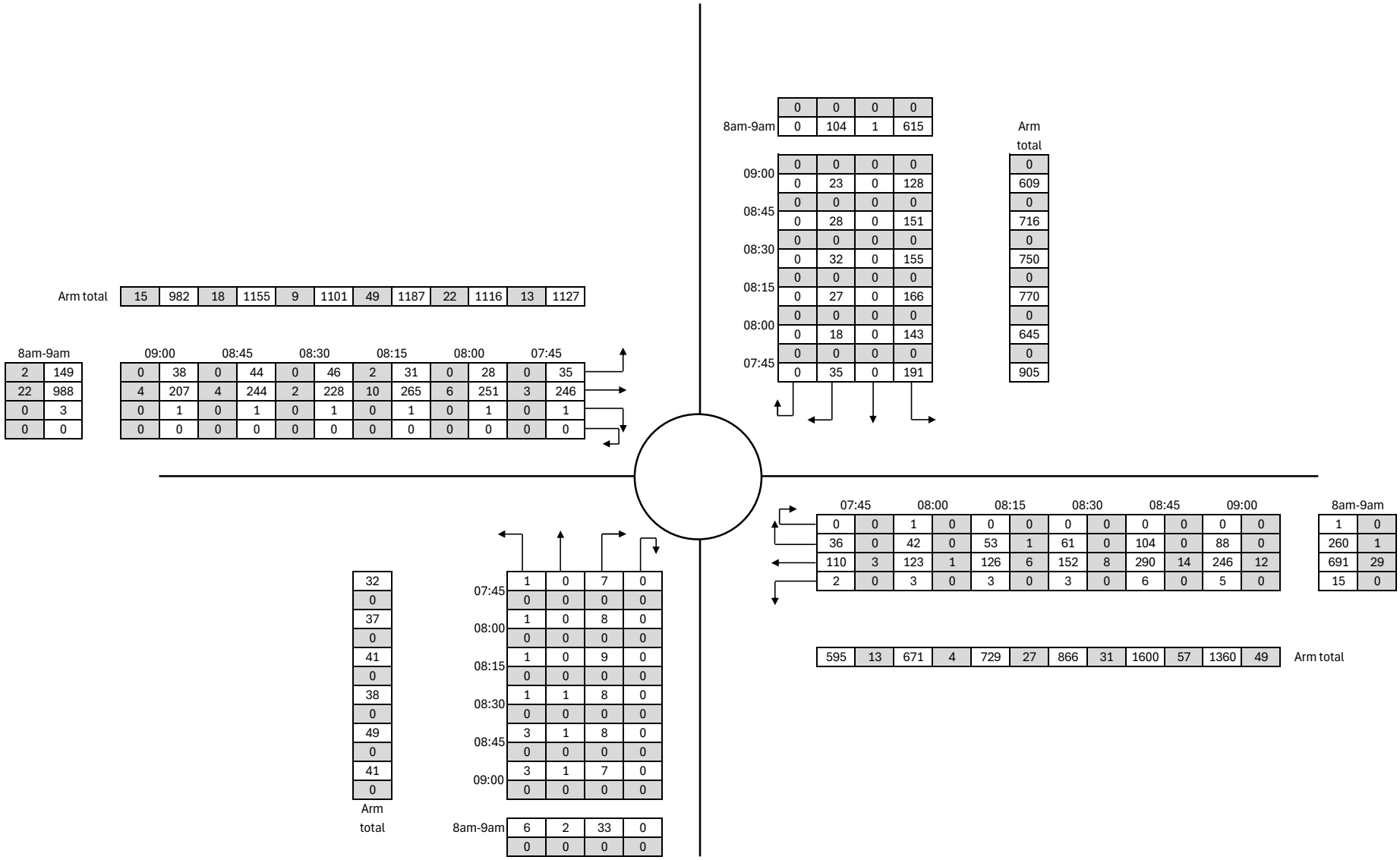

Figure 2.23 2035 Base + Craig Y Parcau + allocated sites - AM

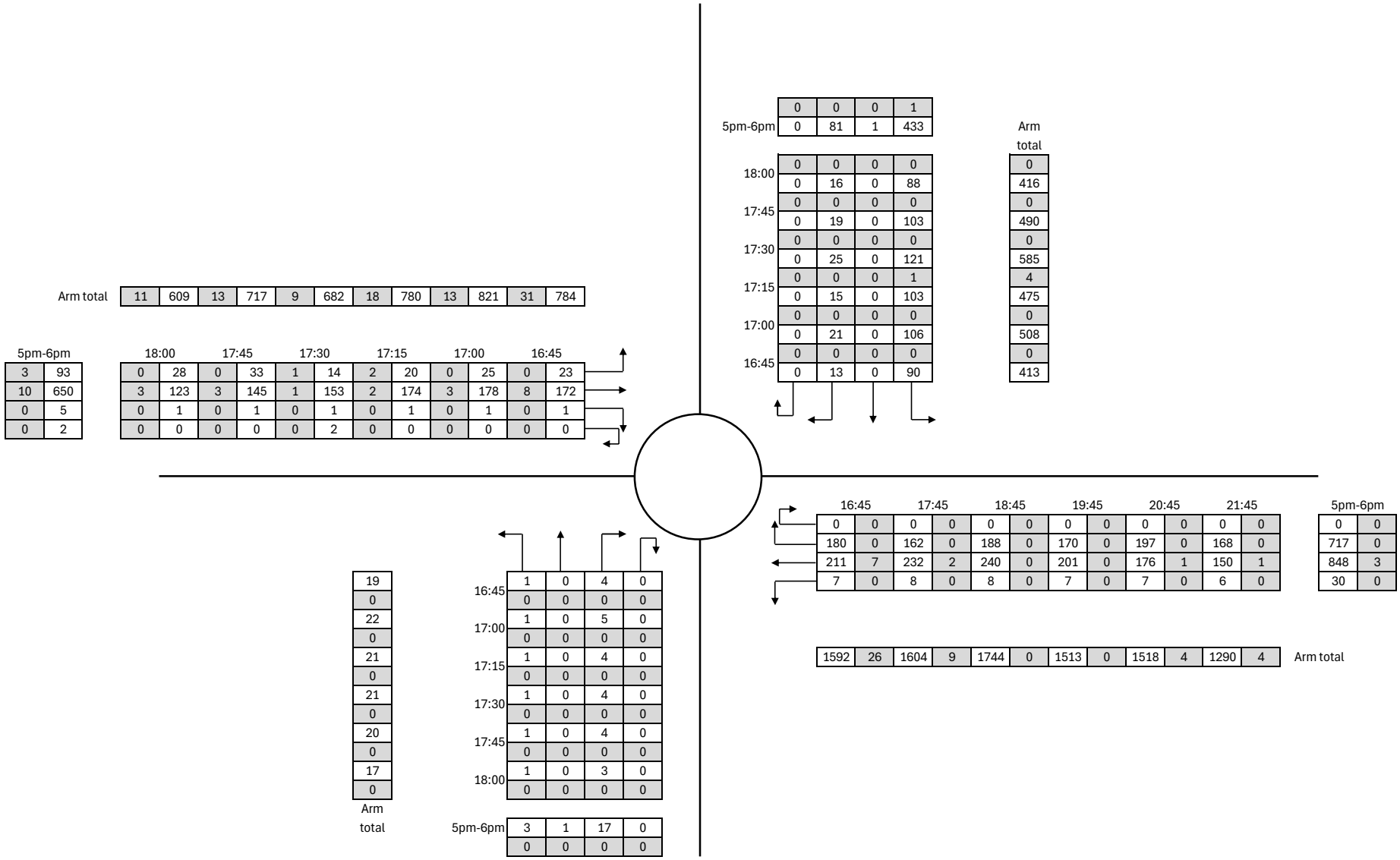

Figure 2.24 2035 Base + Craig Y Parcau + allocated sites - PM

Appendix K

A48/A473 High Street roundabout

	2026 AM					2026 PM					2035 AM					2035 PM				
	Turning movement	Base	Base + dev	difference	%	Turning movement	Base	Base + dev	difference	%	Turning movement	Base	Base + dev	difference	%	Turning movement	Base	Base + dev	difference	%
	A	0	0	0	0%	A	0	0	0	0%	A	0	0	0	0%	A	0	0	0	0%
A473 High Street	B	380	380	0	0%	B	390	390	0	0%	B	403	403	0	0%	B	414	414	0	0%
	C	105	105	0	0%	C	51	51	0	0%	C	111	111	0	0%	C	54	54	0	0%
	D	1	1	0	0%	D	2	2	0	0%	D	1	1	0	0%	D	2	2	0	0%
A48 (s)	E	73	73	0	0%	E	95	95	0	0%	E	78	78	0	0%	E	101	101	0	0%
	F	517	523	6	1%	F	877	881	3	0%	F	549	555	6	1%	F	931	935	3	0%
	G	2	2	0	0%	G	10	10	0	0%	G	2	2	0	0%	G	11	11	0	0%
A48 (w)	H	903	905	2	0%	H	619	625	6	1%	H	959	961	2	0%	H	657	663	6	1%
	I	326	326	0	0%	I	452	452	0	0%	I	346	346	0	0%	I	480	480	0	0%

	2026 AM					2026 PM					2035 AM					2035 PM				
	Arm	Base	Base + dev	difference	%	Arm	Base	Base + dev	difference	%	Arm	Base	Base + dev	difference	%	Arm	Base	Base + dev	difference	%
	A473 High Street	484	484	0	0.0%	A473 High Street	441	441	0	0.0%	A473 High Street	514	514	0	0.0%	A473 High Street	468	468	0	0.0%
	A48 w/b	591	597	6	1.1%	A48 w/b	975	978	3	0.3%	A48 w/b	628	634	6	1.0%	A48 w/b	1035	1038	3	0.3%
	A48 e/b	1230	1233	2	0.2%	A48 e/b	1081	1087	6	0.6%	A48 e/b	1306	1309	2	0.2%	A48 e/b	1148	1154	6	0.5%
	Total	**2306**	**2315**	**9**	**0.4%**	**Total**	**2497**	**2507**	**10**	**0.4%**	**Total**	**2449**	**2458**	**9**	**0.4%**	**Total**	**2651**	**2661**	**10**	**0.4%**

B4622/A48/site access roundabout

	2026 AM					2026 PM					2035 AM					2035 PM				
	Turning movement	Base	Base + dev	difference	%	Turning movement	Base	Base + dev	difference	%	Turning movement	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%
	A	0	0	0	0%	A	1	1	0	0%	A	0	0	0	0%	A	1	1	0	0%
	B	89	89	0	0%	B	410	410	0	0%	B	95	95	0	0%	B	435	435	0	0%
	C	0	1	1	0%	C	0	2	2	0%	C	0	1	1	0%	C	0	2	2	0%
	D	532	532	0	0%	D	94	94	0	0%	D	565	565	0	0%	D	100	100	0	0%
	E	7	7	0	0%	E	2	2	0	0%	E	7	7	0	0%	E	2	2	0	0%
	F	207	207	0	0%	F	543	543	0	0%	F	220	220	0	0%	F	576	576	0	0%
	G	415	415	0	0%	G	815	815	0	0%	G	441	441	0	0%	G	865	865	0	0%
	H	0	14	14	0%	H	0	35	35	0%	H	0	14	14	0%	H	0	35	35	0%
	I	0	0	0	0%	I	0	0	0	0%	I	0	0	0	0%	I	0	0	0	0%
	J	0	36	36	0%	J	0	19	19	0%	J	0	36	36	0%	J	0	19	19	0%
	K	0	2	2	0%	K	0	1	1	0%	K	0	2	2	0%	K	0	1	1	0%
	L	0	6	6	0%	L	0	3	3	0%	L	0	6	6	0%	L	0	3	3	0%
	M	0	0	0	0%	M	1	1	0	0%	M	0	0	0	0%	M	1	1	0	0%
	N	0	2	2	0%	N	0	6	6	0%	N	0	2	2	0%	N	0	6	6	0%
	O	834	834	0	0%	O	497	497	0	0%	O	886	886	0	0%	O	528	528	0	0%
	P	27	27	0	0%	P	122	122	0	0%	P	29	29	0	0%	P	129	129	0	0%

	2026 AM					2026 PM					2035 AM					2035 PM				
	Arm	Base	Base + dev	difference	%	Arm	Base	Base + dev	difference	%	Arm	Base	Base + dev	difference	%	Arm	Base	Base + dev	difference	%
	B4622	621	622	1	0.1%	B4622	505	507	2	0.4%	B4622	660	660	1	0.1%	B4622	537	539	2	0.3%
	A48 w/b	629	643	14	2.2%	A48 w/b	1359	1395	35	2.6%	A48 w/b	668	682	14	2.1%	A48 w/b	1444	1479	35	2.4%
	Site access	0	45	45	0.0%	Site access	0	24	24	0.0%	Site access	0	45	45	0.0%	Site access	0	24	24	0.0%
	A48 e/b	861	864	2	0.3%	A48 e/b	620	626	6	1.0%	A48 e/b	915	917	2	0.3%	A48 e/b	658	664	6	0.9%
	Total	**2112**	**2174**	**62**	**2.9%**	**Total**	**2485**	**2552**	**67**	**2.7%**	**Total**	**2243**	**2305**	**62**	**2.8%**	**Total**	**2638**	**2705**	**67**	**2.5%**

B4622/Careg Llwyd roundabout

	2026 AM				2026 PM				2035 AM				2035 PM			
Turning moveme	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%
A	4	4	0	0%	A	2	2	0	0%	A	4	4	0	0%	A	2	2	0	0%
B	19	19	0	0%	B	48	48	0	0%	B	20	20	0	0%	B	51	51	0	0%
C	222	222	0	0%	C	235	235	0	0%	C	236	236	0	0%	C	250	250	0	0%
D	23	23	0	0%	D	31	31	0	0%	D	25	25	0	0%	D	33	33	0	0%
E	0	0	0	0%	E	0	0	0	0%	E	0	0	0	0%	E	0	0	0	0%
F	14	14	0	0%	F	36	36	0	0%	F	15	15	0	0%	F	38	38	0	0%
G	22	22	0	0%	G	31	31	0	0%	G	23	23	0	0%	G	33	33	0	0%
H	245	246	1	0%	H	168	169	1	1%	H	260	261	1	0%	H	178	180	1	1%
I	0	0	0	0%	I	0	0	0	0%	I	0	0	0	0%	I	0	0	0	0%
J	80	82	2	2%	J	241	242	1	0%	J	85	87	2	2%	J	256	257	1	0%
K	127	127	0	0%	K	274	275	0	0%	K	134	135	0	0%	K	291	291	0	0%
L	46	46	0	0%	L	193	193	0	0%	L	49	49	0	0%	L	205	205	0	0%
M	0	0	0	0%	M	0	0	0	0%	M	0	0	0	0%	M	0	0	0	0%
N	178	178	0	0%	N	101	101	0	0%	N	189	189	0	0%	N	108	108	0	0%
O	41	41	0	0%	O	30	30	0	0%	O	44	44	0	0%	O	32	32	0	0%
P	51	51	0	0%	P	28	28	0	0%	P	54	54	0	0%	P	30	30	0	0%

	2026 AM				2026 PM				2035 AM				2035 PM			
Arm	**Base**	**Base + dev**	**difference**	**%**	**Arm**	**Base**	**Base + dev**	**difference**	**%**	**Arm**	**Base**	**Base + dev**	**difference**	**%**	**Arm**	**Base**	**Base + dev**	**difference**	**%**
B4622 s/b	268	269	0	0.1%	B4622 s/b	317	317	0	0.1%	B4622 s/b	285	285	0	0.1%	B4622 s/b	336	336	0	0.1%
Careg Llwyd w/b	281	282	1	0.2%	Careg Llwyd w/b	235	237	1	0.6%	Careg Llwyd w/b	299	299	1	0.2%	Careg Llwyd w/b	250	251	1	0.6%
B4622 n/b	253	255	2	0.8%	B4622 n/b	708	709	1	0.1%	B4622 n/b	269	271	2	0.7%	B4622 n/b	752	753	1	0.1%
Careg Llwyd e/b	270	270	0	0.0%	Careg Llwyd e/b	160	160	0	0.0%	Careg Llwyd e/b	287	287	0	0.0%	Careg Llwyd e/b	170	170	0	0.0%
Total	**1073**	**1076**	**3**	**0.2%**	**Total**	**1420**	**1423**	**3**	**0.2%**	**Total**	**1140**	**1143**	**3**	**0.2%**	**Total**	**1508**	**1510**	**3**	**0.2%**

A48/Merthyr Mawr Road jcn

	2026 AM				2026 PM				2035 AM				2035 PM			
Turning moveme	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%	Turning moveme	Base	Base + dev	difference	%
A	2	2	0	0%	A	1	1	0	0%	A	2	2	0	0%	A	1	1	0	0%
B	67	67	0	0%	B	44	44	0	0%	B	72	72	0	0%	B	47	47	0	0%
C	633	647	14	2%	C	1358	1394	35	3%	C	672	687	14	2%	C	1442	1478	35	2%
D	1197	1221	24	2%	D	765	777	12	2%	D	1271	1295	24	2%	D	812	824	12	2%
E	151	164	13	8%	E	126	132	7	5%	E	160	173	13	8%	E	133	140	7	5%

	2026 AM				2026 PM				2035 AM				2035 PM			
Arm	**Base**	**Base + dev**	**difference**	**%**	**Arm**	**Base**	**Base + dev**	**difference**	**%**	**Arm**	**Base**	**Base + dev**	**difference**	**%**	**Arm**	**Base**	**Base + dev**	**difference**	**%**
Merthyr Mawr Road	69	69	0	0.0%	Merthyr Mawr Road	45	45	0	0.0%	Merthyr Mawr Road	74	74	0	0.0%	Merthyr Mawr Road	48	48	0	0.0%
A48 w/b	633	647	14	2.2%	A48 w/b	1358	1394	35	2.6%	A48 w/b	672	687	14	2.1%	A48 w/b	1442	1478	35	2.4%
A48 e/b	1348	1384	36	2.7%	A48 e/b	890	909	19	2.2%	A48 e/b	1431	1468	36	2.5%	A48 e/b	945	964	19	2.0%
Total	**2050**	**2101**	**50**	**2.5%**	**Total**	**2294**	**2348**	**54**	**2.4%**	**Total**	**2177**	**2228**	**50**	**2.3%**	**Total**	**2436**	**2490**	**54**	**2.2%**

B4265 Ewenny Road/A48 roundabout

2026 AM

Turning movement	Base	Base + dev	difference	%
A	6	6	0	0%
B	119	124	5	4%
C	108	108	0	0%
D	179	179	0	0%
E	3	3	0	0%
F	62	62	0	0%
G	449	458	9	2%
H	143	143	0	0%
I	0	0	0	0%
J	187	187	0	0%
K	155	155	0	0%
L	56	56	0	0%
M	1	1	0	0%
N	64	65	0	1%
O	1010	1033	23	2%
P	130	130	0	0%

2026 PM

Turning movement	Base	Base + dev	difference	%
A	1	1	0	0%
B	215	227	12	6%
C	170	170	0	0%
D	66	66	0	0%
E	0	0	0	0%
F	21	21	0	0%
G	1009	1031	22	2%
H	180	180	0	0%
I	0	0	0	0%
J	151	151	0	0%
K	153	153	0	0%
L	93	94	0	0%
M	0	0	0	0%
N	71	72	0	0%
O	617	629	12	2%
P	118	118	0	0%

2035 AM

Turning movement	Base	Base + dev	difference	%
A	6	6	0	0%
B	126	131	5	4%
C	114	114	0	0%
D	190	190	0	0%
E	3	3	0	0%
F	66	66	0	0%
G	477	486	9	2%
H	152	152	0	0%
I	0	0	0	0%
J	199	199	0	0%
K	164	164	0	0%
L	60	60	0	0%
M	1	1	0	0%
N	68	69	0	1%
O	1073	1096	23	2%
P	138	138	0	0%

2035 PM

Turning movement	Base	Base + dev	difference	%
A	1	1	0	0%
B	228	241	12	5%
C	180	180	0	0%
D	70	70	0	0%
E	0	0	0	0%
F	22	22	0	0%
G	1071	1094	22	2%
H	191	191	0	0%
I	0	0	0	0%
J	160	160	0	0%
K	162	162	0	0%
L	99	100	0	0%
M	0	0	0	0%
N	76	76	0	0%
O	655	667	12	2%
P	125	125	0	0%

2026 AM

Arm	Base	Base + dev	difference	%
B4265 Ewenny Road s/b	411	416	5	1.2%
A48 w/b	657	666	9	1.4%
B4265 Ewenny Road n/b	398	398	0	0.0%
A48 e/b	1205	1229	24	2.0%
Total	**2672**	**2709**	**38**	**1.4%**

2026 PM

Arm	Base	Base + dev	difference	%
B4265 Ewenny Road s/b	452	464	12	2.7%
A48 w/b	1210	1232	22	1.8%
B4265 Ewenny Road n/b	397	397	0	0.1%
A48 e/b	806	818	12	1.5%
Total	**2865**	**2912**	**48**	**1.7%**

2035 AM

Arm	Base	Base + dev	difference	%
B4265 Ewenny Road s/b	437	442	5	1.1%
A48 w/b	698	707	9	1.3%
B4265 Ewenny Road n/b	423	423	0	0.0%
A48 e/b	1280	1303	24	1.8%
Total	**2837**	**2875**	**38**	**1.3%**

2035 PM

Arm	Base	Base + dev	difference	%
B4265 Ewenny Road s/b	480	492	12	2.6%
A48 w/b	1285	1307	22	1.7%
B4265 Ewenny Road n/b	421	422	0	0.1%
A48 e/b	856	868	12	1.5%
Total	**3042**	**3089**	**48**	**1.6%**

Appendix L

Junctions 9

ARCADY 9 - Roundabout Module

Filename: 2024 existing 3-arm roundabout - base flows only.j9
Path: Z:\Lime\Projects\2024\24090 Craig-Y-Parcau, Bridgend\Analysis\Junction capacity analysis\Junction 2 - Broadlands roundabout
Report generation date: 22/10/2025 16:12:11

Summary of junction performance

	AM					PM				
	Q (PCU)	Delay (s)	RFC	LOS	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Res Cap
	2024									
Arm 1	13.8	50.86	1.01	F	-5 %	1.0	7.83	0.50	A	47 %
Arm 2	1.6	4.39	0.61	A	[Arm 1]	1.9	4.96	0.66	A	[Arm 3]
Arm 3	3.8	13.67	0.80	B		1.3	7.17	0.57	A	
	2026 Base									
Arm 1	15.8	56.01	1.03	F	-6 %	1.0	8.02	0.51	A	46 %
Arm 2	1.6	4.48	0.62	A	[Arm 1]	2.0	5.08	0.66	A	[Arm 3]
Arm 3	4.1	14.45	0.81	B		1.4	7.33	0.58	A	
	2035 Base									
Arm 1	35.6	112.00	1.17	F	-14 %	1.3	9.28	0.57	A	34 %
Arm 2	2.1	5.27	0.67	A	[Arm 1]	2.7	6.20	0.73	A	[Arm 3]
Arm 3	7.3	23.69	0.90	C		1.8	8.88	0.65	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Craig Y Parcau, Bridgend
Location	Broadlands Roundabout
Site number	Junction 2
Date	03/10/2025
Version	
Status	(new file)
Identifier	
Client	Bellway Homes
Jobnumber	24090
Enumerator	DESKTOP-U7G8RPA\Andy
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	AM	DIRECT	07:45	09:15	90	15	✓
D2	2024	PM	DIRECT	16:45	18:15	90	15	✓
D3	2026 Base	AM	DIRECT	07:45	09:15	90	15	✓
D4	2026 Base	PM	DIRECT	16:45	18:15	90	15	✓
D5	2035 Base	AM	DIRECT	07:45	09:15	90	15	✓
D6	2035 Base	PM	DIRECT	16:45	18:15	90	15	✓

Analysis Set Details

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

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	19.68	C

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-5	Arm 1

Arms

Arms

Arm	Name	Description
1	B4622	
2	A48 (e)	
3	A48 (w)	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1	3.63	6.04	11.7	24.8	40.0	26.7	
2	6.94	6.94	0.0	76.8	40.0	24.5	
3	4.63	4.63	0.0	32.7	40.0	16.1	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.623	1572
2	0.762	2219
3	0.622	1497

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1	Percentage		72.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000

Origin-Destination Data

07:45 - 08:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:00 - 08:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:15 - 08:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:30 - 08:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:45 - 09:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

09:00 - 09:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.01	50.86	13.8	F	579	868
2	0.61	4.39	1.6	A	790	1185
3	0.80	13.67	3.8	B	993	1489

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	748	187	867	743	1.007	693	255	0.0	13.8	50.861	F
2	488	122	121	2127	0.229	487	1439	0.0	0.3	2.268	A
3	1008	252	124	1420	0.710	998	483	0.0	2.4	8.542	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	500	125	865	744	0.672	547	270	13.8	2.2	22.269	C
2	544	136	96	2146	0.254	544	1315	0.3	0.3	2.323	A
3	996	249	139	1411	0.706	996	501	2.4	2.4	8.862	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	600	150	919	720	0.833	591	290	2.2	4.3	26.412	D
2	592	148	104	2140	0.277	592	1406	0.3	0.4	2.404	A
3	1060	265	151	1403	0.755	1058	545	2.4	3.0	10.557	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	588	147	857	748	0.786	589	309	4.3	3.9	23.183	C
2	704	176	103	2140	0.329	704	1343	0.4	0.5	2.590	A
3	984	246	180	1385	0.710	986	627	3.0	2.6	9.253	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	560	140	893	731	0.766	562	466	3.9	3.5	21.634	C
2	1304	326	99	2144	0.608	1300	1356	0.5	1.6	4.389	A
3	1032	258	332	1291	0.800	1027	1067	2.6	3.8	13.667	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	476	119	769	787	0.605	484	399	3.5	1.6	12.181	B
2	1108	277	85	2154	0.514	1110	1167	1.6	1.1	3.572	A
3	877	219	283	1321	0.664	884	912	3.8	2.1	8.550	A

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	6.05	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	47	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000

Origin-Destination Data

16:45 - 17:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	320	73
	2	516	0	746
	3	84	535	2

17:00 - 17:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:15 - 17:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:30 - 17:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:45 - 18:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

18:00 - 18:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.50	7.83	1.0	A	367	551
2	0.66	4.96	1.9	A	1219	1829
3	0.57	7.17	1.3	A	607	910

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	316	79	566	878	0.360	314	631	0.0	0.6	6.372	A
2	1332	333	60	2173	0.613	1326	820	0.0	1.6	4.333	A
3	660	165	542	1160	0.569	655	844	0.0	1.3	7.167	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	392	98	596	865	0.453	391	428	0.6	0.8	7.601	A
2	1324	331	69	2167	0.611	1324	918	1.6	1.6	4.416	A
3	684	171	339	1286	0.532	685	1054	1.3	1.2	6.086	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	352	88	561	880	0.400	353	447	0.8	0.7	6.846	A
2	1424	356	62	2172	0.656	1423	852	1.6	1.9	4.959	A
3	644	161	363	1271	0.507	644	1121	1.2	1.1	5.841	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	114	485	914	0.499	455	379	0.7	1.0	7.832	A
2	1200	300	79	2159	0.556	1203	861	1.9	1.3	3.902	A
3	556	139	307	1306	0.426	557	974	1.1	0.8	4.893	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	372	93	515	901	0.413	373	358	1.0	0.7	6.850	A
2	1100	275	65	2169	0.507	1101	823	1.3	1.1	3.488	A
3	592	148	281	1322	0.448	592	885	0.8	0.8	5.006	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	316	79	439	935	0.338	317	304	0.7	0.5	5.844	A
2	935	234	55	2177	0.430	936	700	1.1	0.8	3.004	A
3	503	126	239	1348	0.373	504	753	0.8	0.6	4.336	A

2026 Base , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	21.30	C

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-6	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2026 Base	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To		
		1	2	3
From	1	0	474	95
	2	203	1	594
	3	137	894	0

Demand (PCU/hr)

08:00 - 08:15

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Demand (PCU/hr)

08:15 - 08:30

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:30 - 08:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:45 - 09:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

09:00 - 09:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.03	56.01	15.8	F	586	880
2	0.62	4.48	1.6	A	801	1202
3	0.81	14.45	4.1	B	1006	1509

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	758	190	877	739	1.026	695	260	0.0	15.8	56.010	F
2	494	124	116	2131	0.232	493	1456	0.0	0.3	2.271	A
3	1021	255	126	1419	0.720	1011	483	0.0	2.5	8.813	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	507	127	876	739	0.686	561	274	15.8	2.3	25.879	D
2	555	139	99	2144	0.259	555	1339	0.3	0.4	2.341	A
3	1009	252	142	1409	0.716	1009	512	2.5	2.5	9.187	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	608	152	931	715	0.851	598	294	2.3	4.8	28.774	D
2	600	150	105	2139	0.281	600	1424	0.4	0.4	2.418	A
3	1074	269	153	1402	0.766	1071	552	2.5	3.2	11.025	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	596	149	868	743	0.803	598	313	4.8	4.4	25.375	D
2	713	178	105	2139	0.333	713	1361	0.4	0.5	2.609	A
3	997	249	182	1384	0.720	999	635	3.2	2.7	9.609	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	567	142	904	727	0.780	569	472	4.4	3.8	23.421	C
2	1321	330	100	2143	0.617	1316	1373	0.5	1.6	4.481	A
3	1045	261	336	1288	0.811	1040	1081	2.7	4.1	14.451	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	482	121	780	782	0.616	491	404	3.8	1.7	12.731	B
2	1123	281	86	2153	0.522	1125	1184	1.6	1.1	3.628	A
3	889	222	287	1319	0.674	897	924	4.1	2.2	8.872	A

2026 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	6.20	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	46	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2026 Base	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000

Origin-Destination Data

16:45 - 17:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	324	74
	2	522	0	755
	3	85	541	2

17:00 - 17:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:15 - 17:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:30 - 17:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:45 - 18:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

18:00 - 18:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.51	8.02	1.0	A	372	558
2	0.66	5.08	2.0	A	1234	1851
3	0.58	7.33	1.4	A	615	923

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	320	80	573	875	0.366	318	638	0.0	0.6	6.450	A
2	1348	337	61	2172	0.621	1341	829	0.0	1.7	4.417	A
3	668	167	548	1156	0.578	663	854	0.0	1.4	7.334	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	397	99	603	862	0.461	396	433	0.6	0.8	7.732	A
2	1340	335	70	2166	0.619	1340	929	1.7	1.7	4.505	A
3	692	173	343	1284	0.539	693	1066	1.4	1.2	6.196	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	356	89	568	877	0.406	357	452	0.8	0.7	6.944	A
2	1441	360	63	2171	0.664	1440	862	1.7	2.0	5.079	A
3	652	163	368	1269	0.514	652	1135	1.2	1.1	5.945	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	461	115	498	908	0.507	460	385	0.7	1.0	8.019	A
2	1214	304	80	2158	0.562	1217	878	2.0	1.3	3.963	A
3	571	143	311	1304	0.438	572	986	1.1	0.8	5.006	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	376	94	521	898	0.419	377	362	1.0	0.7	6.944	A
2	1113	278	66	2169	0.513	1114	832	1.3	1.1	3.530	A
3	599	150	285	1320	0.454	599	895	0.8	0.8	5.069	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	320	80	444	933	0.343	321	308	0.7	0.5	5.906	A
2	946	237	56	2176	0.435	947	708	1.1	0.8	3.030	A
3	509	127	242	1347	0.378	510	761	0.8	0.6	4.377	A

2035 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	39.16	E

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-14	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2035 Base	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000

Origin-Destination Data

07:45 - 08:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	517	104
	2	221	1	648
	3	149	976	0

08:00 - 08:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:15 - 08:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:30 - 08:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

08:45 - 09:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

09:00 - 09:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.17	112.00	35.6	F	640	960
2	0.67	5.27	2.1	A	874	1311
3	0.90	23.69	7.3	C	1097	1646

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	827	207	955	704	1.175	685	282	0.0	35.6	105.714	F
2	539	135	115	2132	0.253	538	1525	0.0	0.3	2.332	A
3	1114	279	137	1412	0.789	1100	515	0.0	3.6	11.313	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	553	138	956	703	0.786	675	299	35.6	5.1	111.998	F
2	606	152	118	2129	0.285	606	1513	0.3	0.4	2.443	A
3	1101	275	155	1401	0.786	1101	569	3.6	3.7	12.219	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	663	166	1013	678	0.978	637	320	5.1	11.7	61.560	F
2	654	164	112	2133	0.307	654	1537	0.4	0.5	2.514	A
3	1171	293	167	1393	0.840	1166	599	3.7	4.9	15.745	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	650	163	947	707	0.919	650	341	11.7	11.7	64.279	F
2	778	195	114	2132	0.365	777	1483	0.5	0.6	2.745	A
3	1087	272	199	1374	0.791	1090	693	4.9	4.1	13.171	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	619	155	980	692	0.894	625	513	11.7	10.3	58.530	F
2	1441	360	110	2135	0.675	1435	1495	0.6	2.1	5.270	A
3	1140	285	366	1269	0.898	1127	1178	4.1	7.3	23.690	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	526	132	857	747	0.704	557	442	10.3	2.5	21.602	C
2	1225	306	98	2144	0.571	1228	1316	2.1	1.4	4.073	A
3	969	242	314	1302	0.744	986	1012	7.3	3.1	12.197	B

2035 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	7.46	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	34	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2035 Base	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000

Origin-Destination Data

16:45 - 17:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	353	81
	2	569	0	823
	3	93	590	0

17:00 - 17:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:15 - 17:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:30 - 17:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

17:45 - 18:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

18:00 - 18:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	468	94
	2	200	1	586
	3	135	883	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.57	9.28	1.3	A	405	608
2	0.73	6.20	2.7	A	1345	2017
3	0.65	8.88	1.8	A	670	1006

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	87	623	853	0.409	346	695	0.0	0.7	7.088	A
2	1469	367	65	2170	0.677	1461	904	0.0	2.1	5.157	A
3	728	182	597	1126	0.647	721	928	0.0	1.8	8.878	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	432	108	657	837	0.516	431	472	0.7	1.0	8.844	A
2	1460	365	76	2161	0.676	1460	1012	2.1	2.1	5.305	A
3	754	189	374	1265	0.596	755	1161	1.8	1.5	7.201	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	388	97	619	854	0.454	389	492	1.0	0.8	7.767	A
2	1571	393	69	2167	0.725	1569	939	2.1	2.7	6.199	A
3	710	178	401	1248	0.569	711	1237	1.5	1.4	6.820	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	126	543	888	0.566	501	420	0.8	1.3	9.279	A
2	1324	331	87	2153	0.615	1328	957	2.7	1.7	4.535	A
3	622	156	339	1286	0.484	624	1076	1.4	1.0	5.535	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	410	103	568	877	0.467	412	395	1.3	0.9	7.779	A
2	1213	303	72	2164	0.561	1214	908	1.7	1.3	3.924	A
3	653	163	310	1304	0.501	653	976	1.0	1.0	5.614	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	87	484	915	0.381	350	336	0.9	0.6	6.401	A
2	1031	258	61	2172	0.475	1033	773	1.3	0.9	3.268	A
3	555	139	264	1333	0.416	556	830	1.0	0.7	4.716	A

Appendix M

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: 2024 proposed 4-arm roundabout.j9
Path: Z:\Lime\Projects\2024\24090 Craig-Y-Parcau, Bridgend\Analysis\Junction capacity analysis\Junction 2 - Broadlands roundabout
Report generation date: 21/10/2025 15:56:47

Summary of junction performance

	AM					PM				
	Q (PCU)	Delay (s)	RFC	LOS	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Res Cap
2026 Base + Dev.										
Arm 1	17.7	61.35	1.04	F	-7 % [Arm 1]	1.0	8.23	0.51	A	43 % [Arm 2]
Arm 2	1.7	4.63	0.63	A		2.2	5.33	0.68	A	
Arm 3	0.1	7.31	0.09	A		0.0	7.70	0.04	A	
Arm 4	4.6	16.13	0.83	C		1.4	7.54	0.59	A	
2035 Base + Dev.										
Arm 1	38.2	134.27	1.20	F	-15 % [Arm 1]	1.3	9.55	0.57	A	32 % [Arm 2]
Arm 2	2.2	5.48	0.69	A		2.9	6.59	0.74	A	
Arm 3	0.1	8.56	0.10	A		0.1	9.19	0.05	A	
Arm 4	8.7	27.62	0.92	D		1.9	9.18	0.66	A	
2026 Base + Comm. dev										
Arm 1	30.9	96.31	1.14	F	-12 % [Arm 1]	1.5	10.37	0.61	B	29 % [Arm 4]
Arm 2	2.2	5.44	0.68	A		2.8	6.39	0.73	A	
Arm 3	0.0	0.00	0.00	A		0.0	0.00	0.00	A	
Arm 4	4.6	16.11	0.83	C		1.9	9.64	0.66	A	
2035 Base + Comm. dev										
Arm 1	87.2	438.71	1.29	F	-19 % [Arm 1]	2.0	12.57	0.67	B	20 % [Arm 4]
Arm 2	2.9	6.58	0.74	A		3.8	8.22	0.79	A	
Arm 3	0.0	0.00	0.00	A		0.0	0.00	0.00	A	
Arm 4	8.7	27.52	0.92	D		2.7	12.39	0.74	B	
2026 Base + Dev. + allocations										
Arm 1	33.8	117.94	1.16	F	-13 % [Arm 1]	1.6	10.69	0.62	B	28 % [Arm 4]
Arm 2	2.3	5.63	0.70	A		3.0	6.78	0.75	A	
Arm 3	0.1	8.79	0.11	A		0.1	9.44	0.05	A	
Arm 4	5.3	18.45	0.85	C		2.0	9.97	0.67	A	
2035 Base + Dev. + allocations										
Arm 1	105.9	534.63	1.32	F	-20 % [Arm 1]	2.7	16.87	0.74	C	12 % [Arm 3]
Arm 2	3.0	6.83	0.75	A		4.2	8.87	0.81	A	
Arm 3	0.1	10.49	0.13	B		0.9	15.40	0.49	C	
Arm 4	10.8	33.23	0.94	D		2.9	12.92	0.75	B	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	03/10/2025
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-U7G8RPA\Andy
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2026 Base + Dev.	AM	DIRECT	07:45	09:15	90	15	✓
D2	2026 Base + Dev.	PM	DIRECT	16:45	18:15	90	15	✓
D3	2035 Base + Dev.	AM	DIRECT	07:45	09:15	90	15	✓
D4	2035 Base + Dev.	PM	DIRECT	16:45	18:15	90	15	✓
D5	2026 Base + Comm. dev	AM	DIRECT	07:45	09:15	90	15	✓
D6	2026 Base + Comm. dev	PM	DIRECT	16:45	18:15	90	15	✓
D7	2035 Base + Comm. dev	AM	DIRECT	07:45	09:15	90	15	✓
D8	2035 Base + Comm. dev	PM	DIRECT	16:45	18:15	90	15	✓
D9	2026 Base + Dev. + allocations	AM	DIRECT	07:45	09:15	90	15	✓
D10	2026 Base + Dev. + allocations	PM	DIRECT	16:45	18:15	90	15	✓
D11	2035 Base + Dev. + allocations	AM	DIRECT	07:45	09:15	90	15	✓
D12	2035 Base + Dev. + allocations	PM	DIRECT	16:45	18:15	90	15	✓

Analysis Set Details

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

2026 Base + Dev., AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	22.99	C

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-7	Arm 1

Arms

Arms

Arm	Name	Description
1	B4622	
2	A48 (e)	
3	Craig Y Parcau	
4	A49 (w)	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1	3.63	6.04	11.7	24.8	40.0	26.7	
2	6.94	6.94	0.0	76.8	40.0	24.5	
3	4.48	4.48	0.0	15.0	40.0	27.6	
4	4.63	4.63	0.0	32.7	40.0	16.1	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.623	1572
2	0.762	2219
3	0.569	1347
4	0.622	1497

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1	Percentage		72.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2026 Base + Dev.	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	474	1	95
	2	203	1	15	594
	3	2	33	0	6
	4	137	894	3	0

08:00 - 08:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Demand (PCU/hr)

09:00 - 09:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.04	61.35	17.7	F	587	881
2	0.63	4.63	1.7	A	816	1224
3	0.09	7.31	0.1	A	40	60
4	0.83	16.13	4.6	C	1009	1513

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	758	190	905	726	1.044	687	261	0.0	17.7	61.354	F
2	503	126	119	2129	0.236	502	1474	0.0	0.3	2.286	A
3	32	8	607	1001	0.032	32	13	0.0	0.0	3.713	A
4	1024	256	153	1402	0.730	1013	486	0.0	2.7	9.230	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	507	127	909	724	0.700	568	276	17.7	2.5	30.866	D
2	566	142	104	2140	0.264	566	1373	0.3	0.4	2.362	A
3	37	9	655	974	0.038	37	15	0.0	0.0	3.841	A
4	1012	253	173	1389	0.728	1012	518	2.7	2.7	9.733	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	609	152	966	699	0.872	597	296	2.5	5.4	32.359	D
2	611	153	109	2136	0.286	611	1455	0.4	0.4	2.438	A
3	41	10	704	946	0.043	41	16	0.0	0.0	3.978	A
4	1077	269	188	1380	0.780	1074	557	2.7	3.5	11.869	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	597	149	902	728	0.821	599	315	5.4	5.0	28.732	D
2	727	182	109	2136	0.340	727	1392	0.4	0.5	2.638	A
3	38	10	818	881	0.043	38	18	0.0	0.0	4.268	A
4	1000	250	215	1364	0.733	1002	641	3.5	2.9	10.244	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	142	945	708	0.802	570	474	5.0	4.4	26.872	D
2	1346	337	104	2139	0.629	1341	1411	0.5	1.7	4.631	A
3	49	12	1416	541	0.091	49	29	0.0	0.1	7.313	A
4	1048	262	378	1262	0.830	1041	1087	2.9	4.6	16.128	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	483	121	816	766	0.631	494	406	4.4	1.8	13.737	B
2	1144	286	90	2150	0.532	1146	1219	1.7	1.2	3.714	A
3	41	10	1212	657	0.062	41	25	0.1	0.1	5.842	A
4	891	223	322	1297	0.687	900	930	4.6	2.3	9.471	A

2026 Base + Dev., PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.43	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	43	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2026 Base + Dev.	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	324	1	74
	2	522	0	30	755
	3	1	17	0	3
	4	85	541	5	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.51	8.23	1.0	A	373	559
2	0.68	5.33	2.2	A	1262	1893
3	0.04	7.70	0.0	A	20	30
4	0.59	7.54	1.4	A	620	930

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	321	80	593	866	0.371	319	637	0.0	0.6	6.572	A
2	1375	344	67	2168	0.634	1368	844	0.0	1.8	4.580	A
3	19	5	1398	551	0.034	19	37	0.0	0.0	6.758	A
4	673	168	563	1147	0.587	667	854	0.0	1.4	7.535	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	398	100	626	851	0.468	397	436	0.6	0.9	7.931	A
2	1371	343	72	2164	0.634	1371	950	1.8	1.8	4.690	A
3	22	6	1415	542	0.041	22	28	0.0	0.0	6.927	A
4	698	175	363	1271	0.549	699	1074	1.4	1.3	6.399	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	357	89	590	867	0.412	358	455	0.9	0.7	7.093	A
2	1475	369	65	2169	0.680	1473	882	1.8	2.2	5.334	A
3	21	5	1509	488	0.043	21	30	0.0	0.0	7.705	A
4	657	164	387	1256	0.523	658	1143	1.3	1.1	6.116	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	463	116	519	899	0.515	462	388	0.7	1.0	8.230	A
2	1243	311	82	2156	0.576	1246	898	2.2	1.4	4.098	A
3	21	5	1303	606	0.035	21	26	0.0	0.0	6.160	A
4	575	144	330	1292	0.445	576	993	1.1	0.8	5.120	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	377	94	542	889	0.424	378	365	1.0	0.7	7.091	A
2	1139	285	69	2167	0.526	1140	852	1.4	1.2	3.628	A
3	20	5	1185	673	0.030	20	24	0.0	0.0	5.516	A
4	604	151	303	1309	0.461	604	902	0.8	0.9	5.187	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	321	80	461	925	0.347	322	310	0.7	0.5	5.997	A
2	968	242	58	2175	0.445	969	725	1.2	0.8	3.088	A
3	17	4	1007	773	0.022	17	20	0.0	0.0	4.760	A
4	513	128	257	1337	0.384	514	767	0.9	0.6	4.450	A

2035 Base + Dev., AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	45.56	E

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-15	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2035 Base + Dev.	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	517	1	104
	2	221	1	15	648
	3	2	33	0	6
	4	149	976	3	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.20	134.27	38.2	F	640	961
2	0.69	5.48	2.2	A	889	1333
3	0.10	8.56	0.1	A	40	60
4	0.92	27.62	8.7	D	1100	1650

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	827	207	982	692	1.195	674	283	0.0	38.2	113.920	F
2	548	137	117	2130	0.257	547	1539	0.0	0.4	2.346	A
3	32	8	650	977	0.033	32	13	0.0	0.0	3.809	A
4	1116	279	164	1395	0.800	1101	518	0.0	3.8	11.948	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	553	138	989	688	0.803	671	301	38.2	8.8	134.269	F
2	616	154	122	2126	0.290	616	1538	0.4	0.4	2.462	A
3	37	9	722	936	0.040	37	16	0.0	0.0	4.003	A
4	1104	276	186	1382	0.799	1104	573	3.8	3.9	13.173	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	1048	662	1.003	636	321	8.8	15.7	83.545	F
2	665	166	116	2130	0.312	665	1568	0.4	0.5	2.537	A
3	41	10	764	912	0.045	41	17	0.0	0.0	4.133	A
4	1174	294	202	1372	0.856	1168	604	3.9	5.5	17.410	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	651	163	982	692	0.941	651	343	15.7	15.7	87.314	F
2	791	198	118	2129	0.372	790	1514	0.5	0.6	2.777	A
3	38	10	890	840	0.045	38	19	0.0	0.0	4.485	A
4	1090	273	231	1354	0.805	1094	697	5.5	4.5	14.406	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	620	155	1019	675	0.919	626	515	15.7	14.3	81.652	F
2	1466	367	114	2132	0.688	1460	1530	0.6	2.2	5.480	A
3	49	12	1542	469	0.104	49	32	0.0	0.1	8.556	A
4	1143	286	407	1244	0.919	1126	1183	4.5	8.7	27.621	D

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	527	132	897	730	0.722	573	444	14.3	2.8	28.534	D
2	1246	312	104	2139	0.582	1249	1366	2.2	1.5	4.193	A
3	41	10	1326	592	0.069	41	27	0.1	0.1	6.538	A
4	972	243	348	1281	0.759	993	1019	8.7	3.4	13.625	B

2035 Base + Dev., PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	7.80	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	32	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2035 Base + Dev.	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	353	1	81
	2	569	0	30	823
	3	1	17	0	3
	4	93	590	5	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.57	9.55	1.3	A	406	609
2	0.74	6.59	2.9	A	1373	2060
3	0.05	9.19	0.1	A	20	30
4	0.66	9.18	1.9	A	676	1013

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	87	643	844	0.414	346	694	0.0	0.7	7.221	A
2	1496	374	73	2164	0.691	1487	917	0.0	2.3	5.394	A
3	19	5	1522	481	0.040	19	37	0.0	0.0	7.794	A
4	733	183	611	1117	0.656	725	930	0.0	1.9	9.176	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	433	108	680	827	0.524	431	475	0.7	1.1	9.101	A
2	1492	373	79	2159	0.691	1492	1033	2.3	2.3	5.573	A
3	22	6	1540	471	0.047	22	31	0.0	0.0	8.024	A
4	760	190	394	1252	0.607	761	1168	1.9	1.6	7.471	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	389	97	641	844	0.461	390	495	1.1	0.9	7.964	A
2	1605	401	71	2165	0.741	1603	960	2.3	2.9	6.585	A
3	21	5	1641	413	0.051	21	33	0.0	0.1	9.186	A
4	716	179	420	1236	0.579	717	1243	1.6	1.4	7.051	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	504	126	565	879	0.574	502	422	0.9	1.3	9.546	A
2	1352	338	90	2151	0.629	1356	977	2.9	1.8	4.710	A
3	21	5	1418	540	0.039	21	28	0.1	0.0	6.938	A
4	627	157	358	1275	0.492	629	1081	1.4	1.0	5.678	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	411	103	589	868	0.474	413	397	1.3	0.9	7.964	A
2	1239	310	75	2162	0.573	1240	927	1.8	1.4	4.043	A
3	20	5	1289	613	0.033	20	26	0.0	0.0	6.070	A
4	658	165	328	1293	0.509	658	981	1.0	1.0	5.756	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	88	501	907	0.386	351	338	0.9	0.6	6.510	A
2	1054	264	64	2170	0.486	1056	789	1.4	1.0	3.342	A
3	17	4	1097	722	0.024	17	22	0.0	0.0	5.104	A
4	559	140	279	1324	0.422	560	835	1.0	0.7	4.798	A

2026 Base + Comm. dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	33.55	D

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-12	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2026 Base + Comm. dev	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	572	1	95
	2	242	1	0	637
	3	0	0	0	0
	4	137	906	0	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.14	96.31	30.9	F	678	1017
2	0.68	5.44	2.2	A	883	1324
3	0.00	0.00	0.0	A	0	0
4	0.83	16.11	4.6	C	1017	1526

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	835	209	887	734	1.137	711	283	0.0	30.9	90.983	F
2	542	136	102	2141	0.253	541	1496	0.0	0.3	2.321	A
3	0	0	642	982	0.000	0	1	0.0	0.0	0.000	A
4	1031	258	149	1404	0.734	1020	492	0.0	2.7	9.332	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	598	150	887	734	0.815	698	287	30.9	5.9	96.315	F
2	611	153	123	2126	0.287	611	1463	0.3	0.4	2.455	A
3	0	0	718	938	0.000	0	16	0.0	0.0	0.000	A
4	1021	255	153	1402	0.728	1021	565	2.7	2.7	9.651	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	713	178	942	709	1.005	677	308	5.9	14.8	70.017	F
2	663	166	123	2125	0.312	663	1497	0.4	0.5	2.542	A
3	0	0	769	909	0.000	0	17	0.0	0.0	0.000	A
4	1087	272	166	1394	0.780	1084	603	2.7	3.4	11.740	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	694	174	878	738	0.940	694	329	14.8	14.9	78.522	F
2	788	197	125	2124	0.371	787	1447	0.5	0.6	2.781	A
3	0	0	893	838	0.000	0	19	0.0	0.0	0.000	A
4	1008	252	197	1374	0.733	1010	696	3.4	2.9	10.166	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	914	722	0.920	668	500	14.9	14.0	73.424	F
2	1456	364	121	2127	0.685	1450	1461	0.6	2.2	5.441	A
3	0	0	1539	471	0.000	0	31	0.0	0.0	0.000	A
4	1057	264	363	1271	0.831	1050	1176	2.9	4.6	16.110	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	564	141	790	778	0.725	608	429	14.0	2.9	26.008	D
2	1237	309	110	2135	0.579	1240	1289	2.2	1.4	4.169	A
3	0	0	1323	594	0.000	0	27	0.0	0.0	0.000	A
4	899	225	311	1304	0.689	908	1012	4.6	2.3	9.495	A

2026 Base + Comm. dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	7.96	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	29	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2026 Base + Comm. dev	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	404	0	74
	2	670	0	0	780
	3	0	0	0	0
	4	85	601	0	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.61	10.37	1.5	B	447	670
2	0.73	6.39	2.8	A	1405	2107
3	0.00	0.00	0.0	A	0	0
4	0.66	9.64	1.9	A	672	1008

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	383	96	624	852	0.450	380	752	0.0	0.8	7.599	A
2	1444	361	61	2173	0.665	1436	943	0.0	2.0	4.960	A
3	0	0	1497	495	0.000	0	0	0.0	0.0	0.000	A
4	720	180	664	1085	0.664	712	833	0.0	1.9	9.636	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	471	118	657	837	0.563	469	463	0.8	1.3	9.766	A
2	1452	363	85	2154	0.674	1452	1042	2.0	2.1	5.288	A
3	0	0	1507	489	0.000	0	30	0.0	0.0	0.000	A
4	753	188	365	1270	0.593	755	1141	1.9	1.5	7.125	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	442	111	624	852	0.519	443	488	1.3	1.1	8.839	A
2	1581	395	80	2158	0.733	1578	987	2.1	2.8	6.386	A
3	0	0	1626	421	0.000	0	32	0.0	0.0	0.000	A
4	716	179	396	1251	0.572	717	1231	1.5	1.4	6.849	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	542	136	547	887	0.611	540	427	1.1	1.5	10.371	B
2	1376	344	96	2146	0.641	1380	991	2.8	1.9	4.876	A
3	0	0	1447	523	0.000	0	29	0.0	0.0	0.000	A
4	626	157	346	1282	0.488	628	1101	1.4	1.0	5.604	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	455	114	573	875	0.520	457	434	1.5	1.1	8.670	A
2	1392	348	82	2156	0.646	1392	947	1.9	1.9	4.865	A
3	0	0	1445	524	0.000	0	29	0.0	0.0	0.000	A
4	658	165	349	1280	0.514	658	1097	1.0	1.1	5.871	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	387	97	489	913	0.424	388	369	1.1	0.7	6.908	A
2	1183	296	70	2166	0.546	1185	807	1.9	1.3	3.802	A
3	0	0	1231	646	0.000	0	25	0.0	0.0	0.000	A
4	560	140	297	1312	0.427	561	934	1.1	0.8	4.879	A

2035 Base + Comm. dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	127.97	F

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-19	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2035 Base + Comm. dev	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	615	0	104
	2	260	1	0	691
	3	0	0	0	0
	4	149	988	0	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.29	438.71	87.2	F	732	1097
2	0.74	6.58	2.9	A	955	1433
3	0.00	0.00	0.0	A	0	0
4	0.92	27.52	8.7	D	1108	1663

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	904	226	964	700	1.292	687	305	0.0	54.2	151.862	F
2	586	147	99	2143	0.273	584	1551	0.0	0.4	2.383	A
3	0	0	684	958	0.000	0	0	0.0	0.0	0.000	A
4	1124	281	160	1398	0.804	1108	524	0.0	3.9	12.141	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	967	698	0.922	686	311	54.2	43.9	260.026	F
2	661	165	119	2128	0.311	661	1534	0.4	0.5	2.534	A
3	0	0	763	912	0.000	0	16	0.0	0.0	0.000	A
4	1113	278	166	1394	0.798	1113	598	3.9	4.0	13.040	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	1024	673	1.143	671	334	43.9	68.3	309.245	F
2	718	180	122	2126	0.338	718	1573	0.5	0.5	2.641	A
3	0	0	822	879	0.000	0	18	0.0	0.0	0.000	A
4	1184	296	180	1385	0.855	1178	642	4.0	5.4	17.163	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	749	187	958	702	1.066	701	357	68.3	80.3	392.593	F
2	852	213	127	2122	0.401	851	1532	0.5	0.7	2.924	A
3	0	0	958	802	0.000	0	20	0.0	0.0	0.000	A
4	1098	275	213	1364	0.805	1102	744	5.4	4.5	14.249	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	715	179	988	689	1.038	687	540	80.3	87.2	438.712	F
2	1576	394	125	2124	0.742	1567	1550	0.7	2.9	6.581	A
3	0	0	1658	403	0.000	0	34	0.0	0.0	0.000	A
4	1152	288	393	1253	0.919	1135	1265	4.5	8.7	27.520	D

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	608	152	870	742	0.820	733	467	87.2	55.9	353.104	F
2	1339	335	132	2119	0.632	1343	1472	2.9	1.8	4.822	A
3	0	0	1446	524	0.000	0	29	0.0	0.0	0.000	A
4	979	245	337	1288	0.760	1000	1109	8.7	3.4	13.622	B

2035 Base + Comm. dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.10	B

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	20	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2035 Base + Comm. dev	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	433	0	81
	2	717	0	0	848
	3	0	0	0	0
	4	93	650	0	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.67	12.57	2.0	B	480	721
2	0.79	8.22	3.8	A	1516	2273
3	0.00	0.00	0.0	A	0	0
4	0.74	12.39	2.7	B	728	1091

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	103	673	830	0.496	408	808	0.0	1.0	8.485	A
2	1565	391	66	2168	0.722	1555	1015	0.0	2.6	5.920	A
3	0	0	1621	424	0.000	0	0	0.0	0.0	0.000	A
4	780	195	712	1054	0.740	769	909	0.0	2.7	12.393	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	507	127	713	812	0.624	504	502	1.0	1.6	11.630	B
2	1573	393	91	2149	0.732	1572	1126	2.6	2.8	6.436	A
3	0	0	1631	419	0.000	0	32	0.0	0.0	0.000	A
4	815	204	396	1251	0.652	818	1235	2.7	1.9	8.518	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	474	119	676	829	0.572	475	527	1.6	1.4	10.237	B
2	1710	428	86	2153	0.794	1706	1065	2.8	3.8	8.224	A
3	0	0	1757	347	0.000	0	35	0.0	0.0	0.000	A
4	775	194	427	1231	0.629	776	1329	1.9	1.8	8.045	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	584	146	593	866	0.674	581	461	1.4	2.0	12.571	B
2	1485	371	103	2140	0.694	1491	1071	3.8	2.4	5.776	A
3	0	0	1563	457	0.000	0	31	0.0	0.0	0.000	A
4	678	170	374	1265	0.536	680	1190	1.8	1.2	6.284	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	489	122	620	854	0.573	491	466	2.0	1.4	10.035	B
2	1492	373	88	2152	0.693	1492	1023	2.4	2.4	5.641	A
3	0	0	1550	465	0.000	0	31	0.0	0.0	0.000	A
4	712	178	374	1265	0.563	712	1176	1.2	1.3	6.608	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	104	528	895	0.465	418	397	1.4	0.9	7.605	A
2	1268	317	75	2162	0.587	1272	871	2.4	1.5	4.194	A
3	0	0	1320	595	0.000	0	26	0.0	0.0	0.000	A
4	605	151	319	1299	0.466	607	1002	1.3	0.9	5.294	A

2026 Base + Dev. + allocations, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	39.57	E

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-13	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D9	2026 Base + Dev. + allocations	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	572	1	95
	2	242	1	15	637
	3	2	33	0	6
	4	137	906	3	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.16	117.94	33.8	F	679	1019
2	0.70	5.63	2.3	A	897	1346
3	0.11	8.79	0.1	A	40	60
4	0.85	18.45	5.3	C	1020	1530

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	836	209	915	722	1.158	701	284	0.0	33.8	99.079	F
2	550	138	104	2140	0.257	549	1512	0.0	0.4	2.333	A
3	32	8	639	983	0.033	32	13	0.0	0.0	3.784	A
4	1034	259	176	1388	0.745	1023	495	0.0	2.9	9.792	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	599	150	920	720	0.833	701	291	33.8	8.3	117.937	F
2	621	155	123	2125	0.292	621	1498	0.4	0.4	2.471	A
3	37	9	728	933	0.040	37	16	0.0	0.0	4.019	A
4	1024	256	187	1381	0.742	1024	578	2.9	2.9	10.295	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	714	179	977	694	1.029	672	313	8.3	18.7	87.812	F
2	674	169	122	2126	0.317	674	1528	0.4	0.5	2.560	A
3	41	10	779	904	0.045	41	17	0.0	0.0	4.173	A
4	1090	273	204	1370	0.795	1087	616	2.9	3.7	12.771	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	696	174	912	723	0.963	694	335	18.7	19.2	103.358	F
2	801	200	125	2124	0.377	800	1481	0.5	0.6	2.809	A
3	38	10	906	831	0.046	38	19	0.0	0.0	4.539	A
4	1011	253	233	1352	0.748	1013	711	3.7	3.1	10.949	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	665	166	954	704	0.944	666	508	19.2	19.1	100.918	F
2	1480	370	121	2127	0.696	1473	1499	0.6	2.3	5.631	A
3	49	12	1562	458	0.107	49	32	0.0	0.1	8.790	A
4	1060	265	411	1242	0.854	1051	1200	3.1	5.3	18.454	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	565	141	827	761	0.742	629	437	19.1	3.2	36.906	E
2	1258	315	113	2133	0.590	1261	1342	2.3	1.5	4.284	A
3	41	10	1347	580	0.071	41	27	0.1	0.1	6.679	A
4	901	225	351	1279	0.705	912	1037	5.3	2.5	10.315	B

2026 Base + Dev. + allocations, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	8.32	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	28	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2026 Base + Dev. + allocations	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	404	1	74
	2	671	0	30	780
	3	1	17	0	3
	4	85	601	5	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.62	10.69	1.6	B	448	672
2	0.75	6.78	3.0	A	1433	2149
3	0.05	9.44	0.1	A	20	30
4	0.67	9.97	2.0	A	677	1016

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	384	96	643	843	0.455	381	751	0.0	0.8	7.753	A
2	1470	368	67	2168	0.678	1462	957	0.0	2.1	5.164	A
3	19	5	1493	497	0.038	19	36	0.0	0.0	7.522	A
4	724	181	678	1075	0.673	716	833	0.0	2.0	9.966	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	118	680	827	0.571	470	473	0.8	1.3	10.068	B
2	1484	371	85	2154	0.689	1483	1065	2.1	2.3	5.540	A
3	22	6	1538	472	0.047	22	31	0.0	0.0	8.005	A
4	759	190	392	1253	0.606	761	1168	2.0	1.6	7.454	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	443	111	646	842	0.526	444	498	1.3	1.1	9.075	A
2	1615	404	80	2158	0.749	1612	1009	2.3	3.0	6.778	A
3	21	5	1659	402	0.052	21	33	0.0	0.1	9.436	A
4	721	180	422	1235	0.584	722	1259	1.6	1.4	7.139	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	543	136	568	877	0.619	541	435	1.1	1.6	10.691	B
2	1404	351	96	2146	0.654	1408	1013	3.0	2.0	5.069	A
3	21	5	1475	507	0.041	21	29	0.1	0.0	7.402	A
4	631	158	371	1267	0.498	633	1125	1.4	1.0	5.788	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	114	593	866	0.527	458	442	1.6	1.1	8.891	A
2	1418	355	82	2156	0.658	1418	969	2.0	2.0	5.037	A
3	20	5	1471	510	0.039	20	29	0.0	0.0	7.354	A
4	663	166	372	1266	0.524	663	1119	1.0	1.1	6.063	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	388	97	506	905	0.429	390	376	1.1	0.8	7.027	A
2	1205	301	70	2166	0.556	1208	825	2.0	1.3	3.895	A
3	17	4	1253	634	0.027	17	25	0.0	0.0	5.839	A
4	564	141	317	1300	0.434	565	953	1.1	0.8	4.989	A

2035 Base + Dev. + allocations, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	152.64	F

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	-20	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D11	2035 Base + Dev. + allocations	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	615	1	104
	2	260	1	15	691
	3	2	33	0	6
	4	149	988	3	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.32	534.63	105.9	F	733	1099
2	0.75	6.83	3.0	A	970	1455
3	0.13	10.49	0.1	B	40	60
4	0.94	33.23	10.8	D	1111	1667

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	905	226	991	687	1.317	676	306	0.0	57.4	162.493	F
2	595	149	101	2142	0.278	593	1565	0.0	0.4	2.398	A
3	32	8	682	959	0.033	32	13	0.0	0.0	3.884	A
4	1127	282	187	1381	0.816	1110	526	0.0	4.2	12.904	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	645	161	999	684	0.943	672	316	57.4	50.6	291.634	F
2	671	168	117	2130	0.315	671	1555	0.4	0.5	2.548	A
3	37	9	771	908	0.041	37	17	0.0	0.0	4.131	A
4	1116	279	200	1373	0.813	1116	608	4.2	4.3	14.222	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	770	193	1058	657	1.171	656	339	50.6	79.0	362.463	F
2	729	182	120	2128	0.343	729	1595	0.5	0.5	2.658	A
3	41	10	830	874	0.047	41	18	0.0	0.0	4.320	A
4	1187	297	218	1362	0.872	1180	654	4.3	6.1	19.286	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	750	188	992	687	1.091	686	363	79.0	94.9	468.082	F
2	866	217	124	2124	0.408	865	1554	0.5	0.7	2.953	A
3	38	10	969	795	0.048	38	21	0.0	0.0	4.753	A
4	1101	275	249	1342	0.820	1105	758	6.1	5.0	15.888	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	716	179	1024	673	1.064	672	548	94.9	105.9	534.633	F
2	1600	400	122	2126	0.753	1591	1574	0.7	3.0	6.834	A
3	49	12	1679	392	0.125	49	34	0.0	0.1	10.486	B
4	1155	289	440	1223	0.944	1132	1287	5.0	10.8	33.233	D

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	609	152	912	723	0.842	716	475	105.9	79.1	466.314	F
2	1360	340	129	2121	0.641	1365	1499	3.0	1.9	4.948	A
3	41	10	1464	514	0.080	41	30	0.1	0.1	7.619	A
4	982	246	377	1263	0.778	1010	1128	10.8	3.8	15.919	C

2035 Base + Dev. + allocations, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	11.41	B

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	12	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D12	2035 Base + Dev. + allocations	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	433	1	81
	2	717	0	30	848
	3	1	17	0	3
	4	93	650	5	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.74	16.87	2.7	C	481	722
2	0.81	8.87	4.2	A	1544	2315
3	0.49	15.40	0.9	C	52	78
4	0.75	12.92	2.9	B	732	1098

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	413	103	692	822	0.503	409	807	0.0	1.0	8.646	A
2	1592	398	72	2164	0.736	1581	1029	0.0	2.8	6.219	A
3	19	5	1618	426	0.045	19	36	0.0	0.0	8.830	A
4	784	196	727	1045	0.750	772	910	0.0	2.9	12.920	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	508	127	736	802	0.633	505	511	1.0	1.7	12.055	B
2	1604	401	92	2149	0.746	1603	1149	2.8	3.0	6.799	A
3	22	6	1662	401	0.055	22	33	0.0	0.1	9.489	A
4	821	205	423	1234	0.665	824	1261	2.9	2.1	8.993	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	119	697	819	0.580	476	537	1.7	1.4	10.560	B
2	1744	436	86	2153	0.810	1739	1087	3.0	4.2	8.866	A
3	21	5	1790	328	0.064	21	36	0.1	0.1	11.711	B
4	780	195	454	1215	0.642	781	1357	2.1	1.9	8.447	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	585	146	765	789	0.742	580	479	1.4	2.7	16.870	C
2	1513	378	103	2140	0.707	1520	1242	4.2	2.5	6.054	A
3	214	54	1591	441	0.485	211	31	0.1	0.9	15.398	C
4	682	171	561	1149	0.594	683	1241	1.9	1.5	7.889	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	490	123	644	843	0.581	495	474	2.7	1.4	10.522	B
2	1518	380	89	2151	0.706	1518	1050	2.5	2.5	5.879	A
3	20	5	1576	450	0.044	23	31	0.9	0.0	8.505	A
4	717	179	401	1248	0.574	717	1199	1.5	1.4	6.901	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	104	546	887	0.469	418	404	1.4	0.9	7.735	A
2	1290	323	75	2162	0.597	1294	889	2.5	1.5	4.306	A
3	17	4	1342	583	0.029	17	27	0.0	0.0	6.362	A
4	609	152	339	1286	0.473	611	1021	1.4	0.9	5.431	A

Appendix N

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

Filename: 2024 proposed 4-arm roundabout with mitigation (no capacity reduction).j9
Path: Z:\Lime\Projects\2024\24090 Craig-Y-Parcau, Bridgend\Analysis\Junction capacity analysis\Junction 2 - Broadlands roundabout
Report generation date: 22/10/2025 15:54:26

Summary of junction performance

	AM					PM				
	Q (PCU)	Delay (s)	RFC	LOS	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Res Cap
2026 Base + strategic allocations										
Arm 1	1.4	5.82	0.58	A	11 % [Arm 4]	0.5	3.16	0.32	A	28 % [Arm 4]
Arm 2	2.2	5.44	0.68	A		2.8	6.39	0.73	A	
Arm 3	0.0	0.00	0.00	A		0.1	8.98	0.05	A	
Arm 4	4.8	16.81	0.84	C		2.0	9.86	0.67	A	
2035 Base + strategic allocations										
Arm 1	1.8	7.25	0.65	A	2 % [Arm 4]	0.5	3.39	0.35	A	19 % [Arm 4]
Arm 2	2.9	6.62	0.74	A		3.8	8.22	0.79	A	
Arm 3	0.0	4.34	0.05	A		0.0	0.00	0.00	A	
Arm 4	9.3	29.25	0.93	D		2.8	12.74	0.75	B	
2026 Base + Craig Y Parcau + allocations										
Arm 1	1.4	6.03	0.59	A	8 % [Arm 4]	0.5	3.21	0.32	A	27 % [Arm 4]
Arm 2	2.3	5.63	0.70	A		3.0	6.78	0.75	A	
Arm 3	0.1	8.79	0.11	A		0.1	9.44	0.05	A	
Arm 4	5.5	19.33	0.86	C		2.1	10.19	0.68	B	
2035 Base + Craig Y Parcau + allocations										
Arm 1	1.9	7.57	0.66	A	0 % [Arm 4]	0.6	3.44	0.36	A	18 % [Arm 4]
Arm 2	3.1	6.90	0.75	A		4.2	8.86	0.81	A	
Arm 3	0.1	10.61	0.13	B		0.1	11.71	0.06	B	
Arm 4	11.5	35.42	0.95	E		3.0	13.29	0.76	B	

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 Av. delay per arriving vehicle. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	03/10/2025
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-U7G8RPA\Andy
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2026 Base + strategic allocations	AM	DIRECT	07:45	09:15	90	15	✓
D2	2026 Base + strategic allocations	PM	DIRECT	16:45	18:15	90	15	✓
D3	2035 Base + strategic allocations	AM	DIRECT	07:45	09:15	90	15	✓
D4	2035 Base + strategic allocations	PM	DIRECT	16:45	18:15	90	15	✓
D5	2026 Base + Craig Y Parcau + allocations	AM	DIRECT	07:45	09:15	90	15	✓
D6	2026 Base + Craig Y Parcau + allocations	PM	DIRECT	16:45	18:15	90	15	✓
D7	2035 Base + Craig Y Parcau + allocations	AM	DIRECT	07:45	09:15	90	15	✓
D8	2035 Base + Craig Y Parcau + allocations	PM	DIRECT	16:45	18:15	90	15	✓

Analysis Set Details

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

2026 Base + strategic allocations, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.03	B

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	11	Arm 4

Arms

Arms

Arm	Name	Description
1	B4622	
2	A48 (e)	
3	Craig Y Parcau	
4	A49 (w)	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1	3.67	7.25	48.3	35.1	40.0	20.1	
2	6.94	6.94	0.0	76.8	40.0	24.5	
3	4.48	4.48	0.0	15.0	40.0	27.6	
4	4.63	4.63	0.0	25.3	40.0	16.1	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.738	2099
2	0.762	2219
3	0.569	1347
4	0.617	1485

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 period length (min)	Time segment length (min)	Run automatically
D1	2026 Base + strategic allocations	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	572	0	95
	2	242	1	0	637
	3	0	0	0	0
	4	137	906	0	0

08:00 - 08:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.58	5.82	1.4	A	678	1017
2	0.68	5.44	2.2	A	883	1324
3	0.00	0.00	0.0	A	0	0
4	0.84	16.81	4.8	C	1017	1526

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	835	209	886	1444	0.578	830	283	0.0	1.4	5.825	A
2	542	136	118	2129	0.255	541	1598	0.0	0.4	2.339	A
3	0	0	659	972	0.000	0	0	0.0	0.0	0.000	A
4	1031	258	149	1393	0.740	1020	509	0.0	2.8	9.595	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	598	150	887	1444	0.414	601	287	1.4	0.7	4.296	A
2	611	153	109	2136	0.286	611	1379	0.4	0.4	2.438	A
3	0	0	704	946	0.000	0	15	0.0	0.0	0.000	A
4	1021	255	153	1391	0.734	1021	551	2.8	2.8	9.947	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	713	178	942	1403	0.508	712	308	0.7	1.0	5.213	A
2	663	166	129	2121	0.313	663	1525	0.4	0.5	2.550	A
3	0	0	775	906	0.000	0	17	0.0	0.0	0.000	A
4	1087	272	166	1383	0.786	1084	608	2.8	3.6	12.166	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	694	174	878	1450	0.478	694	329	1.0	0.9	4.781	A
2	788	197	125	2124	0.371	787	1448	0.5	0.6	2.781	A
3	0	0	894	838	0.000	0	19	0.0	0.0	0.000	A
4	1008	252	197	1363	0.739	1010	696	3.6	3.0	10.497	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	913	1424	0.466	664	500	0.9	0.9	4.751	A
2	1456	364	120	2127	0.684	1450	1457	0.6	2.2	5.437	A
3	0	0	1539	471	0.000	0	31	0.0	0.0	0.000	A
4	1057	264	363	1261	0.838	1050	1175	3.0	4.8	16.811	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	564	141	791	1515	0.372	565	429	0.9	0.6	3.805	A
2	1237	309	102	2141	0.578	1240	1253	2.2	1.4	4.142	A
3	0	0	1316	598	0.000	0	27	0.0	0.0	0.000	A
4	899	225	311	1293	0.695	909	1005	4.8	2.4	9.785	A

2026 Base + strategic allocations, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.75	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	28	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2026 Base + strategic allocations	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	404	0	74
	2	670	0	0	780
	3	0	0	0	0
	4	85	601	0	0

17:00 - 17:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.32	3.16	0.5	A	447	670
2	0.73	6.39	2.8	A	1405	2107
3	0.05	8.98	0.1	A	7	11
4	0.67	9.86	2.0	A	672	1008

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	383	96	624	1638	0.234	382	752	0.0	0.3	2.872	A
2	1444	361	59	2174	0.664	1436	946	0.0	2.0	4.953	A
3	0	0	1495	496	0.000	0	0	0.0	0.0	0.000	A
4	720	180	664	1076	0.669	712	832	0.0	2.0	9.857	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	471	118	657	1614	0.292	471	463	0.3	0.4	3.160	A
2	1452	363	85	2154	0.674	1452	1043	2.0	2.1	5.290	A
3	0	0	1507	489	0.000	0	30	0.0	0.0	0.000	A
4	753	188	365	1260	0.598	755	1141	2.0	1.5	7.276	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	442	111	641	1626	0.272	442	489	0.4	0.4	3.051	A
2	1581	395	80	2158	0.733	1578	1003	2.1	2.8	6.385	A
3	21	5	1626	421	0.050	21	32	0.0	0.1	8.981	A
4	716	179	413	1230	0.582	716	1234	1.5	1.4	7.131	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	542	136	547	1695	0.320	542	427	0.4	0.5	3.131	A
2	1376	344	96	2146	0.641	1380	992	2.8	1.9	4.879	A
3	0	0	1447	523	0.000	0.21	29	0.1	0.0	0.000	A
4	626	157	346	1272	0.492	628	1102	1.4	1.0	5.696	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	455	114	590	1664	0.274	455	435	0.5	0.4	2.991	A
2	1392	348	82	2157	0.645	1392	963	1.9	1.9	4.864	A
3	21	5	1445	524	0.040	21	29	0.0	0.0	7.147	A
4	658	165	367	1259	0.523	658	1099	1.0	1.1	6.080	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	387	97	489	1738	0.223	387	369	0.4	0.3	2.676	A
2	1183	296	70	2166	0.546	1185	807	1.9	1.3	3.805	A
3	0	0	1231	646	0.000	0.17	25	0.0	0.0	0.000	A
4	560	140	297	1302	0.430	561	934	1.1	0.8	4.951	A

2035 Base + strategic allocations, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	15.73	C

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	2	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2035 Base + strategic allocations	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	615	0	104
	2	260	1	0	691
	3	0	0	0	0
	4	149	988	0	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.65	7.25	1.8	A	732	1097
2	0.74	6.62	2.9	A	955	1433
3	0.05	4.34	0.0	A	7	10
4	0.93	29.25	9.3	D	1108	1663

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	904	226	963	1388	0.651	897	305	0.0	1.8	7.252	A
2	586	147	130	2120	0.276	584	1730	0.0	0.4	2.419	A
3	0	0	714	940	0.000	0	0	0.0	0.0	0.000	A
4	1124	281	160	1386	0.811	1108	554	0.0	4.1	12.568	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	967	1385	0.465	648	311	1.8	0.9	4.925	A
2	661	165	118	2129	0.310	661	1497	0.4	0.5	2.532	A
3	0	0	762	913	0.000	0	17	0.0	0.0	0.000	A
4	1113	278	166	1383	0.805	1113	596	4.1	4.1	13.580	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	1055	1320	0.582	767	336	0.9	1.4	6.504	A
2	718	180	139	2113	0.340	718	1683	0.5	0.5	2.664	A
3	41	10	838	870	0.047	41	18	0.0	0.0	4.341	A
4	1184	296	215	1353	0.875	1175	664	4.1	6.2	19.700	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	749	187	960	1390	0.539	750	358	1.4	1.2	5.648	A
2	852	213	135	2116	0.403	851	1575	0.5	0.7	2.939	A
3	0	0	966	797	0.000	0.20	20	0.0	0.0	0.000	A
4	1098	275	214	1353	0.811	1104	753	6.2	4.7	15.158	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	715	179	986	1371	0.522	715	540	1.2	1.1	5.517	A
2	1576	394	130	2120	0.743	1567	1572	0.7	2.9	6.621	A
3	0	0	1663	401	0.000	0	34	0.0	0.0	0.000	A
4	1152	288	393	1243	0.927	1134	1270	4.7	9.3	29.246	D

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	608	152	872	1455	0.418	610	467	1.1	0.7	4.278	A
2	1339	335	111	2135	0.627	1344	1371	2.9	1.8	4.728	A
3	0	0	1425	536	0.000	0	29	0.0	0.0	0.000	A
4	979	245	337	1277	0.766	1002	1088	9.3	3.5	14.335	B

2035 Base + strategic allocations, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	8.58	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	19	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2035 Base + strategic allocations	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	433	0	81
	2	717	0	0	848
	3	0	0	0	0
	4	93	650	0	0

17:00 - 17:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.35	3.39	0.5	A	480	721
2	0.79	8.22	3.8	A	1516	2273
3	0.00	0.00	0.0	A	0	0
4	0.75	12.74	2.8	B	728	1091

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	103	672	1602	0.257	411	808	0.0	0.3	3.028	A
2	1565	391	65	2170	0.721	1555	1018	0.0	2.6	5.908	A
3	0	0	1619	425	0.000	0	0	0.0	0.0	0.000	A
4	780	195	712	1046	0.746	769	907	0.0	2.8	12.740	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	507	127	713	1573	0.322	506	502	0.3	0.5	3.385	A
2	1573	393	92	2149	0.732	1572	1127	2.6	2.8	6.436	A
3	0	0	1632	418	0.000	0	32	0.0	0.0	0.000	A
4	815	204	396	1241	0.657	818	1235	2.8	2.0	8.732	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	474	119	676	1600	0.296	474	527	0.5	0.4	3.210	A
2	1710	428	86	2153	0.794	1706	1064	2.8	3.8	8.222	A
3	0	0	1757	347	0.000	0	35	0.0	0.0	0.000	A
4	775	194	428	1221	0.635	776	1329	2.0	1.8	8.228	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	584	146	593	1661	0.352	584	461	0.4	0.5	3.349	A
2	1485	371	104	2140	0.694	1491	1072	3.8	2.4	5.781	A
3	0	0	1564	457	0.000	0	31	0.0	0.0	0.000	A
4	678	170	374	1255	0.540	680	1190	1.8	1.2	6.398	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	489	122	620	1641	0.298	489	466	0.5	0.4	3.138	A
2	1492	373	88	2152	0.693	1492	1021	2.4	2.4	5.639	A
3	0	0	1549	465	0.000	0	31	0.0	0.0	0.000	A
4	712	178	374	1254	0.568	712	1175	1.2	1.3	6.733	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	104	528	1709	0.243	416	397	0.4	0.3	2.795	A
2	1268	317	75	2162	0.587	1272	870	2.4	1.5	4.193	A
3	0	0	1320	595	0.000	0	26	0.0	0.0	0.000	A
4	605	151	319	1288	0.470	607	1002	1.3	0.9	5.379	A

2026 Base + Craig Y Parcau + allocations, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	11.08	B

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	8	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2026 Base + Craig Y Parcau + allocations	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	572	1	95
	2	242	1	15	637
	3	2	33	0	6
	4	137	906	3	0

08:00 - 08:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:15 - 08:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:30 - 08:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

08:45 - 09:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

09:00 - 09:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.59	6.03	1.4	A	679	1019
2	0.70	5.63	2.3	A	897	1346
3	0.11	8.79	0.1	A	40	60
4	0.86	19.33	5.5	C	1020	1530

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	836	209	915	1424	0.587	830	284	0.0	1.4	6.033	A
2	550	138	122	2126	0.259	549	1623	0.0	0.4	2.354	A
3	32	8	657	973	0.033	32	13	0.0	0.0	3.826	A
4	1034	259	176	1376	0.751	1022	513	0.0	2.9	10.079	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	599	150	920	1420	0.422	602	291	1.4	0.7	4.430	A
2	621	155	109	2136	0.291	621	1412	0.4	0.4	2.454	A
3	37	9	714	940	0.039	37	16	0.0	0.0	3.985	A
4	1024	256	187	1370	0.748	1024	564	2.9	3.0	10.627	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	714	179	977	1377	0.518	713	313	0.7	1.1	5.422	A
2	674	169	129	2121	0.318	674	1561	0.4	0.5	2.569	A
3	41	10	785	900	0.046	41	17	0.0	0.0	4.191	A
4	1090	273	204	1359	0.802	1086	623	3.0	3.9	13.264	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	696	174	912	1426	0.488	696	335	1.1	1.0	4.956	A
2	801	200	125	2123	0.377	800	1483	0.5	0.6	2.809	A
3	38	10	907	831	0.046	38	19	0.0	0.0	4.540	A
4	1011	253	233	1341	0.754	1014	712	3.9	3.3	11.326	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	665	166	954	1395	0.477	665	508	1.0	0.9	4.953	A
2	1480	370	120	2127	0.696	1473	1498	0.6	2.3	5.631	A
3	49	12	1562	458	0.107	49	32	0.0	0.1	8.789	A
4	1060	265	411	1232	0.861	1051	1200	3.3	5.5	19.329	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	565	141	827	1488	0.380	566	437	0.9	0.6	3.923	A
2	1258	315	103	2141	0.588	1261	1291	2.3	1.5	4.246	A
3	41	10	1337	586	0.070	41	27	0.1	0.1	6.610	A
4	901	225	351	1268	0.710	913	1027	5.5	2.6	10.666	B

2026 Base + Craig Y Parcau + allocations, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	7.07	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	27	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2026 Base + Craig Y Parcau + allocations	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	404	1	74
	2	670	0	30	780
	3	1	17	0	3
	4	85	601	5	2

17:00 - 17:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.32	3.21	0.5	A	448	672
2	0.75	6.78	3.0	A	1433	2149
3	0.05	9.44	0.1	A	20	30
4	0.68	10.19	2.1	B	677	1016

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	384	96	643	1624	0.236	383	750	0.0	0.3	2.907	A
2	1470	368	67	2168	0.678	1462	959	0.0	2.1	5.166	A
3	19	5	1493	497	0.038	19	36	0.0	0.0	7.525	A
4	724	181	678	1067	0.679	716	834	0.0	2.1	10.190	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	118	680	1597	0.296	472	473	0.3	0.4	3.208	A
2	1484	371	86	2154	0.689	1483	1066	2.1	2.3	5.542	A
3	22	6	1538	472	0.047	22	31	0.0	0.0	8.008	A
4	759	190	392	1243	0.611	761	1168	2.1	1.6	7.616	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	443	111	646	1622	0.273	443	498	0.4	0.4	3.062	A
2	1615	404	80	2158	0.748	1612	1008	2.3	3.0	6.777	A
3	21	5	1659	403	0.052	21	33	0.0	0.1	9.435	A
4	721	180	422	1225	0.589	722	1258	1.6	1.5	7.282	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	543	136	568	1679	0.323	543	435	0.4	0.5	3.177	A
2	1404	351	96	2145	0.654	1408	1014	3.0	2.0	5.072	A
3	21	5	1475	507	0.041	21	29	0.1	0.0	7.407	A
4	631	158	371	1256	0.502	633	1126	1.5	1.0	5.885	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	114	593	1661	0.275	456	442	0.5	0.4	2.999	A
2	1418	355	82	2156	0.658	1418	968	2.0	2.0	5.038	A
3	20	5	1471	510	0.039	20	29	0.0	0.0	7.349	A
4	663	166	372	1255	0.528	663	1118	1.0	1.1	6.168	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	388	97	506	1725	0.225	388	376	0.4	0.3	2.702	A
2	1205	301	70	2166	0.556	1208	825	2.0	1.3	3.894	A
3	17	4	1253	634	0.027	17	25	0.0	0.0	5.836	A
4	564	141	317	1289	0.437	565	953	1.1	0.8	5.063	A

2035 Base + Craig Y Parcau + allocations, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	18.23	C

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	0	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2035 Base + Craig Y Parcau + allocations	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0	615	1	104
	2	260	1	15	691
	3	2	33	0	6
	4	149	988	3	0

Demand (PCU/hr)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Demand (PCU/hr)

08:15 - 08:30

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Demand (PCU/hr)

08:30 - 08:45

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Demand (PCU/hr)

08:45 - 09:00

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Demand (PCU/hr)

09:00 - 09:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.66	7.57	1.9	A	733	1099
2	0.75	6.90	3.1	A	970	1455
3	0.13	10.61	0.1	B	40	60
4	0.95	35.42	11.5	E	1111	1667

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	905	226	991	1367	0.662	897	306	0.0	1.9	7.567	A
2	595	149	134	2117	0.281	593	1754	0.0	0.4	2.437	A
3	32	8	714	941	0.034	32	13	0.0	0.0	3.962	A
4	1127	282	187	1369	0.823	1110	558	0.0	4.4	13.380	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	645	161	999	1361	0.474	649	316	1.9	0.9	5.102	A
2	671	168	118	2129	0.315	671	1530	0.4	0.5	2.550	A
3	37	9	772	908	0.041	37	17	0.0	0.0	4.134	A
4	1116	279	200	1362	0.819	1116	609	4.4	4.5	14.851	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	770	193	1058	1318	0.584	768	339	0.9	1.4	6.548	A
2	729	182	139	2113	0.345	729	1687	0.5	0.5	2.686	A
3	41	10	849	864	0.047	41	18	0.0	0.0	4.376	A
4	1187	297	218	1351	0.879	1179	672	4.5	6.4	20.335	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	750	188	992	1367	0.549	751	363	1.4	1.2	5.871	A
2	866	217	135	2116	0.409	865	1607	0.5	0.7	2.972	A
3	38	10	980	789	0.048	38	21	0.0	0.1	4.792	A
4	1101	275	249	1331	0.827	1106	769	6.4	5.3	16.717	C

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	716	179	1022	1344	0.533	716	548	1.2	1.2	5.756	A
2	1600	400	130	2120	0.755	1591	1609	0.7	3.1	6.903	A
3	49	12	1686	387	0.126	49	34	0.1	0.1	10.613	B
4	1155	289	440	1214	0.952	1130	1294	5.3	11.5	35.425	E

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	609	152	914	1424	0.428	611	476	1.2	0.8	4.450	A
2	1360	340	111	2134	0.637	1365	1414	3.1	1.8	4.865	A
3	41	10	1446	524	0.078	41	30	0.1	0.1	7.466	A
4	982	246	377	1252	0.784	1012	1110	11.5	4.0	16.954	C

2035 Base + Craig Y Parcau + allocations, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	9.11	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	18	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2035 Base + Craig Y Parcau + allocations	PM	DIRECT	16:45	18:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (PCU/hr)

16:45 - 17:00

		To			
		1	2	3	4
From	1	0	433	1	81
	2	717	0	30	848
	3	1	17	0	3
	4	93	650	5	2

Demand (PCU/hr)

17:00 - 17:15

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:15 - 17:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:30 - 17:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

17:45 - 18:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

18:00 - 18:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	468	1	94
	2	200	1	15	586
	3	2	33	0	6
	4	135	883	3	5

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.36	3.44	0.6	A	481	722
2	0.81	8.86	4.2	A	1544	2315
3	0.06	11.71	0.1	B	20	30
4	0.76	13.29	3.0	B	732	1098

Main Results for each time segment

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	413	103	692	1588	0.260	412	807	0.0	0.4	3.065	A
2	1592	398	73	2164	0.736	1581	1030	0.0	2.8	6.222	A
3	19	5	1618	426	0.045	19	36	0.0	0.0	8.835	A
4	784	196	727	1037	0.756	772	910	0.0	3.0	13.289	B

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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	508	127	736	1556	0.327	507	511	0.4	0.5	3.443	A
2	1604	401	92	2149	0.746	1603	1151	2.8	3.0	6.802	A
3	22	6	1662	401	0.055	22	33	0.0	0.1	9.494	A
4	821	205	423	1224	0.671	824	1261	3.0	2.1	9.225	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	119	697	1584	0.300	475	537	0.5	0.4	3.259	A
2	1744	436	86	2153	0.810	1739	1086	3.0	4.2	8.864	A
3	21	5	1790	328	0.064	21	36	0.1	0.1	11.708	B
4	780	195	454	1205	0.647	781	1357	2.1	1.9	8.644	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) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	585	146	613	1646	0.355	585	470	0.4	0.6	3.400	A
2	1513	378	104	2140	0.707	1520	1094	4.2	2.5	6.062	A
3	21	5	1592	441	0.048	21	31	0.1	0.1	8.579	A
4	682	171	399	1239	0.550	685	1214	1.9	1.3	6.630	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	490	123	640	1626	0.301	490	474	0.6	0.4	3.183	A
2	1518	380	88	2152	0.706	1518	1042	2.5	2.5	5.873	A
3	20	5	1575	450	0.044	20	31	0.1	0.0	8.363	A
4	717	179	398	1240	0.578	717	1198	1.3	1.4	6.985	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	104	546	1696	0.245	416	404	0.4	0.3	2.825	A
2	1290	323	75	2162	0.597	1294	887	2.5	1.5	4.305	A
3	17	4	1342	583	0.029	17	27	0.0	0.0	6.363	A
4	609	152	339	1276	0.477	611	1020	1.4	0.9	5.514	A