Residential Development at Ballybin Road, Ratoath
Reference number IE01T23B18

21/06/2024

TRANSPORT ASSESSMENT

SYSTRA

RESIDENTIAL DEVELOPMENT AT BALLYBIN ROAD, RATOATH

TRANSPORT ASSESSMENT

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1.1 General

1.1.1 The proposed development is at a site with a total area of 5.48 hectares principally located at Main Street/R125 and Ballybin Road, Ratoath, Co. Meath. The total site contains a proposed residential development site with an area of 3.66 hectares (bisected by a proposed realigned Ballybin Road) and a proposed infrastructural development site with an area of 1.82 hectares (principally for road and related works, water services and open space amalgamation). The site is generally bound by: Fox Lodge Wood and Manor Woods and Fox Lodge Wood and Manor to the west and north; existing agricultural lands and residential development to the north and east; existing Ballybin Road and Moulden Bridge to the east; and Main Street/R125 and Jamestown Road/L1016 to the south. The site also incorporates parts of: the existing Ballybin Road (north and west of Moulden Bridge), Main Street/R125, Jamestown Road/L1016 and green open space in Fox Lodge Wood and Manor.

1.1.2 The proposed development principally consists of the demolition of 2 No. dwellings (594 square metres gross floor area combined) and 1 No. agricultural shed (988.7 square metres gross floor area) and the construction of 141 No. residential dwellings with a gross floor area of 12,428 square metres in buildings of 2 No. and 3 No. storeys. The dwellings include 117 No. houses (57 No. 2-bed, 52 No. 3-bed, 7 No. 4-bed and 1 No. 5-bed) and 24 No. maisonette/duplex units (18 No. 1-bed and 6 No. 3-bed).

1.1.3 The development also proposes a reconfiguration of the road layout at the south (Main Street/R125 and Jamestown Road/L1016) and east (Ballybin Road) of the site. Specifically, it is proposed to demolish/remove the existing 5-arm roundabout and to replace same with a new 4-arm signalised junction and reconfigured access to the existing Ratoath Childcare site. The new junction arrangement will facilitate a proposed realignment of the southern section of the existing Ballybin Road (approximately 172 metres) as the northern arm of the new signalised junction and a revised entrance for the existing dwelling to the north-east of the site at Ballybin Road (known as 'Fox Lodge Wood and Manor Farm', Eircode A84 KF97). The proposed road infrastructure works also include: road markings, traffic signals, traffic signage, footpaths and cycle infrastructure.

1.1.4 The development also proposes:

- 2 No. new multi-modal accesses onto the proposed realigned Ballybin Road to serve the bisected residential site;
- 2 No. pedestrian accesses onto Main Street/R125 and 1 No. pedestrian access onto the realigned Ballybin Road;
- Relocation of existing eastbound bus stop at Main Street/R125 approximately 130 metres to the west;
- Repurposing of the closed section of Ballybin Road as a pedestrian/cycle greenway;
- Internal roads and footpaths;
- 228 No. car parking spaces;
- Cycle parking spaces;
- Hard and soft landscaping, including public open space, communal amenity space and private amenity space (as rear gardens and terraces/balconies facing multiple directions);

- Demolition of the wall at the north-west corner of the site interfacing with Fox Lodge Wood and Manor and the amalgamation of existing public open in the estate and proposed public open space;
- Boundary treatments;
- Public lighting;
- Rooftop PV panels;
- 2 No. ESB sub-stations; and
- All other associated site and development works above and below ground.

1.1.5 SYSTRA (UK) Ltd has been appointed to provide transportation consultancy services in support of this Large-Scale Residential Development Application.

1.1.6 The Proposed Development is located within the Local Authority of Meath County Council and to the east of Ratoath. **Figure 1** illustrates the site's general boundary and location relative to Ratoath.

Figure 1. General Boundary, Ratoath Context

1.2 Report Purpose

1.2.1 The purpose of this report is to set out the likely transport impacts of the proposals, and to identify measures to ensure that it can be successfully integrated into the local transport network.

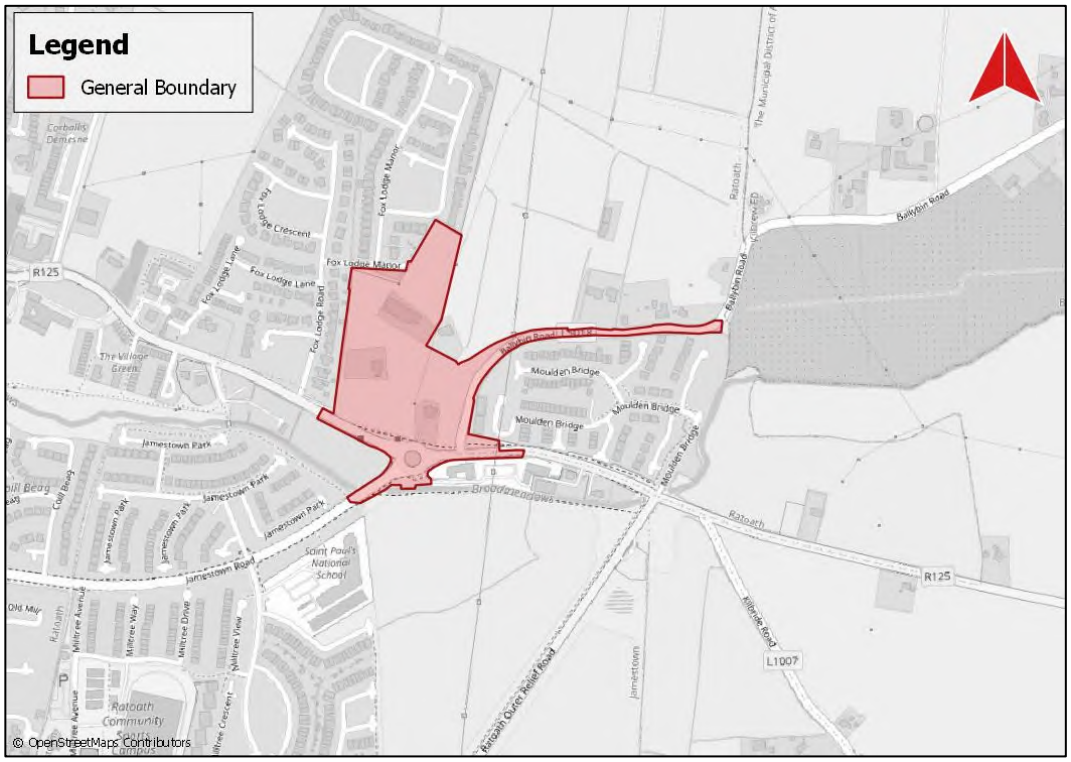
1.2.2 The report describes and evaluates the baseline transport environment, forecasts multi-modal transport demand from the proposed development and assesses the potential impact of this demand on the surrounding transport network.

1.2.3 The report also details the proposed access arrangements to the development for all travel modes and identifies necessary mitigation measures required to support the development and limit adverse impacts on the surrounding network.

1.3 Development Overview

1.3.1 The proposed development comprises 141no. residential units, car parking, green space and associated site access works. The gross site area is 5.48 Ha. The general boundary of the site is illustrated in the local context in **Figure 2**.

Figure 2. General Boundary, Local Context



1.3.2 The proposed development is located to the east of Ratoath, with the site bound by Main Street (R125) to the south, residential properties on Fox Lodge Wood and Manor Wood and Manor to the west and north and Ballybin Road to the east. The site will be accessed from Ballybin Road, which will be realigned as part of the proposed road infrastructure improvements at the R125 (Main Street) / Jamestown Road junction. The site is located to incorporate well into active travel proposals on Main Street.

1.4 Supporting Studies

1.4.1 SYSTRA prepared a Scoping Letter outlining the intended scope of this Transport Assessment, which was issued to Meath County Council in September 2023. SYSTRA have not received a response to this note.

1.4.2 SYSTRA have been made aware of existing safety and capacity concerns raised by MCC, which are concerned with the suitability of the current arrangement of the Main Street / Jamestown Road roundabout and the Ballybin Road / Main Street priority junction. It is understood that the spacing between these junctions results in conflicting traffic movements in proximity to the Ballybin Road / Main Street priority junction and extended queuing on Ballybin Road.

1.4.3 The details of supporting studies, produced by SYSTRA, examining the site access options are provided in Section 4.2.

1.5 Consultation

1.5.1 On 29th April 2024, the applicant and design team engaged with MCC in a Large Residential Development (LRD) Meeting to discuss the development proposals. There were two comments made in relation to Traffic:

- "The Applicant should provide details of the queue length survey at all junctions."
- "The Applicant should assess the impacts of the proposed development in the signal-controlled junction between the Ratoath Outer Relief Road, Main Street R125 and Moulden Bridge. In particular, it is known that traffic queues, particularly during the PM period, frequently extend from this junction eastwards along the R125 Ashbourne Road for some distance. The Applicant will be required to demonstrate that the proposed development does not exacerbate this issue. The two signalised junctions may require a linked system to censure the most efficient movement of traffic."

1.5.2 This Transport Assessment seeks to provide clarity on both points, with queue surveys appended to this document and commentary to queuing on the R125 provided within the Traffic Impact Assessment section.

1.6 Report Structure

1.6.1 Following this introductory chapter, the remainder of this report is structured as follows;

- **Chapter 2** – Transport Policy Context;
- **Chapter 3** – Existing Conditions;
- **Chapter 4** – Proposed Development;
- **Chapter 5** – Development Travel Characteristics;
- **Chapter 6** – Traffic Impact Assessment;
- **Chapter 7** – Measures to Support Development; and
- **Chapter 8** – Summary and Conclusions.

2. TRANSPORT POLICY CONTEXT

2.1 Overview

2.1.1 This chapter provides a summary of the relevant plans, policies, and objectives relating to traffic and transport that have been considered as part of the Ballybin Road Residential development proposals.

2.1.2 There are a wide range of plans, policies, and objectives that are applicable, which can be divided into three broad levels: the national, regional, and local level.

2.2 National Policy

Project 2040: National Planning Framework

2.2.1 The National Planning Framework (hereafter 'NPF') is the government's high-level strategic framework for guiding Ireland's future growth and development to 2040. The NPF's goal is to help rural and urban Ireland successfully accommodate growth and change by supporting a shift toward Ireland's regions and cities while simultaneously acknowledging the importance of rural areas. The NPF is made up of ten National Strategic Outcomes (NSOs), which drive Ireland's economic, environmental, and social growth at national, regional, and local levels.

2.2.2 The NPF's purpose is to create a shared vision and set of goals for all communities across the country. These objectives are referred to as NSOs and the NPF is responsible for achieving them. The following NSOs are relevant to the development proposals:

- **Compact Growth:** Carefully managing the sustainable growth of compact cities, towns and villages which will add value and create more appealing places in which people can live and work;
- **A Strong Economy:** This outcome will depend on the development of locations that can encourage business and innovation and attract investment and talent. To achieve this result, development and place-making coordination with investment in world-class infrastructure will be needed to promote economic competitiveness and business growth;
- **Transition to a Low Carbon and Climate Resilient Society:** The National Climate Policy Position establishes the national objective of achieving transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050;
- **Enhanced Amenities and Heritage:** This objective will ensure that our cities, towns and villages are desirable and can offer a good quality of life. Investment will be required in well-designed public realm, which includes public spaces, parks and streets, as well as recreational infrastructure; and
- **Sustainable Mobility**: Electrify our mobility systems and moving away from polluting and carbon intensive propulsion systems to new technologies such as electric vehicles, so that by 2040 our cities and towns will enjoy a cleaner, quieter environment free of combustion engine driven transport systems.

2.2.3 Furthermore, the NPF provides a number of policy objectives structured around the National Policy Objectives (NPOs). The following objectives are the most relevant in relation to the Traffic and Transport aspect of the LRD.

- **National Policy Objective 4:** Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.
- **National Policy Objective 13:** In urban areas, planning and related standards, including in particular building height and car parking will be based on performance criteria that seek to achieve well-designed high quality outcomes in order to achieve targeted growth. These standards will be subject to a range of tolerance that enables alternative solutions to be proposed to achieve stated outcomes, provided public safety is not compromised and the environment is suitably protected.
- **National Policy Objective 27:** Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.
- **National Policy Objective 28:** Plan for a more diverse and socially inclusive society that targets equality of opportunity and a better quality of life for all citizens, through improved integration and greater accessibility in the delivery of sustainable communities and the provision of associated services.
- **National Policy Objective 64:** Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions.

Adopted Sustainable and Compact Settlements (2024)

2.2.4 Sustainable and Compact Settlements guidelines set out policy and guidance in relation to the planning and development of urban and rural settlements, with a focus on residential development and the creation of sustainable and compact settlements.

2.2.5 The guidelines set out specific requirements for housing design. Most specific to this transport assessment are the requirements on car parking and cycle storage.

Housing for All - A New Housing Plan for Ireland

2.2.6 Housing for All is the Government's housing plan to 2030 which seeks to improve Ireland's housing system and deliver more homes of all types for people with different housing needs. In order to address vacancy (Housing Policy Objective 19), a new *Croí Conaithe (Towns)* fund has been included within Housing for All that seeks to bring forward serviced sites for housing to attract people to build their own homes and to support the refurbishment of vacant properties and enabling people to live in small towns and villages in a sustainable way.

2.2.7 New housing that is brought forward under the *Croí Conaithe (Towns)* fund is expected to be walkable from town and village centres and be guided by responsive design principles so that they are integrated into the town/village with a close visual relationship to the prevailing vernacular.

Climate Action Plan 2023

2.2.8 The Climate Action Plan 2023 (CAP23) is the second annual update to Ireland's Climate Action 2019. This plan is the first to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emissions ceilings.

2.2.9 The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve our emissions by 2030, and reach net zero no later than 2050, as committed to in the Programme for Government. CAP23 sets out how Ireland can accelerate the actions that are required to respond to the climate crisis, putting climate solutions at the centre of Ireland's social and economic development.

2.2.10 In terms of transport, CAP23 pledges to adopt the 'Avoid – Shift – Improve' approach, and targets a 50% reduction in emissions by 2030. It also aims to:

- Reduce the total distance driven across all journeys by **20%.**
- Ensure that walking, cycling and public transport account for **50%** of all journeys.

2.2.11 With particular relevance to the development, CAP23 seeks to:

- TR/23/41: Prioritise and accelerate delivery of NTA Connecting Ireland and new town services.
- TR/23/12: Promote Transport Oriented Design – advance interdepartmental group work programme.
- TR/23/14: Delivery of 10-Minute Towns and 15-Minute Cities.

National Implementation Plan for the Sustainable Development Goals 2022-2024

2.2.12 The new (second) Implementation Plan aims to build on the structures and mechanisms from the first Plan and to develop and integrate additional approaches in areas identified through review and consultation as requiring further action. It sets out Ireland's Sustainable Development Goal (SDG) implementation strategy for 2022-2024 and form part of a series of consecutive Implementation Plans, each building on the previous iteration, to work towards achieving the SDGs.

National Sustainable Mobility Policy (2022)

2.2.13 The National Sustainable Mobility Policy sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations. It builds on and replaces existing active travel and public transport policy as set out in the 2009 Smarter Travel: A Sustainable Transport Future Document.

2.2.14 The policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil fuelled cars. It will make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car.

2.2.15 The policy aims to make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car under the following key themes:

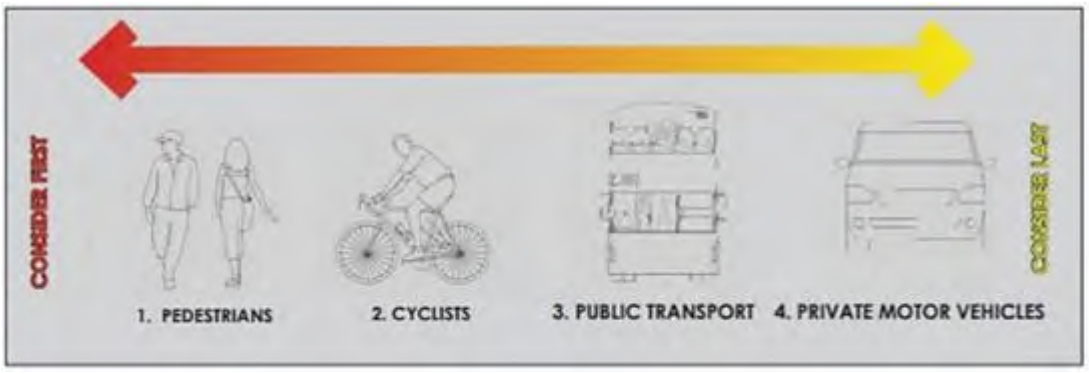
- Safe and Green mobility
- People focused mobility
- Better integrated mobility

2.2.16 With particular relevance to the development, the sustainable mobility policy seeks to expand walking, cycling and public transport infrastructure across the country, and improve the safety of walking, cycling and public transport networks.

Design Manual for Urban Roads & Streets (Updated 2019)

2.2.17 The primary objective of the Design Manual for Urban Roads & Streets (DMURS), published by the Department of Transport, is to set out an integrated design approach for streets in urban areas which balances the needs of all users, and is influenced by the surrounding context of the street. The manual aims to promote a sustainable approach to design which promotes real alternatives to the car. To achieve this the needs of sustainable modes must be considered before that of the private car. This is outlined in the User Hierarchy Chart shown in **Figure 3**.

Figure 3. DMURS User Hierarchy



Cycle Design Manual (2023)

2.2.18 The Cycle Design Manual has been prepared by the National Transport Authority (NTA) and overseen by the Department of Transport. The updated manual replaces the previous National Cycle Manual, published by the NTA in 2011.

2.2.19 The manual seeks to normalise cycling as a regular mode of transport in Ireland through the design of cycle infrastructure. It highlights five main requirements for developing cycle-friendly infrastructure. These are:

- Safety;
- Coherence;
- Directness;
- Comfort; and
- Attractiveness.

2.2.20 The document also provides detailed design guidance for cycle tracks and junctions which implement cycle infrastructure.

2.3 Regional Policy

Transport Strategy for the Greater Dublin Area 2022-2042

2.3.1 This Transport Strategy for the Greater Dublin Area 2022-2042 (Transport Strategy) replaces the previous framework, titled the Transport Strategy for the Greater Dublin Area 2016-2035.

2.3.2 The overall aim of the Transport Strategy is:

> *"To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports the regional economy."*

2.3.3 The Strategy also sets out four objectives:

- An Enhanced Natural and Built Environment;
- Connected Communities and Better Quality of Life;
- A Strong Sustainable Economy; and
- An Inclusive Transport System.

2.3.4 The second part of the document sets out the strategy for achieving the objectives. This includes improvements to active travel and public transport networks as well as tackling climate change and net zero targets.

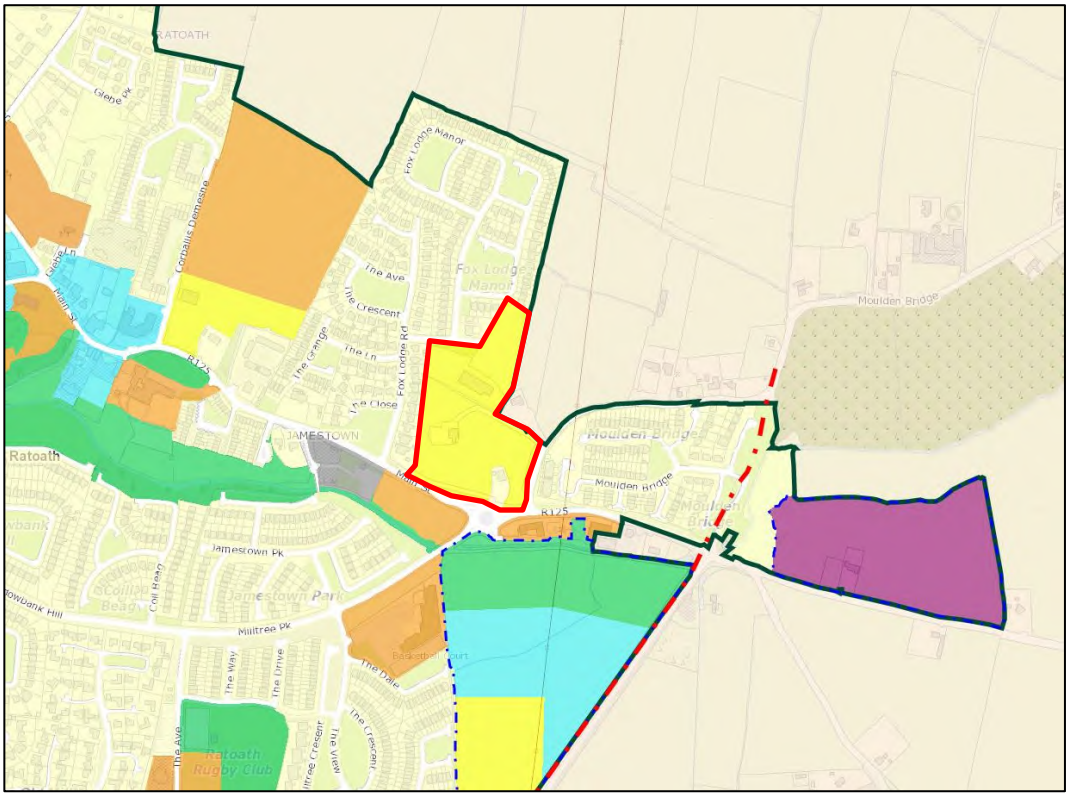
2.4 Local Policy

Meath County Development Plan 2021-2027

2.4.1 The current Meath County Development Plan 2021-2027 was adopted on 22nd September, 2021 and came into effect on 3rd November, 2021. It sets out a vision and an overall strategy for the proper planning and sustainable development of County Meath for a six-year period.

2.4.2 The application site is principally zoned as *'A2 – New Residential'*, with a small area of *'A1 – Existing Residential'* in the current plan, as shown by the red outline in **Figure 4**.

Figure 4. Extract of Meath County Development Plan Land Use Zoning Objectives



3. EXISITING CONDITIONS

3.1 Pedestrian Infrastructure

3.1.1 The formalised pedestrian infrastructure in Ratoath is demonstrated by **Figure 5**. It should be noted that this figure omits the extensive network of footways found within residential areas.

Figure 5. Pedestrian Infrastructure

3.1.2 The Figure illustrates that the majority of Ratoath is accessible via formalised pedestrian infrastructure. This takes the form of a mix between footways, shared active travel ways and segregated pedestrian and cycle tracks.

3.1.3 East and west along the length of Main Street in the vicinity of the site there is high quality pedestrian and cycleway infrastructure that features adequate street lighting. This takes the form of a mix of shared footways and one-way segregated cycle tracks at footway level. These extend east to the part-constructed Ratoath Outer Relief Road and west to The Village Green.

3.1.4 The general characteristics of Main Street east of the site are illustrated by **Figure 6**.

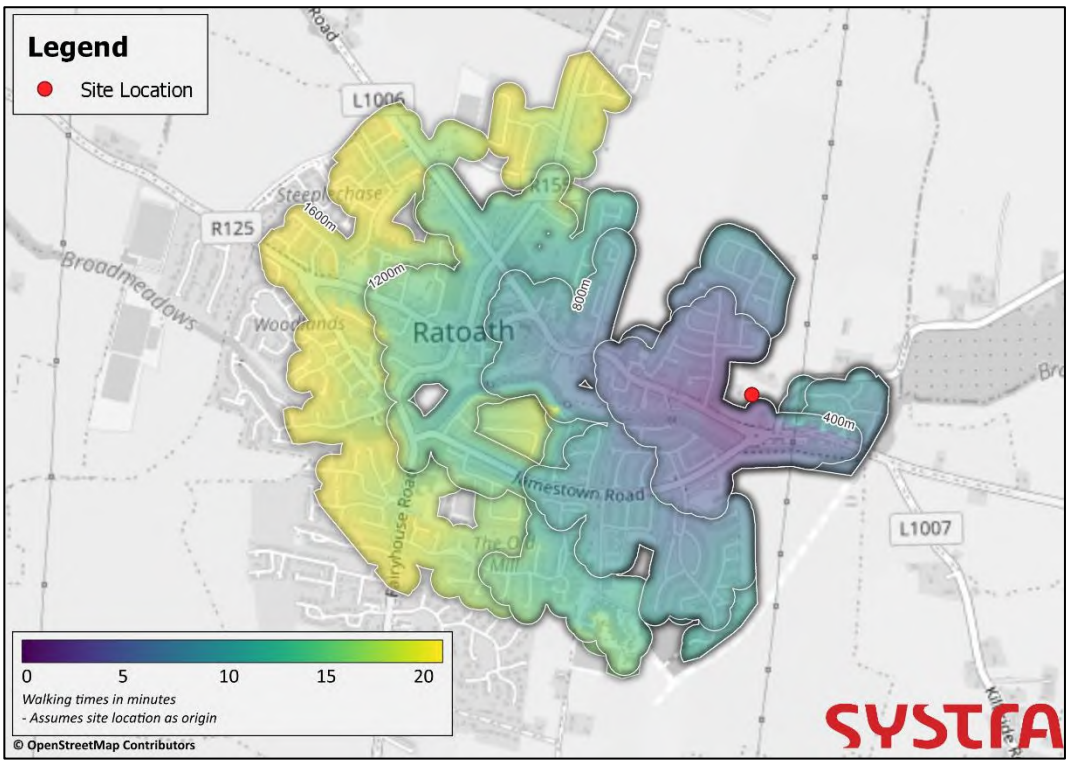
Figure 6. General Characteristics of Main Street (R125)

3.1.5 The existing Ballybin Road, to the east of the site, is a semi-rural road unlikely to be utilised by pedestrians and as such has no formal pedestrian infrastructure.

3.2 Pedestrian Accessibility

3.2.1 The 5-, 10-, 15- and 20-minute walking isochrones from the proposed development are illustrated in **Figure 7**.

Figure 7. 20-Minute Walking Isochrone



3.2.2 **Figure 7** indicates that the majority of Ratoath is accessible within a 20-minute walk from the site (calculated at an average walking speed of 4.8km/h).

3.2.3 SuperValu and Tesco Express retail stores are accessible within an approximately 16-minutes' walk. Ratoath Dental Centre is also located accessible within a 20 minute walk from the proposed development. The nearest place of worship, Holy Trinity Ratoath Parish Church, is located within a 12-minute walk. Tennis, rugby, and athletics facilities are located at the Jamestown Sports Complex, accessible within a 10-minute walk.

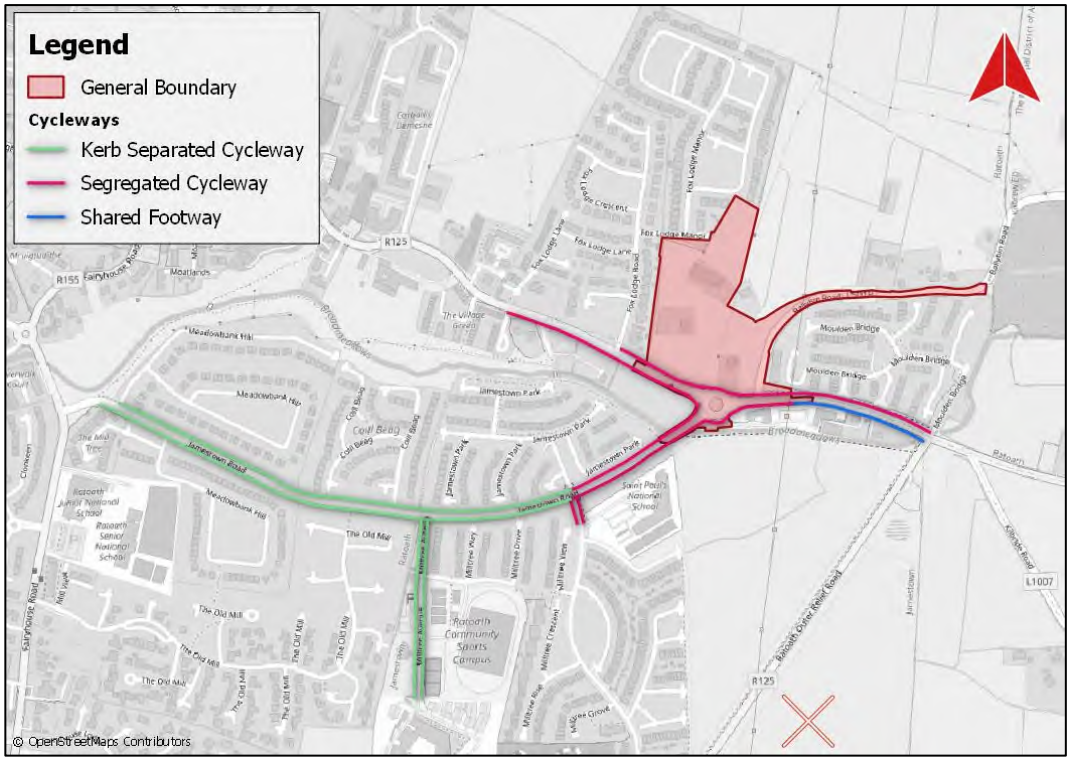
3.2.4 The site has a high accessibility to places of education with St. Paul's Primary and National School (7 minutes), Ratoath College (13 minutes) and Ratoath Junior and Senior National Schools (19 minutes) all within a reasonable walking catchment.

3.3 Cycling Infrastructure

3.3.1 One-way segregated cycleways and pedestrian footways are provided along Jamestown Road from the R125 roundabout and on residential collector roads within recent developments to the south of Jamestown Road.

3.3.2 The type and location of cycleways in the vicinity of the site is illustrated in **Figure 8**. Note that two-way segregated cycleways are also present on the Ratoath Outer Relief but have not been included due to this link not being fully complete at the time of writing.

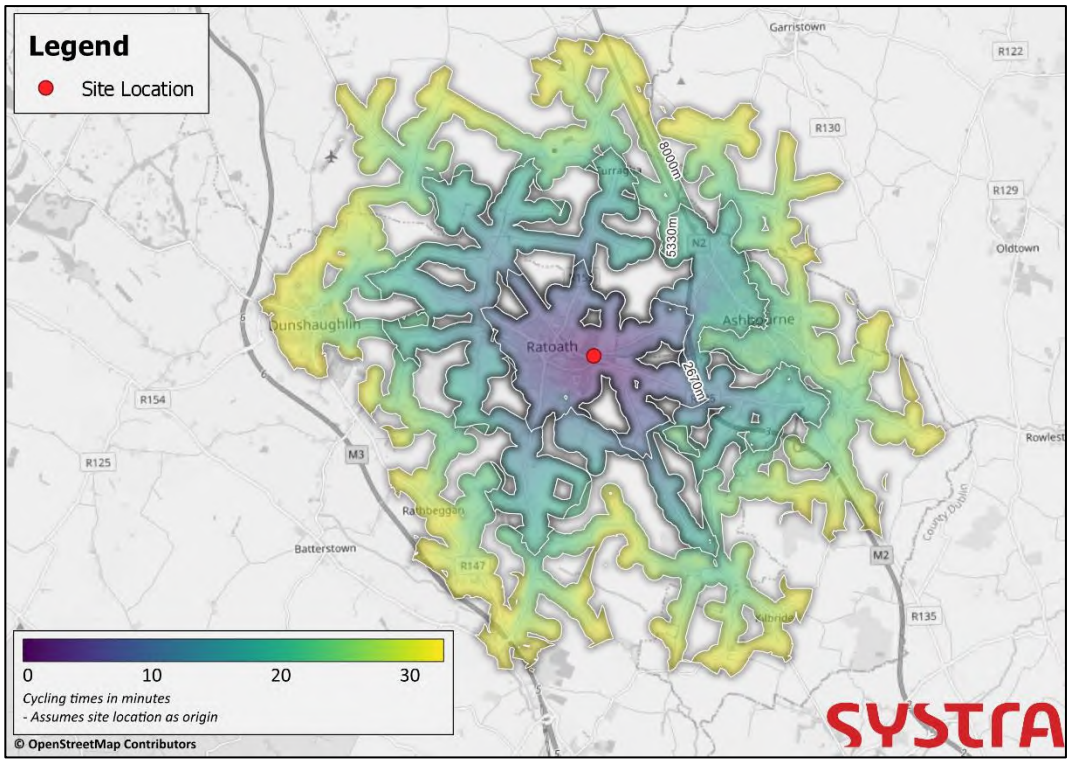
Figure 8. Cycle Facilities in the Vicinity of the Site



3.4 Cycling Accessibility

3.4.1 The 10-, 20-, and 30-minute cycling isochrones from the site are illustrated in **Figure 9**.

Figure 9. 30-Mniute Cycling Isochrone



3.4.2 The figure shows that majority of Ratoath is accessible from the site within a 7-minute cycle. The neighbouring town of Ashbourne, to the east of the site, is accessible within an approximately 17-minute cycle. Ashbourne provides access to further employment opportunities and larger food retail stores.

3.4.3 Dunshaughlin, Rathbeggan, and Kilbride are all accessible from the site within an approximately 30-minute cycle.

3.5 Future Pedestrian and Cycle Infrastructure

3.5.1 Upgrades to the pedestrian and cycle infrastructure on Main Street in the vicinity of the site have recently been approved and are being brought forward by MCC under a Part 8 application. The improvements include enhanced crossing infrastructure on the west arm of the Ballybin roundabout, tactile paving and providing fully segregated cycle tracks.

3.5.2 In January 2023, the Greater Dublin Area (GDA) Cycle Network Plan, consisting of the Urban Network, Inter-Urban Network and Green Route Network for each of the seven Local Authority areas comprising the GDA was adopted as part of the GDA Transport Strategy 2022-2042. €1.2m has been allocated by the NTA under this plan to deliver the Ratoath Town Network.

3.6 Public Transport

3.6.1 The nearest bus stops are located on Main Street adjacent to the proposed site. Raised kerbs are provided at both stops on Main Street, to assist with boarding and alighting services. It is noted that shelters are not provided at either stop. A real-time information sign is provided at the eastbound stop. Services calling at the Main Street stops, and their associated peak frequency is outlined in **Table 1**.

Table 1. Bus Service Frequency Table

SERVICE NO.	ROUTE	PEAK FREQUENCY		
		Mon-Fri	Sat	Sun
103	Dublin – Ashbourne – Ratoath	20 mins	20-30 mins	30 mins
105	Blanchardstown – Ratoath – Ashbourne – Drogheda	30 mins	30 mins	60 mins
109A	DCU – Airport – Ratoath - Navan	60 mins	60 mins	60 mins

3.6.2 **Table 1** demonstrates that there are 12 two-way services per hour at the weekday peaks. The Table further shows 12 two-way services per hour at the Saturday peaks and up to 8 two-way services at the Sunday peaks.

3.6.3 The 105X service between Dublin, Ratoath and M3 Parkway also calls at the Ballybin Roundabout stop with a highly restricted timetable. There are three southbound services in the AM and three northbound services in the PM.

3.6.4 As part of the Ratoath Pedestrian and Cycle Scheme upgrades to Main Street, it is noted that the eastbound bus stop located south of the site will receive a minor realignment and be converted to a layby style stop. The westbound stop will be converted from a layby stop to a standard kerbside stop. Both stops are also to be upgraded with shelters.

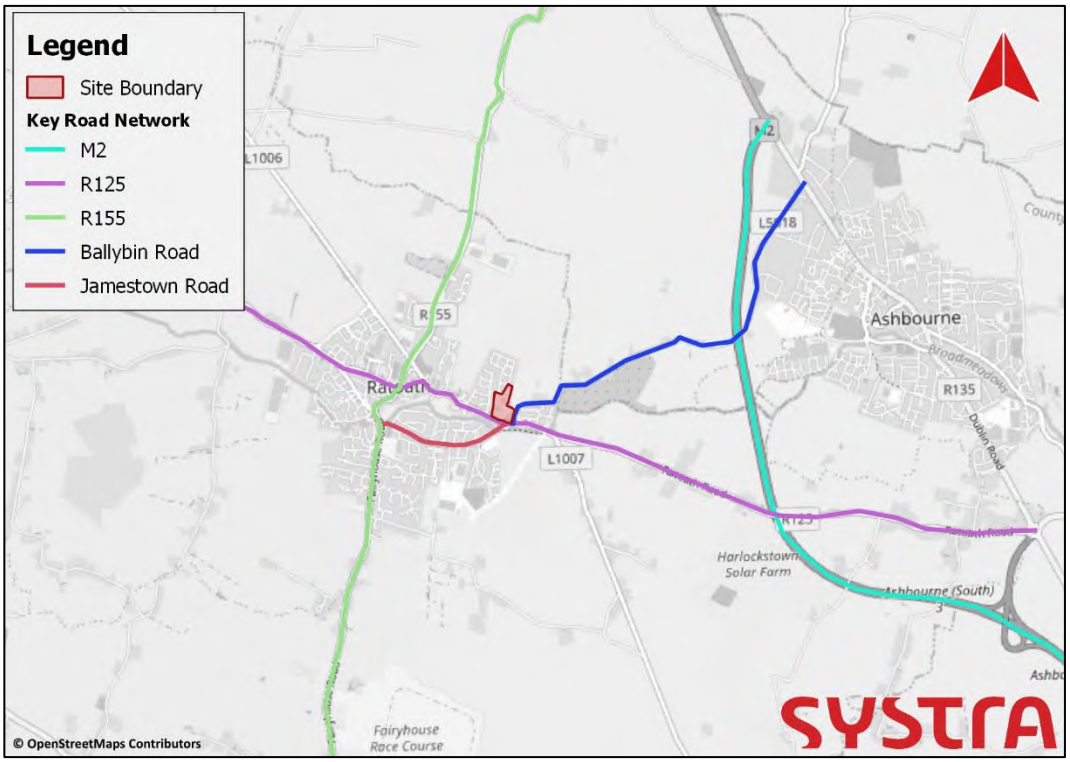
3.6.5 The nearest train station is located at M3 Parkway, a station on a branch of the Western Commuter Train. The station is located approximately 10.5km south of the site (a 15-minute drive) and has free park and ride facilities. Dunboyne station, located one stop south of M3 Parkway, is accessible via a linked public transport journey with the service 105 bus.

3.6.6 M3 Parkway and Dunboyne sees hourly services to Clonsilla, where a transfer can be made for services to Dublin Connolly. Some peak hour services operate directly to Docklands.

3.7 Adjacent Road Network

3.7.1 This section provides a summary of the surrounding road network. **Figure 10** illustrates the key routes of the surrounding road network.

Figure 10. Adjacent Road Network



Main Street (R125)

3.7.2 The R125 travels in a generally east to west direction, providing access to Ratoath Town Centre and Dunshaughlin to the west and the M2 motorway to the east. The R125 comprises a single carriageway with one lane in each direction. The road is subject to a 50km/h speed restriction in the vicinity of the site.

3.7.3 The general characteristics of the R125 in the vicinity of the site is illustrated in **Figure 11**.

Figure 11. General Characteristics of R125

Jamestown Road / Jamestown Road

3.7.4 Jamestown Road, known also as Jamestown Road, is an east west residential distributor road of a good quality. The carriageway is approximately 6m in width and features kerb-segregated pedestrian and cycle tracks on each side of the road. The road is subject to a 50km/h speed restriction and is well-lit along its length.

3.7.5 The general characteristics of Jamestown Road are shown in **Figure 12**.

Figure 12. General Characteristics of Jamestown Road

R155

3.7.6 The R155 travels in generally a north to south direction between the Galloping Horses roundabout to the south and the N2 to the north. It is a single carriageway road with one lane in each direction and approximately 6m in width. Within Ratoath, vehicles are subject to a 50km/h speed restriction, outside of the town, they are subject to an 80km/h speed restriction.

3.7.7 The general characteristics of the R155 outside of Ratoath are shown in **Figure 13**.

Figure 13. General Characteristics of the R155

Ballybin Road

3.7.8 Ballybin Road is a rural connector between Ratoath and the north of Ashbourne at the Ashbourne Industrial Estate. It also provides access to a number of farm properties. The road is approximately 6m in width and subject to an 80km/h speed restrictions along the majority of its length. A realigned Ballybin Road will provide access to the development, further detail on this realignment is provided in Section 4.2.

3.7.9 The general characteristics of Ballybin Road are illustrated in **Figure 14**.

Figure 14. General characteristics of Ballybin Road

M2 & N2

3.7.10 The N2 is the closest major arterial road in the area and runs from the M50 at Charlestown north to the border at Monaghan. The road carries a motorway designation between junction 2 and the junction with the R135, north of Ashbourne. The M2/N2 provides access to Dublin, Slane and Ardee.

3.7.11 For southbound journeys, the M2 is accessed via the Nine Mile Roundabout at junction 3 which is located approximately 5km east of the site. For northbound journeys the N2 can be accessed via Ballybin Road and the R135.

3.7.12 The general characteristics of the M2 are illustrated in **Figure 15**.

Figure 15. General Characteristics of the M2

3.8 Summary

3.8.1 The site is well-positioned to enable active travel access to destinations in Ratoath town centre and particularly schools and the Ratoath College accessed from Jamestown Road. The Ratoath Town Network upgrades will complement and enhance the existing network of shared and segregated active travel ways found throughout Ratoath.

3.8.2 The site is located within 400m of a bus stop providing regular services to Ashbourne, Dunboyne, Blanchardstown and Dublin and an hourly service to Dunshaughlin and Dublin Airport. The 105 service also enables interchange with rail services at M3 Parkway. Vehicular access to the development will be taken via an upgraded and realigned Ballybin Road, for which further detail is provided in Section 4.2.

4. PROPOSED DEVELOPMENT ACCESS STRATEGY

4.1 General

4.1.1 The proposed development is located to the east of Ratoath, with the main residential site bound by Main Street (R125) to the south, residential properties on Fox Lodge Wood and Manor Wood and Manor to the west and north and Ballybin Road to the east. The site will be accessed from a realigned Ballybin Road along the eastern boundary of the site.

4.1.2 The proposals comprise 141no. residential units, upgrading the existing Ballybin Roundabout to a signalised junction, car parking, green space, and associated works. The current site layout is illustrated in **Figure 16** and provided within **Appendix A**.

Figure 16. Site Layout

4.2 Upgrade of Ballybin Roundabout

Background

4.2.1 During a pre-application meeting with Meath County Council (MCC), appropriate vehicular access arrangements for the LRD site were discussed, with MCC highlighting their concerns over providing a new dedicated access from the R125 Main Street, to the west of Ballybin Roundabout.

4.2.2 MCC also raised concerns regarding the proximity of Ballybin Road to the Main Street / Jamestown Road roundabout. Currently, westbound queues from the roundabout extend along the R125 Main Street beyond the junction with Ballybin Road. This means that drivers wishing to exit Ballybin Road need to either rely on drivers on the R125 allowing them to do so, or they need to pull out onto the R125 to force a gap in traffic. Both of these scenarios could have a considerable detrimental impact to road safety. Furthermore, we also understand from discussions with MCC that accident statistics for this section of the R125 are 2.5 times greater than they would expect to see for a road of this nature.

4.2.3 In recognition of these concerns, SYSTRA initially carried out a quantitative access appraisal (Technical Note dated 1st November 2023), that considered the feasibility of five different scenarios.

- Option 1 - From R125 Main Street via The Road and Fox Lodge Wood and Manor;
- Option 2 - Direct site access from R125 Main Street;
- Option 3 - Access from the existing Ballybin Road;
- Option 4 - Access from a realigned Ballybin Road connecting to the Ballybin roundabout; and
- Option 5 - From the Ratoath Outer Relief Road / Moulden Bridge via Ballybin Road.

4.2.4 Notwithstanding the conclusion that Option 2 would be the preferred development option, traffic surveys carried out in October 2023 and the resultant analysis, confirmed that the Ballybin Roundabout currently operates considerably over capacity. Furthermore, the survey recorded eastbound queues on the R125 (west arm) in excess of 250m to 300m. These queues will severely impact on the ability for residents to enter and exit Fox Lodge Wood and Manor. This means that in its current arrangement, the roundabout will be unable to accommodate any material increases in traffic movements associated with further development within Ratoath.

4.2.5 Due to queuing at the R125 / Jamestown Road roundabout on the R125 West arm being so extensive and extending beyond Fox Lodge Wood and Manor, SYSTRA cannot recommend that either Option 1 or 2 be considered as a robust access strategy to the proposed development. It is envisaged that extensive mitigation at the R125 / Jamestown Road roundabout would be required to effectively reduce existing queuing such that Options 1 and 2 would become advisable.

4.2.6 Incorporation of a 5th arm at the roundabout (Option 4) would likely require third-party land acquisition, realignment of the R125 and potentially Jamestown Road and may incur topographical issues. While there is no policy that explicitly refutes the incorporation of a 5-arm roundabout arrangement, this is generally considered to be not best practice. As such, the process of its delivery would be subject to heightened scrutiny relative to the other options.

4.2.7 Option 3 was primary ruled out as there was not sufficient space available to deliver active travel infrastructure on both sides of the existing Ballybin Road. Additionally, an access off the existing Ballybin Road would likely exacerbate known issues with the R125 / Main Street Junction.

4.2.8 Option 5 was ruled out simply on the basis that the delivery of the entire Ratoath Outer Relief road could not be assured.

4.2.9 In order to address the existing road safety problems and to facilitate access to the proposed LRD site, SYSTRA has given consideration to the potential of replacing the roundabout with a fully signal controlled junction.

Initial Traffic Signal Appraisal

4.2.10 An initial assessment of three possible signal-controlled arrangements has been carried by out SYSTRA using the LinSig junction modelling software and traffic flow data recorded by the surveys undertaken in October 2023. The layouts tested were:

- A typical 4-arm crossroads arrangement;
- A 5-arm layout incorporating a dedicated access to the Ratoath Childcare facility; and
- A staggered 4-arm arrangement which retains the existing alignment of Ballybin Road.

4.2.11 The conversion of the Ballybin roundabout to a 4-arm signal junction would require the realignment of Ballybin Road to meet with the existing convergence of Main Street and Jamestown Road. In operational terms this layout works well, with the junction operating within practical capacity in both the existing AM and PM peak hours. It would also address the current road safety problems MCC has regarding the proximity and interaction between Ballybin Road and the roundabout.

4.2.12 The introduction of a fifth arm to provide separate signal-controlled access for the Ratoath Childcare facility introduces additional delay at the junction and reduced junction performance, particularly in the AM peak.

4.2.13 The staggered junction arrangement, which retains the current alignment of Ballybin Road, also shows reduced performance over a 'traditional' 4-arm crossroads layout.

4.2.14 Overall, the initial assessment demonstrated that conversion of the Ballybin roundabout junction to a signal-controlled crossroads arrangement is feasible and preferable to the other two options that have been tested.

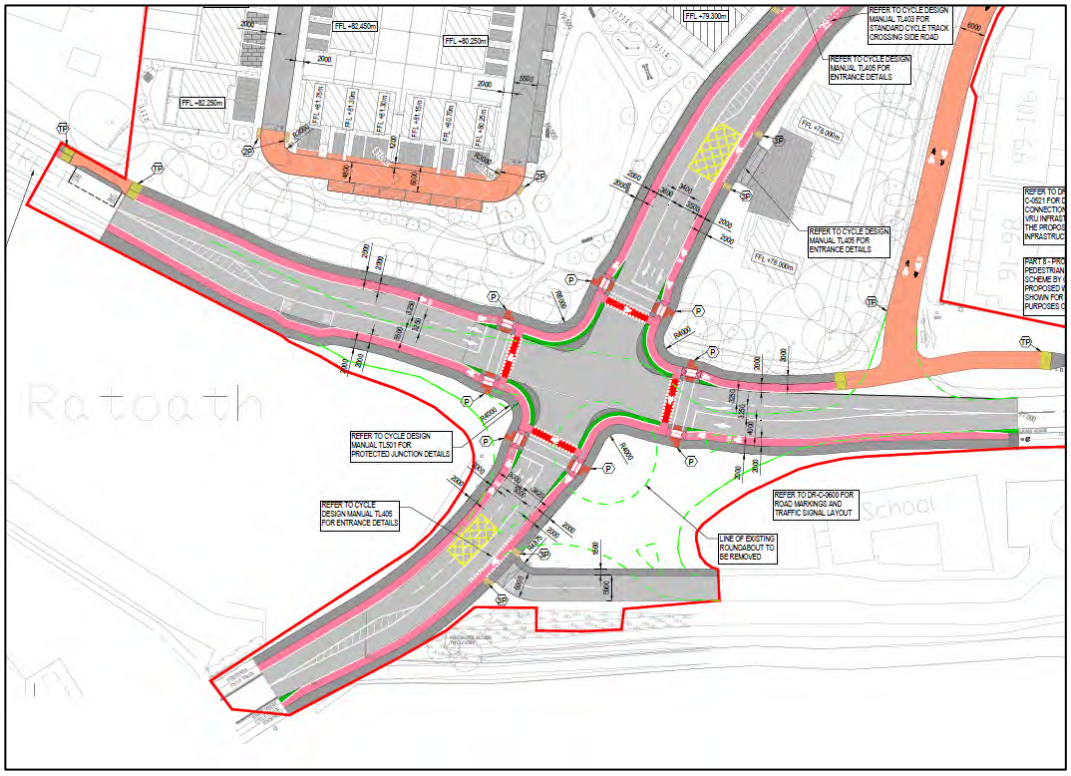
Junction Layout

4.2.15 The conversion of the existing Ballybin Roundabout to a 4-arm signalised junction, including a realignment of Ballybin Road, will provide segregated active travel ways on both sides of all arms. Toucan crossings are also to be provided on all arms.

4.2.16 The existing eastbound bus stop located to the west of the roundabout is to be relocated approximately 130 metres further to the west on the R125 and the westbound stop will remain at a similar location. Both stops will be in-lane stops. Access to the Ratoath Childcare facility will be provided via a realigned access on the eastern side of Jamestown Road.

4.2.17 The arrangement of the revised Ballybin Roundabout junction is shown in **Figure 17**. A full-scale drawing of the proposed layout is also provided in **Appendix A**.

Figure 17. Revised Layout of Ballybin Roundabout Junction



Conclusion

4.2.18 By adopting a design which not only accommodates the LRD site but also provides capacity for further development in the area, replacing the Ballybin Roundabout with a signal-controlled crossroads will:

- Fundamentally address the existing road safety problem raised by MCC, by incorporating a realigned Ballybin Road into the junction;
- Reduce eastbound queues on the R125, thereby improving the ability for residents to enter and exit Fox Lodge Wood and Manor;

- Incorporate high quality active travel infrastructure for pedestrians and cyclists on all arms of the junction;
- Not jeopardise the principles of the Part 8 scheme that MCC were bringing forward for this location. Indeed, the proposed design will enhance the Part 8 scheme, by providing controlled segregated crossings for pedestrians and cyclists on all arms of the junction;
- Acknowledge the need to retain the eastbound bus stop, by providing a design compliant layout to the west of the junction;
- Seek to minimise the impact to the trees on the north side of the R125. An Arboricultural Method Statement has been included in the Arboricultural Report prepared by Charles McCorkell Arboricultural Consultancy;
- Provide a safe means of accessing the LRD site; and
- Open up the opportunity for further development in the area.

5. PROPOSED DEVELOPMENT TRAVEL CHARACTERISTICS

5.1 General

5.1.1 This chapter considers the likely multi-modal trip generation associated with the proposed development. In line with the best practice methodology, the TRICS (Trip Rate Information Computer System) database and local census data have been used to obtain the people-trip rates by transportation mode.

5.2 People Trip Generation

5.2.1 The TRICS database has been interrogated under the '03 – Residential' land use with the 'A – Houses Privately Owned' subcategory. While the dwellings may not entirely be privately owned, using this approach provides a more onerous, and therefore robust, assessment. The sites were filtered to include only surveys conducted in Ireland. The resultant people trip rates were informed by 12 sites.

5.2.2 TRICS identifies the '*traditional*' weekday morning (AM) and evening (PM) commuter peak hours to be 08:00 – 09:00 and 17:00 – 18:00 in the AM and PM periods respectively, and this is when additional people (and particularly vehicle trips) will potentially have the greatest impact on the local transport infrastructure.

5.2.3 **Table 3** outlines the estimated people trip rates and people trips based on the values output from TRICS and 141no. residential units. The full TRICS output is provided in **Appendix B**.

Table 2. Estimated People Trip Rate

TIME	PEOPLE TRIP RATE			ESTIMATED PEOPLE TRIPS		
	In	Out	Total	In	Out	Total
07:00-08:00	0.119	0.325	0.444	17	46	63
08:00-09:00	**0.28**	**0.955**	**1.235**	**39**	**135**	**174**
09:00-10:00	0.324	0.367	0.691	46	52	97
10:00-11:00	0.236	0.282	0.518	33	40	73
11:00-12:00	0.255	0.272	0.527	36	38	74
12:00-13:00	0.321	0.316	0.637	45	45	90
13:00-14:00	0.385	0.418	0.803	54	59	113
14:00-15:00	0.45	0.444	0.894	63	63	126
15:00-16:00	0.529	0.389	0.918	75	55	129
16:00-17:00	0.619	0.38	0.999	87	54	141
17:00-18:00	**0.676**	**0.444**	**1.12**	**95**	**63**	**158**
18:00-19:00	0.543	0.428	0.971	77	60	137
Total	**4.737**	**5.020**	**9.757**	668	708	1,376

5.2.4 **Table 3** indicates that the proposed development will generate 174 two-way people trips during the AM peak hour (08:00-09:00), comprising 39 inbound journeys and 135 outbound journeys. 158 two-way people trips are estimated to be generated during the PM peak hour (17:00-18:00), with 95 inbound journeys and 63 outbound journeys.

5.3 Mode Share

5.3.1 Data from the 2022 Ireland Census has been interrogated to determine the mode share for travel to work and school. The proposed site is within the Small Area 167078023. The mode share for this Small Area is outlined in **Table 4**. The mode share has also been adjusted to remove people who predominantly work from home.

Table 3. 2022 Ireland Census Transport Mode Share

MODE	SHARE	EXCL. WFH
On Foot	20%	22%
Bicycle	6%	7%
Public Transport	5%	6%
Car Driver	40%	44%
Car passenger	17%	19%
Other	2%	2%
Work from home	9%	-

5.3.2 **Table 4** indicates that the majority of people will travel by car (63%) and that the majority of these (44%) will be drivers. Approximately 29% of people will travel by active travel modes (22% by foot and 7% by bicycle), and 6% of people will travel by public transport. The remaining 2% will travel by other modes (e.g. van, motorbike, or taxi).

5.3.3 Applying the 2022 census data, **Table 5** indicates the resultant people trips by mode share estimated for the entire development in the AM and PM peak hour.

Table 4. Total People Trips by Census Mode Share

TRIPS (116 UNITS)	AM PEAK (0800 - 0900)			PM PEAK (1700 - 1800)		
	In	Out	2-way	In	Out	2-way
On Foot	9	30	38	21	14	35
Bicycle	3	9	11	6	4	10
Public Transport	2	8	10	6	4	9
Car Driver	17	60	77	42	28	70
Car passenger	8	26	33	18	12	30
Other	1	3	4	2	1	3
Total	**39**	**135**	**174**	**95**	**63**	**158**

5.3.4 **Table 5** indicates that around 77 two-way vehicle trips will be generated in the AM peak hour (17 inbound and 60 outbound) and 70 two-way vehicle trips will be generated in the PM peak hour (42 inbound and 28 outbound).

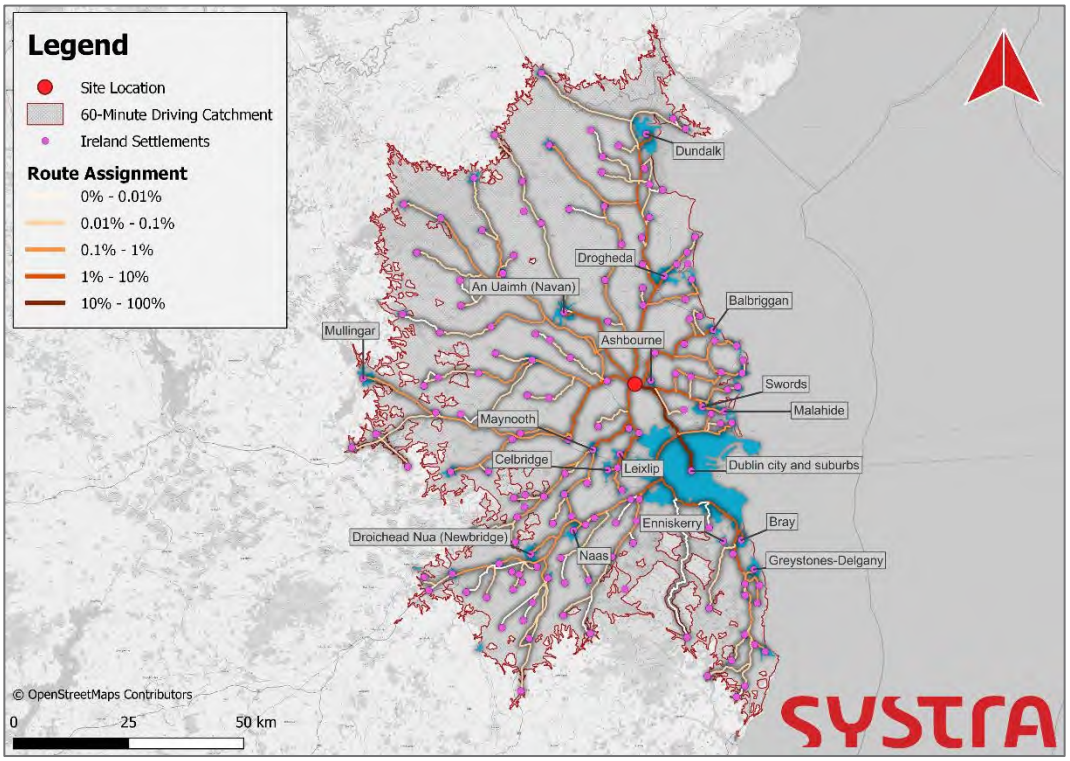
5.4 Trip Distribution and Assignment

5.4.1 For the purposes of assessing the likely distribution and assignment of vehicle trips associated with the development proposals, SYSTRA has utilised a gravity model considering settlements within a 60-minute driving catchment from the site. To derive the percentage of trips originating / destinating from the settlements within the sphere of influence (δ) a simple gravity model formula has been applied:

$$\delta = \frac{Population}{Cost\ (Time)}$$

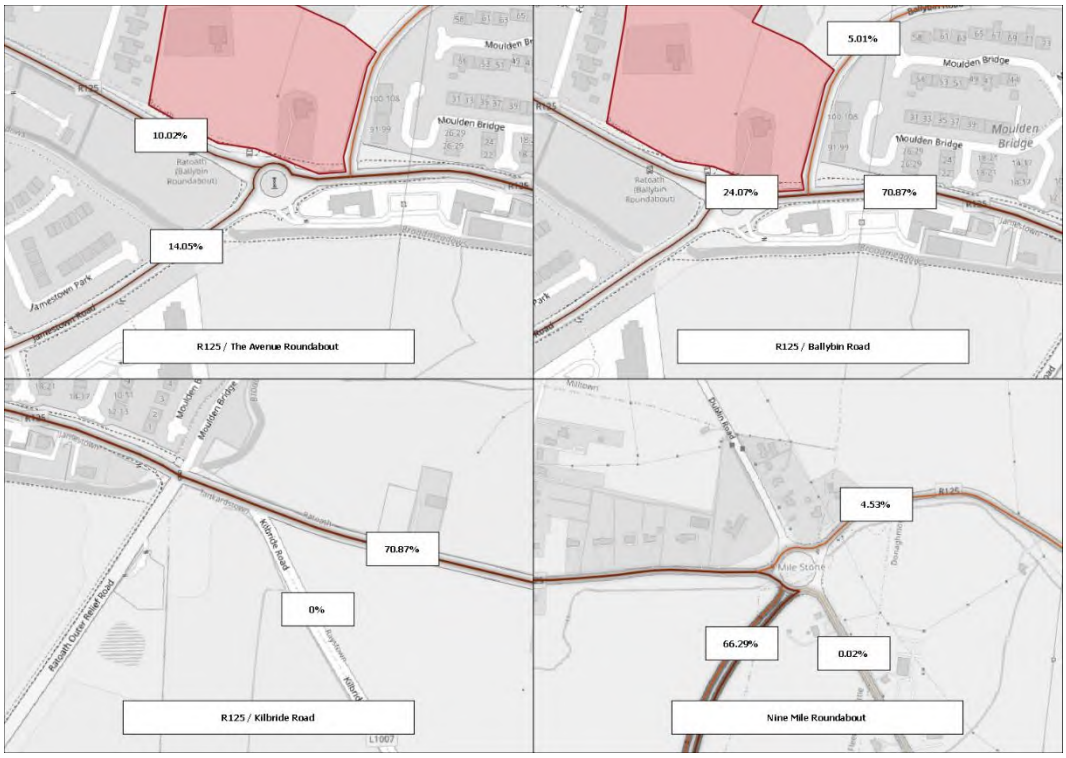
5.4.2 **Figure 18** demonstrates the sphere of influence along with the indicative assignment of traffic to / from the development. The width of the lines representing route assignment are a function of the destination population as a percentage of aggregate population within the sphere of influence. A larger full-sized version of this figure is provided in **Appendix C**.

Figure 18. Traffic Assignment



5.4.3 **Figure 19** illustrates the estimated vehicle route assignment at junctions on the local road network. Percentages given are a proportion of total trips.

Figure 19. Vehicle Assignment on the Local Road Network



6. TRAFFIC IMPACT ASSESSMENT

6.1 General

6.1.1 The purpose of this section of the TA is to analyse the extent of the impact that the traffic generated by the proposed development will have on the local road network in terms of road capacity, queueing, and delay.

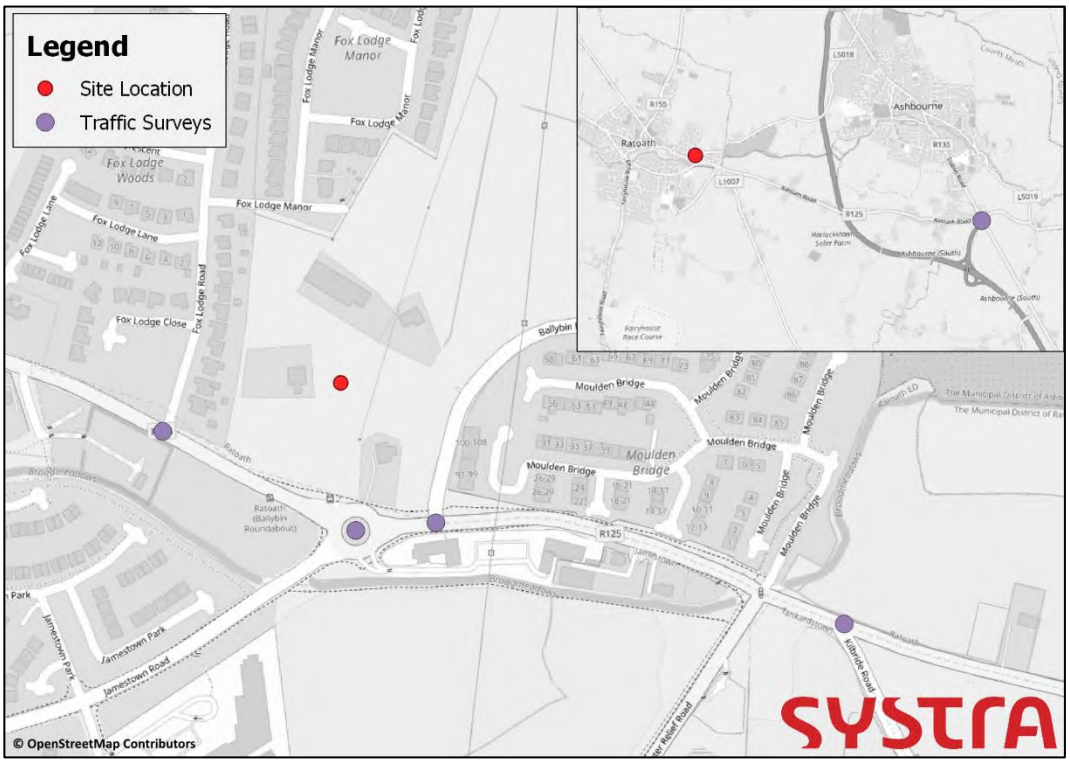
6.2 Baseline Traffic

6.2.1 Junction Turning Counts (JTCs) including queue length surveys were undertaken on Thursday 19 October 2023 during the AM period (0700-1000) and PM period (1600-1900) at the following junctions:

- Main Street (R125) / Jamestown Road / Ratoath Childcare Access priority roundabout (also known as Ballybin Roundabout);
- Main Street (R125) / The Road priority junction;
- Main Street (R125) / Ballybin Road priority junction;
- Main Street (R125) / Kilbride Road priority junction; and
- R125 / R135 / M2 Slip priority roundabout (also known as Nine Mile Roundabout, resurveyed on Thursday 26 October due to error with camera settings).

6.2.2 The location of the surveys is shown in **Figure 20**.

Figure 20. Traffic Counter Locations



6.2.3 From the JTC data the network peaks were identified as:

- AM Peak: 08:00 – 09:00; and
- PM Peak: 16:15 – 17:15.

6.3 Year of Opening

6.3.1 For the purposes of this exercise, SYSTRA anticipates that development may commence in circa 2026, with an anticipated opening year of 2027.

6.4 Modelled Scenarios

6.4.1 SYSTRA have modelled the following scenarios as required in TII's 'Traffic and Transport Assessment Guidelines', for both the AM (08:00 – 09:00) and PM (16:15 – 17:15) peak periods:

- 2024 Base Year
- 2027 Completion Year
- 2032 Completion Year + 5 Year Forecast
- 2042 Completion Year + 15 Year Forecast

6.5 Traffic Growth

6.5.1 SYSTRA have applied low growth rates for the county of Meath in line with 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections'. The factors applied are shown in **Table 5**.

Table 5. Traffic Growth Factors

SCENARIO	LIGHT VEHICLES	HEAVY VEHICLES
2023 to 2027	1.0639	1.1471
2023 to 2032	1.1261	1.3135
2023 to 2042	1.1839	1.5531

6.6 Committed Development

6.6.1 Meath County Council has not made SYSTRA aware of any committed developments which are likely to have an impact on the anticipated area of influence. SYSTRA also conducted a high-level search of the MCC planning portal and this too did not highlight any developments likely to have an impact.

6.6.2 We have therefore assumed that there is no committed development that require to be considered.

6.7 Upgrade of Main Street (R125) / Jamestown Road Roundabout

6.7.1 Assessment by SYSTRA to support the site access options appraisal has indicated that the current Ballybin Roundabout operates over theoretical capacity. For the purposes of analysis, it has been assumed that the upgrades to Ballybin Roundabout would be brought forward ahead of occupation of the LRD site. Base traffic data has been reassigned onto the proposed network using observed turning proportions.

6.8 Threshold Assessment

6.8.1 A threshold assessment has been carried out on each of the identified junctions within the area of influence to determine whether a detailed junction analysis is required. A standard percentage impact of 10% or greater increase in flows has been utilised as the trigger for further detailed junction analysis.

6.8.2 The results of the threshold assessment are indicated by **Table 6**.

Table 6. Threshold Assessment

DESCRIPTION	LINK	2023 BASE		2027 BASE		2027 BASE + COMM DEV		DEVELOPMENT		IMPACT	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Main Street / Ballybin Road / Jamestown Road	Main Street East	1196	1161	1277	1238	1277	1238	56	50	4%	4%
	Jamestown Road	958	664	1021	708	1021	708	12	10	1%	1%
	Main Street West	1215	1234	1297	1316	1297	1316	12	14	1%	1%
	Ballybin Road	465	577	497	616	497	616	74	62	15%	10%
Main Street / The Road	Main Street East	1215	1240	1300	1325	1300	1325	9	8	1%	1%
	The Road	234	206	250	222	250	222	0	0	0%	0%
	Main Street West	1121	1216	1200	1299	1200	1299	9	8	1%	1%
Main Street (R125) / Kilbride Road	Main Street East	925	844	990	901	990	901	56	50	6%	6%
	Kilbride Road	308	287	329	306	329	306	0	0	0%	0%
	Main Street West	1179	1097	1259	1169	1259	1169	56	50	4%	4%
Nine Mile Roundabout	R125 East	737	705	790	758	790	758	4	4	1%	1%
	R135 South	453	561	488	600	488	600	0	0	0%	0%

DESCRIPTION	LINK	2023 BASE		2027 BASE		2027 BASE + COMM DEV		DEVELOPMENT		IMPACT	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	M2 Slip	1325	1204	1422	1290	1422	1290	52	47	4%	4%
	R125 West	1060	1138	1135	1218	1135	1218	56	51	5%	4%
	R135 North	1169	1192	1249	1274	1249	1274	0	0	0%	0%

6.8.3 The threshold assessment indicates that the proposed upgrade to the Ballybin Roundabout exceeds the 10% impact threshold and therefore requires further detailed analysis.

6.9 Reporting of Results

6.9.1 SYSTRA has used LinSig v3 signalised junction modelling software to model the Ballybin Roundabout junction. The LinSig analysis will present the Degree of Saturation (DoS) and Mean Max Queue (MMQ) for each lane while the overall Practical Reserve Capacity (PRC) and junction delay will also be included. A DoS of less than 90% indicates that the lane will operate within 'practical' capacity while a positive PRC indicates that the junction operates within capacity. A DoS of 100% or more indicates that the lane is operating above theoretical capacity.

6.9.2 The MMQ is a combination of vehicles in:

- The vehicle queue at the end of the red period;
- Vehicles joining the back of the queue at the start of the green period; and
- Random / oversaturated queueing.

6.9.3 A summary of the analysis results follows within the next section of this chapter, with detailed assessment results for each scenario provided within **Appendix D**. Junction turning diagrams for all modelled scenarios are provided within **Appendix E**.

6.10 Ballybin Roundabout Junction Analysis

6.10.1 SYSTRA have produced a LinSig v3 model based on the General Arrangement of the Ballybin Roundabout junction upgrades. The model incorporates an "all red" pedestrian stage every cycle.

6.10.2 The AM and PM results of the analysis are presented in **Table 7** and **8**, respectively.

Table 7. AM LinSig Results

LINK	AM BASE (2023)		AM BASE (2027)		AM BASE W/ DEV (2027)		AM BASE (2032)		AM BASE W/ DEV (2032)		AM BASE (2042)		AM BASE W/ DEV (2042)	
	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)
Main Street West	78.5 : 78.5%	13.1	84.8 : 84.8%	16.7	87.5 : 87.5%	18.4	89.4 : 89.4%	20.2	96.8 : 96.8%	29.8	96.2 : 96.2%	29.1	100.7 : 100.7%	40.3
Main Street East	45.0%	6.7	48.1%	7.3	50.8%	7.8	50.2%	7.8	55.0%	8.4	53.4%	8.6	57.5%	9.3
Jamestown Road	74.7 : 75.5%	8.2	81.8 : 81.8%	9.5	88.4 : 88.4%	11.0	91.0 : 91.0%	13.0	98.3 : 98.3%	18.3	97.2 : 97.2%	18.3	101.4 : 101.4%	23.7
Ballybin Road	22.1 : 22.1%	1.8	23.6 : 25.1%	2.0	33.8 : 33.8%	3.1	26.1 : 30.5%	2.2	36.3 : 36.3%	3.3	27.6 : 34.6%	2.3	37.1 : 37.1%	3.4
PRC (%)	14.7%		6.1%		1.8%		-1.1%		-9.3%		-8.0%		-12.6%	
Delay (pcuHr)	15.82		18.72		21.83		23.43		36.23		34.35		51.41	

Table 8. PM LinSig Results

LINK	PM BASE (2023)		PM BASE (2027)		PM BASE W/ DEV (2027)		PM BASE (2032)		PM BASE W/ DEV (2032)		PM BASE (2042)		PM BASE W/ DEV (2042)	
	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)
Main Street West	40.3 : 40.3%	3.2	55.9 : 55.9%	3.8	62.6 : 62.6%	4.0	73.5 : 73.5%	4.7	73.3 : 73.3%	4.7	75.0 : 75.0%	5.1	75.0 : 75.0%	5.1
Main Street East	81.2%	18.5	88.3%	22.2	91.6%	24.9	93.7%	27.2	97.0%	32.2	101.0%	41.8	102.1%	46.5
Jamestown Road	45.8 : 45.8%	3.7	47.2 : 47.2%	3.9	48.8 : 48.8%	4.1	49.9 : 49.9%	4.2	51.5 : 53.2%	4.4	50.9 : 50.9%	4.3	54.1 : 58.0%	4.6
Ballybin Road	81.7 : 81.7%	7.0	84.7 : 84.7%	7.8	86.9 : 86.9%	8.3	92.2 : 92.2%	10.2	95.9 : 95.9%	12.2	95.7 : 95.7%	12.4	103.4 : 103.4%	20.2
PRC (%)	10.1%		1.9%		-1.8%		-4.1%		-7.8%		-12.2%		-14.9%	
Delay (pcuHr)	16.02		19.47		22.15		26.03		32.31		41.30		53.88	

6.10.3 **Table 8** indicates that the junction will operate under practical capacity in the current year, opening year and opening year with development in the AM Peak Hour. Mean maximum queuing on the Main Street West arm is estimated at 13.1 Passenger Car Units (PCU) with baseline traffic flows, increasing by 3.6 PCU with traffic growth alone. The development will increase queues by 1.7 PCU on the Main Street West arm and 1.5 PCU on Jamestown Road.

6.10.4 The junction will operate below theoretical capacity in all scenarios except for 2042 with development.

6.10.5 **Table 9** indicates that the junction will operate under practical capacity in the base year and year of opening (2027) in the PM Peak Hour. Queuing will be most considerable on the Main Street East arm of the junction. In the base year mean maximum queues will 18.5 PCU increasing by 3.7 PCU with baseline traffic growth. The development will increase queues by 2.7 PCU on the Main Street East arm in the year of opening.

6.10.6 The junction will operate below theoretical capacity in all scenarios except for 2042 with and without development.

Comment on Queuing

6.10.7 MCC raised concerns in respect to westbound queuing on the R125, and the potential for queues to stack from the proposed junction towards the Ratoath Relief Road / R125 / Moulden Bridge signalised junction. This signalised junction is located approximately 400m to the east of the proposed signalised junction. At this distance, there will be limited benefit from linking the junctions under a single controller to enable synchronise vehicle phase offsets, as was suggested by MCC as an option.

6.10.8 The modelling exercise undertaken indicates that mean maximum queuing for westbound traffic in the PM is 24.9 PCU – approximately 137m. This length of queue is not anticipated to interact with the relief road signalised junction. There will be a slight augmentation of queuing for westbound traffic on the R125 at the proposed signalised junction, however this simply reflects a better balancing of priorities for all traffic across the PM peak period. Hence, holistically there is anticipated to be betterment at the junction in respect to queuing, at the cost of a slight increase in queuing for westbound traffic on the R125 in the PM.

Comparison to Baseline Modelling Results

6.10.9 In order to compare the proposed junction upgrades with the current situation, SYSTRA has used JUNCTIONS 10 stand-alone junction modelling software to model the Ballybin Roundabout in its current configuration. Analysis will report the Ratio of Flow Capacity (RFC) and maximum forecast queue for each movement within the junction. The RFC of an arm of a junction is one of the principal factors in influencing queues and delays.

6.10.10 The results of this modelling are presented in **Table 9**.

Table 9. Ballybin Roundabout Baseline AM and PM Results

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023											
1 - Main Street E	D1	0.6	4.25	0.38	A	1 % [4 - Main Street W]	D2	3.5	11.06	0.78	B	20 % [1 - Main Street E]
2 - Creche Entrance		0.1	5.20	0.09	A			0.1	7.71	0.05	A	
3 - The Avenue		0.7	4.35	0.40	A			0.4	4.66	0.27	A	
4 - Main Street W		7.5	30.48	0.89	D			0.7	5.11	0.39	A	

6.10.11 The Table indicates that the junction will operate at or close to practical capacity, however the modelled queues do not accurately reflect the observed queues recorded during the traffic surveys. The average observed queues can be found in **Table 10**.

Table 10. Average Observed Queues

PERIOD	MAXIMUM QUEUES DURING PEAK HOURS (METRES)			
	Main Street E	Creche Entrance	Jamestown Road	Main Street W
AM Peak Hour	20	15	10	270+
PM Peak Hour	25	15	25	25

6.10.12 The queue length surveys conducted in October 2023 indicate that there is notable queuing at the current Ballybin Roundabout with measured queues on the Main Street West arm extending beyond the view of the camera at the Fox Lodge Wood and Manor junction in the AM peak. This is a queue of over **270m** or approximately 47 PCU A queue of this length is not only undesirable from a travel delay perspective but also presents a road safety risk and air quality issue.

6.10.13 **Table 10** also indicates that modelled queues are considerably less than those observed. In order to calibrate the model stream intercept, SYSTRA has applied adjustments, in line with TRL guidance.

6.10.14 TRL states:

"Corrections are intended to account for factors at the junction which make the junction different to the 'average' junction with the same geometries, such as poor visibility, gradient, driver hesitation or an unusual layout, and so on. Usually these factors apply at all times of day and in current and future years"

6.10.15 Reflecting on the limitations of proprietary capacity models, it is SYSTRA's view that model outcomes are to an extent, academic, as calibration distorts capacity outputs. The demonstration of this calibration model should hence be considered for information only and reflects simply a commitment to follow best-practice modelling procedure.

6.10.16 The base model was calibrated such that the modelled Base 2024 AM and PM queues accurately reflect the observed queues. The results from the calibrated model are shown in **Table 11** and **12**, respectively.

Table 11. Ballybin Roundabout Base 2023 AM Calibrated

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023											
1 - Main Street E	D1	4.0	28.75	0.81	D	-23 % [2 - Creche Entrance]	D2	358.1	1691.08	1.59	F	-50 % [2 - Creche Entrance]
2 - Creche Entrance		3.0	181.24	0.83	F			3.1	536.35	0.94	F	
3 - The Avenue		2.0	13.73	0.67	B			0.8	9.39	0.43	A	
4 - Main Street W		53.8	188.74	1.10	F			0.9	7.08	0.47	A	
	2027											
1 - Main Street E	D3	5.8	39.41	0.87	E	-29 % [2 - Creche Entrance]	D4	458.1	2144.63	1.70	F	-53 % [2 - Creche Entrance]
2 - Creche Entrance		7.8	397.89	1.16	F			4.6	709.94	1.09	F	
3 - The Avenue		2.6	16.64	0.73	C			0.9	9.91	0.46	A	
4 - Main Street W		93.8	360.79	1.20	F			1.1	7.72	0.51	A	
	2032											
1 - Main Street E	D5	9.1	57.72	0.92	F	-33 % [2 - Creche Entrance]	D6	555.9	2588.25	1.82	F	-56 % [2 - Creche Entrance]
2 - Creche Entrance		15.7	774.99	1.65	F			5.9	880.69	1.19	F	
3 - The Avenue		3.4	20.22	0.78	C			1.0	10.45	0.49	B	
4 - Main Street W		139.5	571.56	1.29	F			1.2	8.41	0.55	A	
	2042											
1 - Main Street E	D7	15.6	90.08	0.98	F	-37 % [2 - Creche Entrance]	D8	650.5	3017.07	1.92	F	-58 % [2 - Creche Entrance]
2 - Creche Entrance		26.3	2149.93	2.45	F			6.2	949.90	1.21	F	
3 - The Avenue		4.3	25.06	0.82	D			1.1	11.01	0.52	B	
4 - Main Street W		201.1	799.68	1.39	F			1.4	9.19	0.58	A	

Table 12. Ballybin Roundabout Base 2023 PM Calibrated

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023											
1 - Main Street E	D1	0.7	4.43	0.39	A	-54 % [4 - Main Street W]	D2	5.0	16.00	0.84	C	-17 % [2 - Creche Entrance]
2 - Creche Entrance		0.2	13.35	0.20	B			3.0	396.87	1.04	F	
3 - The Avenue		5.1	35.54	0.85	E			5.0	64.93	0.86	F	
4 - Main Street W		519.3	3737.05	2.35	F			6.0	49.75	0.88	E	
	2027											
1 - Main Street E	D3	0.7	4.64	0.41	A	-57 % [4 - Main Street W]	D4	7.9	24.01	0.90	C	-22 % [2 - Creche Entrance]
2 - Creche Entrance		0.3	14.61	0.23	B			14.6	1543.84	9999999999.00	F	
3 - The Avenue		9.1	60.12	0.93	F			11.3	131.63	0.99	F	
4 - Main Street W		621.9	4574.23	2.62	F			10.0	76.97	0.95	F	
	2032											
1 - Main Street E	D5	0.8	4.87	0.44	A	-60 % [4 - Main Street W]	D6	14.2	40.79	0.95	E	-27 % [2 - Creche Entrance]
2 - Creche Entrance		0.3	16.04	0.25	C			15.9	1759.93	9999999999.00	F	
3 - The Avenue		18.4	107.79	1.01	F			27.1	275.43	1.16	F	
4 - Main Street W		721.2	5428.63	2.85	F			15.4	108.36	0.99	F	
	2042											
1 - Main Street E	D7	0.9	5.13	0.47	A	-62 % [4 - Main Street W]	D8	29.0	73.66	1.01	F	-30 % [2 - Creche Entrance]
2 - Creche Entrance		0.4	17.91	0.29	C			22.7	2415.57	9999999999.00	F	
3 - The Avenue		35.2	183.53	1.08	F			44.6	451.44	1.31	F	
4 - Main Street W		818.5	6471.05	3.02	F			22.8	146.84	1.04	F	

6.10.17 **Table 11** and **12** indicate that the junction is presently operating significantly over capacity in the AM and PM peak hours. In a *do nothing* scenario with continued traffic growth the operation of the Ballybin Roundabout would continue to deteriorate.

6.10.18 It is likely that MCC would be required to upgrade the junction to enable continued growth in Ratoath. The proposals put forth by this LRD application present an opportunity to

upgrade the junction to address safety risks and queuing, while enabling the proposed residential development.

6.10.19 The LinSig modelling indicates that the upgrades to Ballybin Roundabout will exceed theoretical capacity in 9 and 19 years beyond the baseline flows. However, this is primarily a result of considerable levels of traffic growth despite 'low' growth factors being utilised. These growth rates do not consider the context of nationwide efforts to reduce car dependency or the delivery of the Part 8 scheme, which will help to encourage sustainable travel to and from the development.

6.10.20 Ultimately, replacing the Ballybin Roundabout with a signal-controlled crossroads will:

- Fundamentally address the existing road safety problem raised by MCC, by incorporating a realigned Ballybin Road into the junction;
- Reduce eastbound queues on the R125, thereby improving the ability for residents to enter and exit Fox Lodge Wood and Manor;
- Incorporate high quality active travel infrastructure for pedestrians and cyclists on all arms of the junction;
- Not jeopardise the principles of the Part 8 scheme that MCC were bringing forward for this location. Indeed, the proposed design will enhance the Part 8 scheme, by providing controlled segregated crossings for pedestrians and cyclists on all arms of the junction;
- Acknowledge the need to retain the eastbound bus stop, by providing a design compliant layout to the east of the junction;
- Seek to minimise the impact to the trees on the north side of the R125. An Arboricultural Method Statement has been included in the Arboricultural Report prepared by Charles McCorkell Arboricultural Consultancy;
- Provide a safe means of accessing the LRD site; and
- Open up the opportunity for further development in the area.

6.10.21 It should be noted that the modelling results do not consider the implications of the Ratoath Relief Road being completed. This highway intervention would likely result in a redistribution of strategic flows though and around the town of Ratoath, ultimately seeks to reduce flows on roads like the R125 and Jamestown Road. Such benefits, which would be afforded by the completion of the relief road, have not been considered as part of this assessments, and as such, the modelling results – particularly those pertaining to future years – should be viewed in this context.

7. MEASURES TO SUPPORT DEVELOPMENT

7.1 Introduction

7.1.1 The section outlines the range of measures which have been undertaken or are proposed to ensure that the development can be meaningfully integrated into the adjoining transport network.

7.2 Active Travel Access

7.2.1 The majority of roads within the site feature footways on both sides of the carriageway with a nominal width of 2m and tactile paving at crossings where appropriate. The site also features a network of paths through the open green space, connecting into Main Street in two locations, the realigned Ballybin Road and a connection to Fox Lodge Wood and Manor.

7.2.2 The realigned Ballybin Road and the proposed upgrades to the Ballybin Roundabout will tie into and enhance the active travel proposals adjacent to the site. These enhancements will provide high-quality active travel infrastructure and enable sustainable access to local amenities such as the adjacent bus stop, Ratoath town centre and education facilities accessed from Jamestown Road.

7.2.3 It is proposed that once the Ballybin Road is realigned, that its original alignment be repurposed to a shared active greenway, for use of both pedestrians and cyclists. This route would provide a traffic-free link for such users that better aligns with the desire lines for users heading northbound from the R125 East.

7.3 Cycle Parking Provision

7.3.1 Cycle parking will be provided in accordance with Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024) and Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities (2023).

7.3.2 It is therefore proposed that for units with a private garden, cycles will be securely stored within the curtilage of each individual residential plot. For units with communal outdoor space, cycle parking is provided.

7.3.3 Where a private garden is not present, such as with the maisonette and duplex units, secure resident cycle storage is provided at a rate of 1 space per bed. This is in line with MCDP standards. 1 visitor space should be provided per two housing units, without private gardens. There are 24 such units and so 12 visitor cycle spaces should be provided.

7.3.4 The level of cycle parking provision is also compliant with the Sustainable Residential Development and Compact Settlements Guidelines.

7.4 Car Parking Provision

7.4.1 The rate of car parking within the development has been provided in line with the Sustainable Residential Development and Compact Settlements (SRDCS) Guidelines which are set out in **Table 13**.

Table 13. Extract of SPPR 3 – Car Parking from SRDCS

LOCATION	MAXIMUM CAR PARKING PROVISION
Five Cities	1no. space per dwelling
Accessible Locations	1.5no. spaces per dwelling
Intermediate and Peripheral Locations	2no. spaces per dwelling

7.4.2 Due to the site's location it would be classified as a "Peripheral" location in the SRDCS and thus the maximum car parking provision is 2no. spaces per dwelling.

7.4.3 The Proposed Development is to include 141no. residential units, comprising 117no. conventional dwellings and 24no. maisonette and duplex units. For all of the 2-bedroom conventional dwellings (of which there are to be 57no. units) the site layout indicates that one space will be provided within the curtilage of each property. This is below the maximum and SYSTRA believe this is acceptable due to the site's high-quality active travel connections and proximity to local amenities including a bus stop served by frequent services to employment destinations.

7.4.4 For all 3 and 4-bedroom dwellings the site layout indicates sufficient space for 2 cars within the curtilage of the properties, which is to the maximum standard. Parking for the maisonette and duplex units (which are a mix of 1 and 3-bedroom units) is provided at a rate of 1 allocated car parking space per unit in parking bays adjacent to these units. This is also below the standard but SYSTRA believe this is acceptable for the reasons outlined above, and due to thee smaller size of units.

7.4.5 A further 27 unallocated car parking spaces are provided throughout the site.

7.4.6 In order to satisfy Development Management Objective 94 of the Meath County Development Plan "All car parks shall include the provision of necessary wiring and ducting to be capable of accommodating future Electric Vehicle charging points, at a rate of 20% of total space numbers." 227 car parking spaces are provided throughout the development in total; therefore 45 spaces should be fitted with the provision for EV charging.

7.5 Safe Routes to School

7.5.1 Signalised pedestrian and cycle crossings are to be provided on all arms of the proposed upgrade of Ballybin Roundabout. These crossings will provide a safe and accessible way for users to access existing and proposed active travel infrastructure on Main Street and Jamestown Road.

7.5.2 From these points users will be able to access education facilities, such as St. Paul's National Catholic School, Ratoath College and Ratoath Junior Mixed National School via established routes adjacent to Jamestown Road.

7.6 Upgrades to Ballybin Roundabout Junction

7.6.1 To support the development and development in the wider area, the applicant seeks to upgrade the existing Ballybin Roundabout to a 4-arm signalised junction. The revised junction layout will incorporate a realigned Ballybin Road as the northern arm of the junction.

7.6.2 The upgrades will also incorporate pedestrian and cycle crossings into all arms of the junction. Segregated pedestrian and cycleways will tie into the existing Part 8 scheme proposals as well as extending active travel infrastructure north along Ballybin Road to the location of the existing Fox Lodge Wood and Manor Farm access.

7.6.3 The junction improvements will also include a relocation of the existing bus stop to the south of the site approximately 130m west of its current location on the R125 Main Street.

7.7 Additional Active Travel Connections

7.7.1 To complement the active travel enhancements brought forward as part of the Ballybin Roundabout junction improvements the development will include a number of additional active travel connections. These include a network of paths through the open green space within the site and connections to Fox Lodge Wood and Manor and to Main Street west of the junction.

7.8 Mobility Management Plan

7.8.1 A Mobility Management Plan (MMP) has been prepared to support the development and is included as **Appendix F** to this report.

8. SUMMARY AND CONCLUSIONS

8.1 Summary

8.1.1 SYSTRA (UK) Ltd has been appointed to provide transportation consultancy services in support of a Large Scale Residential Development Application principally located at Main Street/R125 and Ballybin Road, Ratoath, Co. Meath.

8.1.2 The proposed development comprises 141no. residential units, car parking, green space and associated site access works. The development also proposes a reconfiguration of the road layout to the south (Main Street/R125 and Jamestown Road) and east (Ballybin Road). Specifically, it is proposed to demolish/remove the existing 5-arm roundabout and to replace same with a new 4-arm signalised junction and reconfigured access to the existing Ratoath Childcare site.

8.2 Conclusions

8.2.1 The site is well-positioned to enable active travel access to destinations in Ratoath town centre and particularly schools and the Ratoath College accessed from Jamestown Road. The Ratoath Town Network upgrades will complement and enhance the existing network of shared and segregated active travel ways found throughout Ratoath.

8.2.2 Replacing the Ballybin Roundabout with a signal-controlled crossroads will:

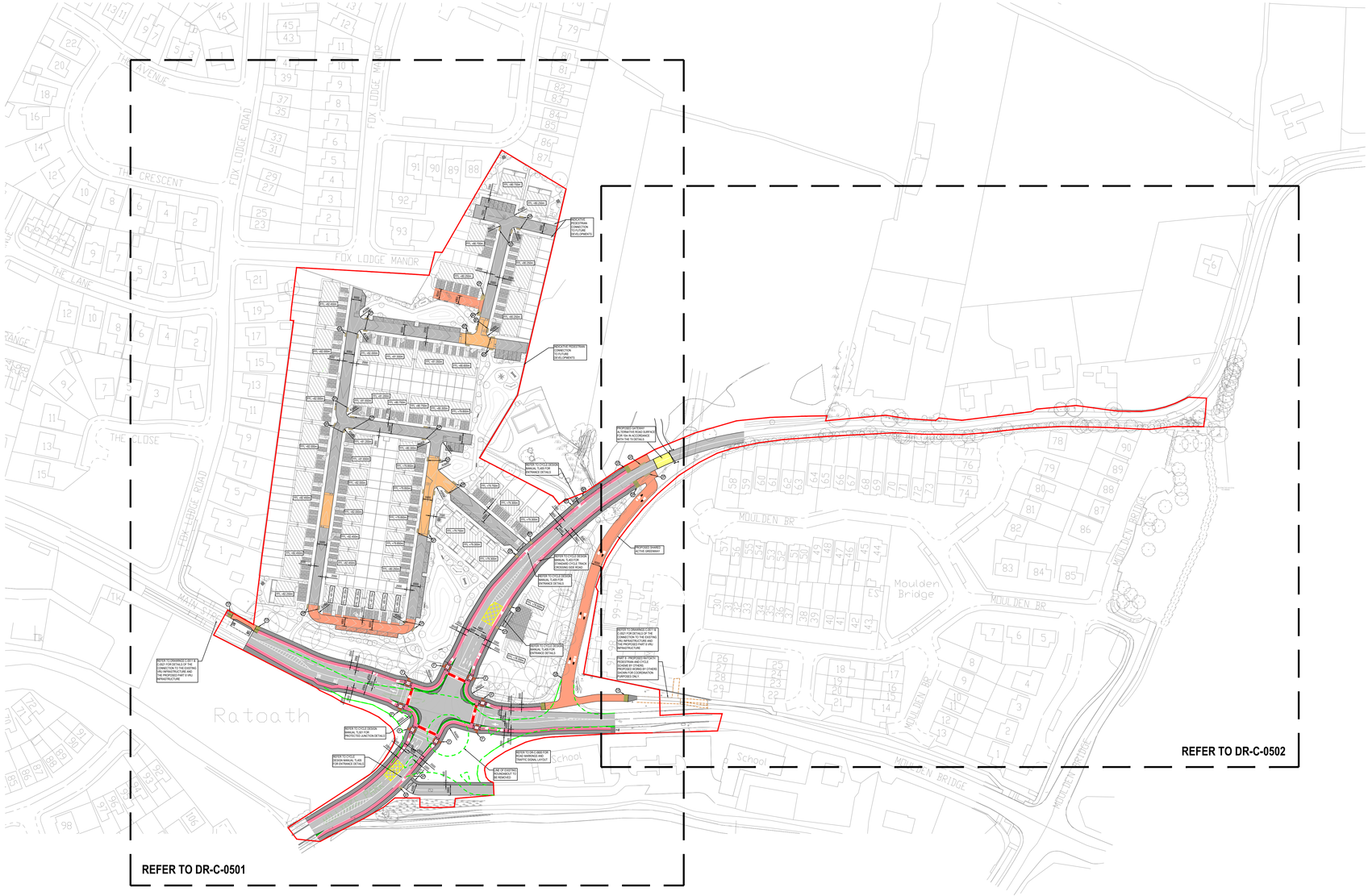
- Fundamentally address the existing road safety problem raised by MCC, by incorporating a realigned Ballybin Road into the junction;
- Reduce eastbound queues on the R125, thereby improving the ability for residents to enter and exit Fox Lodge Wood and Manor;
- Incorporate high quality active travel infrastructure for pedestrians and cyclists on all arms of the junction;
- Not jeopardise the principles of the Part 8 scheme that MCC were bringing forward for this location. Indeed, the proposed design will enhance the Part 8 scheme, by providing controlled segregated crossings for pedestrians and cyclists on all arms of the junction;
- Acknowledge the need to retain the eastbound bus stop, by providing a design compliant layout to the east of the junction;
- Seek to minimise the impact to the trees on the north side of the R125. An Arboricultural Method Statement has been included in the Arboricultural Report prepared by Charles McCorkell Arboricultural Consultancy;
- Provide a safe means of accessing the LRD site; and
- Open up the opportunity for further development in the area.

8.2.3 Following a detailed examination of the proposals, supported and informed through correspondence with Meath County Council, SYSTRA concludes that the proposed development of 141no. units can be accommodated without detriment to the local transport network, and in a manner which adequately caters for trips by active travel and public transport modes. Hence, no further measures are considered necessary beyond those outlined in Section 7 of this report.

APPENDIX A – SITE LAYOUT

N

0 10 20 30 40 50 m
SCALE 1:1000 @ A0



NOTES:

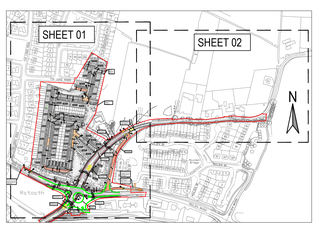
1. FOR STANDARD DOBA NOTES REFER TO DRAWING 2334-DOB-XX-SI-DR-S-0001 & S-0002
2. REFER TO ARCHITECTS DRAWINGS FOR ALL SITE & APPLICATION BOUNDARIES
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT'S & ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. USE FIGURED DIMENSIONS ONLY. DO NOT SCALE
5. REFER TO SURVEY DRAWINGS FOR EXISTING SERVICES LAYOUTS AND MANHOLE INFORMATION
6. ALL EXISTING SURFACES TO BE REINSTATED FOLLOWING DIVERSION OF SERVICES/CONSTRUCTION OF NEW SERVICES
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LEVELS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER & ARCHITECT FOR RESOLUTION
8. CONTRACTOR TO ENSURE ALL WATER & WASTEWATER RELATED WORKS ARE IN ACCORDANCE WITH THE IRISH WATER WATER INFRASTRUCTURE & WASTEWATER INFRASTRUCTURE CODE OF PRACTICE & STANDARD DETAILS DOCUMENTS
9. TESTING OF ALL GRAVITY SEWERS AND MANHOLES TO BE IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE SECTION 4.10 TESTING OF GRAVITY SEWERS & MANHOLES

LEGEND:

- PROPOSED BUILDING
- PROPOSED ROADWAY (REFER TO DR-C-1100 DETAIL 1 AND 2)
- PROPOSED ROAD - HOME ZONE / SHARED SURFACE (REFER TO DR-C-1100 DETAIL 3)
- PROPOSED CONCRETE FOOTPATH (REFER TO DR-C-1100 DETAIL 4)
- PROPOSED RAISED CYCLE TRACK (REFER TO DR-C-1100 DETAIL 5)
- PROPOSED ON-ROAD CYCLE TRACK
- PROPOSED TABLETOP PEDESTRIAN CROSSING (COLOURED SURFACE) (REFER TO DR-C-1100 DETAIL 6)
- PROPOSED PARKING BAYS (PERMEABLE SURFACING) (REFER TO DR-C-1200 FOR DETAILS)
- XP — PR. IN-LINE TACTILE PAVING (@ UNCONTROLLED CROSSING)
- ZP — PROPOSED PERPENDICULAR TACTILE PAVING (@ UNCONTROLLED CROSSING)
- TP — PROPOSED CORDUROY TACTILE PAVING SURFACING (TRAMLINE AND LADDER)
- TP — PROPOSED CORDUROY TACTILE PAVING SURFACING (LADDER) FOR PEDESTRIAN ENTERING A SHARED SURFACE
- P — PROPOSED TACTILE PAVING SURFACING (@ CONTROLLED CROSSING)
- 13.500 — PROPOSED ROAD CONTOURS
- PROPOSED RATOATH PART 8 PEDESTRIAN AND CYCLE SCHEME BY OTHERS
- EXISTING ROADS & ROUNDABOUT BEING REMOVED
- ALTERNATIVE ROAD SURFACING IN ACCORDANCE WITH TII DETAILS

FOR INFORMATION ONLY

Rev.	Note	Date	Drawn	Check
S2.P11	ISSUED FOR INFORMATION	05.06.2024	RR	AL
S2.P10	ISSUED FOR INFORMATION	21.05.2024	RR	AL
S2.P09	ISSUED FOR INFORMATION	16.05.2024	RR	AL
S2.P08	ISSUED FOR INFORMATION	13.05.2024	RR	AL
S2.P07	ISSUED FOR INFORMATION	09.05.2024	RR	AL
S2.P06	ISSUED FOR INFORMATION	02.05.2024	RR	AL
S2.P05	ISSUED FOR INFORMATION	25.04.2024	RR	AL
S2.P04	ISSUED FOR INFORMATION	15.04.2024	SP	AL
S2.P03	ISSUED FOR LRD OPINION	27.03.2024	NQ	AL
S2.P02	DRAFT ISSUE	21.03.2024	NQ	AL
S2.P01	DRAFT ISSUE	14.03.2024	NQ	AL



KEY PLAN

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INFO@DOBA.IE WWW.DOBA.IE

Client:	MARSHALL YARDS DEVELOPMENT COMPANY LTD.
Project:	RESIDENTIAL DEVELOPMENT AT RATOATH, CO. MEATH
Drawing Title:	PROPOSED SITE LAYOUT OVERALL

Drawn By:	Checked By:	Approved By:	Date:	Scale:	Sheet Size:
RR	PD	DOB	MARCH 2023	1:1000	A0

Project Number:	Drawing Number:	Status Code:	Rev Number:
DOBA2334	2334-DOB-XX-SI-DR-C-0500	S2	P11

APPENDIX B – TRICS OUTPUT FILES

Calculation Reference: AUDIT-700702-230920-0956

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

12	CONNAUGHT		
	LT	LEITRIM	1 days
	MA	MAYO	1 days
13	MUNSTER		
	TI	TIPPERARY	1 days
14	LEINSTER		
	WC	WICKLOW	2 days
15	GREATER DUBLIN		
	DL	DUBLIN	2 days
16	ULSTER (REPUBLIC OF IRELAND)		
	CV	CAVAN	2 days
	DN	DONEGAL	1 days
	MG	MONAGHAN	2 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 6 to 90 (units:)
Range Selected by User: 4 to 437 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 12/10/21

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

Selected survey days:

Monday	4 days
Tuesday	2 days
Wednesday	4 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	3
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	6

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

Selected Location Sub Categories:

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	8 days - Selected
Servicing vehicles Excluded	4 days - Selected

Secondary Filtering selection:

Use Class:

C3	12 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	6 days
10,001 to 15,000	1 days
25,001 to 50,000	1 days

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

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	7 days
25,001 to 50,000	1 days
50,001 to 75,000	2 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	7 days
1.6 to 2.0	1 days

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

Travel Plan:

No	12 days

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

PTAL Rating:

No PTAL Present	12 days

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

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

LIST OF SITES relevant to selection parameters

1 CV-03-A-02 DETACHED & SEMI DETACHED CAVAN
R212 DUBLIN ROAD
CAVAN
KILLYNEBBER
Edge of Town
No Sub Category
Total No of Dwellings: 80
Survey date: MONDAY 22/05/17 Survey Type: MANUAL

2 CV-03-A-03 DETACHED HOUSES CAVAN
R212 DUBLIN ROAD
CAVAN
PULLAMORE NEAR
Edge of Town
No Sub Category
Total No of Dwellings: 37
Survey date: MONDAY 22/05/17 Survey Type: MANUAL

3 DL-03-A-10 SEMI DETACHED & DETACHED DUBLIN
R124
MALAHIDE
SAINT HELENS
Edge of Town
Residential Zone
Total No of Dwellings: 65
Survey date: WEDNESDAY 20/06/18 Survey Type: MANUAL

4 DL-03-A-11 SEMI-DETACHED HOUSES DUBLIN
GRACE PARK ROAD
DUBLIN
WHITEHALL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 19
Survey date: WEDNESDAY 19/05/21 Survey Type: MANUAL

5 DN-03-A-06 DETACHED HOUSING DONEGAL
GLENFIN ROAD
BALLYBOFEY

Edge of Town
Residential Zone
Total No of Dwellings: 6
Survey date: WEDNESDAY 10/10/18 Survey Type: MANUAL

6 LT-03-A-01 SEMI-DETACHED & DETACHED LEITRIM
ARD NA SI
CARRICK-ON-SHANNON
ATTIRORY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 90
Survey date: FRIDAY 24/04/15 Survey Type: MANUAL

7 MA-03-A-02 SEMI-DETACHED HOUSES MAYO
CONVENT ROAD
CLAREMORRIS

Edge of Town Centre
No Sub Category
Total No of Dwellings: 31
Survey date: WEDNESDAY 15/09/21 Survey Type: MANUAL

8 MG-03-A-01 SEMI-DETACHED HOUSES MONAGHAN
ORIEL WAY
MONAGHAN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 49
Survey date: TUESDAY 12/10/21 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9	MG-03-A-02 GLEN ROAD MONAGHAN	MIXED HOUSES		MONAGHAN
	Edge of Town Centre Residential Zone Total No of Dwellings:		76	
	Survey date: TUESDAY		*12/10/21*	*Survey Type: MANUAL*
10	TI-03-A-01 BRITTAS ROAD THURLES	MIXED HOUSES		TIPPERARY
	Edge of Town Out of Town Total No of Dwellings:		76	
	Survey date: THURSDAY		*17/06/21*	*Survey Type: MANUAL*
11	WC-03-A-01 STATION ROAD WICKLOW CORPORATION MURRAGH	DETACHED HOUSES		WICKLOW
	Edge of Town No Sub Category Total No of Dwellings:		50	
	Survey date: MONDAY		*28/05/18*	*Survey Type: MANUAL*
12	WC-03-A-02 MARLTON ROAD WICKLOW FRIARSHILL	DETACHED HOUSES		WICKLOW
	Edge of Town Centre Residential Zone Total No of Dwellings:		45	
	Survey date: MONDAY		*28/05/18*	*Survey Type: MANUAL*

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.53

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.077	12	52	0.208	12	52	0.285
08:00 - 09:00	12	52	0.192	12	52	0.558	12	52	0.750
09:00 - 10:00	12	52	0.229	12	52	0.228	12	52	0.457
10:00 - 11:00	12	52	0.173	12	52	0.191	12	52	0.364
11:00 - 12:00	12	52	0.170	12	52	0.184	12	52	0.354
12:00 - 13:00	12	52	0.231	12	52	0.223	12	52	0.454
13:00 - 14:00	12	52	0.253	12	52	0.248	12	52	0.501
14:00 - 15:00	12	52	0.284	12	52	0.303	12	52	0.587
15:00 - 16:00	12	52	0.322	12	52	0.268	12	52	0.590
16:00 - 17:00	12	52	0.380	12	52	0.263	12	52	0.643
17:00 - 18:00	12	52	0.450	12	52	0.300	12	52	0.750
18:00 - 19:00	12	52	0.370	12	52	0.292	12	52	0.662
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.131			3.266			6.397

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

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

Parameter summary

Trip rate parameter range selected:	6 - 90 (units:)
Survey date date range:	01/01/15 - 12/10/21
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.000	12	52	0.000	12	52	0.000
08:00 - 09:00	12	52	0.000	12	52	0.000	12	52	0.000
09:00 - 10:00	12	52	0.003	12	52	0.003	12	52	0.006
10:00 - 11:00	12	52	0.002	12	52	0.000	12	52	0.002
11:00 - 12:00	12	52	0.002	12	52	0.002	12	52	0.004
12:00 - 13:00	12	52	0.000	12	52	0.000	12	52	0.000
13:00 - 14:00	12	52	0.002	12	52	0.000	12	52	0.002
14:00 - 15:00	12	52	0.000	12	52	0.002	12	52	0.002
15:00 - 16:00	12	52	0.000	12	52	0.002	12	52	0.002
16:00 - 17:00	12	52	0.003	12	52	0.003	12	52	0.006
17:00 - 18:00	12	52	0.000	12	52	0.000	12	52	0.000
18:00 - 19:00	12	52	0.000	12	52	0.000	12	52	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.012			0.024

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
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.002	12	52	0.002	12	52	0.004
08:00 - 09:00	12	52	0.003	12	52	0.002	12	52	0.005
09:00 - 10:00	12	52	0.002	12	52	0.002	12	52	0.004
10:00 - 11:00	12	52	0.002	12	52	0.002	12	52	0.004
11:00 - 12:00	12	52	0.006	12	52	0.006	12	52	0.012
12:00 - 13:00	12	52	0.003	12	52	0.003	12	52	0.006
13:00 - 14:00	12	52	0.006	12	52	0.005	12	52	0.011
14:00 - 15:00	12	52	0.002	12	52	0.003	12	52	0.005
15:00 - 16:00	12	52	0.003	12	52	0.005	12	52	0.008
16:00 - 17:00	12	52	0.002	12	52	0.000	12	52	0.002
17:00 - 18:00	12	52	0.003	12	52	0.005	12	52	0.008
18:00 - 19:00	12	52	0.000	12	52	0.000	12	52	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.035			0.069

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
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.003	12	52	0.002	12	52	0.005
08:00 - 09:00	12	52	0.002	12	52	0.003	12	52	0.005
09:00 - 10:00	12	52	0.002	12	52	0.000	12	52	0.002
10:00 - 11:00	12	52	0.000	12	52	0.002	12	52	0.002
11:00 - 12:00	12	52	0.000	12	52	0.000	12	52	0.000
12:00 - 13:00	12	52	0.002	12	52	0.000	12	52	0.002
13:00 - 14:00	12	52	0.000	12	52	0.002	12	52	0.002
14:00 - 15:00	12	52	0.003	12	52	0.003	12	52	0.006
15:00 - 16:00	12	52	0.002	12	52	0.002	12	52	0.004
16:00 - 17:00	12	52	0.003	12	52	0.002	12	52	0.005
17:00 - 18:00	12	52	0.002	12	52	0.003	12	52	0.005
18:00 - 19:00	12	52	0.002	12	52	0.002	12	52	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.021			0.021			0.042

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
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.003	12	52	0.006	12	52	0.009
08:00 - 09:00	12	52	0.000	12	52	0.013	12	52	0.013
09:00 - 10:00	12	52	0.002	12	52	0.000	12	52	0.002
10:00 - 11:00	12	52	0.000	12	52	0.000	12	52	0.000
11:00 - 12:00	12	52	0.002	12	52	0.000	12	52	0.002
12:00 - 13:00	12	52	0.002	12	52	0.000	12	52	0.002
13:00 - 14:00	12	52	0.003	12	52	0.003	12	52	0.006
14:00 - 15:00	12	52	0.002	12	52	0.000	12	52	0.002
15:00 - 16:00	12	52	0.000	12	52	0.000	12	52	0.000
16:00 - 17:00	12	52	0.003	12	52	0.003	12	52	0.006
17:00 - 18:00	12	52	0.003	12	52	0.003	12	52	0.006
18:00 - 19:00	12	52	0.008	12	52	0.005	12	52	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.028			0.033			0.061

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
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.103	12	52	0.252	12	52	0.355
08:00 - 09:00	12	52	0.244	12	52	0.824	12	52	1.068
09:00 - 10:00	12	52	0.292	12	52	0.301	12	52	0.593
10:00 - 11:00	12	52	0.200	12	52	0.248	12	52	0.448
11:00 - 12:00	12	52	0.207	12	52	0.232	12	52	0.439
12:00 - 13:00	12	52	0.279	12	52	0.285	12	52	0.564
13:00 - 14:00	12	52	0.309	12	52	0.341	12	52	0.650
14:00 - 15:00	12	52	0.364	12	52	0.380	12	52	0.744
15:00 - 16:00	12	52	0.442	12	52	0.357	12	52	0.799
16:00 - 17:00	12	52	0.518	12	52	0.329	12	52	0.847
17:00 - 18:00	12	52	0.591	12	52	0.389	12	52	0.980
18:00 - 19:00	12	52	0.465	12	52	0.361	12	52	0.826
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.014			4.299			8.313

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
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.013	12	52	0.054	12	52	0.067
08:00 - 09:00	12	52	0.037	12	52	0.112	12	52	0.149
09:00 - 10:00	12	52	0.029	12	52	0.058	12	52	0.087
10:00 - 11:00	12	52	0.035	12	52	0.032	12	52	0.067
11:00 - 12:00	12	52	0.045	12	52	0.034	12	52	0.079
12:00 - 13:00	12	52	0.034	12	52	0.030	12	52	0.064
13:00 - 14:00	12	52	0.066	12	52	0.067	12	52	0.133
14:00 - 15:00	12	52	0.079	12	52	0.058	12	52	0.137
15:00 - 16:00	12	52	0.083	12	52	0.032	12	52	0.115
16:00 - 17:00	12	52	0.093	12	52	0.048	12	52	0.141
17:00 - 18:00	12	52	0.072	12	52	0.051	12	52	0.123
18:00 - 19:00	12	52	0.066	12	52	0.061	12	52	0.127
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.652			0.637			1.289

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
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.000	12	52	0.008	12	52	0.008
08:00 - 09:00	12	52	0.000	12	52	0.006	12	52	0.006
09:00 - 10:00	12	52	0.002	12	52	0.008	12	52	0.010
10:00 - 11:00	12	52	0.000	12	52	0.002	12	52	0.002
11:00 - 12:00	12	52	0.002	12	52	0.006	12	52	0.008
12:00 - 13:00	12	52	0.002	12	52	0.000	12	52	0.002
13:00 - 14:00	12	52	0.006	12	52	0.006	12	52	0.012
14:00 - 15:00	12	52	0.006	12	52	0.006	12	52	0.012
15:00 - 16:00	12	52	0.003	12	52	0.000	12	52	0.003
16:00 - 17:00	12	52	0.002	12	52	0.000	12	52	0.002
17:00 - 18:00	12	52	0.008	12	52	0.000	12	52	0.008
18:00 - 19:00	12	52	0.003	12	52	0.002	12	52	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.044			0.078

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
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.000	12	52	0.005	12	52	0.005
08:00 - 09:00	12	52	0.000	12	52	0.000	12	52	0.000
09:00 - 10:00	12	52	0.000	12	52	0.000	12	52	0.000
10:00 - 11:00	12	52	0.000	12	52	0.000	12	52	0.000
11:00 - 12:00	12	52	0.000	12	52	0.000	12	52	0.000
12:00 - 13:00	12	52	0.005	12	52	0.000	12	52	0.005
13:00 - 14:00	12	52	0.000	12	52	0.000	12	52	0.000
14:00 - 15:00	12	52	0.000	12	52	0.000	12	52	0.000
15:00 - 16:00	12	52	0.000	12	52	0.000	12	52	0.000
16:00 - 17:00	12	52	0.003	12	52	0.000	12	52	0.003
17:00 - 18:00	12	52	0.002	12	52	0.000	12	52	0.002
18:00 - 19:00	12	52	0.002	12	52	0.000	12	52	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.005			0.017

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
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.000	12	52	0.013	12	52	0.013
08:00 - 09:00	12	52	0.000	12	52	0.006	12	52	0.006
09:00 - 10:00	12	52	0.002	12	52	0.008	12	52	0.010
10:00 - 11:00	12	52	0.000	12	52	0.002	12	52	0.002
11:00 - 12:00	12	52	0.002	12	52	0.006	12	52	0.008
12:00 - 13:00	12	52	0.006	12	52	0.000	12	52	0.006
13:00 - 14:00	12	52	0.006	12	52	0.006	12	52	0.012
14:00 - 15:00	12	52	0.006	12	52	0.006	12	52	0.012
15:00 - 16:00	12	52	0.003	12	52	0.000	12	52	0.003
16:00 - 17:00	12	52	0.005	12	52	0.000	12	52	0.005
17:00 - 18:00	12	52	0.010	12	52	0.000	12	52	0.010
18:00 - 19:00	12	52	0.005	12	52	0.002	12	52	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.045			0.049			0.094

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
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.53

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.119	12	52	0.325	12	52	0.444
08:00 - 09:00	12	52	0.280	12	52	0.955	12	52	1.235
09:00 - 10:00	12	52	0.324	12	52	0.367	12	52	0.691
10:00 - 11:00	12	52	0.236	12	52	0.282	12	52	0.518
11:00 - 12:00	12	52	0.255	12	52	0.272	12	52	0.527
12:00 - 13:00	12	52	0.321	12	52	0.316	12	52	0.637
13:00 - 14:00	12	52	0.385	12	52	0.418	12	52	0.803
14:00 - 15:00	12	52	0.450	12	52	0.444	12	52	0.894
15:00 - 16:00	12	52	0.529	12	52	0.389	12	52	0.918
16:00 - 17:00	12	52	0.619	12	52	0.380	12	52	0.999
17:00 - 18:00	12	52	0.676	12	52	0.444	12	52	1.120
18:00 - 19:00	12	52	0.543	12	52	0.428	12	52	0.971
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.737			5.020			9.757

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
MULTI-MODAL CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.064	12	52	0.181	12	52	0.245
08:00 - 09:00	12	52	0.162	12	52	0.514	12	52	0.676
09:00 - 10:00	12	52	0.194	12	52	0.192	12	52	0.386
10:00 - 11:00	12	52	0.139	12	52	0.162	12	52	0.301
11:00 - 12:00	12	52	0.144	12	52	0.152	12	52	0.296
12:00 - 13:00	12	52	0.205	12	52	0.200	12	52	0.405
13:00 - 14:00	12	52	0.223	12	52	0.216	12	52	0.439
14:00 - 15:00	12	52	0.255	12	52	0.269	12	52	0.524
15:00 - 16:00	12	52	0.284	12	52	0.239	12	52	0.523
16:00 - 17:00	12	52	0.333	12	52	0.228	12	52	0.561
17:00 - 18:00	12	52	0.412	12	52	0.269	12	52	0.681
18:00 - 19:00	12	52	0.340	12	52	0.266	12	52	0.606
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.755			2.888			5.643

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
MULTI-MODAL LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.008	12	52	0.022	12	52	0.030
08:00 - 09:00	12	52	0.026	12	52	0.037	12	52	0.063
09:00 - 10:00	12	52	0.029	12	52	0.029	12	52	0.058
10:00 - 11:00	12	52	0.029	12	52	0.026	12	52	0.055
11:00 - 12:00	12	52	0.018	12	52	0.022	12	52	0.040
12:00 - 13:00	12	52	0.019	12	52	0.018	12	52	0.037
13:00 - 14:00	12	52	0.021	12	52	0.026	12	52	0.047
14:00 - 15:00	12	52	0.024	12	52	0.024	12	52	0.048
15:00 - 16:00	12	52	0.034	12	52	0.021	12	52	0.055
16:00 - 17:00	12	52	0.037	12	52	0.030	12	52	0.067
17:00 - 18:00	12	52	0.032	12	52	0.022	12	52	0.054
18:00 - 19:00	12	52	0.027	12	52	0.024	12	52	0.051
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.304			0.301			0.605

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.*

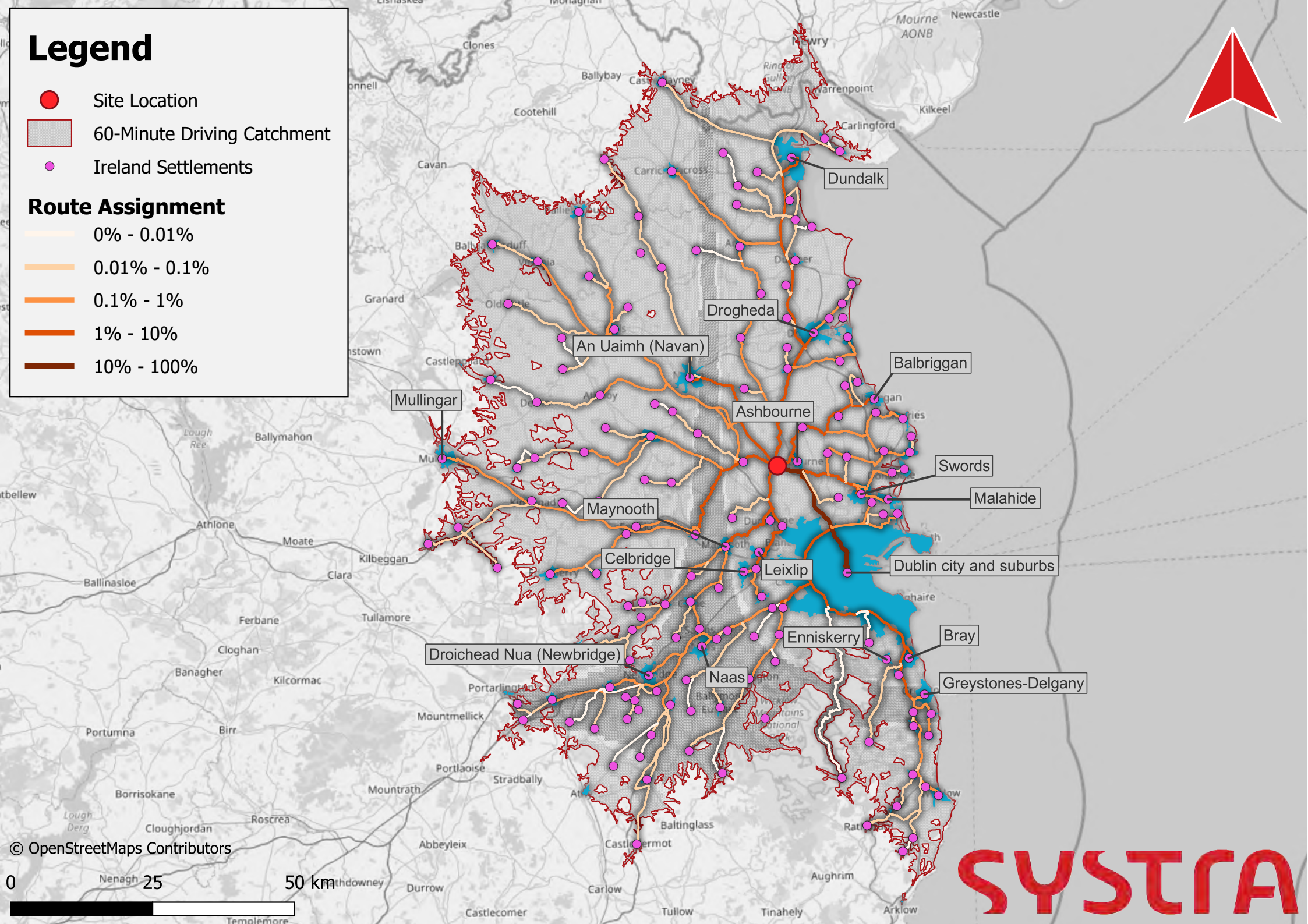
TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	52	0.000	12	52	0.002	12	52	0.002
08:00 - 09:00	12	52	0.000	12	52	0.002	12	52	0.002
09:00 - 10:00	12	52	0.000	12	52	0.002	12	52	0.002
10:00 - 11:00	12	52	0.002	12	52	0.000	12	52	0.002
11:00 - 12:00	12	52	0.000	12	52	0.002	12	52	0.002
12:00 - 13:00	12	52	0.002	12	52	0.002	12	52	0.004
13:00 - 14:00	12	52	0.002	12	52	0.000	12	52	0.002
14:00 - 15:00	12	52	0.000	12	52	0.002	12	52	0.002
15:00 - 16:00	12	52	0.000	12	52	0.000	12	52	0.000
16:00 - 17:00	12	52	0.002	12	52	0.000	12	52	0.002
17:00 - 18:00	12	52	0.002	12	52	0.000	12	52	0.002
18:00 - 19:00	12	52	0.002	12	52	0.000	12	52	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.012			0.024

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 C – GRAVITY MODEL


Legend
Site Location
60-Minute Driving Catchment
Ireland Settlements
Route Assignment
0% - 0.01%
0.01% - 0.1%
0.1% - 1%
1% - 10%
10% - 100%
Dundalk
Drogheda
An Uaimh (Navan)
Balbriggan
Mullingar
Ashbourne
Swords
Malahide
Maynooth
Celbridge
Leixlip
Dublin city and suburbs
Enniskerry
Bray
Droichead Nua (Newbridge)
Naas
Greystones-Delgany
© OpenStreetMaps Contributors
0
25
50 km
SYSTRA

APPENDIX D – JUNCTION MODELLING REPORTS

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 02 - Main Street x The Avenue Roundabout no Dev AM Cali.j10
Path: \\glasgowfile\JOBS\SCT\2023\T&T\Ballybin Rd, Ratoath\5. Technical\5. Modelling\JUNCTIONS\Calibrated
Report generation date: 06/06/2024 11:20:26 AM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023											
1 - Main Street E	D1	4.0	28.75	0.81	D	-23 % [2 - Creche Entrance]	D2	358.1	1691.08	1.59	F	-50 % [2 - Creche Entrance]
2 - Creche Entrance		3.0	181.24	0.83	F			3.1	536.35	0.94	F	
3 - The Avenue		2.0	13.73	0.67	B			0.8	9.39	0.43	A	
4 - Main Street W		53.8	188.74	1.10	F			0.9	7.08	0.47	A	
	2027											
1 - Main Street E	D3	5.8	39.41	0.87	E	-29 % [2 - Creche Entrance]	D4	458.1	2144.63	1.70	F	-53 % [2 - Creche Entrance]
2 - Creche Entrance		7.8	397.89	1.16	F			4.6	709.94	1.09	F	
3 - The Avenue		2.6	16.64	0.73	C			0.9	9.91	0.46	A	
4 - Main Street W		93.8	360.79	1.20	F			1.1	7.72	0.51	A	
	2032											
1 - Main Street E	D5	9.1	57.72	0.92	F	-33 % [2 - Creche Entrance]	D6	555.9	2588.25	1.82	F	-56 % [2 - Creche Entrance]
2 - Creche Entrance		15.7	774.99	1.65	F			5.9	880.69	1.19	F	
3 - The Avenue		3.4	20.22	0.78	C			1.0	10.45	0.49	B	
4 - Main Street W		139.5	571.56	1.29	F			1.2	8.41	0.55	A	
	2042											
1 - Main Street E	D7	15.6	90.08	0.98	F	-37 % [2 - Creche Entrance]	D8	650.5	3017.07	1.92	F	-58 % [2 - Creche Entrance]
2 - Creche Entrance		26.3	2149.93	2.45	F			6.2	949.90	1.21	F	
3 - The Avenue		4.3	25.06	0.82	D			1.1	11.01	0.52	B	
4 - Main Street W		201.1	799.68	1.39	F			1.4	9.19	0.58	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity 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	24/10/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ADSYSTRA\tfoster
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
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 segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	08:00	09:30	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2027	AM	ONE HOUR	08:00	09:30	15	✓
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓
D5	2032	AM	ONE HOUR	08:00	09:30	15	✓
D6	2032	PM	ONE HOUR	16:45	18:15	15	✓
D7	2042	AM	ONE HOUR	08:00	09:30	15	✓
D8	2042	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2023, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	102.04	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-23	2 - Creche Entrance	102.04	F

Arms

Arms

Arm	Name	Description	No give-way line
1	Main Street E		
2	Creche Entrance		
3	The Avenue		
4	Main Street W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Main Street E	3.51	7.85	14.9	8.6	44.4	44.0		
2 - Creche Entrance	2.89	4.49	7.5	26.4	44.4	47.0		
3 - The Avenue	3.77	7.24	12.5	14.1	44.4	46.0		
4 - Main Street W	3.82	4.81	10.2	19.0	44.4	44.0		

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - Main Street E	Direct		-766
2 - Creche Entrance	Direct		-688
3 - The Avenue	Direct		-574
4 - Main Street W	Direct		-201

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Main Street E	0.566	779
2 - Creche Entrance	0.500	421
3 - The Avenue	0.582	996
4 - Main Street W	0.539	1114

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

Traffic Demand

Demand Set Details

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	482	100.000
2 - Creche Entrance		ONE HOUR	✓	60	100.000
3 - The Avenue		ONE HOUR	✓	498	100.000
4 - Main Street W		ONE HOUR	✓	860	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	4	15	227	236
	2 - Creche Entrance	30	0	12	18
	3 - The Avenue	376	21	1	100
	4 - Main Street W	668	22	169	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.81	28.75	4.0	D	442	663
2 - Creche Entrance	0.83	181.24	3.0	F	55	83
3 - The Avenue	0.67	13.73	2.0	B	457	685
4 - Main Street W	1.10	188.74	53.8	F	789	1184

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	363	91	159	689	0.526	358	802	0.0	1.1	11.181	B
2 - Creche Entrance	45	11	474	184	0.245	44	43	0.0	0.3	25.471	D
3 - The Avenue	375	94	214	871	0.430	372	304	0.0	0.8	7.245	A
4 - Main Street W	647	162	322	941	0.688	639	264	0.0	2.2	11.900	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	433	108	190	672	0.645	431	958	1.1	1.8	15.349	C
2 - Creche Entrance	54	13	569	137	0.394	53	52	0.3	0.6	42.207	E
3 - The Avenue	448	112	257	846	0.529	446	364	0.8	1.1	9.066	A
4 - Main Street W	773	193	387	906	0.854	761	317	2.2	5.1	23.780	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	531	133	212	659	0.805	523	1101	1.8	3.8	26.071	D
2 - Creche Entrance	66	17	674	84	0.787	60	61	0.6	2.2	125.969	F
3 - The Avenue	548	137	309	816	0.672	545	425	1.1	2.0	13.240	B
4 - Main Street W	947	237	470	861	1.100	844	384	5.1	30.9	91.467	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	531	133	215	658	0.807	530	1114	3.8	4.0	28.748	D
2 - Creche Entrance	66	17	683	80	0.830	63	61	2.2	3.0	181.235	F
3 - The Avenue	548	137	315	813	0.675	548	431	2.0	2.0	13.726	B
4 - Main Street W	947	237	474	859	1.103	855	389	30.9	53.8	188.741	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	433	108	217	656	0.660	441	1062	4.0	2.1	17.965	C
2 - Creche Entrance	54	13	603	120	0.450	62	55	3.0	0.9	68.646	F
3 - The Avenue	448	112	270	839	0.534	451	395	2.0	1.2	9.472	A
4 - Main Street W	773	193	395	901	0.858	884	326	53.8	26.0	166.038	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	363	91	182	676	0.537	366	887	2.1	1.2	12.237	B
2 - Creche Entrance	45	11	502	170	0.266	47	46	0.9	0.4	29.802	D
3 - The Avenue	375	94	221	867	0.432	377	329	1.2	0.8	7.438	A
4 - Main Street W	647	162	328	938	0.691	742	270	26.0	2.4	27.960	D

2023, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	1021.07	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-50	2 - Creche Entrance	1021.07	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1066	100.000
2 - Creche Entrance		ONE HOUR	✓	23	100.000
3 - The Avenue		ONE HOUR	✓	270	100.000
4 - Main Street W		ONE HOUR	✓	424	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	1	12	310	743
	2 - Creche Entrance	4	0	9	10
	3 - The Avenue	208	3	0	59
	4 - Main Street W	362	9	51	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	1.59	1691.08	358.1	F	978	1467
2 - Creche Entrance	0.94	536.35	3.1	F	21	32
3 - The Avenue	0.43	9.39	0.8	A	248	372
4 - Main Street W	0.47	7.08	0.9	A	389	584

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	803	201	49	752	1.068	717	430	0.0	21.3	67.816	F
2 - Creche Entrance	17	4	749	47	0.371	15	17	0.0	0.5	111.356	F
3 - The Avenue	203	51	511	698	0.291	202	253	0.0	0.4	7.344	A
4 - Main Street W	319	80	161	1027	0.311	317	552	0.0	0.5	5.169	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	958	240	58	746	1.284	744	515	21.3	74.8	245.252	F
2 - Creche Entrance	21	5	784	29	0.704	18	19	0.5	1.3	264.437	F
3 - The Avenue	243	61	532	686	0.354	242	269	0.4	0.5	8.229	A
4 - Main Street W	381	95	193	1010	0.377	381	581	0.5	0.6	5.839	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1174	293	71	739	1.589	739	630	74.8	183.5	637.634	F
2 - Creche Entrance	25	6	789	27	0.941	21	21	1.3	2.4	424.729	F
3 - The Avenue	297	74	530	687	0.432	296	279	0.5	0.8	9.341	A
4 - Main Street W	467	117	236	987	0.473	466	591	0.6	0.9	7.043	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1174	293	72	739	1.589	739	632	183.5	292.3	1158.408	F
2 - Creche Entrance	25	6	789	27	0.944	22	22	2.4	3.1	536.349	F
3 - The Avenue	297	74	531	687	0.433	297	280	0.8	0.8	9.393	A
4 - Main Street W	467	117	237	987	0.473	467	592	0.9	0.9	7.081	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	958	240	59	746	1.285	746	518	292.3	345.3	1539.976	F
2 - Creche Entrance	21	5	785	28	0.726	21	19	3.1	3.1	508.848	F
3 - The Avenue	243	61	535	685	0.355	244	271	0.8	0.6	8.314	A
4 - Main Street W	381	95	195	1009	0.378	382	584	0.9	0.6	5.880	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	803	201	49	751	1.068	751	435	345.3	358.1	1691.084	F
2 - Creche Entrance	17	4	783	30	0.582	22	18	3.1	2.0	436.872	F
3 - The Avenue	203	51	539	682	0.298	204	265	0.6	0.4	7.655	A
4 - Main Street W	319	80	164	1026	0.311	320	579	0.6	0.5	5.216	A

2027, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	190.19	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-29	2 - Creche Entrance	190.19	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2027	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	517	100.000
2 - Creche Entrance		ONE HOUR	✓	65	100.000
3 - The Avenue		ONE HOUR	✓	532	100.000
4 - Main Street W		ONE HOUR	✓	919	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	16	243	253
	2 - Creche Entrance	32	0	13	20
	3 - The Avenue	400	23	2	107
	4 - Main Street W	714	23	180	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.87	39.41	5.8	E	474	712
2 - Creche Entrance	1.16	397.89	7.8	F	60	89
3 - The Avenue	0.73	16.64	2.6	C	488	732
4 - Main Street W	1.20	360.79	93.8	F	843	1265

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	389	97	170	683	0.570	384	854	0.0	1.3	12.331	B
2 - Creche Entrance	49	12	508	167	0.293	47	46	0.0	0.4	29.713	D
3 - The Avenue	401	100	231	862	0.465	397	325	0.0	0.9	7.778	A
4 - Main Street W	692	173	344	929	0.745	681	284	0.0	2.8	14.284	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	465	116	202	665	0.699	461	1015	1.3	2.3	18.020	C
2 - Creche Entrance	58	15	608	117	0.498	56	55	0.4	0.9	57.416	F
3 - The Avenue	478	120	277	835	0.573	476	387	0.9	1.3	10.100	B
4 - Main Street W	826	207	413	892	0.927	804	341	2.8	8.4	35.234	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	569	142	215	658	0.865	557	1122	2.3	5.3	33.656	D
2 - Creche Entrance	72	18	708	67	1.068	57	63	0.9	4.5	238.023	F
3 - The Avenue	586	146	325	807	0.726	581	440	1.3	2.5	15.788	C
4 - Main Street W	1012	253	498	846	1.196	839	409	8.4	51.5	142.146	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	569	142	215	657	0.866	567	1129	5.3	5.8	39.413	E
2 - Creche Entrance	72	18	719	62	1.156	58	64	4.5	7.8	397.889	F
3 - The Avenue	586	146	332	803	0.729	585	445	2.5	2.6	16.639	C
4 - Main Street W	1012	253	502	844	1.199	843	415	51.5	93.8	316.697	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	465	116	217	656	0.708	477	1086	5.8	2.7	22.190	C
2 - Creche Entrance	58	15	637	103	0.569	83	57	7.8	1.7	195.530	F
3 - The Avenue	478	120	306	818	0.585	483	414	2.6	1.5	11.014	B
4 - Main Street W	826	207	431	882	0.937	872	358	93.8	82.3	360.792	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	389	97	223	653	0.596	394	1042	2.7	1.6	14.671	B
2 - Creche Entrance	49	12	564	139	0.351	54	52	1.7	0.6	43.908	E
3 - The Avenue	401	100	241	856	0.468	403	376	1.5	0.9	8.077	A
4 - Main Street W	692	173	352	924	0.748	913	292	82.3	27.0	219.300	F

2027, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	1292.38	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-53	2 - Creche Entrance	1292.38	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1137	100.000
2 - Creche Entrance		ONE HOUR	✓	26	100.000
3 - The Avenue		ONE HOUR	✓	289	100.000
4 - Main Street W		ONE HOUR	✓	454	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	13	330	792
	2 - Creche Entrance	5	0	10	11
	3 - The Avenue	223	4	0	62
	4 - Main Street W	386	10	55	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	1.70	2144.63	458.1	F	1043	1565
2 - Creche Entrance	1.09	709.94	4.6	F	24	36
3 - The Avenue	0.46	9.91	0.9	A	265	398
4 - Main Street W	0.51	7.72	1.1	A	417	625

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	856	214	54	749	1.143	726	460	0.0	32.5	93.185	F
2 - Creche Entrance	20	5	761	41	0.481	17	19	0.0	0.7	141.830	F
3 - The Avenue	218	54	519	694	0.314	216	258	0.0	0.5	7.629	A
4 - Main Street W	342	85	174	1020	0.335	340	561	0.0	0.5	5.390	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1022	256	65	743	1.376	742	551	32.5	102.6	339.604	F
2 - Creche Entrance	23	6	785	28	0.822	19	21	0.7	1.7	323.321	F
3 - The Avenue	260	65	533	686	0.379	259	272	0.5	0.6	8.563	A
4 - Main Street W	408	102	209	1002	0.407	407	583	0.5	0.7	6.184	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1252	313	79	735	1.704	734	674	102.6	231.9	827.231	F
2 - Creche Entrance	29	7	790	26	1.087	22	24	1.7	3.3	530.178	F
3 - The Avenue	318	80	530	688	0.463	317	282	0.6	0.9	9.847	A
4 - Main Street W	500	125	255	977	0.512	498	592	0.7	1.1	7.667	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1252	313	79	734	1.705	734	676	231.9	361.3	1460.542	F
2 - Creche Entrance	29	7	790	26	1.089	24	24	3.3	4.6	702.432	F
3 - The Avenue	318	80	531	687	0.463	318	283	0.9	0.9	9.915	A
4 - Main Street W	500	125	256	976	0.512	500	593	1.1	1.1	7.722	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1022	256	65	742	1.377	742	555	361.3	431.2	1919.171	F
2 - Creche Entrance	23	6	786	28	0.833	23	21	4.6	4.6	709.942	F
3 - The Avenue	260	65	536	684	0.380	261	274	0.9	0.6	8.660	A
4 - Main Street W	408	102	211	1001	0.408	410	586	1.1	0.7	6.239	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	856	214	54	748	1.144	748	466	431.2	458.1	2144.625	F
2 - Creche Entrance	20	5	784	29	0.666	25	19	4.6	3.2	624.287	F
3 - The Avenue	218	54	540	682	0.319	218	268	0.6	0.5	7.907	A
4 - Main Street W	342	85	177	1019	0.336	343	581	0.7	0.5	5.450	A

2032, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	303.03	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-33	2 - Creche Entrance	303.03	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2032	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	552	100.000
2 - Creche Entrance		ONE HOUR	✓	69	100.000
3 - The Avenue		ONE HOUR	✓	564	100.000
4 - Main Street W		ONE HOUR	✓	977	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	17	259	271
	2 - Creche Entrance	34	0	14	21
	3 - The Avenue	424	24	2	114
	4 - Main Street W	759	25	191	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.92	57.72	9.1	F	507	760
2 - Creche Entrance	1.65	774.99	15.7	F	63	95
3 - The Avenue	0.78	20.22	3.4	C	518	776
4 - Main Street W	1.29	571.56	139.5	F	897	1345

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	416	104	180	677	0.614	409	904	0.0	1.6	13.678	B
2 - Creche Entrance	52	13	540	151	0.344	50	49	0.0	0.5	35.027	E
3 - The Avenue	425	106	246	853	0.498	421	345	0.0	1.0	8.347	A
4 - Main Street W	736	184	364	918	0.801	721	303	0.0	3.7	17.548	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	496	124	209	661	0.751	491	1060	1.6	2.9	21.410	C
2 - Creche Entrance	62	16	642	100	0.620	59	58	0.5	1.3	81.538	F
3 - The Avenue	507	127	294	825	0.615	505	407	1.0	1.6	11.282	B
4 - Main Street W	878	220	436	879	0.999	833	363	3.7	15.0	54.141	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	608	152	214	658	0.923	589	1137	2.9	7.7	44.503	E
2 - Creche Entrance	76	19	737	53	1.440	49	66	1.3	8.1	449.332	F
3 - The Avenue	621	155	335	801	0.775	614	451	1.6	3.2	18.849	C
4 - Main Street W	1076	269	520	834	1.290	832	430	15.0	76.0	209.017	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	608	152	214	658	0.924	602	1141	7.7	9.1	57.721	F
2 - Creche Entrance	76	19	750	46	1.648	45	66	8.1	15.7	774.989	F
3 - The Avenue	621	155	339	799	0.777	620	457	3.2	3.4	20.224	C
4 - Main Street W	1076	269	523	832	1.292	832	437	76.0	136.9	462.260	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	496	124	217	656	0.756	518	1104	9.1	3.6	30.375	D
2 - Creche Entrance	62	16	676	83	0.744	78	60	15.7	11.6	567.615	F
3 - The Avenue	507	127	323	808	0.628	513	431	3.4	1.8	12.617	B
4 - Main Street W	878	220	453	870	1.010	868	384	136.9	139.5	571.557	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	416	104	220	655	0.635	422	1068	3.6	1.9	16.532	C
2 - Creche Entrance	52	13	588	127	0.408	95	54	11.6	0.8	167.034	F
3 - The Avenue	425	106	289	828	0.513	427	394	1.8	1.1	9.144	A
4 - Main Street W	736	184	392	903	0.815	896	324	139.5	99.2	480.480	F

2032, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	1559.26	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-56	2 - Creche Entrance	1559.26	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2032	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1207	100.000
2 - Creche Entrance		ONE HOUR	✓	28	100.000
3 - The Avenue		ONE HOUR	✓	307	100.000
4 - Main Street W		ONE HOUR	✓	482	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	14	350	841
	2 - Creche Entrance	5	0	11	12
	3 - The Avenue	237	4	0	66
	4 - Main Street W	410	11	58	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	1.82	2588.25	555.9	F	1108	1661
2 - Creche Entrance	1.19	880.69	5.9	F	26	39
3 - The Avenue	0.49	10.45	1.0	B	282	423
4 - Main Street W	0.55	8.41	1.2	A	442	663

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	909	227	57	747	1.216	730	488	0.0	44.6	120.812	F
2 - Creche Entrance	21	5	768	37	0.563	18	20	0.0	0.9	165.965	F
3 - The Avenue	231	58	523	692	0.334	229	262	0.0	0.5	7.879	A
4 - Main Street W	363	91	184	1015	0.358	361	568	0.0	0.6	5.606	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1085	271	68	741	1.465	740	585	44.6	130.8	437.923	F
2 - Creche Entrance	25	6	786	28	0.899	20	22	0.9	2.1	367.757	F
3 - The Avenue	276	69	532	686	0.402	275	275	0.5	0.7	8.888	A
4 - Main Street W	433	108	221	995	0.435	432	586	0.6	0.8	6.541	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1329	332	83	732	1.815	732	715	130.8	280.0	1016.646	F
2 - Creche Entrance	31	8	790	26	1.187	23	25	2.1	4.1	615.348	F
3 - The Avenue	338	85	528	689	0.491	337	285	0.7	1.0	10.371	B
4 - Main Street W	531	133	270	969	0.548	529	596	0.8	1.2	8.334	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1329	332	84	732	1.816	732	718	280.0	429.3	1750.785	F
2 - Creche Entrance	31	8	791	26	1.189	24	25	4.1	5.7	837.730	F
3 - The Avenue	338	85	529	688	0.491	338	286	1.0	1.0	10.448	B
4 - Main Street W	531	133	271	968	0.548	531	596	1.2	1.2	8.408	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1085	271	69	740	1.465	740	590	429.3	515.5	2290.741	F
2 - Creche Entrance	25	6	787	28	0.907	25	22	5.7	5.9	880.687	F
3 - The Avenue	276	69	535	685	0.403	277	277	1.0	0.7	9.002	A
4 - Main Street W	433	108	223	994	0.436	435	589	1.2	0.8	6.606	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	909	227	57	747	1.217	747	494	515.5	555.9	2588.253	F
2 - Creche Entrance	21	5	784	29	0.724	27	20	5.9	4.5	796.492	F
3 - The Avenue	231	58	540	682	0.339	232	271	0.7	0.5	8.146	A
4 - Main Street W	363	91	188	1013	0.358	364	584	0.8	0.6	5.679	A

2042, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	459.44	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-37	2 - Creche Entrance	459.44	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2042	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	588	100.000
2 - Creche Entrance		ONE HOUR	✓	73	100.000
3 - The Avenue		ONE HOUR	✓	594	100.000
4 - Main Street W		ONE HOUR	✓	1034	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	18	275	290
	2 - Creche Entrance	36	0	15	22
	3 - The Avenue	447	25	2	120
	4 - Main Street W	804	26	202	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.98	90.08	15.6	F	540	809
2 - Creche Entrance	2.45	2149.93	26.3	F	67	100
3 - The Avenue	0.82	25.06	4.3	D	545	818
4 - Main Street W	1.39	799.68	201.1	F	949	1423

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	443	111	189	672	0.658	435	952	0.0	1.9	15.335	C
2 - Creche Entrance	55	14	573	135	0.408	52	51	0.0	0.6	42.540	E
3 - The Avenue	447	112	261	844	0.530	443	364	0.0	1.1	8.976	A
4 - Main Street W	778	195	383	908	0.857	758	321	0.0	5.2	22.208	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	529	132	212	659	0.802	521	1091	1.9	3.7	25.876	D
2 - Creche Entrance	66	16	674	84	0.780	60	60	0.6	2.2	124.969	F
3 - The Avenue	534	133	310	815	0.655	531	423	1.1	1.8	12.669	B
4 - Main Street W	930	232	458	868	1.071	846	384	5.2	26.1	81.752	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	647	162	212	659	0.982	615	1150	3.7	11.7	60.341	F
2 - Creche Entrance	80	20	761	41	1.976	39	67	2.2	12.4	827.519	F
3 - The Avenue	654	164	342	797	0.820	645	459	1.8	4.1	22.668	C
4 - Main Street W	1138	285	539	823	1.383	822	447	26.1	105.1	297.622	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	647	162	212	659	0.982	632	1152	11.7	15.6	90.076	F
2 - Creche Entrance	80	20	777	33	2.449	33	67	12.4	24.4	2149.926	F
3 - The Avenue	654	164	345	796	0.822	653	465	4.1	4.3	25.064	D
4 - Main Street W	1138	285	543	822	1.385	822	455	105.1	184.3	628.843	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	529	132	216	657	0.805	571	1113	15.6	5.0	52.397	F
2 - Creche Entrance	66	16	725	59	1.121	58	62	24.4	26.3	1280.516	F
3 - The Avenue	534	133	334	802	0.666	543	449	4.3	2.1	14.522	B
4 - Main Street W	930	232	467	863	1.078	862	410	184.3	201.1	799.679	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	443	111	217	656	0.674	454	1085	5.0	2.3	19.394	C
2 - Creche Entrance	55	14	616	113	0.485	109	55	26.3	12.7	656.850	F
3 - The Avenue	447	112	316	812	0.551	451	409	2.1	1.3	10.157	B
4 - Main Street W	778	195	417	889	0.875	885	349	201.1	174.5	764.592	F

2042, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	1817.65	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-58	2 - Creche Entrance	1817.65	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2042	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1275	100.000
2 - Creche Entrance		ONE HOUR	✓	28	100.000
3 - The Avenue		ONE HOUR	✓	324	100.000
4 - Main Street W		ONE HOUR	✓	509	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	15	370	888
	2 - Creche Entrance	5	0	11	12
	3 - The Avenue	251	4	0	69
	4 - Main Street W	434	11	61	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	1.92	3017.07	650.5	F	1170	1755
2 - Creche Entrance	1.21	949.90	6.2	F	26	39
3 - The Avenue	0.52	11.01	1.1	B	297	446
4 - Main Street W	0.58	9.19	1.4	A	467	700

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	960	240	59	746	1.287	733	516	0.0	56.8	149.124	F
2 - Creche Entrance	21	5	772	35	0.596	17	20	0.0	1.0	180.274	F
3 - The Avenue	244	61	524	691	0.353	242	265	0.0	0.5	8.110	A
4 - Main Street W	383	96	194	1009	0.379	380	571	0.0	0.6	5.829	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1146	287	70	739	1.550	739	619	56.8	158.5	535.782	F
2 - Creche Entrance	25	6	787	27	0.916	20	22	1.0	2.2	385.654	F
3 - The Avenue	291	73	531	687	0.424	291	277	0.5	0.7	9.209	A
4 - Main Street W	457	114	233	988	0.463	456	588	0.6	0.9	6.902	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1404	351	86	731	1.922	730	757	158.5	326.9	1201.295	F
2 - Creche Entrance	31	8	792	25	1.212	23	25	2.2	4.2	645.369	F
3 - The Avenue	357	89	527	689	0.517	355	287	0.7	1.1	10.912	B
4 - Main Street W	560	140	285	961	0.583	558	597	0.9	1.4	9.086	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1404	351	86	730	1.922	730	759	326.9	495.2	2032.264	F
2 - Creche Entrance	31	8	792	25	1.215	24	25	4.2	6.0	880.186	F
3 - The Avenue	357	89	528	689	0.518	357	288	1.1	1.1	11.006	B
4 - Main Street W	560	140	286	960	0.583	560	598	1.4	1.4	9.192	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1146	287	71	739	1.551	739	624	495.2	597.0	2650.178	F
2 - Creche Entrance	25	6	788	27	0.921	25	22	6.0	6.2	949.897	F
3 - The Avenue	291	73	534	686	0.425	293	279	1.1	0.8	9.344	A
4 - Main Street W	457	114	236	987	0.463	459	590	1.4	0.9	7.000	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	960	240	59	746	1.287	746	523	597.0	650.5	3017.070	F
2 - Creche Entrance	21	5	785	29	0.733	26	20	6.2	4.8	844.229	F
3 - The Avenue	244	61	539	682	0.357	245	272	0.8	0.6	8.375	A
4 - Main Street W	383	96	198	1007	0.380	384	585	0.9	0.6	5.915	A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 02 - Main Street x The Avenue Roundabout no Dev PM Cali.j10
Path: \\glasgowfile\JOBS\SCT\2023\T&T\Ballybin Rd, Ratoath\5. Technical\5. Modelling\JUNCTIONS\Calibrated
Report generation date: 06/06/2024 11:40:34 AM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023											
1 - Main Street E	D1	0.7	4.43	0.39	A	-54 % [4 - Main Street W]	D2	5.0	16.00	0.84	C	-17 % [2 - Creche Entrance]
2 - Creche Entrance		0.2	13.35	0.20	B			3.0	396.87	1.04	F	
3 - The Avenue		5.1	35.54	0.85	E			5.0	64.93	0.86	F	
4 - Main Street W		519.3	3737.05	2.35	F			6.0	49.75	0.88	E	
	2027											
1 - Main Street E	D3	0.7	4.64	0.41	A	-57 % [4 - Main Street W]	D4	7.9	24.01	0.90	C	-22 % [2 - Creche Entrance]
2 - Creche Entrance		0.3	14.61	0.23	B			14.6	1543.84	9999999999.00	F	
3 - The Avenue		9.1	60.12	0.93	F			11.3	131.63	0.99	F	
4 - Main Street W		621.9	4574.23	2.62	F			10.0	76.97	0.95	F	
	2032											
1 - Main Street E	D5	0.8	4.87	0.44	A	-60 % [4 - Main Street W]	D6	14.2	40.79	0.95	E	-27 % [2 - Creche Entrance]
2 - Creche Entrance		0.3	16.04	0.25	C			15.9	1759.93	9999999999.00	F	
3 - The Avenue		18.4	107.79	1.01	F			27.1	275.43	1.16	F	
4 - Main Street W		721.2	5428.63	2.85	F			15.4	108.36	0.99	F	
	2042											
1 - Main Street E	D7	0.9	5.13	0.47	A	-62 % [4 - Main Street W]	D8	29.0	73.66	1.01	F	-30 % [2 - Creche Entrance]
2 - Creche Entrance		0.4	17.91	0.29	C			22.7	2415.57	9999999999.00	F	
3 - The Avenue		35.2	183.53	1.08	F			44.6	451.44	1.31	F	
4 - Main Street W		818.5	6471.05	3.02	F			22.8	146.84	1.04	F	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity 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	24/10/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ADSYSTRA\tfoster
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
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 segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	08:00	09:30	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2027	AM	ONE HOUR	08:00	09:30	15	✓
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓
D5	2032	AM	ONE HOUR	08:00	09:30	15	✓
D6	2032	PM	ONE HOUR	16:45	18:15	15	✓
D7	2042	AM	ONE HOUR	08:00	09:30	15	✓
D8	2042	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2023, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	1702.37	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-54	4 - Main Street W	1702.37	F

Arms

Arms

Arm	Name	Description	No give-way line
1	Main Street E		
2	Creche Entrance		
3	The Avenue		
4	Main Street W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Main Street E	3.51	7.85	14.9	8.6	44.4	44.0		
2 - Creche Entrance	2.89	4.49	7.5	26.4	44.4	47.0		
3 - The Avenue	3.77	7.24	12.5	14.1	44.4	46.0		
4 - Main Street W	3.82	4.81	10.2	19.0	44.4	44.0		

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - Main Street E	Direct		-105
2 - Creche Entrance	Direct		-476
3 - The Avenue	Direct		-740
4 - Main Street W	Direct		-657

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Main Street E	0.566	1440
2 - Creche Entrance	0.500	633
3 - The Avenue	0.582	830
4 - Main Street W	0.539	658

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

Traffic Demand

Demand Set Details

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	482	100.000
2 - Creche Entrance		ONE HOUR	✓	60	100.000
3 - The Avenue		ONE HOUR	✓	498	100.000
4 - Main Street W		ONE HOUR	✓	860	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	4	15	227	236
	2 - Creche Entrance	30	0	12	18
	3 - The Avenue	376	21	1	100
	4 - Main Street W	668	22	169	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.39	4.43	0.7	A	442	663
2 - Creche Entrance	0.20	13.35	0.2	B	55	83
3 - The Avenue	0.85	35.54	5.1	E	457	685
4 - Main Street W	2.35	3737.05	519.3	F	789	1184

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	363	91	122	1371	0.265	361	673	0.0	0.4	3.707	A
2 - Creche Entrance	45	11	445	411	0.110	45	39	0.0	0.1	9.817	A
3 - The Avenue	375	94	216	704	0.532	370	273	0.0	1.1	10.768	B
4 - Main Street W	647	162	321	485	1.335	474	265	0.0	43.4	181.033	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	433	108	120	1372	0.316	433	716	0.4	0.5	3.987	A
2 - Creche Entrance	54	13	509	379	0.142	54	44	0.1	0.2	11.078	B
3 - The Avenue	448	112	259	679	0.659	445	304	1.1	1.9	15.317	C
4 - Main Street W	773	193	386	450	1.717	450	318	43.4	124.2	718.615	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	531	133	115	1375	0.386	530	759	0.5	0.6	4.429	A
2 - Creche Entrance	66	17	595	336	0.197	66	50	0.2	0.2	13.321	B
3 - The Avenue	548	137	317	646	0.849	537	344	1.9	4.7	30.753	D
4 - Main Street W	947	237	467	407	2.328	407	388	124.2	259.3	1705.258	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	531	133	114	1376	0.386	531	763	0.6	0.7	4.434	A
2 - Creche Entrance	66	17	595	336	0.197	66	50	0.2	0.2	13.346	B
3 - The Avenue	548	137	318	645	0.850	547	343	4.7	5.1	35.536	E
4 - Main Street W	947	237	474	403	2.352	403	390	259.3	395.3	2674.919	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	433	108	119	1373	0.316	434	722	0.7	0.5	3.996	A
2 - Creche Entrance	54	13	509	379	0.142	54	44	0.2	0.2	11.108	B
3 - The Avenue	448	112	260	679	0.660	460	303	5.1	2.1	17.453	C
4 - Main Street W	773	193	398	444	1.743	444	322	395.3	477.7	3344.379	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	363	91	124	1370	0.265	363	685	0.5	0.4	3.723	A
2 - Creche Entrance	45	11	448	409	0.110	45	40	0.2	0.1	9.898	A
3 - The Avenue	375	94	218	703	0.533	378	276	2.1	1.2	11.320	B
4 - Main Street W	647	162	328	481	1.345	481	268	477.7	519.3	3737.050	F

2023, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	36.35	E

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-17	2 - Creche Entrance	36.35	E

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1066	100.000
2 - Creche Entrance		ONE HOUR	✓	23	100.000
3 - The Avenue		ONE HOUR	✓	270	100.000
4 - Main Street W		ONE HOUR	✓	424	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	1	12	310	743
	2 - Creche Entrance	4	0	9	10
	3 - The Avenue	208	3	0	59
	4 - Main Street W	362	9	51	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.84	16.00	5.0	C	978	1467
2 - Creche Entrance	1.04	396.87	3.0	F	21	32
3 - The Avenue	0.86	64.93	5.0	F	248	372
4 - Main Street W	0.88	49.75	6.0	E	389	584

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	803	201	48	1413	0.568	797	426	0.0	1.3	5.918	A
2 - Creche Entrance	17	4	828	219	0.079	17	18	0.0	0.1	18.043	C
3 - The Avenue	203	51	568	499	0.407	201	276	0.0	0.7	12.142	B
4 - Main Street W	319	80	160	572	0.558	314	608	0.0	1.2	14.037	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	958	240	58	1407	0.681	955	512	1.3	2.1	8.063	A
2 - Creche Entrance	21	5	992	137	0.150	20	21	0.1	0.2	31.153	D
3 - The Avenue	243	61	681	434	0.559	241	331	0.7	1.2	18.706	C
4 - Main Street W	381	95	192	555	0.687	378	729	1.2	2.1	20.410	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1174	293	70	1401	0.838	1163	612	2.1	4.8	14.806	B
2 - Creche Entrance	25	6	1207	30	0.848	19	26	0.2	1.7	284.270	F
3 - The Avenue	297	74	826	350	0.850	285	400	1.2	4.2	49.944	E
4 - Main Street W	467	117	228	536	0.872	454	883	2.1	5.2	40.203	E

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1174	293	71	1400	0.838	1173	627	4.8	5.0	16.002	C
2 - Creche Entrance	25	6	1218	24	1.037	20	26	1.7	3.0	396.875	F
3 - The Avenue	297	74	833	345	0.861	294	405	4.2	5.0	64.927	F
4 - Main Street W	467	117	234	532	0.878	464	893	5.2	6.0	49.749	E

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	958	240	61	1406	0.682	969	542	5.0	2.2	8.620	A
2 - Creche Entrance	21	5	1008	129	0.160	32	22	3.0	0.2	41.369	E
3 - The Avenue	243	61	698	424	0.572	257	342	5.0	1.4	23.515	C
4 - Main Street W	381	95	207	547	0.697	395	748	6.0	2.5	26.116	D

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	803	201	50	1412	0.568	806	439	2.2	1.4	6.095	A
2 - Creche Entrance	17	4	837	214	0.081	18	18	0.2	0.1	18.639	C
3 - The Avenue	203	51	575	496	0.410	206	280	1.4	0.7	12.765	B
4 - Main Street W	319	80	165	569	0.561	324	616	2.5	1.4	15.272	C

2027, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	2085.12	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-57	4 - Main Street W	2085.12	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2027	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	517	100.000
2 - Creche Entrance		ONE HOUR	✓	65	100.000
3 - The Avenue		ONE HOUR	✓	532	100.000
4 - Main Street W		ONE HOUR	✓	919	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	16	243	253
	2 - Creche Entrance	32	0	13	20
	3 - The Avenue	400	23	2	107
	4 - Main Street W	714	23	180	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.41	4.64	0.7	A	474	712
2 - Creche Entrance	0.23	14.61	0.3	B	60	89
3 - The Avenue	0.93	60.12	9.1	F	488	732
4 - Main Street W	2.62	4574.23	621.9	F	843	1265

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	389	97	122	1371	0.284	388	686	0.0	0.4	3.803	A
2 - Creche Entrance	49	12	469	399	0.123	48	41	0.0	0.1	10.278	B
3 - The Avenue	401	100	233	694	0.577	395	284	0.0	1.3	11.964	B
4 - Main Street W	692	173	343	473	1.462	465	285	0.0	56.8	237.059	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	465	116	120	1373	0.339	464	728	0.4	0.5	4.124	A
2 - Creche Entrance	58	15	538	364	0.160	58	46	0.1	0.2	11.760	B
3 - The Avenue	478	120	279	667	0.716	474	317	1.3	2.4	18.401	C
4 - Main Street W	826	207	412	436	1.894	436	341	56.8	154.3	937.919	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	569	142	114	1376	0.414	568	771	0.5	0.7	4.637	A
2 - Creche Entrance	72	18	631	318	0.225	71	52	0.2	0.3	14.573	B
3 - The Avenue	586	146	341	631	0.928	565	361	2.4	7.6	44.812	E
4 - Main Street W	1012	253	492	393	2.574	393	415	154.3	309.0	2114.028	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	569	142	113	1376	0.414	569	777	0.7	0.7	4.644	A
2 - Creche Entrance	72	18	630	318	0.225	72	52	0.3	0.3	14.605	B
3 - The Avenue	586	146	342	631	0.928	580	360	7.6	9.1	60.125	F
4 - Main Street W	1012	253	504	387	2.617	387	418	309.0	465.3	3228.553	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	465	116	118	1373	0.338	466	741	0.7	0.5	4.132	A
2 - Creche Entrance	58	15	537	365	0.160	59	47	0.3	0.2	11.782	B
3 - The Avenue	478	120	280	667	0.717	504	315	9.1	2.8	25.131	D
4 - Main Street W	826	207	436	423	1.952	423	348	465.3	566.0	4059.117	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	389	97	124	1370	0.284	390	697	0.5	0.4	3.825	A
2 - Creche Entrance	49	12	472	397	0.123	49	41	0.2	0.1	10.349	B
3 - The Avenue	401	100	235	693	0.578	406	286	2.8	1.4	12.880	B
4 - Main Street W	692	173	352	468	1.477	468	288	566.0	621.9	4574.229	F

2027, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	73.68	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-22	2 - Creche Entrance	73.68	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1137	100.000
2 - Creche Entrance		ONE HOUR	✓	26	100.000
3 - The Avenue		ONE HOUR	✓	289	100.000
4 - Main Street W		ONE HOUR	✓	454	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	13	330	792
	2 - Creche Entrance	5	0	10	11
	3 - The Avenue	223	4	0	62
	4 - Main Street W	386	10	55	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.90	24.01	7.9	C	1043	1565
2 - Creche Entrance	9999999999.00	1543.84	14.6	F	24	36
3 - The Avenue	0.99	131.63	11.3	F	265	398
4 - Main Street W	0.95	76.97	10.0	F	417	625

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	856	214	53	1410	0.607	850	456	0.0	1.5	6.489	A
2 - Creche Entrance	20	5	883	192	0.102	19	20	0.0	0.1	21.144	C
3 - The Avenue	218	54	607	477	0.457	214	295	0.0	0.8	13.787	B
4 - Main Street W	342	85	173	565	0.605	336	648	0.0	1.5	15.698	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1022	256	64	1404	0.728	1018	547	1.5	2.6	9.402	A
2 - Creche Entrance	23	6	1058	104	0.224	23	24	0.1	0.3	44.455	E
3 - The Avenue	260	65	727	407	0.639	256	353	0.8	1.7	23.805	C
4 - Main Street W	408	102	208	546	0.747	403	776	1.5	2.7	24.839	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1252	313	76	1397	0.896	1234	637	2.6	7.2	20.445	C
2 - Creche Entrance	29	7	1281	0	9999999999.000	0	29	0.3	7.4	1543.836	F
3 - The Avenue	318	80	865	327	0.973	294	416	1.7	7.7	80.365	F
4 - Main Street W	500	125	233	533	0.939	479	925	2.7	7.9	54.684	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1252	313	78	1396	0.897	1249	654	7.2	7.9	24.013	C
2 - Creche Entrance	29	7	1298	0	9999999999.000	0	29	7.4	14.6	-7281.785	?
3 - The Avenue	318	80	876	321	0.992	304	422	7.7	11.3	131.628	F
4 - Main Street W	500	125	241	528	0.946	491	939	7.9	10.0	76.968	F

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1022	256	69	1401	0.729	1042	612	7.9	2.9	10.759	B
2 - Creche Entrance	23	6	1085	90	0.258	80	26	14.6	0.5	340.748	F
3 - The Avenue	260	65	780	376	0.690	295	385	11.3	2.6	56.324	F
4 - Main Street W	408	102	249	524	0.779	432	826	10.0	4.1	45.619	E

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	856	214	56	1409	0.608	861	478	2.9	1.6	6.768	A
2 - Creche Entrance	20	5	896	185	0.106	21	21	0.5	0.1	22.488	C
3 - The Avenue	218	54	617	471	0.462	224	301	2.6	0.9	15.187	C
4 - Main Street W	342	85	182	560	0.610	352	659	4.1	1.7	18.382	C

2032, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	2483.05	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-60	4 - Main Street W	2483.05	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2032	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	552	100.000
2 - Creche Entrance		ONE HOUR	✓	69	100.000
3 - The Avenue		ONE HOUR	✓	564	100.000
4 - Main Street W		ONE HOUR	✓	977	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	17	259	271
	2 - Creche Entrance	34	0	14	21
	3 - The Avenue	424	24	2	114
	4 - Main Street W	759	25	191	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.44	4.87	0.8	A	507	760
2 - Creche Entrance	0.25	16.04	0.3	C	63	95
3 - The Avenue	1.01	107.79	18.4	F	518	776
4 - Main Street W	2.85	5428.63	721.2	F	897	1345

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	416	104	121	1372	0.303	414	698	0.0	0.4	3.905	A
2 - Creche Entrance	52	13	493	387	0.134	51	42	0.0	0.2	10.709	B
3 - The Avenue	425	106	249	685	0.620	418	295	0.0	1.6	13.337	B
4 - Main Street W	736	184	363	463	1.590	456	304	0.0	69.9	295.496	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	496	124	118	1374	0.361	496	741	0.4	0.6	4.266	A
2 - Creche Entrance	62	16	566	350	0.177	62	47	0.2	0.2	12.471	B
3 - The Avenue	507	127	298	657	0.772	501	330	1.6	3.1	22.511	C
4 - Main Street W	878	220	435	424	2.072	424	364	69.9	183.5	1158.295	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	608	152	113	1376	0.442	607	779	0.6	0.8	4.863	A
2 - Creche Entrance	76	19	666	300	0.253	75	53	0.2	0.3	15.995	C
3 - The Avenue	621	155	364	618	1.005	582	377	3.1	12.9	66.196	F
4 - Main Street W	1076	269	507	385	2.794	385	439	183.5	356.2	2475.265	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	608	152	112	1377	0.441	608	786	0.8	0.8	4.871	A
2 - Creche Entrance	76	19	666	300	0.253	76	54	0.3	0.3	16.041	C
3 - The Avenue	621	155	365	618	1.006	599	376	12.9	18.4	107.792	F
4 - Main Street W	1076	269	521	377	2.850	377	443	356.2	530.8	3784.038	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	496	124	114	1375	0.361	497	768	0.8	0.6	4.272	A
2 - Creche Entrance	62	16	562	352	0.176	62	49	0.3	0.2	12.450	B
3 - The Avenue	507	127	299	656	0.773	565	325	18.4	4.0	52.288	F
4 - Main Street W	878	220	486	396	2.217	396	378	530.8	651.3	4794.345	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	416	104	122	1371	0.303	416	710	0.6	0.5	3.925	A
2 - Creche Entrance	52	13	495	386	0.135	52	43	0.2	0.2	10.799	B
3 - The Avenue	425	106	251	684	0.621	434	296	4.0	1.7	15.003	C
4 - Main Street W	736	184	375	456	1.614	456	309	651.3	721.2	5428.631	F

2032, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	116.26	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-27	2 - Creche Entrance	116.26	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2032	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1207	100.000
2 - Creche Entrance		ONE HOUR	✓	28	100.000
3 - The Avenue		ONE HOUR	✓	307	100.000
4 - Main Street W		ONE HOUR	✓	482	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	14	350	841
	2 - Creche Entrance	5	0	11	12
	3 - The Avenue	237	4	0	66
	4 - Main Street W	410	11	58	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.95	40.79	14.2	E	1108	1661
2 - Creche Entrance	9999999999.00	1759.93	15.9	F	26	39
3 - The Avenue	1.16	275.43	27.1	F	282	423
4 - Main Street W	0.99	108.36	15.4	F	442	663

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	909	227	56	1408	0.645	901	483	0.0	1.8	7.148	A
2 - Creche Entrance	21	5	936	165	0.128	21	22	0.0	0.1	25.192	D
3 - The Avenue	231	58	644	455	0.508	227	312	0.0	1.0	15.785	C
4 - Main Street W	363	91	183	559	0.649	356	688	0.0	1.8	17.521	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1085	271	67	1402	0.774	1079	577	1.8	3.3	11.157	B
2 - Creche Entrance	25	6	1120	73	0.345	24	26	0.1	0.5	72.745	F
3 - The Avenue	276	69	771	382	0.723	271	374	1.0	2.4	31.525	D
4 - Main Street W	433	108	218	540	0.802	426	823	1.8	3.6	30.376	D

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1329	332	78	1396	0.952	1295	650	3.3	11.7	29.609	D
2 - Creche Entrance	31	8	1343	0	9999999999.000	0	30	0.5	8.2	1759.928	F
3 - The Avenue	338	85	908	302	1.120	288	436	2.4	14.9	135.280	F
4 - Main Street W	531	133	228	535	0.992	500	967	3.6	11.3	70.799	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1329	332	81	1395	0.953	1319	663	11.7	14.2	40.791	E
2 - Creche Entrance	31	8	1369	0	9999999999.000	0	31	8.2	15.9	-1702.946	?
3 - The Avenue	338	85	925	292	1.157	289	444	14.9	27.1	275.429	F
4 - Main Street W	531	133	229	535	0.992	514	985	11.3	15.4	108.365	F

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1085	271	74	1398	0.776	1127	669	14.2	3.7	15.337	C
2 - Creche Entrance	25	6	1172	47	0.536	44	28	15.9	11.1	967.236	F
3 - The Avenue	276	69	817	355	0.778	342	400	27.1	10.6	205.856	F
4 - Main Street W	433	108	278	508	0.853	464	880	15.4	7.7	87.468	F

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	909	227	61	1406	0.646	916	547	3.7	1.9	7.611	A
2 - Creche Entrance	21	5	954	156	0.135	65	23	11.1	0.2	61.799	F
3 - The Avenue	231	58	682	433	0.533	269	337	10.6	1.2	27.033	D
4 - Main Street W	363	91	224	537	0.675	384	726	7.7	2.3	26.825	D

2042, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	2972.66	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-62	4 - Main Street W	2972.66	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2042	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	588	100.000
2 - Creche Entrance		ONE HOUR	✓	73	100.000
3 - The Avenue		ONE HOUR	✓	594	100.000
4 - Main Street W		ONE HOUR	✓	1034	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	18	275	290
	2 - Creche Entrance	36	0	15	22
	3 - The Avenue	447	25	2	120
	4 - Main Street W	804	26	202	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.47	5.13	0.9	A	540	809
2 - Creche Entrance	0.29	17.91	0.4	C	67	100
3 - The Avenue	1.08	183.53	35.2	F	545	818
4 - Main Street W	3.02	6471.05	818.5	F	949	1423

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	443	111	119	1373	0.323	441	709	0.0	0.5	4.014	A
2 - Creche Entrance	55	14	517	375	0.147	54	43	0.0	0.2	11.210	B
3 - The Avenue	447	112	265	676	0.662	440	306	0.0	1.9	14.979	B
4 - Main Street W	778	195	381	453	1.720	447	323	0.0	82.8	356.529	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	529	132	116	1375	0.384	528	753	0.5	0.6	4.423	A
2 - Creche Entrance	66	16	595	336	0.195	65	49	0.2	0.2	13.302	B
3 - The Avenue	534	133	318	645	0.828	525	343	1.9	4.1	28.297	D
4 - Main Street W	930	232	456	413	2.253	413	387	82.8	212.1	1371.122	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	647	162	112	1377	0.470	646	783	0.6	0.9	5.122	A
2 - Creche Entrance	80	20	704	281	0.286	80	54	0.2	0.4	17.815	C
3 - The Avenue	654	164	388	604	1.083	586	395	4.1	21.3	96.137	F
4 - Main Street W	1138	285	512	382	2.979	382	462	212.1	401.2	2899.774	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	647	162	111	1377	0.470	647	788	0.9	0.9	5.133	A
2 - Creche Entrance	80	20	704	281	0.286	80	54	0.4	0.4	17.910	C
3 - The Avenue	654	164	389	603	1.084	598	395	21.3	35.2	183.533	F
4 - Main Street W	1138	285	522	377	3.023	377	465	401.2	591.6	4394.313	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	529	132	110	1378	0.384	530	795	0.9	0.7	4.424	A
2 - Creche Entrance	66	16	588	339	0.194	66	52	0.4	0.2	13.223	B
3 - The Avenue	534	133	319	644	0.829	626	335	35.2	12.1	142.967	F
4 - Main Street W	930	232	537	369	2.521	369	408	591.6	731.9	5657.179	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	443	111	118	1373	0.322	443	734	0.7	0.5	4.034	A
2 - Creche Entrance	55	14	517	375	0.147	55	45	0.2	0.2	11.273	B
3 - The Avenue	447	112	267	675	0.663	487	305	12.1	2.1	23.187	C
4 - Main Street W	778	195	420	432	1.803	432	335	731.9	818.5	6471.052	F

2042, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	179.11	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-30	2 - Creche Entrance	179.11	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2042	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1275	100.000
2 - Creche Entrance		ONE HOUR	✓	28	100.000
3 - The Avenue		ONE HOUR	✓	324	100.000
4 - Main Street W		ONE HOUR	✓	509	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	15	370	888
	2 - Creche Entrance	5	0	11	12
	3 - The Avenue	251	4	0	69
	4 - Main Street W	434	11	61	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	1.01	73.66	29.0	F	1170	1755
2 - Creche Entrance	9999999999.00	2415.57	22.7	F	26	39
3 - The Avenue	1.31	451.44	44.6	F	297	446
4 - Main Street W	1.04	146.84	22.8	F	467	700

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	960	240	58	1408	0.682	951	510	0.0	2.1	7.914	A
2 - Creche Entrance	21	5	987	140	0.151	20	22	0.0	0.2	30.488	D
3 - The Avenue	244	61	679	435	0.561	239	329	0.0	1.2	18.236	C
4 - Main Street W	383	96	193	554	0.691	374	724	0.0	2.1	19.653	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1146	287	69	1401	0.818	1138	606	2.1	4.2	13.512	B
2 - Creche Entrance	25	6	1180	43	0.584	22	27	0.2	1.0	156.249	F
3 - The Avenue	291	73	810	359	0.812	282	392	1.2	3.5	43.525	E
4 - Main Street W	457	114	228	535	0.854	447	865	2.1	4.7	37.621	E

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1404	351	79	1395	1.006	1340	658	4.2	20.1	43.506	E
2 - Creche Entrance	31	8	1389	0	9999999999.000	0	30	1.0	8.7	2415.571	F
3 - The Avenue	357	89	939	284	1.257	277	450	3.5	23.3	203.321	F
4 - Main Street W	560	140	220	539	1.038	516	996	4.7	15.6	89.553	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1404	351	81	1394	1.007	1368	666	20.1	29.0	73.664	F
2 - Creche Entrance	31	8	1418	0	9999999999.000	0	31	8.7	16.4	1733.163	F
3 - The Avenue	357	89	958	273	1.308	272	460	23.3	44.6	447.973	F
4 - Main Street W	560	140	216	542	1.033	531	1014	15.6	22.8	146.836	F

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1146	287	78	1396	0.821	1241	678	29.0	5.2	32.914	D
2 - Creche Entrance	25	6	1290	0	9999999999.000	0	29	16.4	22.7	1030.791	F
3 - The Avenue	291	73	870	324	0.899	317	420	44.6	38.2	451.444	F
4 - Main Street W	457	114	251	523	0.875	504	935	22.8	11.1	132.327	F

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	960	240	65	1404	0.684	972	668	5.2	2.3	8.726	A
2 - Creche Entrance	21	5	1011	128	0.165	111	25	22.7	0.3	332.811	F
3 - The Avenue	244	61	748	395	0.618	385	374	38.2	3.0	205.651	F
4 - Main Street W	383	96	324	484	0.792	409	809	11.1	4.6	56.777	F

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 02 - Main Street x The Avenue Roundabout no Dev.j10
Path: \\glasgowfile\JOBS\SCT\2023\T&T\Ballybin Rd, Ratoath\5. Technical\5. Modelling\JUNCTIONS
Report generation date: 26/03/2024 11:58:56 AM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023											
1 - Main Street E	D1	0.6	4.25	0.38	A	1 % [4 - Main Street W]	D2	3.5	11.06	0.78	B	20 % [1 - Main Street E]
2 - Creche Entrance		0.1	5.20	0.09	A			0.1	7.71	0.05	A	
3 - The Avenue		0.7	4.35	0.40	A			0.4	4.66	0.27	A	
4 - Main Street W		7.5	30.48	0.89	D			0.7	5.11	0.39	A	
	2027											
1 - Main Street E	D3	0.7	4.49	0.41	A	-5 % [4 - Main Street W]	D4	4.9	14.62	0.83	B	12 % [1 - Main Street E]
2 - Creche Entrance		0.1	5.44	0.10	A			0.1	8.50	0.06	A	
3 - The Avenue		0.8	4.64	0.43	A			0.4	5.00	0.30	A	
4 - Main Street W		16.4	60.84	0.97	F			0.8	5.44	0.42	A	
	2032											
1 - Main Street E	D5	0.8	4.72	0.43	A	-11 % [4 - Main Street W]	D6	7.3	20.89	0.89	C	6 % [1 - Main Street E]
2 - Creche Entrance		0.1	5.65	0.11	A			0.1	9.40	0.07	A	
3 - The Avenue		0.8	4.95	0.46	A			0.5	5.38	0.33	A	
4 - Main Street W		39.5	123.87	1.05	F			0.8	5.77	0.45	A	
	2042											
1 - Main Street E	D7	0.9	4.97	0.46	A	-16 % [4 - Main Street W]	D8	12.1	33.16	0.94	D	0 % [1 - Main Street E]
2 - Creche Entrance		0.1	5.86	0.12	A			0.1	10.36	0.08	B	
3 - The Avenue		1.0	5.28	0.49	A			0.6	5.78	0.36	A	
4 - Main Street W		74.2	214.37	1.13	F			0.9	6.13	0.48	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity 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	24/10/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ADSYSTRA\tfoster
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
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 segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	08:00	09:30	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2027	AM	ONE HOUR	08:00	09:30	15	✓
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓
D5	2032	AM	ONE HOUR	08:00	09:30	15	✓
D6	2032	PM	ONE HOUR	16:45	18:15	15	✓
D7	2042	AM	ONE HOUR	08:00	09:30	15	✓
D8	2042	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2023, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	16.18	C

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	1	4 - Main Street W	16.18	C

Arms

Arms

Arm	Name	Description	No give-way line
1	Main Street E		
2	Creche Entrance		
3	The Avenue		
4	Main Street W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Main Street E	3.51	7.85	14.9	8.6	44.4	44.0		
2 - Creche Entrance	2.89	4.49	7.5	26.4	44.4	47.0		
3 - The Avenue	3.77	7.24	12.5	14.1	44.4	46.0		
4 - Main Street W	3.82	4.81	10.2	19.0	44.4	44.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Main Street E	0.566	1545
2 - Creche Entrance	0.500	1109
3 - The Avenue	0.582	1570
4 - Main Street W	0.539	1315

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

Traffic Demand

Demand Set Details

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	482	100.000
2 - Creche Entrance		ONE HOUR	✓	60	100.000
3 - The Avenue		ONE HOUR	✓	498	100.000
4 - Main Street W		ONE HOUR	✓	860	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	4	15	227	236
	2 - Creche Entrance	30	0	12	18
	3 - The Avenue	376	21	1	100
	4 - Main Street W	668	22	169	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.38	4.25	0.6	A	442	663
2 - Creche Entrance	0.09	5.20	0.1	A	55	83
3 - The Avenue	0.40	4.35	0.7	A	457	685
4 - Main Street W	0.89	30.48	7.5	D	789	1184

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	363	91	160	1455	0.249	361	806	0.0	0.3	3.423	A
2 - Creche Entrance	45	11	478	870	0.052	45	43	0.0	0.1	4.361	A
3 - The Avenue	375	94	217	1444	0.260	374	306	0.0	0.4	3.395	A
4 - Main Street W	647	162	324	1141	0.568	642	266	0.0	1.3	7.322	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	433	108	191	1437	0.302	433	966	0.3	0.4	3.730	A
2 - Creche Entrance	54	13	572	823	0.066	54	52	0.1	0.1	4.680	A
3 - The Avenue	448	112	260	1419	0.316	447	367	0.4	0.5	3.742	A
4 - Main Street W	773	193	388	1106	0.699	769	319	1.3	2.3	10.817	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	531	133	232	1414	0.375	530	1172	0.4	0.6	4.234	A
2 - Creche Entrance	66	17	698	760	0.087	66	63	0.1	0.1	5.186	A
3 - The Avenue	548	137	318	1385	0.396	548	446	0.5	0.7	4.341	A
4 - Main Street W	947	237	475	1059	0.894	929	390	2.3	6.8	25.347	D

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	531	133	235	1412	0.376	531	1185	0.6	0.6	4.250	A
2 - Creche Entrance	66	17	702	758	0.087	66	64	0.1	0.1	5.200	A
3 - The Avenue	548	137	318	1385	0.396	548	450	0.7	0.7	4.349	A
4 - Main Street W	947	237	476	1059	0.894	944	391	6.8	7.5	30.478	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	433	108	197	1434	0.302	434	985	0.6	0.5	3.749	A
2 - Creche Entrance	54	13	578	820	0.066	54	53	0.1	0.1	4.699	A
3 - The Avenue	448	112	260	1419	0.316	448	372	0.7	0.5	3.756	A
4 - Main Street W	773	193	389	1105	0.699	793	320	7.5	2.5	12.508	B

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	363	91	162	1454	0.250	363	815	0.5	0.3	3.438	A
2 - Creche Entrance	45	11	482	868	0.052	45	44	0.1	0.1	4.373	A
3 - The Avenue	375	94	218	1443	0.260	375	309	0.5	0.4	3.411	A
4 - Main Street W	647	162	326	1140	0.568	652	268	2.5	1.4	7.625	A

2023, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	8.63	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	20	1 - Main Street E	8.63	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1066	100.000
2 - Creche Entrance		ONE HOUR	✓	23	100.000
3 - The Avenue		ONE HOUR	✓	270	100.000
4 - Main Street W		ONE HOUR	✓	424	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	1	12	310	743
	2 - Creche Entrance	4	0	9	10
	3 - The Avenue	208	3	0	59
	4 - Main Street W	362	9	51	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.78	11.06	3.5	B	978	1467
2 - Creche Entrance	0.05	7.71	0.1	A	21	32
3 - The Avenue	0.27	4.66	0.4	A	248	372
4 - Main Street W	0.39	5.11	0.7	A	389	584

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	803	201	49	1518	0.529	798	431	0.0	1.1	5.074	A
2 - Creche Entrance	17	4	829	695	0.025	17	18	0.0	0.0	5.399	A
3 - The Avenue	203	51	569	1239	0.164	202	277	0.0	0.2	3.530	A
4 - Main Street W	319	80	162	1228	0.260	318	609	0.0	0.4	4.044	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	958	240	58	1512	0.634	956	516	1.1	1.7	6.574	A
2 - Creche Entrance	21	5	993	613	0.034	21	22	0.0	0.0	6.177	A
3 - The Avenue	243	61	682	1174	0.207	242	332	0.2	0.3	3.930	A
4 - Main Street W	381	95	194	1211	0.315	381	730	0.4	0.5	4.433	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1174	293	71	1505	0.780	1167	632	1.7	3.4	10.656	B
2 - Creche Entrance	25	6	1212	503	0.050	25	26	0.0	0.1	7.654	A
3 - The Avenue	297	74	832	1086	0.274	297	405	0.3	0.4	4.634	A
4 - Main Street W	467	117	237	1187	0.393	466	891	0.5	0.7	5.098	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1174	293	72	1505	0.780	1173	633	3.4	3.5	11.058	B
2 - Creche Entrance	25	6	1218	500	0.051	25	26	0.1	0.1	7.707	A
3 - The Avenue	297	74	837	1083	0.274	297	407	0.4	0.4	4.655	A
4 - Main Street W	467	117	238	1187	0.393	467	896	0.7	0.7	5.109	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	958	240	59	1512	0.634	965	518	3.5	1.8	6.798	A
2 - Creche Entrance	21	5	1002	608	0.034	21	22	0.1	0.0	6.228	A
3 - The Avenue	243	61	688	1170	0.208	243	335	0.4	0.3	3.953	A
4 - Main Street W	381	95	195	1210	0.315	382	737	0.7	0.5	4.448	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	803	201	49	1517	0.529	805	433	1.8	1.2	5.174	A
2 - Creche Entrance	17	4	836	691	0.025	17	18	0.0	0.0	5.428	A
3 - The Avenue	203	51	574	1236	0.164	204	279	0.3	0.2	3.547	A
4 - Main Street W	319	80	163	1227	0.260	320	615	0.5	0.4	4.057	A

2027, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	30.03	D

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-5	4 - Main Street W	30.03	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2027	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	517	100.000
2 - Creche Entrance		ONE HOUR	✓	65	100.000
3 - The Avenue		ONE HOUR	✓	532	100.000
4 - Main Street W		ONE HOUR	✓	919	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	16	243	253
	2 - Creche Entrance	32	0	13	20
	3 - The Avenue	400	23	2	107
	4 - Main Street W	714	23	180	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.41	4.49	0.7	A	474	712
2 - Creche Entrance	0.10	5.44	0.1	A	60	89
3 - The Avenue	0.43	4.64	0.8	A	488	732
4 - Main Street W	0.97	60.84	16.4	F	843	1265

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	389	97	172	1448	0.269	388	860	0.0	0.4	3.529	A
2 - Creche Entrance	49	12	513	853	0.057	49	46	0.0	0.1	4.476	A
3 - The Avenue	401	100	234	1434	0.279	399	328	0.0	0.4	3.512	A
4 - Main Street W	692	173	346	1128	0.613	686	286	0.0	1.6	8.210	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	465	116	205	1429	0.325	464	1030	0.4	0.5	3.883	A
2 - Creche Entrance	58	15	614	802	0.073	58	56	0.1	0.1	4.840	A
3 - The Avenue	478	120	280	1407	0.340	478	392	0.4	0.5	3.915	A
4 - Main Street W	826	207	415	1092	0.757	820	343	1.6	3.0	13.316	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	569	142	245	1407	0.405	568	1236	0.5	0.7	4.464	A
2 - Creche Entrance	72	18	746	736	0.097	71	67	0.1	0.1	5.414	A
3 - The Avenue	586	146	343	1370	0.427	585	474	0.5	0.7	4.626	A
4 - Main Street W	1012	253	508	1041	0.972	973	420	3.0	12.7	40.498	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	569	142	250	1404	0.405	569	1256	0.7	0.7	4.489	A
2 - Creche Entrance	72	18	751	734	0.098	72	68	0.1	0.1	5.437	A
3 - The Avenue	586	146	343	1370	0.428	586	479	0.7	0.8	4.638	A
4 - Main Street W	1012	253	509	1041	0.972	997	421	12.7	16.4	60.841	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	465	116	218	1422	0.327	466	1076	0.7	0.5	3.922	A
2 - Creche Entrance	58	15	627	796	0.073	59	57	0.1	0.1	4.885	A
3 - The Avenue	478	120	281	1406	0.340	479	404	0.8	0.5	3.929	A
4 - Main Street W	826	207	416	1091	0.757	878	344	16.4	3.4	20.921	C

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	389	97	175	1446	0.269	390	872	0.5	0.4	3.550	A
2 - Creche Entrance	49	12	518	850	0.058	49	47	0.1	0.1	4.493	A
3 - The Avenue	401	100	235	1433	0.279	401	331	0.5	0.4	3.529	A
4 - Main Street W	692	173	348	1127	0.614	699	288	3.4	1.7	8.735	A

2027, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	10.89	B

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	12	1 - Main Street E	10.89	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1137	100.000
2 - Creche Entrance		ONE HOUR	✓	26	100.000
3 - The Avenue		ONE HOUR	✓	289	100.000
4 - Main Street W		ONE HOUR	✓	454	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	13	330	792
	2 - Creche Entrance	5	0	10	11
	3 - The Avenue	223	4	0	62
	4 - Main Street W	386	10	55	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.83	14.62	4.9	B	1043	1565
2 - Creche Entrance	0.06	8.50	0.1	A	24	36
3 - The Avenue	0.30	5.00	0.4	A	265	398
4 - Main Street W	0.42	5.44	0.8	A	417	625

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	856	214	54	1515	0.565	851	462	0.0	1.3	5.491	A
2 - Creche Entrance	20	5	884	667	0.029	19	20	0.0	0.0	5.649	A
3 - The Avenue	218	54	608	1216	0.179	217	296	0.0	0.2	3.659	A
4 - Main Street W	342	85	175	1221	0.280	340	650	0.0	0.4	4.172	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1022	256	65	1509	0.678	1019	553	1.3	2.1	7.452	A
2 - Creche Entrance	23	6	1059	579	0.040	23	24	0.0	0.0	6.576	A
3 - The Avenue	260	65	729	1146	0.227	260	354	0.2	0.3	4.127	A
4 - Main Street W	408	102	210	1202	0.340	408	778	0.4	0.5	4.630	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1252	313	79	1500	0.834	1241	677	2.1	4.7	13.647	B
2 - Creche Entrance	29	7	1291	464	0.062	29	30	0.0	0.1	8.402	A
3 - The Avenue	318	80	888	1054	0.302	318	432	0.3	0.4	4.971	A
4 - Main Street W	500	125	257	1177	0.425	499	948	0.5	0.7	5.425	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1252	313	79	1500	0.834	1251	678	4.7	4.9	14.616	B
2 - Creche Entrance	29	7	1301	459	0.062	29	30	0.1	0.1	8.500	A
3 - The Avenue	318	80	895	1050	0.303	318	435	0.4	0.4	5.004	A
4 - Main Street W	500	125	258	1176	0.425	500	955	0.7	0.8	5.439	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1022	256	65	1509	0.678	1033	555	4.9	2.2	7.892	A
2 - Creche Entrance	23	6	1073	572	0.041	23	24	0.1	0.0	6.662	A
3 - The Avenue	260	65	739	1140	0.228	260	358	0.4	0.3	4.161	A
4 - Main Street W	408	102	211	1202	0.340	409	788	0.8	0.5	4.648	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	856	214	54	1515	0.565	859	464	2.2	1.3	5.638	A
2 - Creche Entrance	20	5	893	663	0.030	20	20	0.0	0.0	5.690	A
3 - The Avenue	218	54	614	1212	0.179	218	298	0.3	0.2	3.680	A
4 - Main Street W	342	85	176	1220	0.280	342	656	0.5	0.4	4.196	A

2032, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	58.65	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-11	4 - Main Street W	58.65	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2032	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	552	100.000
2 - Creche Entrance		ONE HOUR	✓	69	100.000
3 - The Avenue		ONE HOUR	✓	564	100.000
4 - Main Street W		ONE HOUR	✓	977	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	17	259	271
	2 - Creche Entrance	34	0	14	21
	3 - The Avenue	424	24	2	114
	4 - Main Street W	759	25	191	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.43	4.72	0.8	A	507	760
2 - Creche Entrance	0.11	5.65	0.1	A	63	95
3 - The Avenue	0.46	4.95	0.8	A	518	776
4 - Main Street W	1.05	123.87	39.5	F	897	1345

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	416	104	182	1442	0.288	414	913	0.0	0.4	3.637	A
2 - Creche Entrance	52	13	546	836	0.062	52	49	0.0	0.1	4.589	A
3 - The Avenue	425	106	250	1425	0.298	423	348	0.0	0.4	3.626	A
4 - Main Street W	736	184	367	1118	0.658	728	306	0.0	1.9	9.288	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	496	124	217	1422	0.349	496	1091	0.4	0.6	4.042	A
2 - Creche Entrance	62	16	654	782	0.079	62	59	0.1	0.1	4.998	A
3 - The Avenue	507	127	299	1396	0.363	506	417	0.4	0.6	4.088	A
4 - Main Street W	878	220	439	1078	0.814	870	366	1.9	4.1	16.959	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	608	152	251	1404	0.433	607	1282	0.6	0.8	4.698	A
2 - Creche Entrance	76	19	787	716	0.106	76	71	0.1	0.1	5.623	A
3 - The Avenue	621	155	366	1357	0.458	620	497	0.6	0.8	4.929	A
4 - Main Street W	1076	269	537	1025	1.049	995	448	4.1	24.4	64.921	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	608	152	255	1401	0.434	608	1299	0.8	0.8	4.724	A
2 - Creche Entrance	76	19	792	713	0.107	76	71	0.1	0.1	5.647	A
3 - The Avenue	621	155	367	1357	0.458	621	501	0.8	0.8	4.945	A
4 - Main Street W	1076	269	538	1025	1.050	1015	449	24.4	39.5	123.868	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	496	124	250	1404	0.353	497	1205	0.8	0.6	4.136	A
2 - Creche Entrance	62	16	684	767	0.081	62	63	0.1	0.1	5.108	A
3 - The Avenue	507	127	300	1395	0.363	508	446	0.8	0.6	4.106	A
4 - Main Street W	878	220	441	1078	0.815	1014	368	39.5	5.6	73.017	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	416	104	187	1440	0.289	416	931	0.6	0.4	3.663	A
2 - Creche Entrance	52	13	553	833	0.062	52	50	0.1	0.1	4.611	A
3 - The Avenue	425	106	251	1424	0.298	425	354	0.6	0.4	3.648	A
4 - Main Street W	736	184	369	1116	0.659	750	308	5.6	2.0	10.411	B

2032, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	14.78	B

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	6	1 - Main Street E	14.78	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2032	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1207	100.000
2 - Creche Entrance		ONE HOUR	✓	28	100.000
3 - The Avenue		ONE HOUR	✓	307	100.000
4 - Main Street W		ONE HOUR	✓	482	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	14	350	841
	2 - Creche Entrance	5	0	11	12
	3 - The Avenue	237	4	0	66
	4 - Main Street W	410	11	58	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.89	20.89	7.3	C	1108	1661
2 - Creche Entrance	0.07	9.40	0.1	A	26	39
3 - The Avenue	0.33	5.38	0.5	A	282	423
4 - Main Street W	0.45	5.77	0.8	A	442	663

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	909	227	57	1513	0.601	903	490	0.0	1.5	5.961	A
2 - Creche Entrance	21	5	938	640	0.033	21	22	0.0	0.0	5.906	A
3 - The Avenue	231	58	645	1195	0.193	230	313	0.0	0.2	3.792	A
4 - Main Street W	363	91	186	1215	0.299	361	690	0.0	0.4	4.301	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1085	271	68	1507	0.720	1081	587	1.5	2.5	8.545	A
2 - Creche Entrance	25	6	1123	548	0.046	25	26	0.0	0.0	7.002	A
3 - The Avenue	276	69	773	1120	0.246	276	375	0.2	0.3	4.331	A
4 - Main Street W	433	108	223	1195	0.363	433	826	0.4	0.6	4.824	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1329	332	84	1498	0.887	1312	719	2.5	6.8	18.249	C
2 - Creche Entrance	31	8	1364	427	0.072	31	32	0.0	0.1	9.221	A
3 - The Avenue	338	85	938	1024	0.330	337	456	0.3	0.5	5.325	A
4 - Main Street W	531	133	272	1168	0.454	530	1003	0.6	0.8	5.753	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1329	332	84	1498	0.887	1327	720	6.8	7.3	20.890	C
2 - Creche Entrance	31	8	1379	420	0.073	31	32	0.1	0.1	9.404	A
3 - The Avenue	338	85	949	1018	0.332	338	461	0.5	0.5	5.381	A
4 - Main Street W	531	133	273	1168	0.454	531	1014	0.8	0.8	5.774	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1085	271	68	1506	0.720	1103	589	7.3	2.7	9.505	A
2 - Creche Entrance	25	6	1146	536	0.047	25	26	0.1	0.1	7.159	A
3 - The Avenue	276	69	789	1111	0.248	277	382	0.5	0.3	4.390	A
4 - Main Street W	433	108	224	1195	0.363	434	842	0.8	0.6	4.848	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	909	227	57	1513	0.601	913	493	2.7	1.6	6.175	A
2 - Creche Entrance	21	5	949	635	0.033	21	22	0.1	0.0	5.963	A
3 - The Avenue	231	58	653	1190	0.194	231	317	0.3	0.2	3.818	A
4 - Main Street W	363	91	187	1214	0.299	363	697	0.6	0.4	4.329	A

2042, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	99.67	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-16	4 - Main Street W	99.67	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2042	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	588	100.000
2 - Creche Entrance		ONE HOUR	✓	73	100.000
3 - The Avenue		ONE HOUR	✓	594	100.000
4 - Main Street W		ONE HOUR	✓	1034	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	5	18	275	290
	2 - Creche Entrance	36	0	15	22
	3 - The Avenue	447	25	2	120
	4 - Main Street W	804	26	202	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	3	6
	2 - Creche Entrance	0	0	0	0
	3 - The Avenue	1	0	0	1
	4 - Main Street W	3	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.46	4.97	0.9	A	540	809
2 - Creche Entrance	0.12	5.86	0.1	A	67	100
3 - The Avenue	0.49	5.28	1.0	A	545	818
4 - Main Street W	1.13	214.37	74.2	F	949	1423

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	443	111	191	1437	0.308	441	964	0.0	0.5	3.756	A
2 - Creche Entrance	55	14	581	819	0.067	55	52	0.0	0.1	4.710	A
3 - The Avenue	447	112	266	1415	0.316	445	369	0.0	0.5	3.746	A
4 - Main Street W	778	195	386	1107	0.703	769	325	0.0	2.3	10.635	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	529	132	228	1416	0.373	528	1150	0.5	0.6	4.216	A
2 - Creche Entrance	66	16	694	762	0.086	66	62	0.1	0.1	5.168	A
3 - The Avenue	534	133	319	1385	0.386	533	441	0.5	0.6	4.271	A
4 - Main Street W	930	232	462	1066	0.872	915	390	2.3	5.9	22.602	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	647	162	251	1403	0.461	646	1311	0.6	0.9	4.945	A
2 - Creche Entrance	80	20	825	697	0.115	80	72	0.1	0.1	5.839	A
3 - The Avenue	654	164	390	1343	0.487	653	516	0.6	0.9	5.261	A
4 - Main Street W	1138	285	566	1010	1.127	996	477	5.9	41.4	98.385	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	647	162	254	1402	0.462	647	1320	0.9	0.9	4.968	A
2 - Creche Entrance	80	20	828	695	0.116	80	73	0.1	0.1	5.857	A
3 - The Avenue	654	164	391	1343	0.487	654	518	0.9	1.0	5.283	A
4 - Main Street W	1138	285	567	1010	1.128	1007	478	41.4	74.2	214.373	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	529	132	258	1399	0.378	530	1257	0.9	0.6	4.316	A
2 - Creche Entrance	66	16	722	748	0.088	66	65	0.1	0.1	5.279	A
3 - The Avenue	534	133	320	1384	0.386	535	468	1.0	0.6	4.294	A
4 - Main Street W	930	232	464	1065	0.873	1051	391	74.2	43.9	204.054	F

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	443	111	230	1415	0.313	443	1102	0.6	0.5	3.861	A
2 - Creche Entrance	55	14	617	800	0.069	55	56	0.1	0.1	4.829	A
3 - The Avenue	447	112	268	1414	0.316	448	405	0.6	0.5	3.771	A
4 - Main Street W	778	195	388	1106	0.704	944	328	43.9	2.6	45.849	E

2042, 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
2	Main Street x The Avenue	Standard Roundabout		1, 2, 3, 4	22.27	C

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	0	1 - Main Street E	22.27	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2042	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Main Street E		ONE HOUR	✓	1275	100.000
2 - Creche Entrance		ONE HOUR	✓	28	100.000
3 - The Avenue		ONE HOUR	✓	324	100.000
4 - Main Street W		ONE HOUR	✓	509	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	2	15	370	888
	2 - Creche Entrance	5	0	11	12
	3 - The Avenue	251	4	0	69
	4 - Main Street W	434	11	61	3

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - Main Street E	2 - Creche Entrance	3 - The Avenue	4 - Main Street W
From	1 - Main Street E	0	0	1	2
	2 - Creche Entrance	0	0	4	0
	3 - The Avenue	2	0	0	0
	4 - Main Street W	2	5	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Main Street E	0.94	33.16	12.1	D	1170	1755
2 - Creche Entrance	0.08	10.36	0.1	B	26	39
3 - The Avenue	0.36	5.78	0.6	A	297	446
4 - Main Street W	0.48	6.13	0.9	A	467	700

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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	960	240	59	1512	0.635	953	519	0.0	1.7	6.494	A
2 - Creche Entrance	21	5	989	615	0.034	21	22	0.0	0.0	6.161	A
3 - The Avenue	244	61	680	1174	0.208	243	330	0.0	0.3	3.926	A
4 - Main Street W	383	96	196	1209	0.317	381	727	0.0	0.5	4.433	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1146	287	70	1505	0.761	1141	621	1.7	3.1	9.921	A
2 - Creche Entrance	25	6	1184	517	0.049	25	27	0.0	0.1	7.437	A
3 - The Avenue	291	73	814	1096	0.266	291	395	0.3	0.4	4.542	A
4 - Main Street W	457	114	235	1188	0.385	456	870	0.5	0.6	5.024	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1404	351	86	1496	0.938	1374	760	3.1	10.5	25.470	D
2 - Creche Entrance	31	8	1428	395	0.078	31	33	0.1	0.1	10.034	B
3 - The Avenue	357	89	981	999	0.357	356	477	0.4	0.6	5.683	A
4 - Main Street W	560	140	288	1160	0.483	559	1049	0.6	0.9	6.107	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1404	351	86	1496	0.938	1397	762	10.5	12.1	33.162	D
2 - Creche Entrance	31	8	1451	384	0.080	31	33	0.1	0.1	10.364	B
3 - The Avenue	357	89	997	990	0.360	357	484	0.6	0.6	5.781	A
4 - Main Street W	560	140	288	1160	0.483	560	1066	0.9	0.9	6.134	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 side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	1146	287	71	1505	0.762	1181	624	12.1	3.4	12.433	B
2 - Creche Entrance	25	6	1224	497	0.051	25	27	0.1	0.1	7.757	A
3 - The Avenue	291	73	842	1080	0.270	292	407	0.6	0.4	4.651	A
4 - Main Street W	457	114	236	1188	0.385	458	898	0.9	0.6	5.054	A

18:00 - 18:15

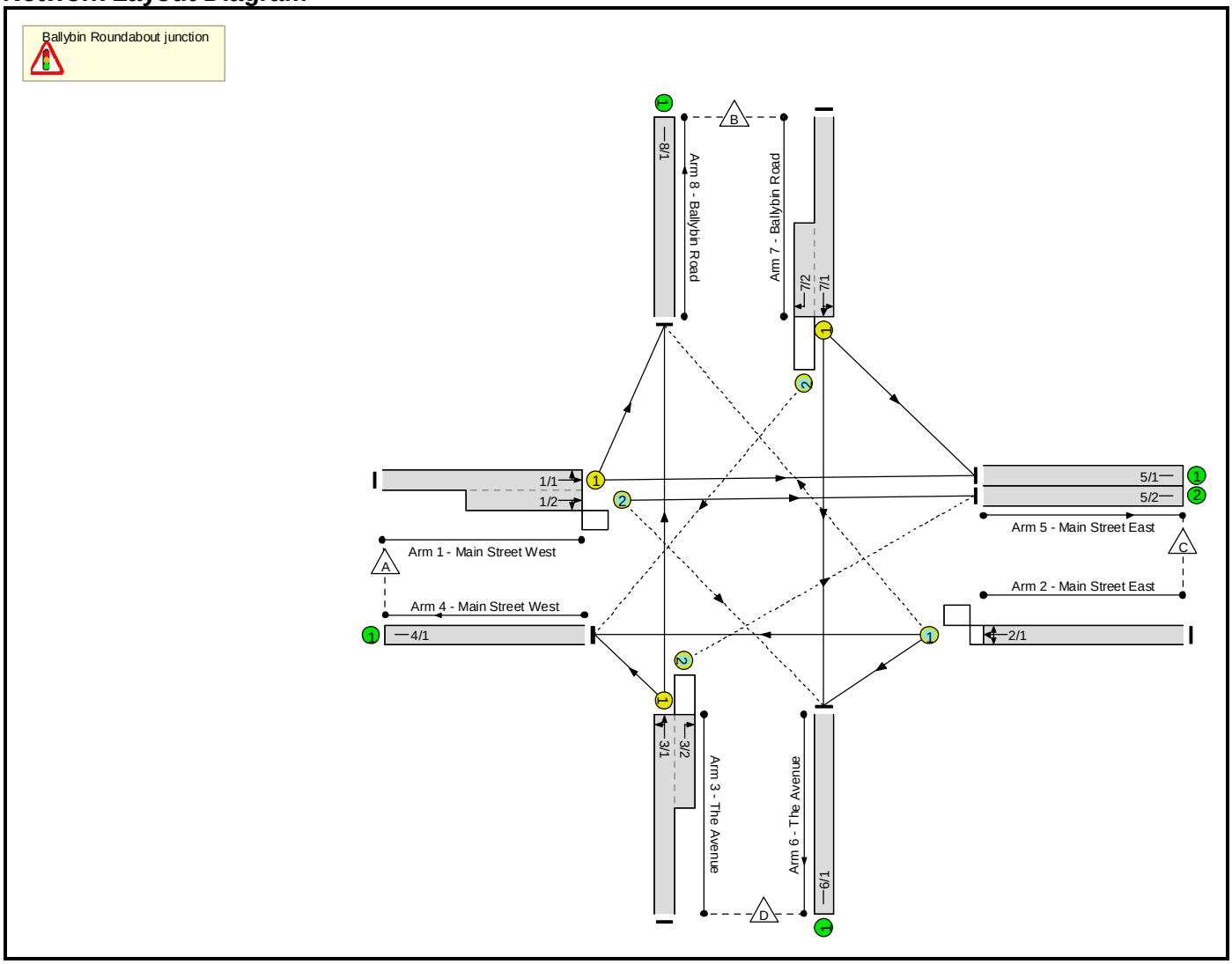
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Main Street E	960	240	59	1512	0.635	966	522	3.4	1.8	6.811	A
2 - Creche Entrance	21	5	1003	608	0.035	21	23	0.1	0.0	6.239	A
3 - The Avenue	244	61	690	1169	0.209	244	334	0.4	0.3	3.961	A
4 - Main Street W	383	96	198	1209	0.317	383	736	0.6	0.5	4.463	A

Full Input Data And Results

User and Project Details

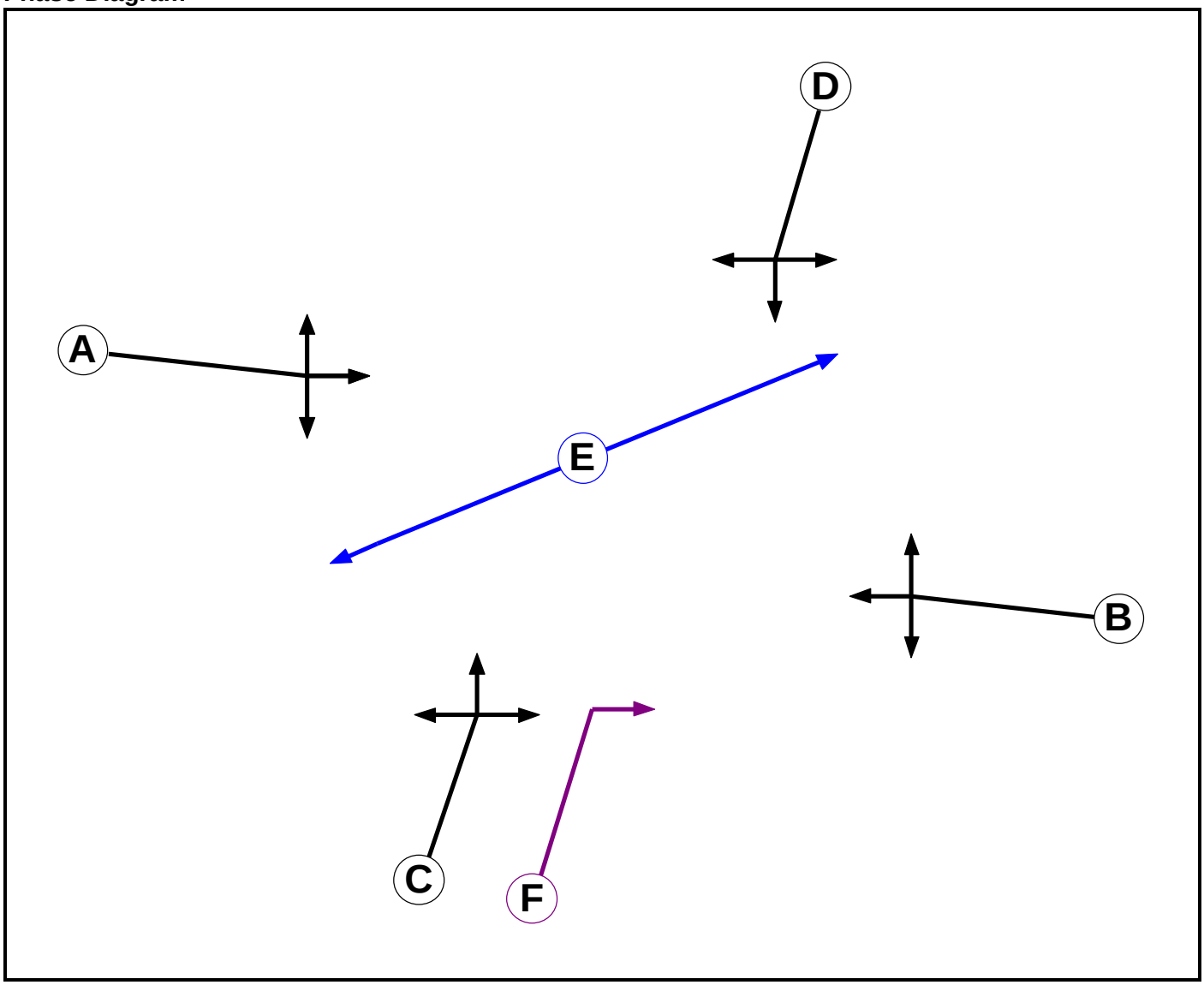
Project:	**Ballybin Road, Ratoath**
Title:	**Ballybin Rbt signalisation**
Location:	
Additional detail:	
File name:	Ballybin Rbt Junction 140324.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		6	6
F	Ind. Arrow	C	4	4

Full Input Data And Results

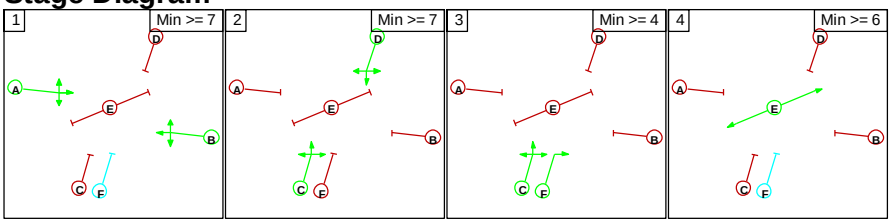
Phase Intergreens Matrix

	Starting Phase						
Terminating Phase		A	B	C	D	E	F
	A		-	6	6	6	-
	B	-		6	6	6	-
	C	5	5		-	6	-
	D	5	5	-		6	4
	E	7	7	7	7		-
	F	-	-	-	4	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C D
3	C F
4	E

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

	To Stage				
From Stage		1	2	3	4
	1		6	X	6
	2	5		4	6
	3	5	4		6
	4	7	7	X	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Ballybin Roundabout junction											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/2 (Main Street West)	6/1 (Right)	1439	0	2/1	1.09	To 4/1 (Ahead) To 6/1 (Left)	2.00	2.00	0.50	2	2.00
2/1 (Main Street East)	8/1 (Right)	1439	0	1/2	1.09	None	3.00	2.00	0.50	3	2.00
				1/1	1.09	To 5/1 (Ahead) To 8/1 (Left)					
3/2 (The Avenue)	5/2 (Right)	1439	0	7/1	1.09	All	3.00	-	0.50	3	2.00
7/2 (Ballybin Road)	4/1 (Right)	1439	0	3/1	1.09	To 4/1 (Left) To 8/1 (Ahead)	4.00	-	0.50	4	2.00

Full Input Data And Results

Lane Input Data

Junction: Ballybin Roundabout junction												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Main Street West)	U	A	2	3	43.5	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	12.00
1/2 (Main Street West)	O	A	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
2/1 (Main Street East)	O	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	12.00
											Arm 8 Right	15.00
3/1 (The Avenue)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Left	12.00
											Arm 8 Ahead	Inf
3/2 (The Avenue)	O	C F	2	3	7.0	Geom	-	3.25	0.00	Y	Arm 5 Right	15.00
4/1 (Main Street West)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Main Street East)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2 (Main Street East)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (The Avenue)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Ballybin Road)	U	D	2	3	60.0	Geom	-	2.75	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
7/2 (Ballybin Road)	O	D	2	3	7.0	Geom	-	3.25	0.00	Y	Arm 4 Right	15.00
8/1 (Ballybin Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Base 2023'	08:00	09:00	01:00	
2: 'PM Base 2023'	16:15	17:15	01:00	
3: 'AM Base 2027'	08:00	09:00	01:00	
4: 'PM Base 2027'	16:15	17:15	01:00	
5: 'AM Base 2027 + Comm Dev'	08:00	09:00	01:00	
6: 'PM Base 2027 + Comm Dev'	16:15	17:15	01:00	
7: 'AM Base 2027 + Comm Dev + Dev'	08:00	09:00	01:00	
8: 'PM Base 2027 + Comm Dev + Dev'	16:15	17:15	01:00	
9: 'AM Base 2032'	08:00	09:00	01:00	
10: 'PM Base 2032'	16:15	17:15	01:00	
11: 'AM Base 2032 + Comm Dev'	08:00	09:00	01:00	
12: 'PM Base 2032 + Comm Dev'	16:15	17:15	01:00	
13: 'AM Base 2032 + Comm Dev + Dev'	08:00	09:00	01:00	
14: 'PM Base 2032 + Comm Dev + Dev'	16:15	17:15	01:00	
15: 'AM Base 2042'	08:00	09:00	01:00	
16: 'PM Base 2042'	16:15	17:15	01:00	
17: 'AM Base 2042 + Comm Dev'	08:00	09:00	01:00	
18: 'PM Base 2042 + Comm Dev'	16:15	17:15	01:00	
19: 'AM Base 2042 + Comm Dev + Dev'	08:00	09:00	01:00	
20: 'PM Base 2042 + Comm Dev + Dev'	16:15	17:15	01:00	

Scenario 1: 'AM Base 2023' (FG1: 'AM Base 2023', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	177	492	191	860
	B	66	0	25	65	156
	C	171	28	0	178	377
	D	118	104	302	0	524
	Tot.	355	309	819	434	1917

Traffic Lane Flows

Lane	Scenario 1: AM Base 2023
Junction: Ballybin Roundabout junction	
1/1 (with short)	860(In) 539(Out)
1/2 (short)	321
2/1	377
3/1 (with short)	524(In) 222(Out)
3/2 (short)	302
4/1	355
5/1	387
5/2	432
6/1	434
7/1 (with short)	156(In) 90(Out)
7/2 (short)	66
8/1	309

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	67.2 %	1864	1864
				Arm 8 Left	12.00	32.8 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	40.5 %	1807	1807
				Arm 6 Right	15.00	59.5 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.4 %	1796	1796
				Arm 6 Left	12.00	47.2 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.2 %	1819	1819
				Arm 8 Ahead	Inf	46.8 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	27.8 %	1827	1827
				Arm 6 Ahead	Inf	72.2 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM Base 2023' (FG2: 'PM Base 2023', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	145	217	60	422
	B	208	0	18	91	317
	C	535	31	0	231	797
	D	69	84	129	0	282
	Tot.	812	260	364	382	1818

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM Base 2023
Junction: Ballybin Roundabout junction	
1/1 (with short)	422(In) 206(Out)
1/2 (short)	216
2/1	797
3/1 (with short)	282(In) 153(Out)
3/2 (short)	129
4/1	812
5/1	79
5/2	285
6/1	382
7/1 (with short)	317(In) 109(Out)
7/2 (short)	208
8/1	260

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.6 %	1783	1783
				Arm 8 Left	12.00	70.4 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.2 %	1863	1863
				Arm 6 Right	15.00	27.8 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.1 %	1841	1841
				Arm 6 Left	12.00	29.0 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	45.1 %	1836	1836
				Arm 8 Ahead	Inf	54.9 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.5 %	1852	1852
				Arm 6 Ahead	Inf	83.5 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM Base 2027' (FG3: 'AM Base 2027', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	189	525	203	917
	B	71	0	27	69	167
	C	183	30	0	190	403
	D	126	111	322	0	559
	Tot.	380	330	874	462	2046

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: AM Base 2027
Junction: Ballybin Roundabout junction	
1/1 (with short)	917(In) 590(Out)
1/2 (short)	327
2/1	403
3/1 (with short)	559(In) 237(Out)
3/2 (short)	322
4/1	380
5/1	428
5/2	446
6/1	462
7/1 (with short)	167(In) 96(Out)
7/2 (short)	71
8/1	330

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	68.0 %	1865	1865
				Arm 8 Left	12.00	32.0 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	37.9 %	1803	1803
				Arm 6 Right	15.00	62.1 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.4 %	1796	1796
				Arm 6 Left	12.00	47.1 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.2 %	1819	1819
				Arm 8 Ahead	Inf	46.8 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	28.1 %	1826	1826
				Arm 6 Ahead	Inf	71.9 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM Base 2027' (FG4: 'PM Base 2027', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	155	232	64	451
	B	222	0	19	97	338
	C	570	33	0	246	849
	D	73	90	138	0	301
	Tot.	865	278	389	407	1939

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM Base 2027
Junction: Ballybin Roundabout junction	
1/1 (with short)	451(In) 221(Out)
1/2 (short)	230
2/1	849
3/1 (with short)	301(In) 163(Out)
3/2 (short)	138
4/1	865
5/1	85
5/2	304
6/1	407
7/1 (with short)	338(In) 116(Out)
7/2 (short)	222
8/1	278

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.9 %	1784	1784
				Arm 8 Left	12.00	70.1 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.2 %	1863	1863
				Arm 6 Right	15.00	27.8 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.1 %	1841	1841
				Arm 6 Left	12.00	29.0 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	44.8 %	1837	1837
				Arm 8 Ahead	Inf	55.2 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.4 %	1852	1852
				Arm 6 Ahead	Inf	83.6 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'AM Base 2027 + Comm Dev' (FG5: 'AM Base 2027 + Comm Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	189	525	203	917
	B	71	0	27	69	167
	C	183	30	0	190	403
	D	126	111	322	0	559
	Tot.	380	330	874	462	2046

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: AM Base 2027 + Comm Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	917(In) 590(Out)
1/2 (short)	327
2/1	403
3/1 (with short)	559(In) 237(Out)
3/2 (short)	322
4/1	380
5/1	428
5/2	446
6/1	462
7/1 (with short)	167(In) 96(Out)
7/2 (short)	71
8/1	330

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	68.0 %	1865	1865
				Arm 8 Left	12.00	32.0 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	37.9 %	1803	1803
				Arm 6 Right	15.00	62.1 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.4 %	1796	1796
				Arm 6 Left	12.00	47.1 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.2 %	1819	1819
				Arm 8 Ahead	Inf	46.8 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	28.1 %	1826	1826
				Arm 6 Ahead	Inf	71.9 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'PM Base 2027 + Comm Dev' (FG6: 'PM Base 2027 + Comm Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	155	232	64	451
	B	222	0	19	97	338
	C	570	33	0	246	849
	D	73	90	138	0	301
	Tot.	865	278	389	407	1939

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: PM Base 2027 + Comm Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	451(In) 221(Out)
1/2 (short)	230
2/1	849
3/1 (with short)	301(In) 163(Out)
3/2 (short)	138
4/1	865
5/1	85
5/2	304
6/1	407
7/1 (with short)	338(In) 116(Out)
7/2 (short)	222
8/1	278

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.9 %	1784	1784
				Arm 8 Left	12.00	70.1 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.2 %	1863	1863
				Arm 6 Right	15.00	27.8 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.1 %	1841	1841
				Arm 6 Left	12.00	29.0 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	44.8 %	1837	1837
				Arm 8 Ahead	Inf	55.2 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.4 %	1852	1852
				Arm 6 Ahead	Inf	83.6 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 7: 'AM Base 2027 + Comm Dev + Dev' (FG7: 'AM Base 2027 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	191	525	203	919
	B	77	0	69	78	224
	C	183	42	0	190	415
	D	128	111	322	0	561
	Tot.	388	344	916	471	2119

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 7: AM Base 2027 + Comm Dev + Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	919(In) 603(Out)
1/2 (short)	316
2/1	415
3/1 (with short)	561(In) 239(Out)
3/2 (short)	322
4/1	388
5/1	481
5/2	435
6/1	471
7/1 (with short)	224(In) 147(Out)
7/2 (short)	77
8/1	344

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	68.3 %	1866	1866
				Arm 8 Left	12.00	31.7 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	35.8 %	1799	1799
				Arm 6 Right	15.00	64.2 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	44.1 %	1794	1794
				Arm 6 Left	12.00	45.8 %		
				Arm 8 Right	15.00	10.1 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.6 %	1818	1818
				Arm 8 Ahead	Inf	46.4 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	46.9 %	1785	1785
				Arm 6 Ahead	Inf	53.1 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: 'PM Base 2027 + Comm Dev + Dev' (FG8: 'PM Base 2027 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	159	232	64	455
	B	225	0	39	101	365
	C	570	63	0	246	879
	D	79	90	138	0	307
	Tot.	874	312	409	411	2006

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: PM Base 2027 + Comm Dev + Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	455(In) 222(Out)
1/2 (short)	233
2/1	879
3/1 (with short)	307(In) 169(Out)
3/2 (short)	138
4/1	874
5/1	102
5/2	307
6/1	411
7/1 (with short)	365(In) 140(Out)
7/2 (short)	225
8/1	312

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	28.4 %	1781	1781
				Arm 8 Left	12.00	71.6 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.5 %	1864	1864
				Arm 6 Right	15.00	27.5 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	64.8 %	1838	1838
				Arm 6 Left	12.00	28.0 %		
				Arm 8 Right	15.00	7.2 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	46.7 %	1833	1833
				Arm 8 Ahead	Inf	53.3 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	27.9 %	1826	1826
				Arm 6 Ahead	Inf	72.1 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 9: 'AM Base 2032' (FG9: 'AM Base 2032', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	202	558	215	975
	B	76	0	29	74	179
	C	196	32	0	203	431
	D	134	118	341	0	593
	Tot.	406	352	928	492	2178

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 9: AM Base 2032
Junction: Ballybin Roundabout junction	
1/1 (with short)	975(In) 640(Out)
1/2 (short)	335
2/1	431
3/1 (with short)	593(In) 252(Out)
3/2 (short)	341
4/1	406
5/1	467
5/2	461
6/1	492
7/1 (with short)	179(In) 103(Out)
7/2 (short)	76
8/1	352

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	68.4 %	1866	1866
				Arm 8 Left	12.00	31.6 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	35.8 %	1800	1800
				Arm 6 Right	15.00	64.2 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.5 %	1796	1796
				Arm 6 Left	12.00	47.1 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.2 %	1819	1819
				Arm 8 Ahead	Inf	46.8 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	28.2 %	1826	1826
				Arm 6 Ahead	Inf	71.8 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 10: 'PM Base 2032' (FG10: 'PM Base 2032', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	164	246	68	478
	B	236	0	20	103	359
	C	605	35	0	261	901
	D	77	95	147	0	319
	Tot.	918	294	413	432	2057

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 10: PM Base 2032
Junction: Ballybin Roundabout junction	
1/1 (with short)	478(In) 234(Out)
1/2 (short)	244
2/1	901
3/1 (with short)	319(In) 172(Out)
3/2 (short)	147
4/1	918
5/1	90
5/2	323
6/1	432
7/1 (with short)	359(In) 123(Out)
7/2 (short)	236
8/1	294

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.9 %	1784	1784
				Arm 8 Left	12.00	70.1 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.1 %	1863	1863
				Arm 6 Right	15.00	27.9 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.1 %	1841	1841
				Arm 6 Left	12.00	29.0 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	44.8 %	1837	1837
				Arm 8 Ahead	Inf	55.2 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.3 %	1852	1852
				Arm 6 Ahead	Inf	83.7 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 11: 'AM Base 2032 + Comm Dev' (FG11: 'AM Base 2032 + Comm Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	202	558	215	975
	B	76	0	29	74	179
	C	196	32	0	203	431
	D	134	118	341	0	593
	Tot.	406	352	928	492	2178

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 11: AM Base 2032 + Comm Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	975(In) 611(Out)
1/2 (short)	364
2/1	431
3/1 (with short)	593(In) 252(Out)
3/2 (short)	341
4/1	406
5/1	438
5/2	490
6/1	492
7/1 (with short)	179(In) 103(Out)
7/2 (short)	76
8/1	352

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	66.9 %	1863	1863
				Arm 8 Left	12.00	33.1 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	40.9 %	1808	1808
				Arm 6 Right	15.00	59.1 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.5 %	1796	1796
				Arm 6 Left	12.00	47.1 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.2 %	1819	1819
				Arm 8 Ahead	Inf	46.8 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	28.2 %	1826	1826
				Arm 6 Ahead	Inf	71.8 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 12: 'PM Base 2032 + Comm Dev' (FG12: 'PM Base 2032 + Comm Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	164	246	68	478
	B	236	0	20	103	359
	C	605	35	0	261	901
	D	77	95	147	0	319
	Tot.	918	294	413	432	2057

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 12: PM Base 2032 + Comm Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	478(In) 234(Out)
1/2 (short)	244
2/1	901
3/1 (with short)	319(In) 172(Out)
3/2 (short)	147
4/1	918
5/1	90
5/2	323
6/1	432
7/1 (with short)	359(In) 123(Out)
7/2 (short)	236
8/1	294

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.9 %	1784	1784
				Arm 8 Left	12.00	70.1 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.1 %	1863	1863
				Arm 6 Right	15.00	27.9 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.1 %	1841	1841
				Arm 6 Left	12.00	29.0 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	44.8 %	1837	1837
				Arm 8 Ahead	Inf	55.2 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.3 %	1852	1852
				Arm 6 Ahead	Inf	83.7 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 13: 'AM Base 2032 + Comm Dev + Dev' (FG13: 'AM Base 2032 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	204	558	215	977
	B	82	0	71	82	235
	C	196	44	0	203	443
	D	136	118	341	0	595
	Tot.	414	366	970	500	2250

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 13: AM Base 2032 + Comm Dev + Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	977(In) 725(Out)
1/2 (short)	252
2/1	443
3/1 (with short)	595(In) 254(Out)
3/2 (short)	341
4/1	414
5/1	592
5/2	378
6/1	500
7/1 (with short)	235(In) 153(Out)
7/2 (short)	82
8/1	366

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.9 %	1874	1874
				Arm 8 Left	12.00	28.1 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	14.7 %	1764	1764
				Arm 6 Right	15.00	85.3 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	44.2 %	1794	1794
				Arm 6 Left	12.00	45.8 %		
				Arm 8 Right	15.00	9.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.5 %	1818	1818
				Arm 8 Ahead	Inf	46.5 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	46.4 %	1786	1786
				Arm 6 Ahead	Inf	53.6 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 14: 'PM Base 2032 + Comm Dev + Dev' (FG14: 'PM Base 2032 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	169	246	68	483
	B	239	0	40	107	386
	C	605	65	0	261	931
	D	83	95	147	0	325
	Tot.	927	329	433	436	2125

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 14: PM Base 2032 + Comm Dev + Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	483(In) 236(Out)
1/2 (short)	247
2/1	931
3/1 (with short)	325(In) 178(Out)
3/2 (short)	147
4/1	927
5/1	107
5/2	326
6/1	436
7/1 (with short)	386(In) 147(Out)
7/2 (short)	239
8/1	329

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	28.4 %	1781	1781
				Arm 8 Left	12.00	71.6 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.5 %	1864	1864
				Arm 6 Right	15.00	27.5 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	65.0 %	1838	1838
				Arm 6 Left	12.00	28.0 %		
				Arm 8 Right	15.00	7.0 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	46.6 %	1833	1833
				Arm 8 Ahead	Inf	53.4 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	27.2 %	1828	1828
				Arm 6 Ahead	Inf	72.8 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 15: 'AM Base 2042' (FG15: 'AM Base 2042', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	215	590	227	1032
	B	81	0	31	78	190
	C	209	34	0	215	458
	D	142	124	359	0	625
	Tot.	432	373	980	520	2305

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 15: AM Base 2042
Junction: Ballybin Roundabout junction	
1/1 (with short)	1032(In) 702(Out)
1/2 (short)	330
2/1	458
3/1 (with short)	625(In) 266(Out)
3/2 (short)	359
4/1	432
5/1	518
5/2	462
6/1	520
7/1 (with short)	190(In) 109(Out)
7/2 (short)	81
8/1	373

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	69.4 %	1868	1868
				Arm 8 Left	12.00	30.6 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	31.2 %	1792	1792
				Arm 6 Right	15.00	68.8 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.6 %	1796	1796
				Arm 6 Left	12.00	46.9 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.4 %	1819	1819
				Arm 8 Ahead	Inf	46.6 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	28.4 %	1825	1825
				Arm 6 Ahead	Inf	71.6 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 16: 'PM Base 2042' (FG16: 'PM Base 2042', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	174	261	71	506
	B	251	0	21	109	381
	C	638	37	0	275	950
	D	81	100	156	0	337
	Tot.	970	311	438	455	2174

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 16: PM Base 2042
Junction: Ballybin Roundabout junction	
1/1 (with short)	506(In) 247(Out)
1/2 (short)	259
2/1	950
3/1 (with short)	337(In) 181(Out)
3/2 (short)	156
4/1	970
5/1	94
5/2	344
6/1	455
7/1 (with short)	381(In) 130(Out)
7/2 (short)	251
8/1	311

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.6 %	1783	1783
				Arm 8 Left	12.00	70.4 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.6 %	1864	1864
				Arm 6 Right	15.00	27.4 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.2 %	1841	1841
				Arm 6 Left	12.00	28.9 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	44.8 %	1837	1837
				Arm 8 Ahead	Inf	55.2 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.2 %	1853	1853
				Arm 6 Ahead	Inf	83.8 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 17: 'AM Base 2042 + Comm Dev' (FG17: 'AM Base 2042 + Comm Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	215	590	227	1032
	B	81	0	31	78	190
	C	209	34	0	215	458
	D	142	124	359	0	625
	Tot.	432	373	980	520	2305

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 17: AM Base 2042 + Comm Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	1032(In) 702(Out)
1/2 (short)	330
2/1	458
3/1 (with short)	625(In) 266(Out)
3/2 (short)	359
4/1	432
5/1	518
5/2	462
6/1	520
7/1 (with short)	190(In) 109(Out)
7/2 (short)	81
8/1	373

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	69.4 %	1868	1868
				Arm 8 Left	12.00	30.6 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	31.2 %	1792	1792
				Arm 6 Right	15.00	68.8 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	45.6 %	1796	1796
				Arm 6 Left	12.00	46.9 %		
				Arm 8 Right	15.00	7.4 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.4 %	1819	1819
				Arm 8 Ahead	Inf	46.6 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	28.4 %	1825	1825
				Arm 6 Ahead	Inf	71.6 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 18: 'PM Base 2042 + Comm Dev' (FG18: 'PM Base 2042 + Comm Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	174	261	71	506
	B	251	0	21	109	381
	C	638	37	0	275	950
	D	81	100	156	0	337
	Tot.	970	311	438	455	2174

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 18: PM Base 2042 + Comm Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	506(In) 247(Out)
1/2 (short)	259
2/1	950
3/1 (with short)	337(In) 181(Out)
3/2 (short)	156
4/1	970
5/1	94
5/2	344
6/1	455
7/1 (with short)	381(In) 130(Out)
7/2 (short)	251
8/1	311

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	29.6 %	1783	1783
				Arm 8 Left	12.00	70.4 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.6 %	1864	1864
				Arm 6 Right	15.00	27.4 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	67.2 %	1841	1841
				Arm 6 Left	12.00	28.9 %		
				Arm 8 Right	15.00	3.9 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	44.8 %	1837	1837
				Arm 8 Ahead	Inf	55.2 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	16.2 %	1853	1853
				Arm 6 Ahead	Inf	83.8 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 19: 'AM Base 2042 + Comm Dev + Dev' (FG19: 'AM Base 2042 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	217	590	227	1034
	B	87	0	74	87	248
	C	209	46	0	215	470
	D	144	124	359	0	627
	Tot.	440	387	1023	529	2379

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 19: AM Base 2042 + Comm Dev + Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	1034(In) 710(Out)
1/2 (short)	324
2/1	470
3/1 (with short)	627(In) 268(Out)
3/2 (short)	359
4/1	440
5/1	567
5/2	456
6/1	529
7/1 (with short)	248(In) 161(Out)
7/2 (short)	87
8/1	387

Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	69.4 %	1869	1869
				Arm 8 Left	12.00	30.6 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	29.9 %	1790	1790
				Arm 6 Right	15.00	70.1 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	44.5 %	1795	1795
				Arm 6 Left	12.00	45.7 %		
				Arm 8 Right	15.00	9.8 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	53.7 %	1818	1818
				Arm 8 Ahead	Inf	46.3 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	46.0 %	1787	1787
				Arm 6 Ahead	Inf	54.0 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 20: 'PM Base 2042 + Comm Dev + Dev' (FG20: 'PM Base 2042 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	178	261	71	510
	B	253	0	41	113	407
	C	638	67	0	275	980
	D	87	100	156	0	343
	Tot.	978	345	458	459	2240

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 20: PM Base 2042 + Comm Dev + Dev
Junction: Ballybin Roundabout junction	
1/1 (with short)	510(In) 249(Out)
1/2 (short)	261
2/1	980
3/1 (with short)	343(In) 187(Out)
3/2 (short)	156
4/1	978
5/1	112
5/2	346
6/1	459
7/1 (with short)	407(In) 154(Out)
7/2 (short)	253
8/1	345

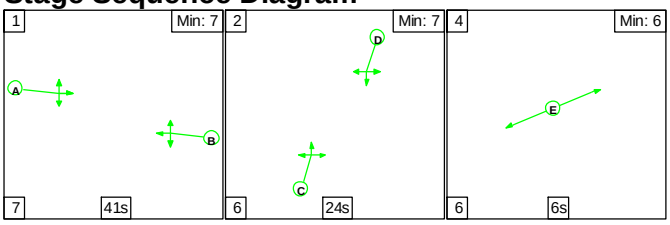
Full Input Data And Results

Lane Saturation Flows

Junction: Ballybin Roundabout junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Main Street West)	3.25	0.00	Y	Arm 5 Ahead	Inf	28.5 %	1781	1781
				Arm 8 Left	12.00	71.5 %		
1/2 (Main Street West)	3.00	0.00	Y	Arm 5 Ahead	Inf	72.8 %	1864	1864
				Arm 6 Right	15.00	27.2 %		
2/1 (Main Street East)	3.00	0.00	Y	Arm 4 Ahead	Inf	65.1 %	1838	1838
				Arm 6 Left	12.00	28.1 %		
				Arm 8 Right	15.00	6.8 %		
3/1 (The Avenue)	3.25	0.00	Y	Arm 4 Left	12.00	46.5 %	1833	1833
				Arm 8 Ahead	Inf	53.5 %		
3/2 (The Avenue)	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (Main Street West Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Main Street East Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Main Street East Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (The Avenue Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Ballybin Road)	2.75	0.00	Y	Arm 5 Left	12.00	26.6 %	1829	1829
				Arm 6 Ahead	Inf	73.4 %		
7/2 (Ballybin Road)	3.25	0.00	Y	Arm 4 Right	15.00	100.0 %	1764	1764
8/1 (Ballybin Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM Base 2023' (FG1: 'AM Base 2023', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

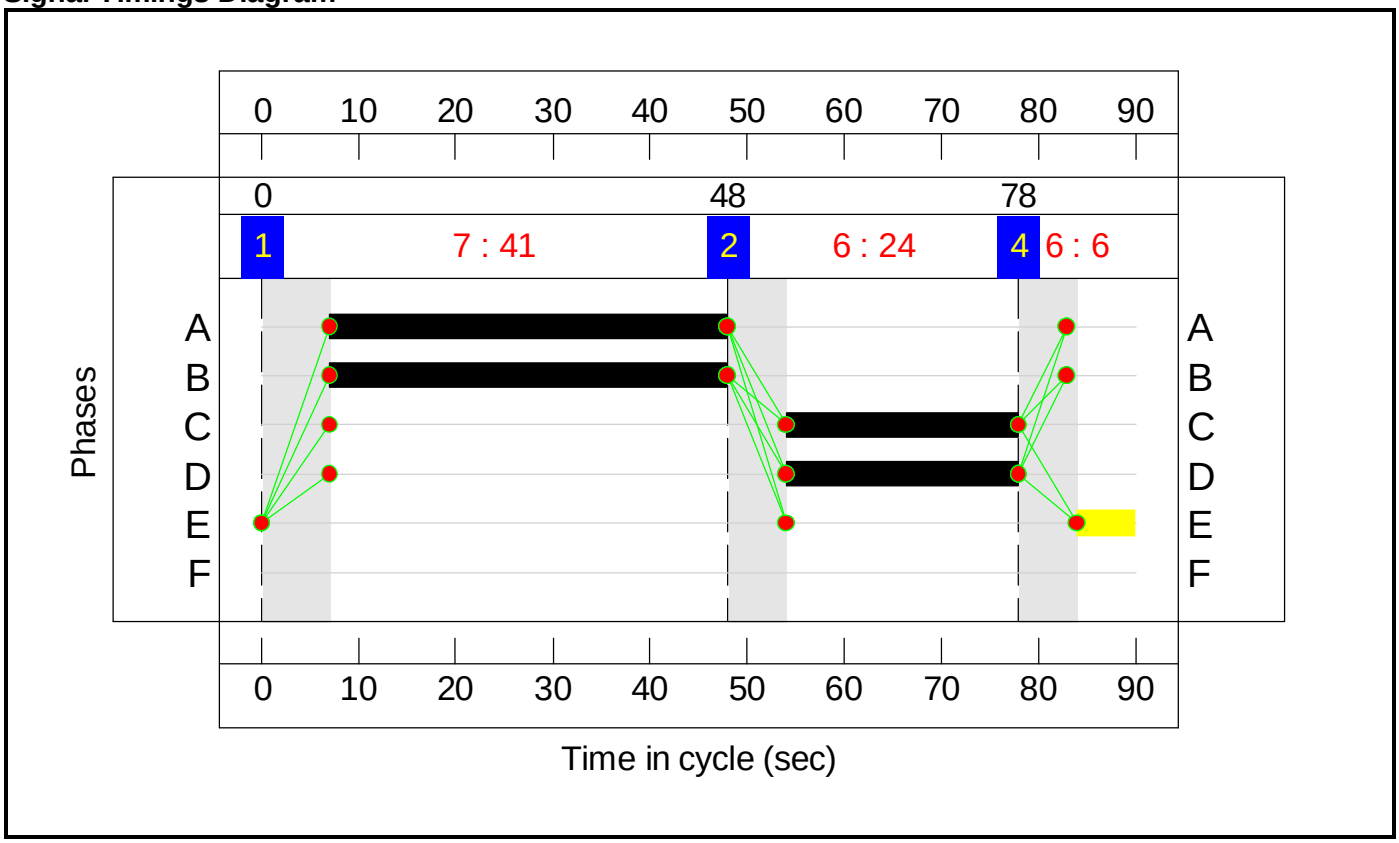


Stage Timings

Stage	1	2	4
Duration	41	24	6
Change Point	0	48	78

Full Input Data And Results

Signal Timings Diagram

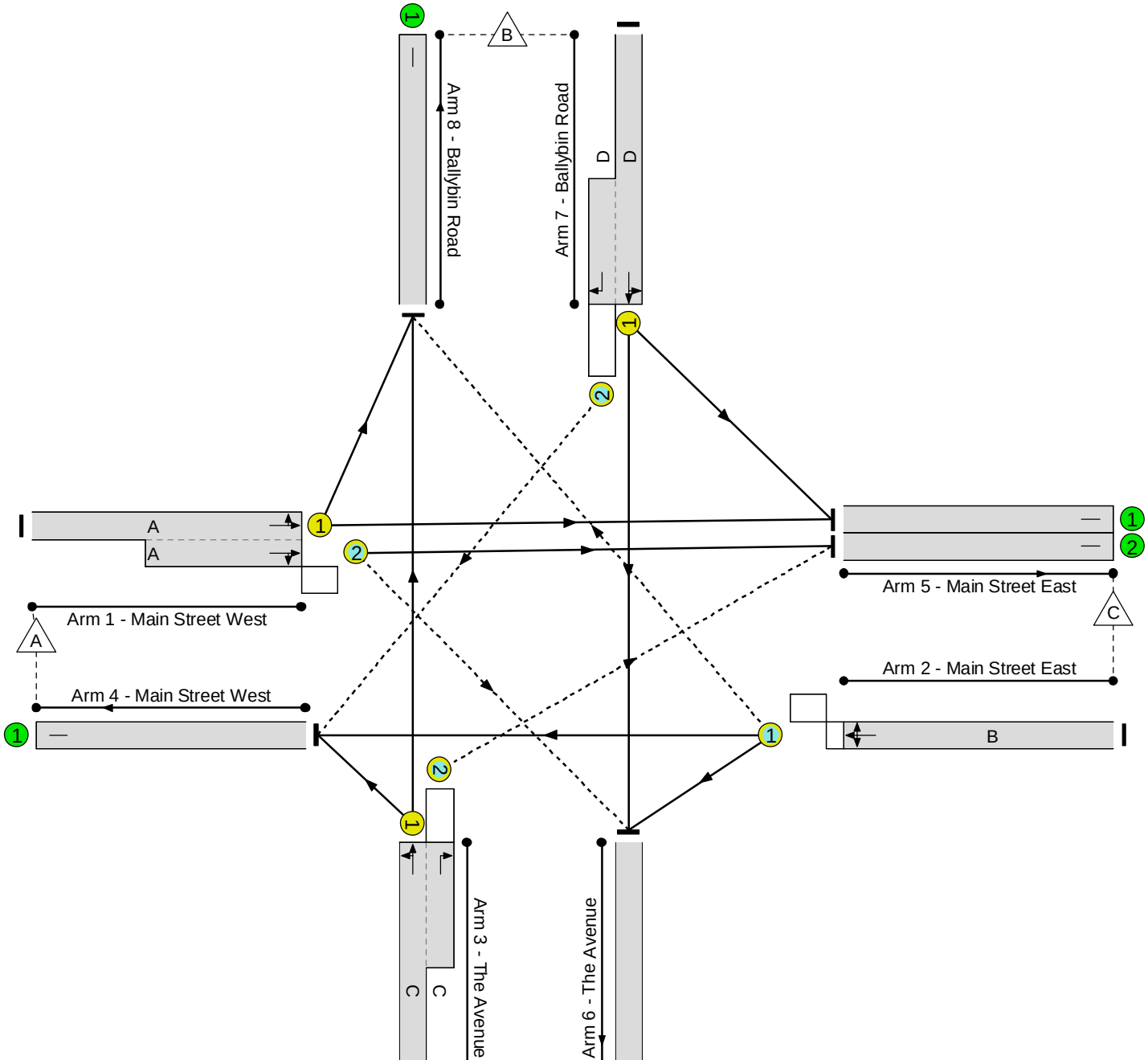


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 14.7 %
Total Traffic Delay: 15.8 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.5%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.5%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	41	-	860	1864:1807	687+409	78.5 : 78.5%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	41	-	377	1796	838	45.0%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	24	0	524	1819:1764	297+400	74.7 : 75.5%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	355	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	434	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	24	-	156	1827:1764	407+298	22.1 : 22.1%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	309	Inf	Inf	0.0%

Full Input Data And Results

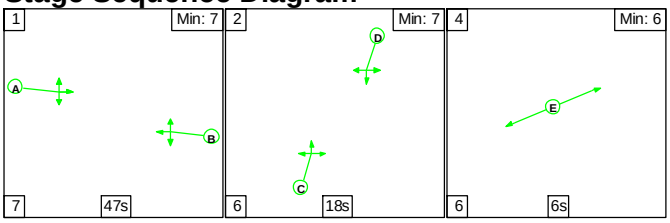
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**582**	**0**	**5**	**11.2**	**3.8**	**0.8**	**15.8**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**582**	**0**	**5**	**11.2**	**3.8**	**0.8**	**15.8**	**-**	**-**	**-**	**-**
1/1+1/2	860	860	191	0	0	4.3	1.8	0.3	6.4	27.0	11.3	1.8	13.1
2/1	377	377	28	0	0	1.7	0.4	0.1	2.2	20.8	6.3	0.4	6.7
3/1+3/2	524	524	299	0	3	4.1	1.5	0.3	5.9	40.4	6.7	1.5	8.2
4/1	355	355	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	434	434	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	156	156	65	0	1	1.1	0.1	0.1	1.3	30.5	1.7	0.1	1.8
8/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 14.7 Total Delay for Signalled Lanes (pcuHr): 15.82 Cycle Time (s): 90
PRC Over All Lanes (%): 14.7 Total Delay Over All Lanes(pcuHr): 15.82

Full Input Data And Results

Scenario 2: 'PM Base 2023' (FG2: 'PM Base 2023', Plan 1: 'Network Control Plan 1')

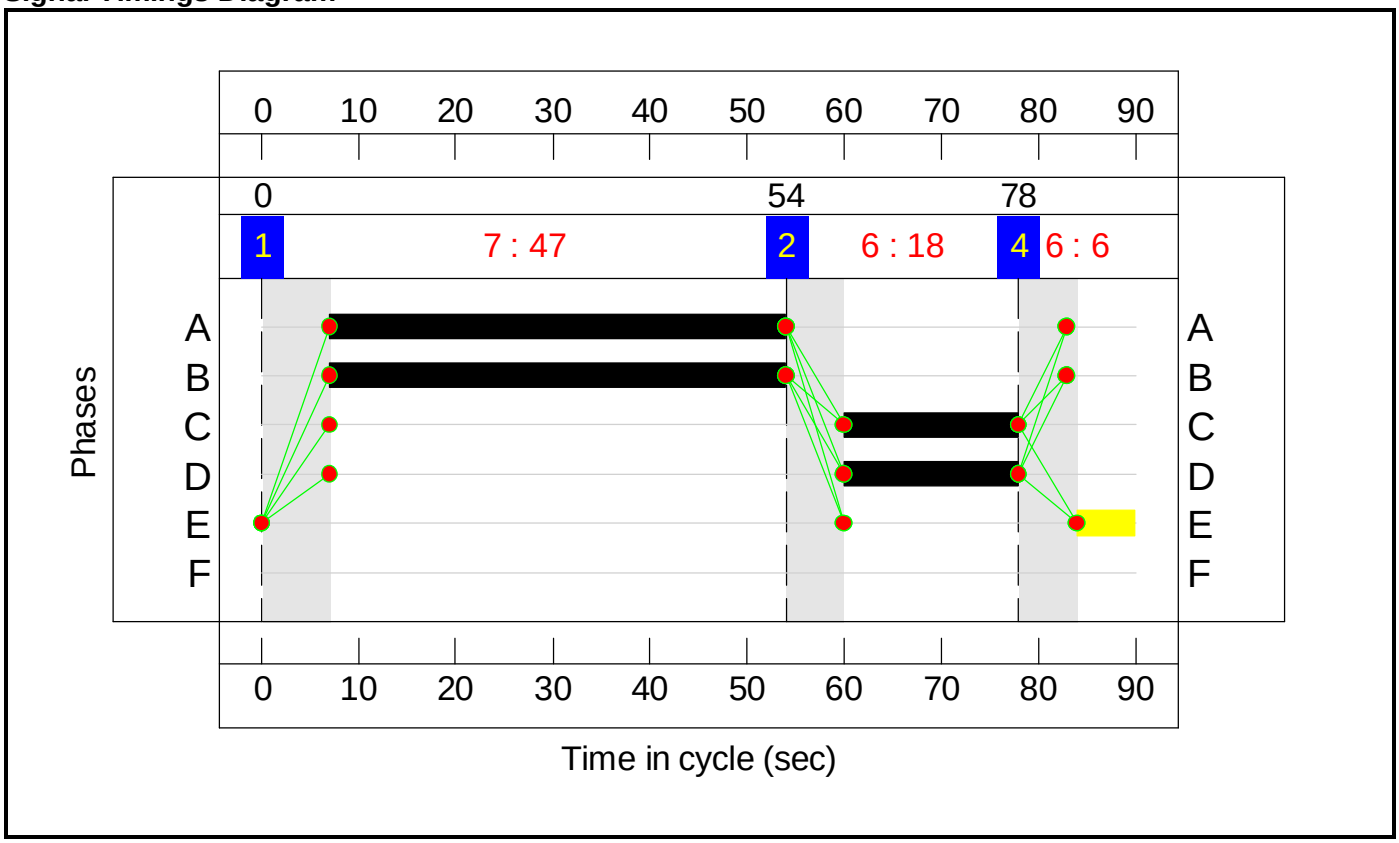
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	47	18	6
Change Point	0	54	78

Signal Timings Diagram

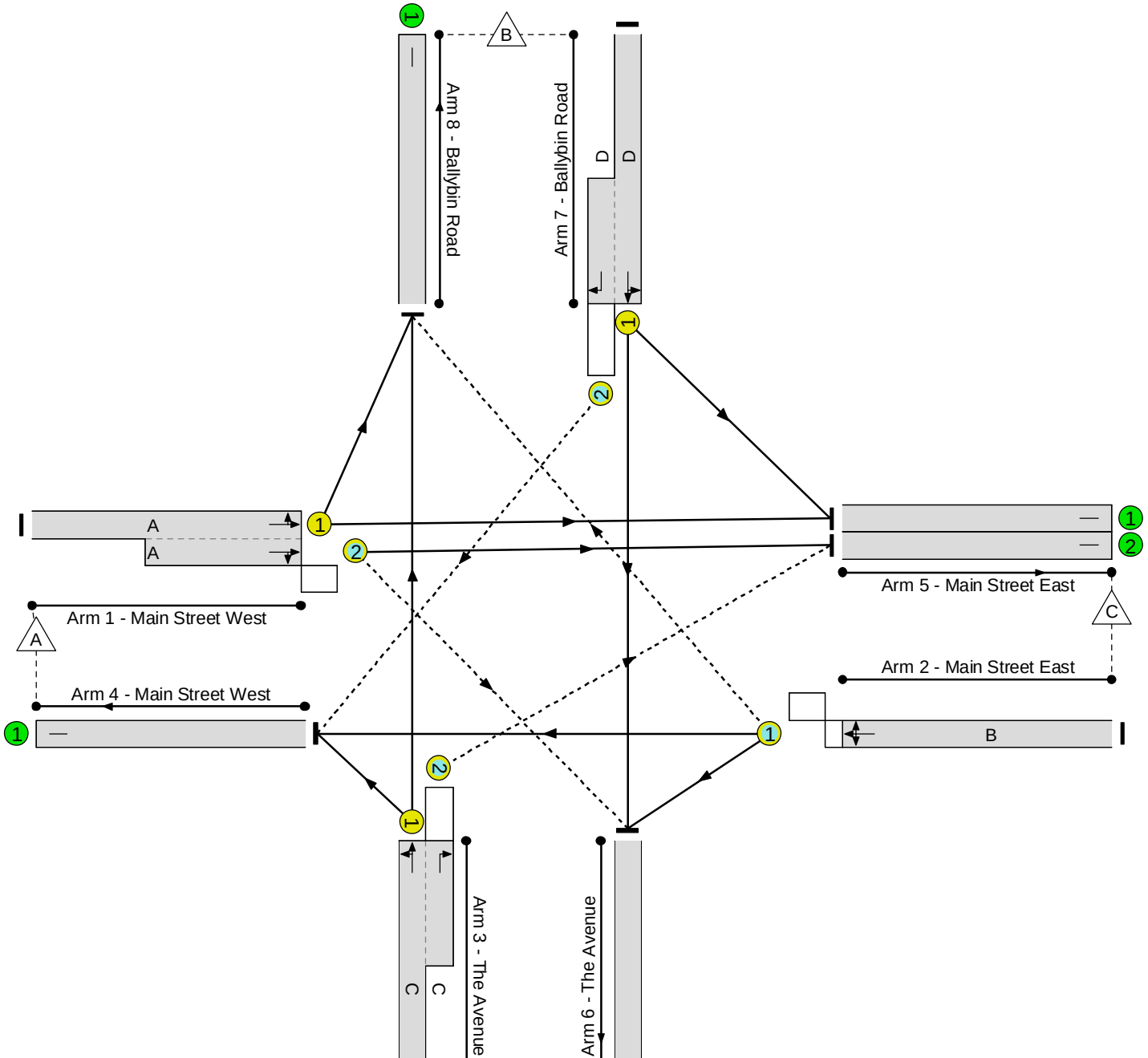


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 10.1 %
Total Traffic Delay: 16.0 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.7%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.7%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	47	-	422	1783:1863	511+535	40.3 : 40.3%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	47	-	797	1841	982	81.2%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	18	0	282	1836:1764	334+282	45.8 : 45.8%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	812	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	79	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	285	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	382	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	18	-	317	1852:1764	133+254	81.7 : 81.7%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	260	Inf	Inf	0.0%

Full Input Data And Results

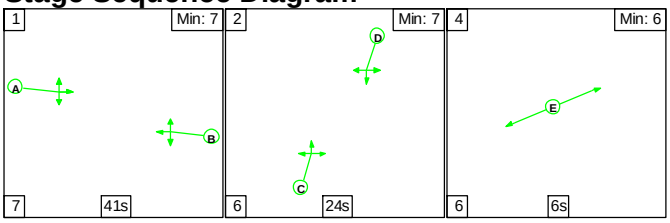
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**393**	**0**	**35**	**10.3**	**5.0**	**0.8**	**16.0**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**393**	**0**	**35**	**10.3**	**5.0**	**0.8**	**16.0**	**-**	**-**	**-**	**-**
1/1+1/2	422	422	60	0	0	1.3	0.3	0.3	1.9	16.4	2.8	0.3	3.2
2/1	797	797	31	0	0	3.8	2.1	0.0	5.9	26.8	16.4	2.1	18.5
3/1+3/2	282	282	128	0	1	2.4	0.4	0.1	2.9	37.6	3.3	0.4	3.7
4/1	812	812	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	79	79	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	285	285	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	382	382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	317	317	174	0	34	2.8	2.1	0.3	5.2	59.1	4.9	2.1	7.0
8/1	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 10.1 Total Delay for Signalled Lanes (pcuHr): 16.02 Cycle Time (s): 90
PRC Over All Lanes (%): 10.1 Total Delay Over All Lanes(pcuHr): 16.02

Full Input Data And Results

Scenario 3: 'AM Base 2027' (FG3: 'AM Base 2027', Plan 1: 'Network Control Plan 1')

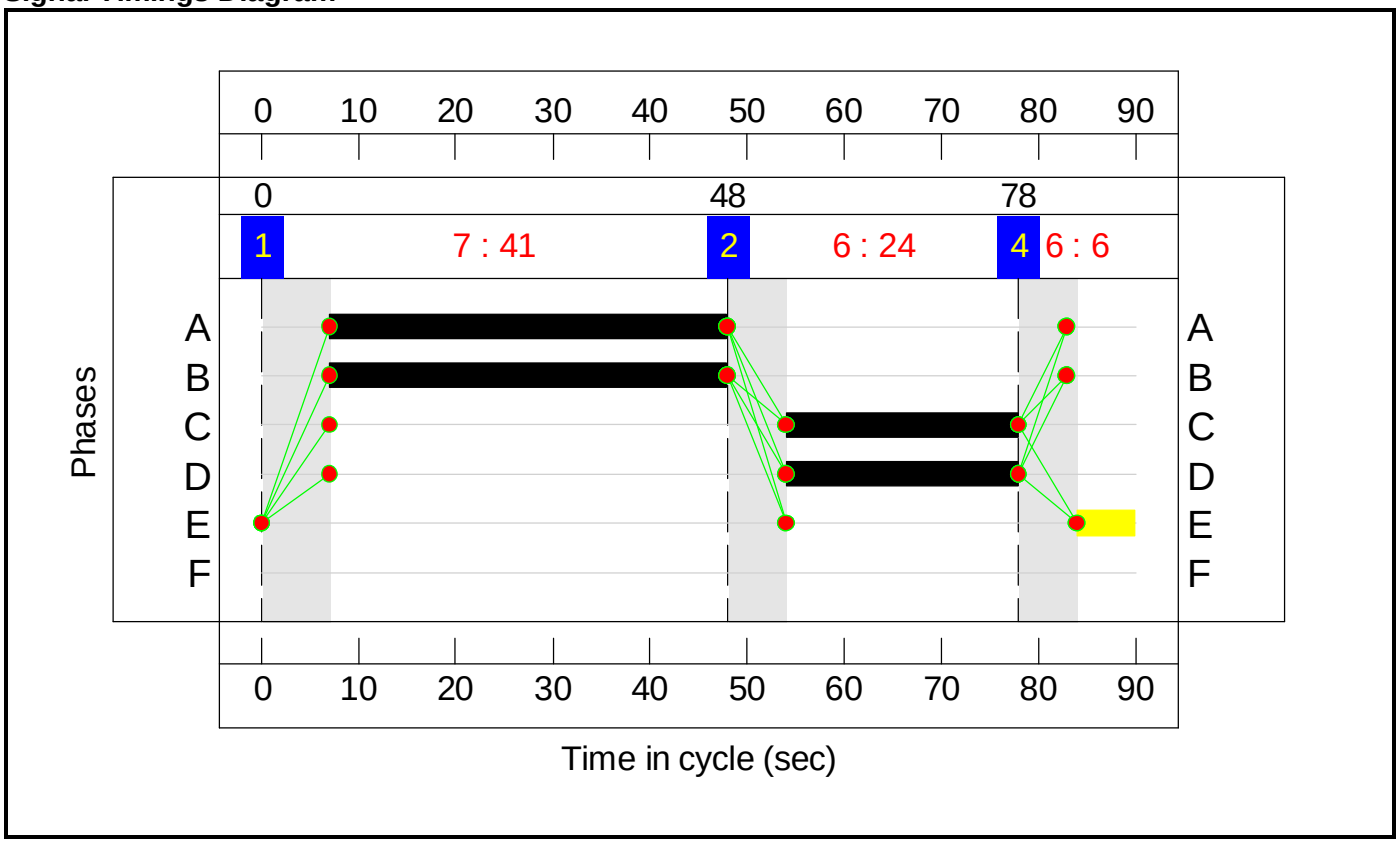
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	41	24	6
Change Point	0	48	78

Signal Timings Diagram

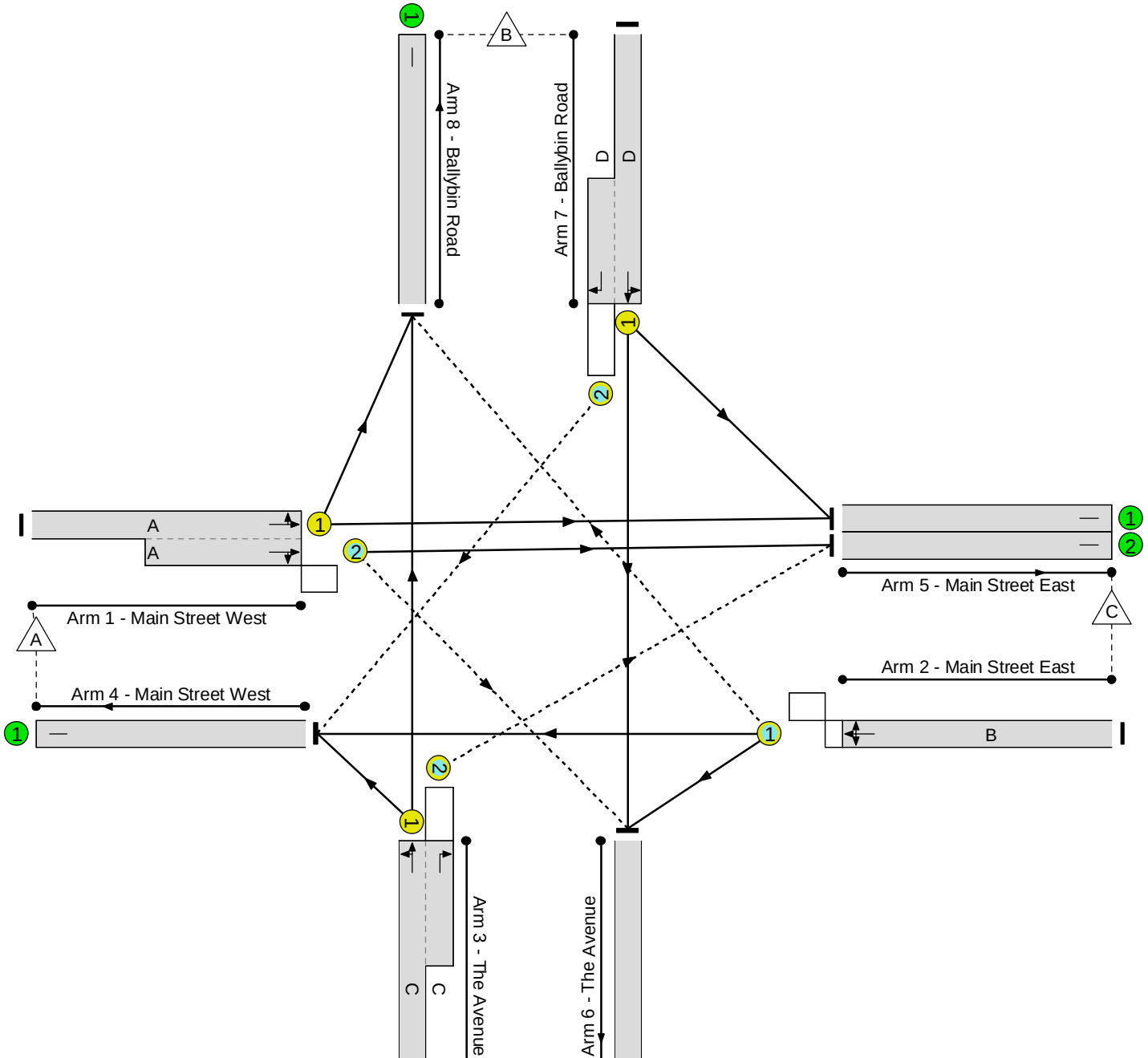


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 6.1 %
Total Traffic Delay: 18.7 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	41	-	917	1865:1803	696+386	84.8 : 84.8%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	41	-	403	1796	838	48.1%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	24	0	559	1819:1764	290+393	81.8 : 81.8%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	380	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	428	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	462	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	24	-	167	1826:1764	406+283	23.6 : 25.1%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%

Full Input Data And Results

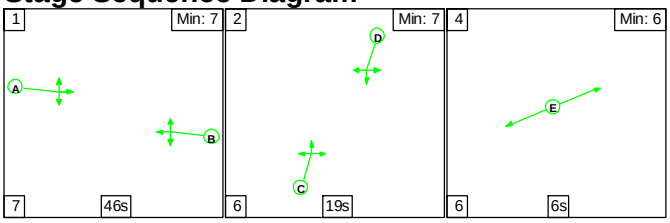
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**616**	**0**	**10**	**12.2**	**5.5**	**1.0**	**18.7**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**616**	**0**	**10**	**12.2**	**5.5**	**1.0**	**18.7**	**-**	**-**	**-**	**-**
1/1+1/2	917	917	203	0	0	4.8	2.7	0.4	7.9	31.0	14.0	2.7	16.7
2/1	403	403	30	0	0	1.8	0.5	0.1	2.4	21.5	6.8	0.5	7.3
3/1+3/2	559	559	313	0	9	4.4	2.2	0.4	7.0	44.9	7.3	2.2	9.5
4/1	380	380	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	428	428	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	167	167	69	0	2	1.1	0.2	0.1	1.4	31.1	1.8	0.2	2.0
8/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 6.1 Total Delay for Signalled Lanes (pcuHr): 18.72 Cycle Time (s): 90
PRC Over All Lanes (%): 6.1 Total Delay Over All Lanes(pcuHr): 18.72

Full Input Data And Results

Scenario 4: 'PM Base 2027' (FG4: 'PM Base 2027', Plan 1: 'Network Control Plan 1')

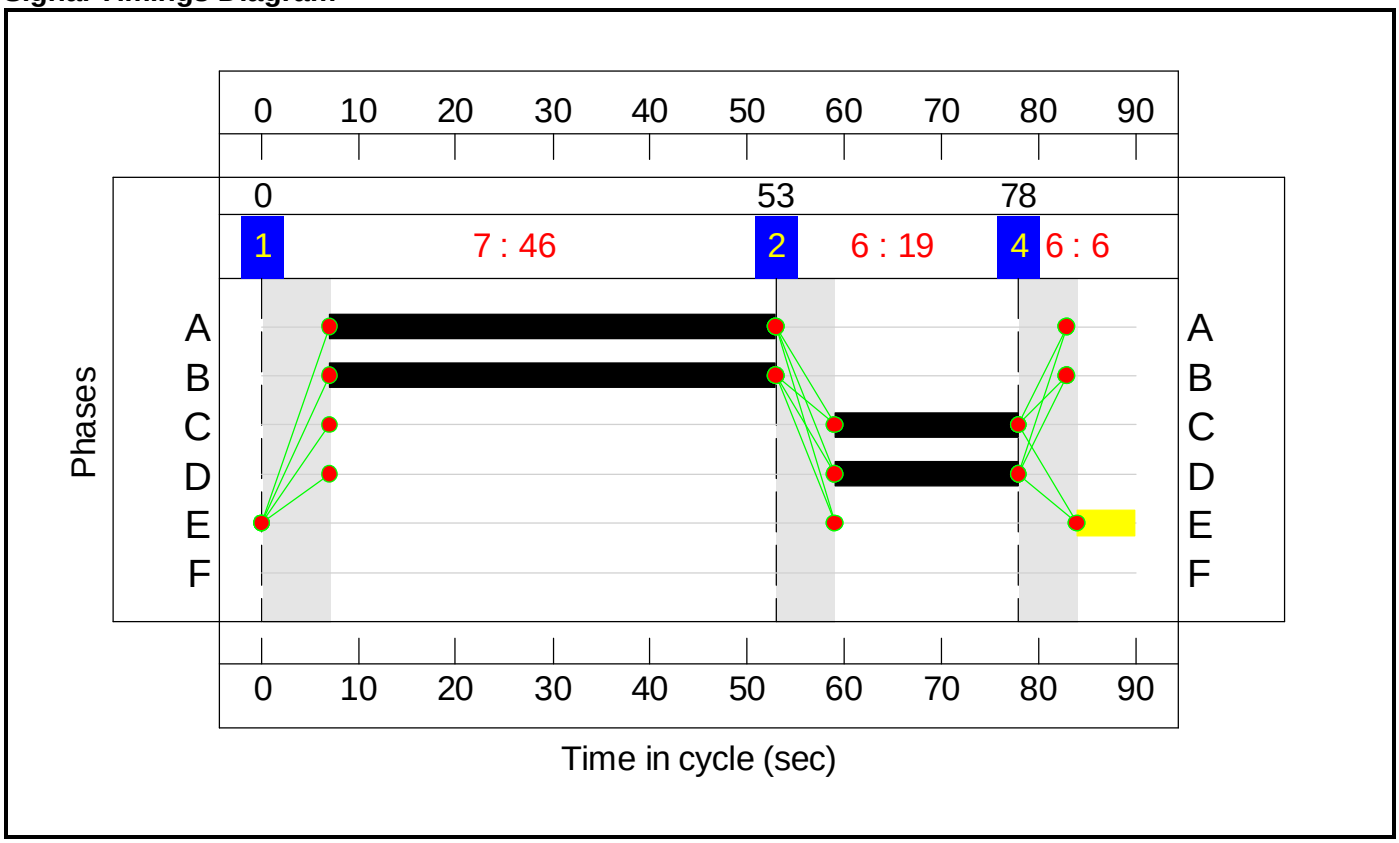
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

Signal Timings Diagram

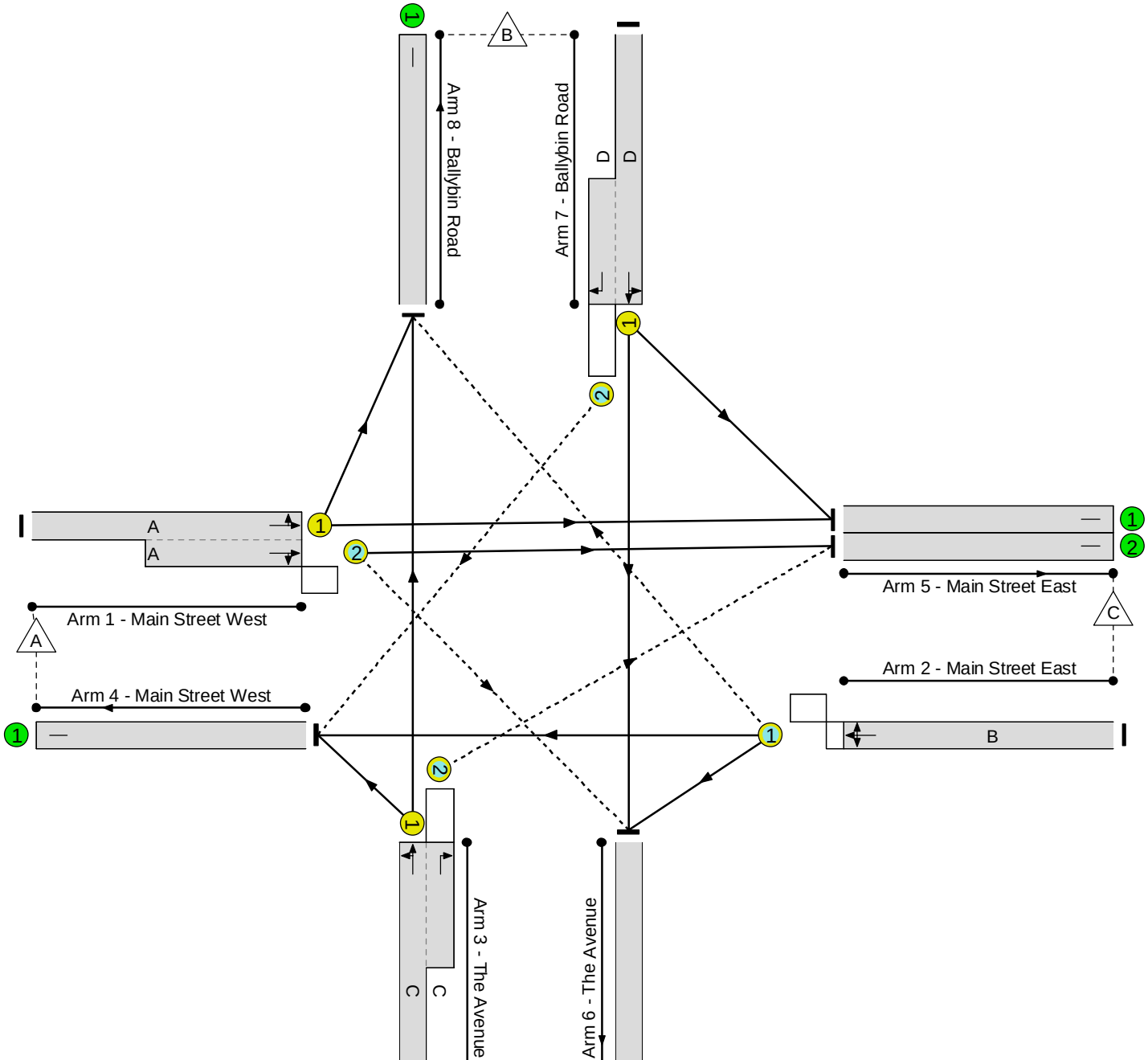


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 1.9 %
Total Traffic Delay: 19.5 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.3%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.3%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	451	1784:1863	395+411	55.9 : 55.9%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	849	1841	961	88.3%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	301	1837:1764	345+292	47.2 : 47.2%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	865	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	304	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	407	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	338	1852:1764	137+262	84.7 : 84.7%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%

Full Input Data And Results

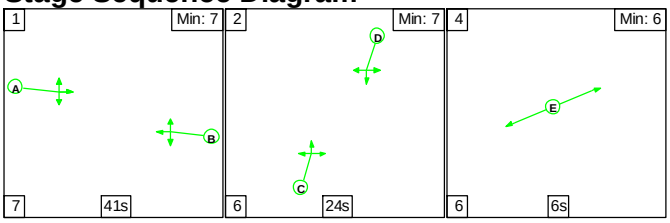
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**412**	**0**	**45**	**11.4**	**7.2**	**0.9**	**19.5**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**412**	**0**	**45**	**11.4**	**7.2**	**0.9**	**19.5**	**-**	**-**	**-**	**-**
1/1+1/2	451	451	61	0	3	1.5	0.6	0.4	2.5	19.9	3.1	0.6	3.8
2/1	849	849	33	0	0	4.5	3.6	0.0	8.1	34.2	18.6	3.6	22.2
3/1+3/2	301	301	136	0	2	2.5	0.4	0.2	3.1	37.1	3.4	0.4	3.9
4/1	865	865	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	407	407	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	338	338	182	0	40	2.9	2.5	0.4	5.8	62.0	5.2	2.5	7.8
8/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 1.9 Total Delay for Signalled Lanes (pcuHr): 19.47 Cycle Time (s): 90
PRC Over All Lanes (%): 1.9 Total Delay Over All Lanes(pcuHr): 19.47

Full Input Data And Results

Scenario 5: 'AM Base 2027 + Comm Dev' (FG5: 'AM Base 2027 + Comm Dev', Plan 1: 'Network Control Plan 1')

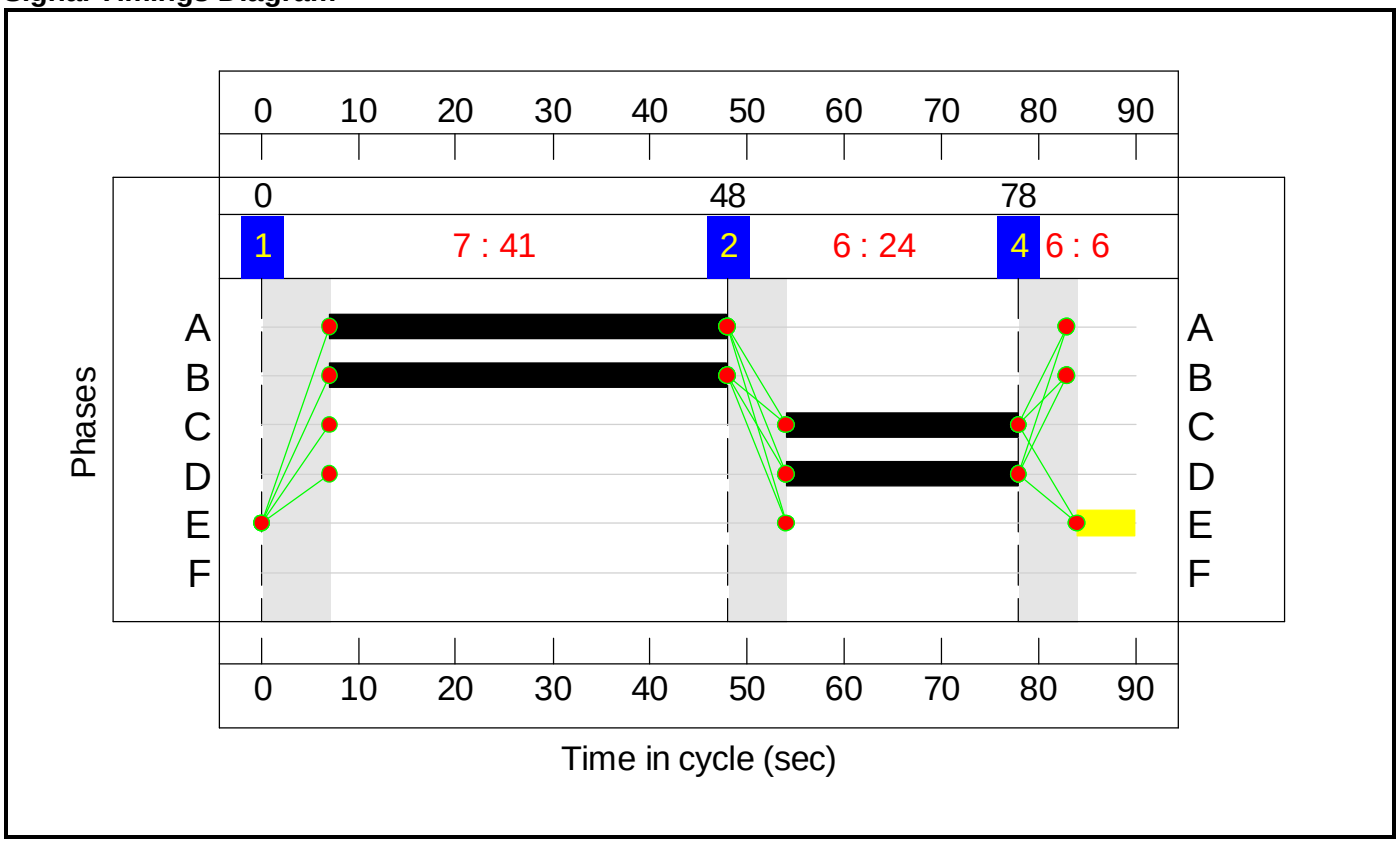
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	41	24	6
Change Point	0	48	78

Signal Timings Diagram

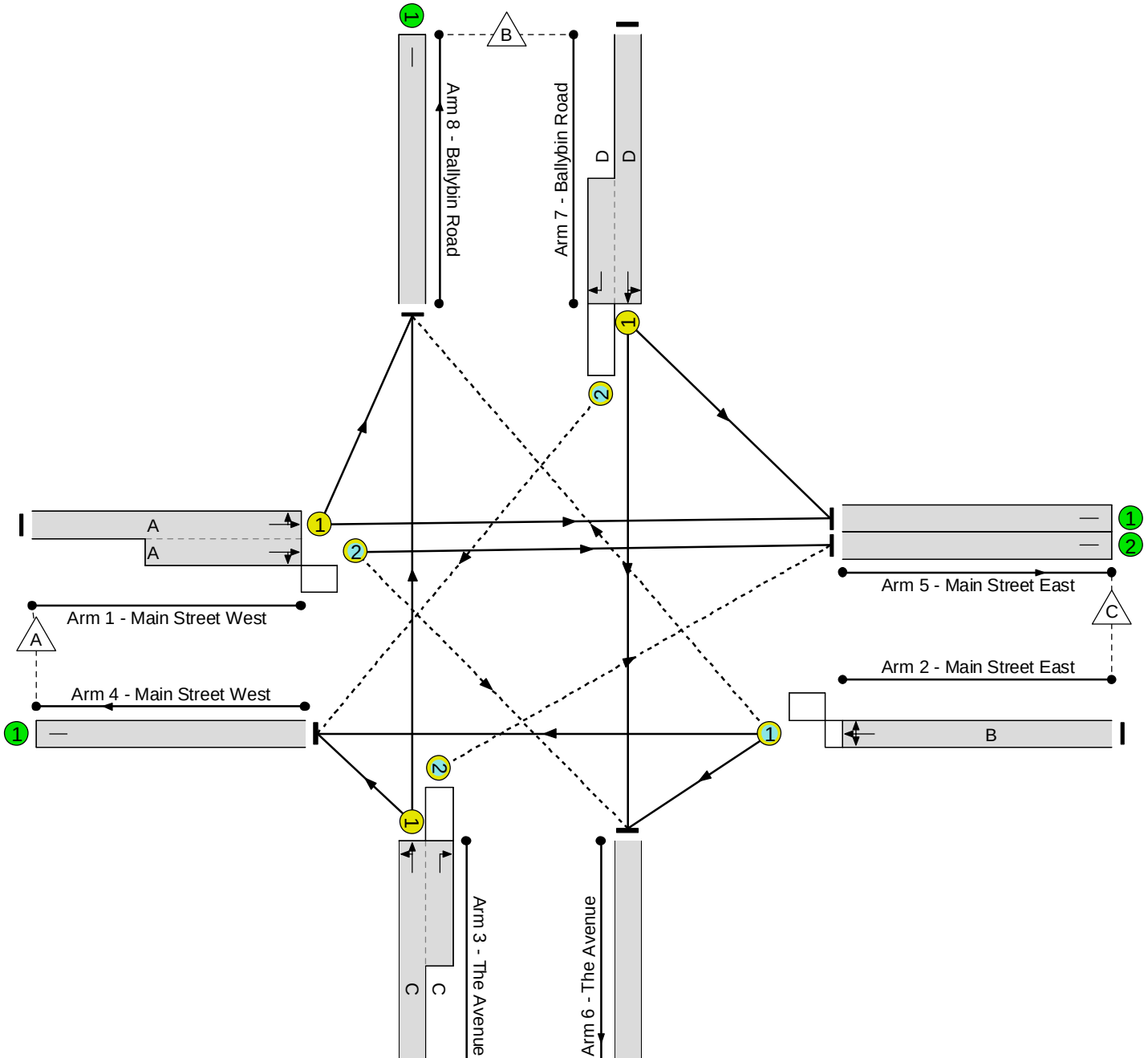


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 6.1 %
Total Traffic Delay: 18.7 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	41	-	917	1865:1803	696+386	84.8 : 84.8%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	41	-	403	1796	838	48.1%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	24	0	559	1819:1764	290+393	81.8 : 81.8%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	380	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	428	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	462	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	24	-	167	1826:1764	406+283	23.6 : 25.1%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%

Full Input Data And Results

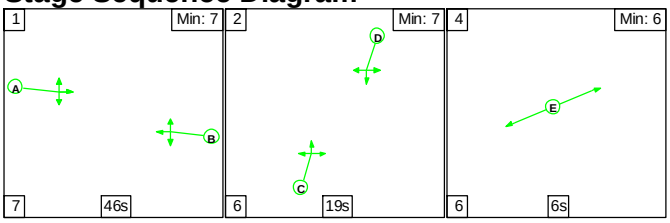
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**616**	**0**	**10**	**12.2**	**5.5**	**1.0**	**18.7**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**616**	**0**	**10**	**12.2**	**5.5**	**1.0**	**18.7**	**-**	**-**	**-**	**-**
1/1+1/2	917	917	203	0	0	4.8	2.7	0.4	7.9	31.0	14.0	2.7	16.7
2/1	403	403	30	0	0	1.8	0.5	0.1	2.4	21.5	6.8	0.5	7.3
3/1+3/2	559	559	313	0	9	4.4	2.2	0.4	7.0	44.9	7.3	2.2	9.5
4/1	380	380	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	428	428	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	167	167	69	0	2	1.1	0.2	0.1	1.4	31.1	1.8	0.2	2.0
8/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 6.1 Total Delay for Signalled Lanes (pcuHr): 18.72 Cycle Time (s): 90
PRC Over All Lanes (%): 6.1 Total Delay Over All Lanes(pcuHr): 18.72

Full Input Data And Results

Scenario 6: 'PM Base 2027 + Comm Dev' (FG6: 'PM Base 2027 + Comm Dev', Plan 1: 'Network Control Plan 1')

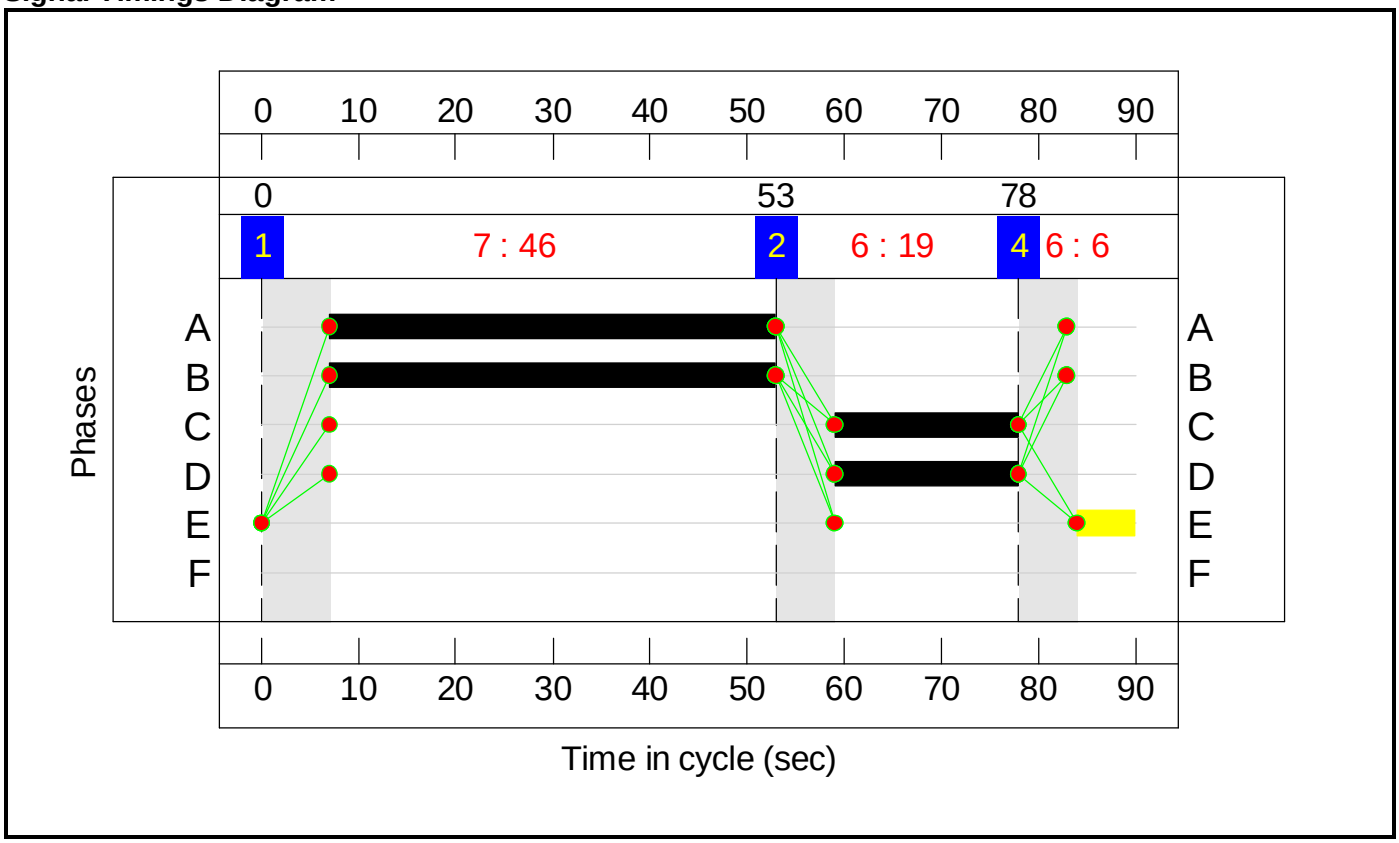
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

Signal Timings Diagram

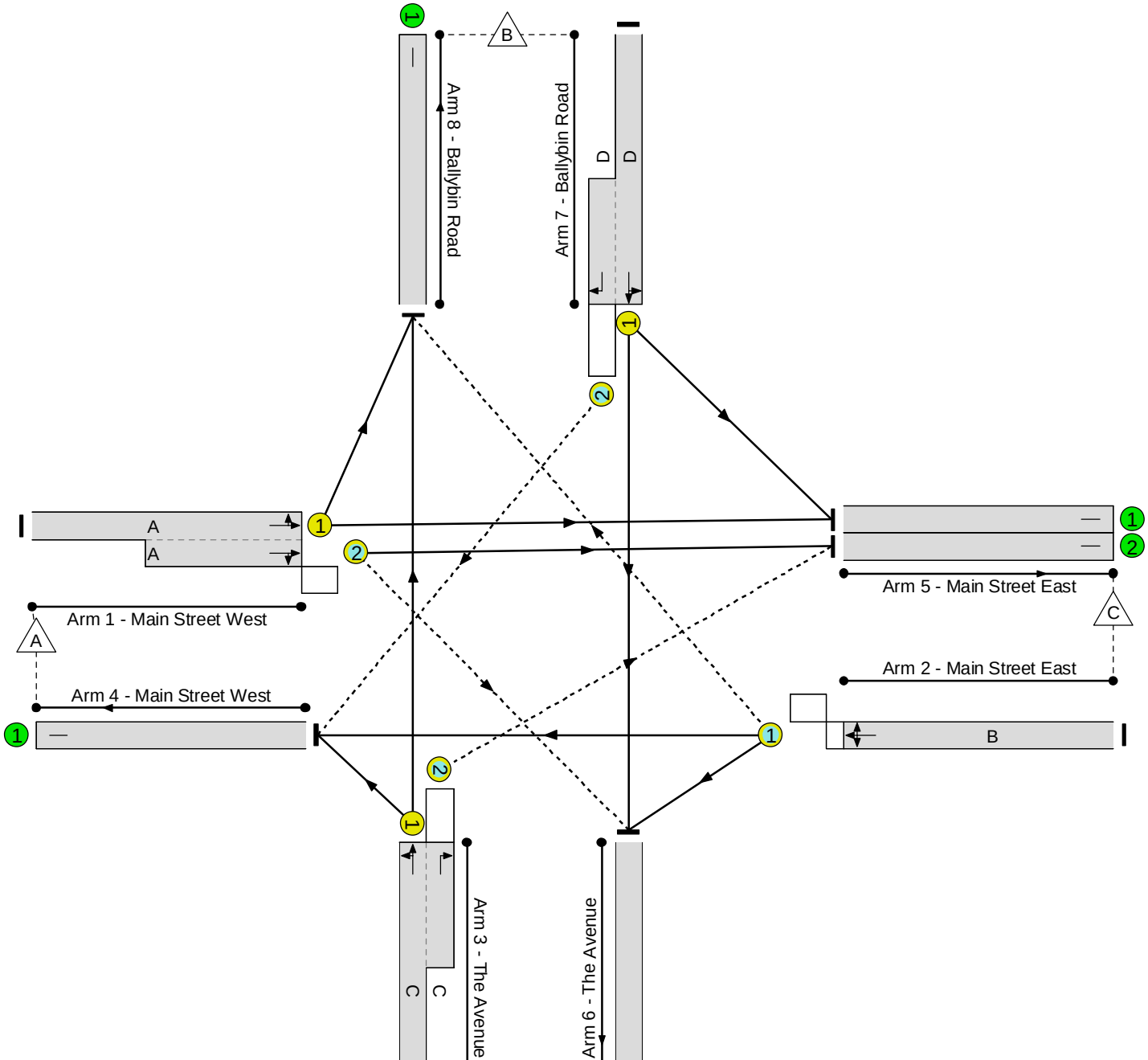


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 1.9 %
Total Traffic Delay: 19.5 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.3%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.3%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	451	1784:1863	395+411	55.9 : 55.9%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	849	1841	961	88.3%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	301	1837:1764	345+292	47.2 : 47.2%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	865	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	304	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	407	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	338	1852:1764	137+262	84.7 : 84.7%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%

Full Input Data And Results

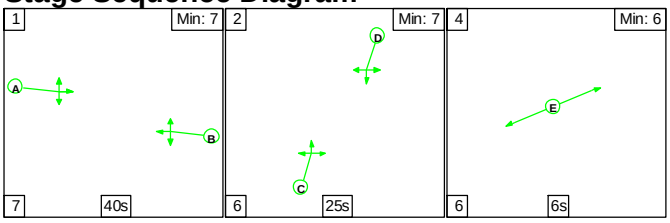
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**412**	**0**	**45**	**11.4**	**7.2**	**0.9**	**19.5**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**412**	**0**	**45**	**11.4**	**7.2**	**0.9**	**19.5**	**-**	**-**	**-**	**-**
1/1+1/2	451	451	61	0	3	1.5	0.6	0.4	2.5	19.9	3.1	0.6	3.8
2/1	849	849	33	0	0	4.5	3.6	0.0	8.1	34.2	18.6	3.6	22.2
3/1+3/2	301	301	136	0	2	2.5	0.4	0.2	3.1	37.1	3.4	0.4	3.9
4/1	865	865	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	407	407	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	338	338	182	0	40	2.9	2.5	0.4	5.8	62.0	5.2	2.5	7.8
8/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 1.9 Total Delay for Signalled Lanes (pcuHr): 19.47 Cycle Time (s): 90
PRC Over All Lanes (%): 1.9 Total Delay Over All Lanes(pcuHr): 19.47

Full Input Data And Results

Scenario 7: 'AM Base 2027 + Comm Dev + Dev' (FG7: 'AM Base 2027 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

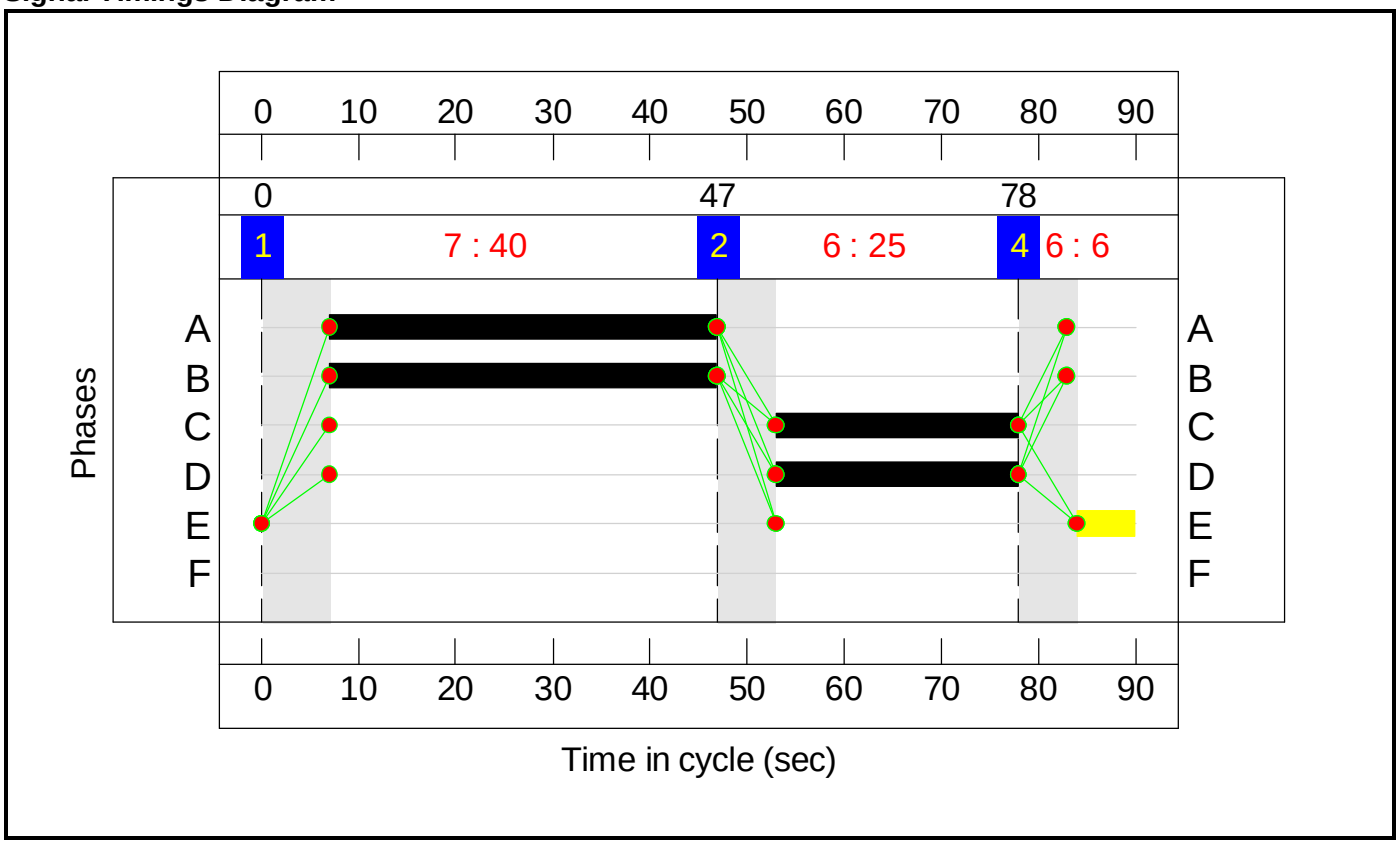
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	40	25	6
Change Point	0	47	78

Signal Timings Diagram

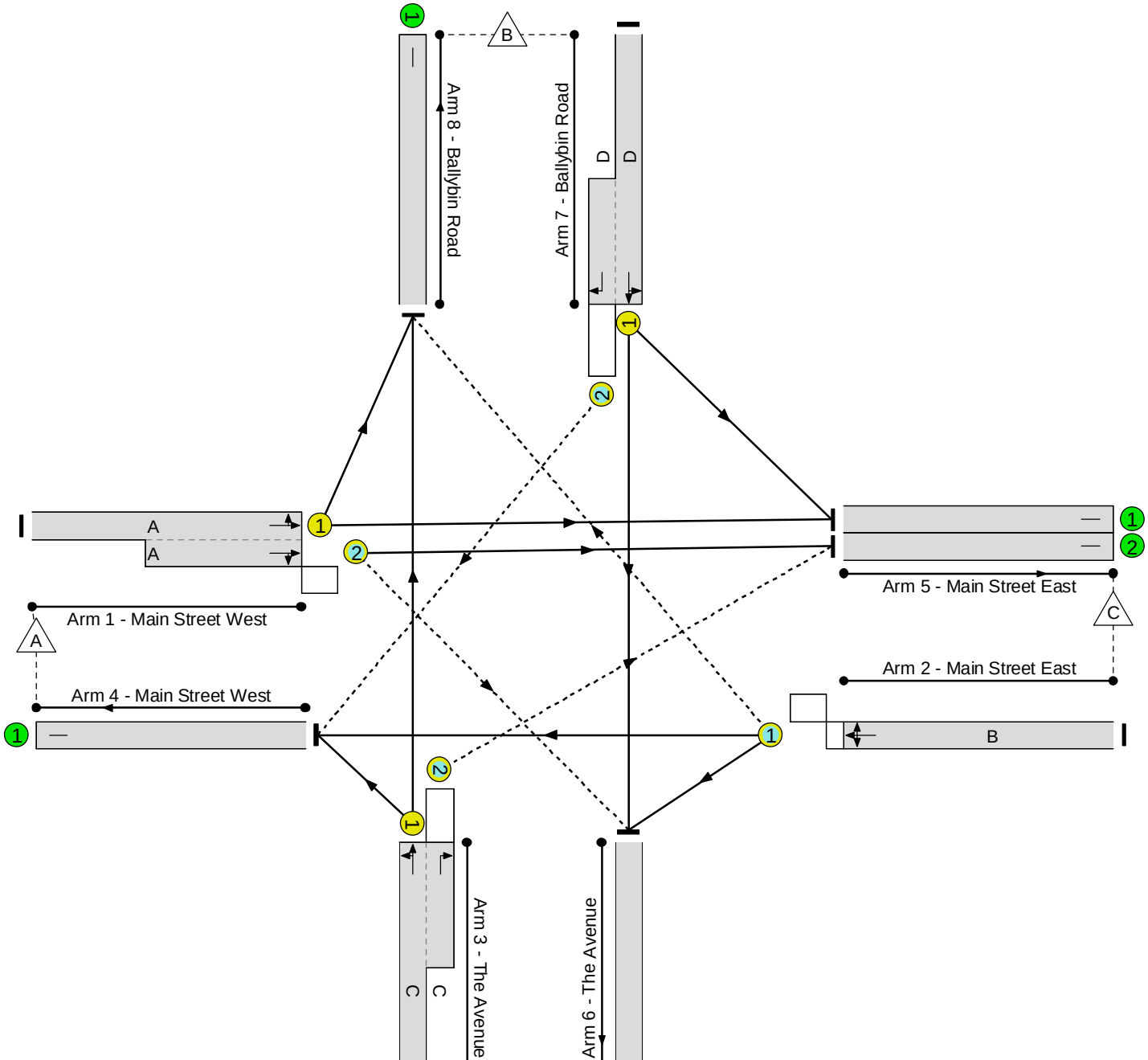


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 1.8 %
Total Traffic Delay: 21.8 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.4%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.4%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	40	-	919	1866:1799	689+361	87.5 : 87.5%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	40	-	415	1794	817	50.8%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	25	0	561	1818:1764	270+364	88.4 : 88.4%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	388	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	481	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	471	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	25	-	224	1785:1764	436+228	33.8 : 33.8%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	344	Inf	Inf	0.0%

Full Input Data And Results

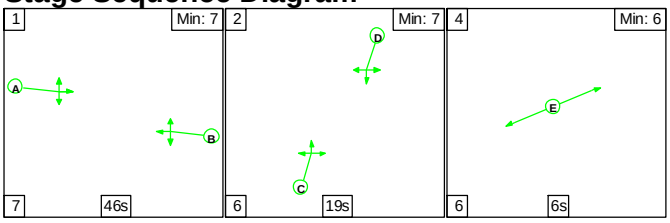
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**604**	**0**	**40**	**13.1**	**7.6**	**1.2**	**21.8**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**604**	**0**	**40**	**13.1**	**7.6**	**1.2**	**21.8**	**-**	**-**	**-**	**-**
1/1+1/2	919	919	203	0	0	5.1	3.3	0.4	8.8	34.6	15.1	3.3	18.4
2/1	415	415	42	0	0	2.0	0.5	0.2	2.7	23.3	7.3	0.5	7.8
3/1+3/2	561	561	284	0	38	4.5	3.5	0.4	8.4	53.8	7.5	3.5	11.0
4/1	388	388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	481	481	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	471	471	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	224	224	75	0	2	1.5	0.3	0.2	1.9	31.0	2.8	0.3	3.1
8/1	344	344	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 1.8 Total Delay for Signalled Lanes (pcuHr): 21.83 Cycle Time (s): 90
PRC Over All Lanes (%): 1.8 Total Delay Over All Lanes(pcuHr): 21.83

Full Input Data And Results

Scenario 8: 'PM Base 2027 + Comm Dev + Dev' (FG8: 'PM Base 2027 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

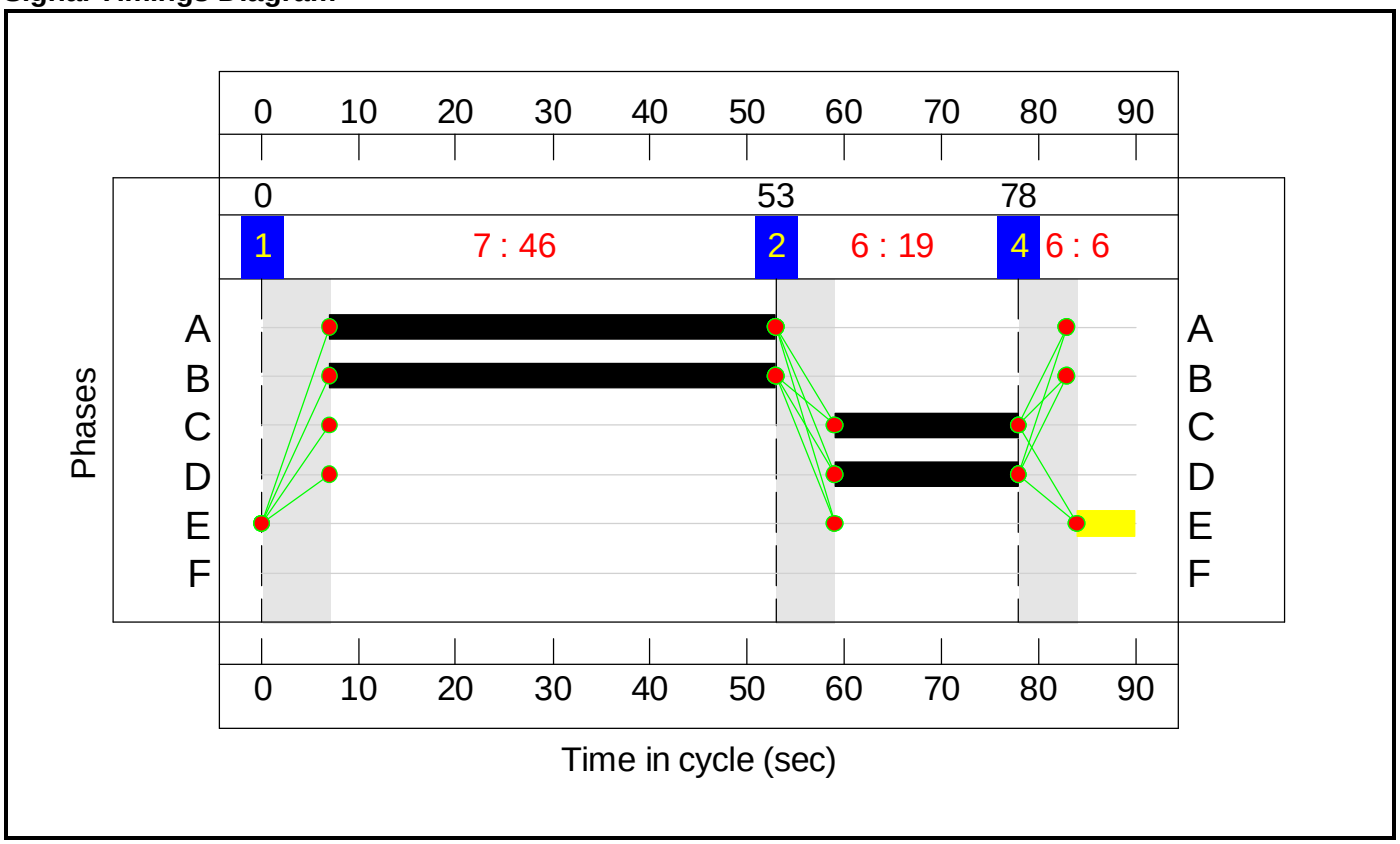
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

Signal Timings Diagram

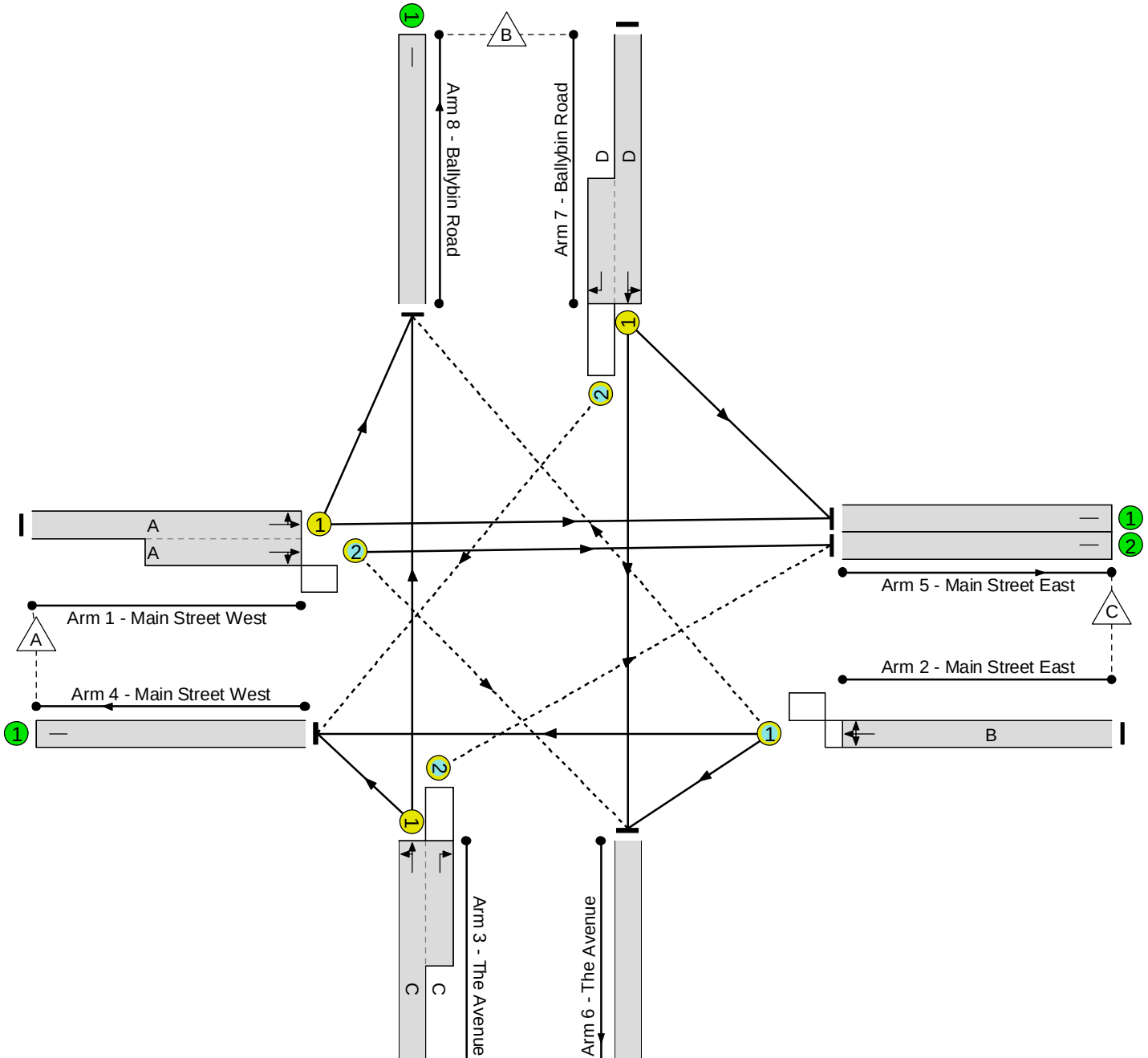


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -1.8 %
Total Traffic Delay: 22.1 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.6%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.6%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	455	1781:1864	355+372	62.6 : 62.6%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	879	1838	960	91.6%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	307	1833:1764	346+283	48.8 : 48.8%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	874	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	102	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	307	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	411	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	365	1826:1764	161+259	86.9 : 86.9%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	312	Inf	Inf	0.0%

Full Input Data And Results

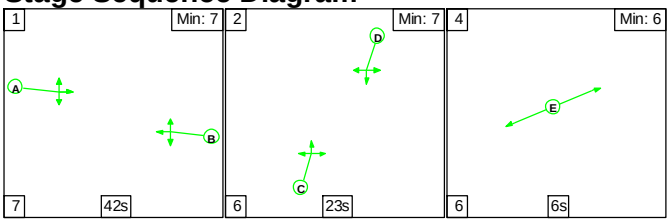
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**422**	**0**	**68**	**12.0**	**9.1**	**1.0**	**22.1**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**422**	**0**	**68**	**12.0**	**9.1**	**1.0**	**22.1**	**-**	**-**	**-**	**-**
1/1+1/2	455	455	44	0	20	1.5	0.8	0.4	2.7	21.6	3.2	0.8	4.0
2/1	879	879	62	0	1	4.8	4.9	0.0	9.7	39.6	20.0	4.9	24.9
3/1+3/2	307	307	136	0	2	2.5	0.5	0.2	3.2	37.8	3.6	0.5	4.1
4/1	874	874	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	102	102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	307	307	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	365	365	179	0	46	3.2	3.0	0.4	6.5	64.2	5.3	3.0	8.3
8/1	312	312	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -1.8 Total Delay for Signalled Lanes (pcuHr): 22.15 Cycle Time (s): 90
PRC Over All Lanes (%): -1.8 Total Delay Over All Lanes(pcuHr): 22.15

Full Input Data And Results

Scenario 9: 'AM Base 2032' (FG9: 'AM Base 2032', Plan 1: 'Network Control Plan 1')

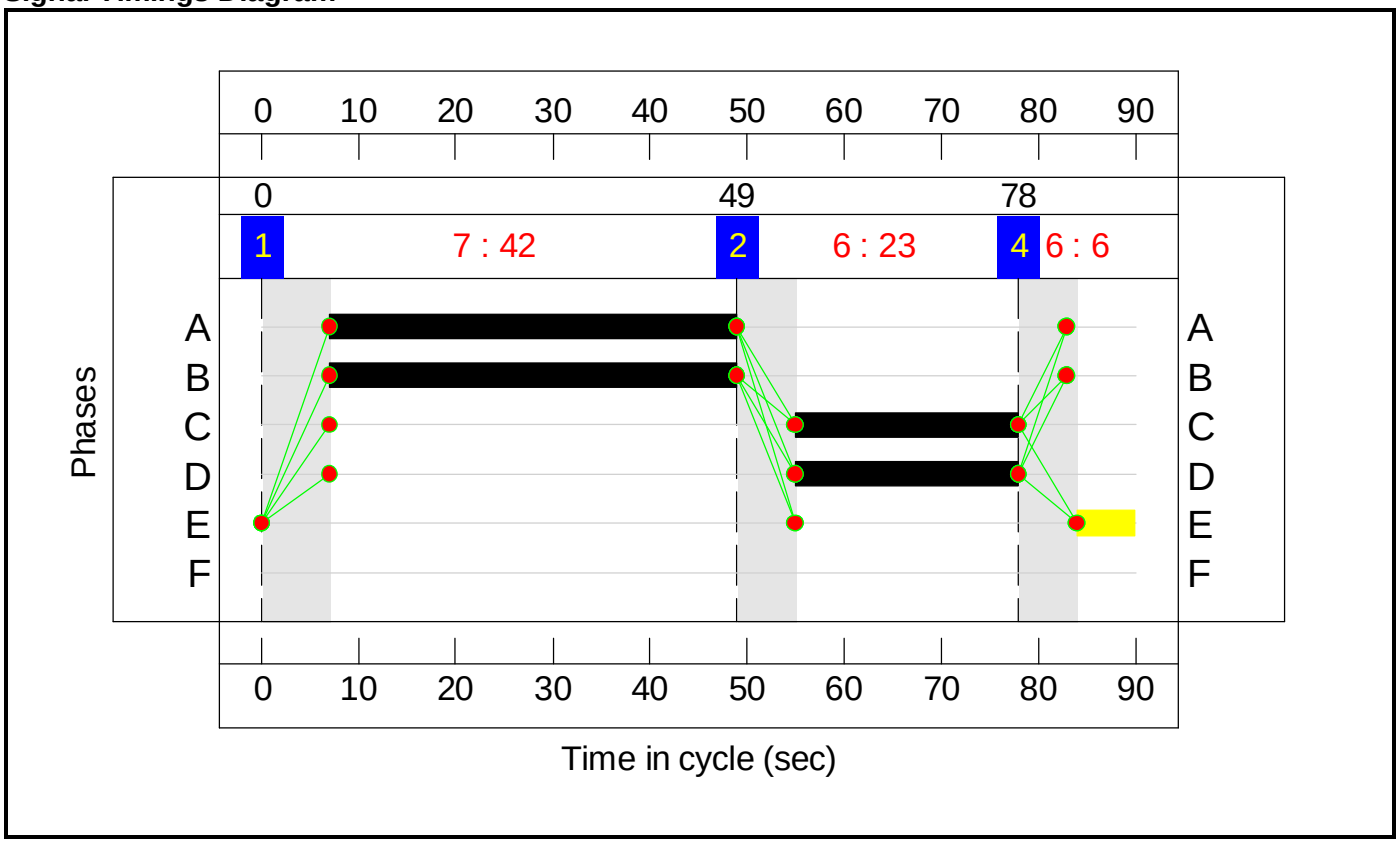
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	42	23	6
Change Point	0	49	78

Signal Timings Diagram

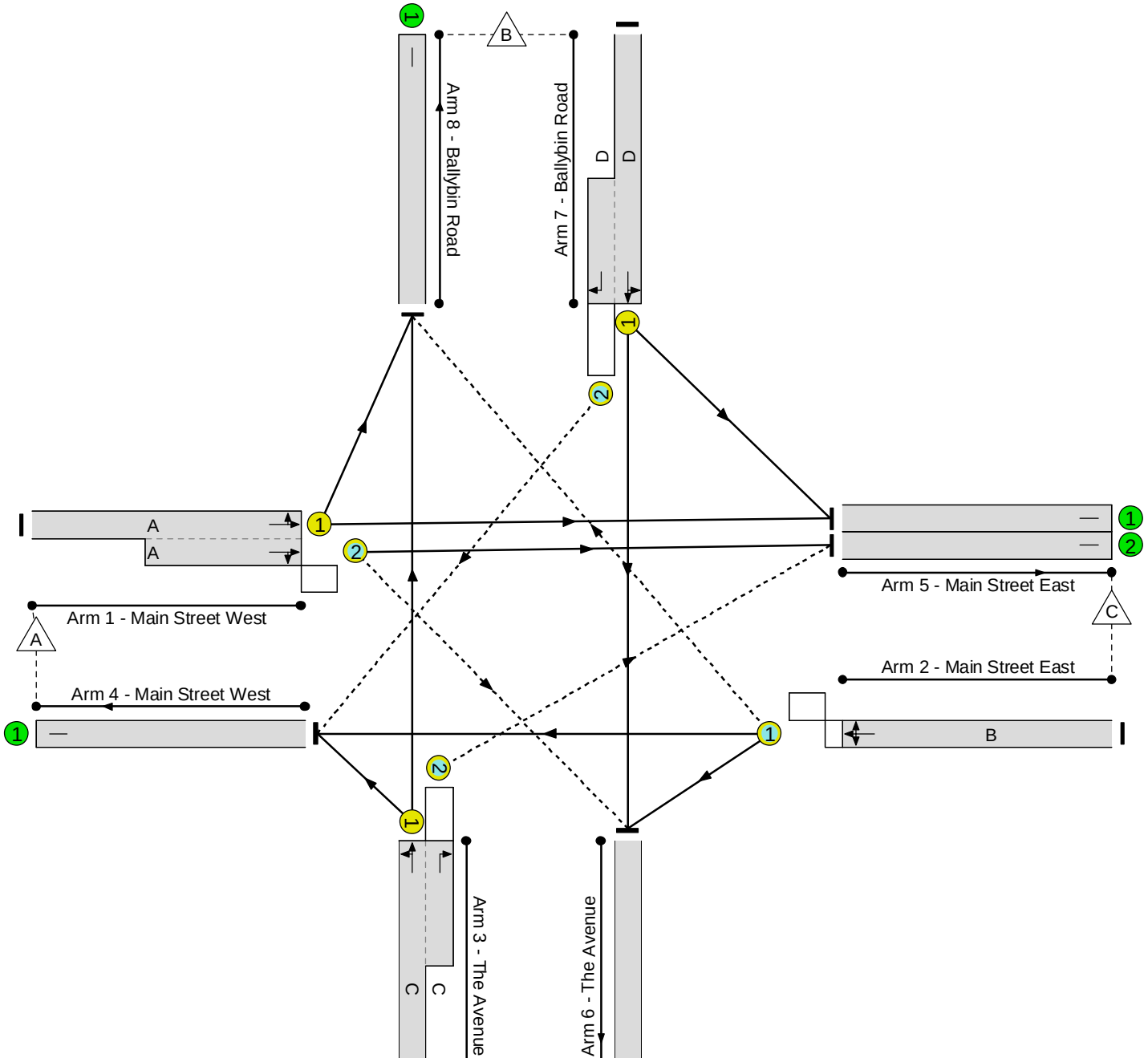


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -1.1 %
Total Traffic Delay: 23.4 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.0%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.0%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	42	-	975	1866:1800	716+375	89.4 : 89.4%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	42	-	431	1796	858	50.2%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	23	0	593	1819:1764	277+375	91.0 : 91.0%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	406	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	467	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	461	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	492	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	23	-	179	1826:1764	395+249	26.1 : 30.5%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	352	Inf	Inf	0.0%

Full Input Data And Results

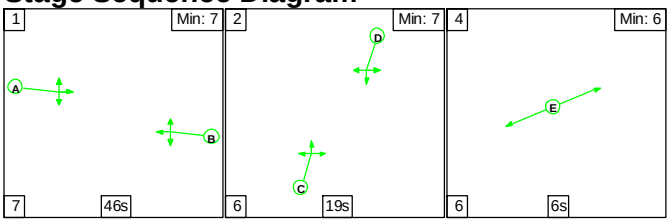
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**616**	**0**	**48**	**13.4**	**9.0**	**1.1**	**23.4**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**616**	**0**	**48**	**13.4**	**9.0**	**1.1**	**23.4**	**-**	**-**	**-**	**-**
1/1+1/2	975	975	215	0	0	5.2	3.9	0.4	9.5	35.2	16.3	3.9	20.2
2/1	431	431	32	0	0	1.9	0.5	0.1	2.6	21.4	7.3	0.5	7.8
3/1+3/2	593	593	295	0	46	5.0	4.4	0.4	9.7	59.1	8.6	4.4	13.0
4/1	406	406	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	467	467	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	461	461	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	492	492	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	179	179	74	0	2	1.3	0.2	0.2	1.6	32.4	2.0	0.2	2.2
8/1	352	352	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -1.1 Total Delay for Signalled Lanes (pcuHr): 23.43 Cycle Time (s): 90
PRC Over All Lanes (%): -1.1 Total Delay Over All Lanes(pcuHr): 23.43

Full Input Data And Results

Scenario 10: 'PM Base 2032' (FG10: 'PM Base 2032', Plan 1: 'Network Control Plan 1')

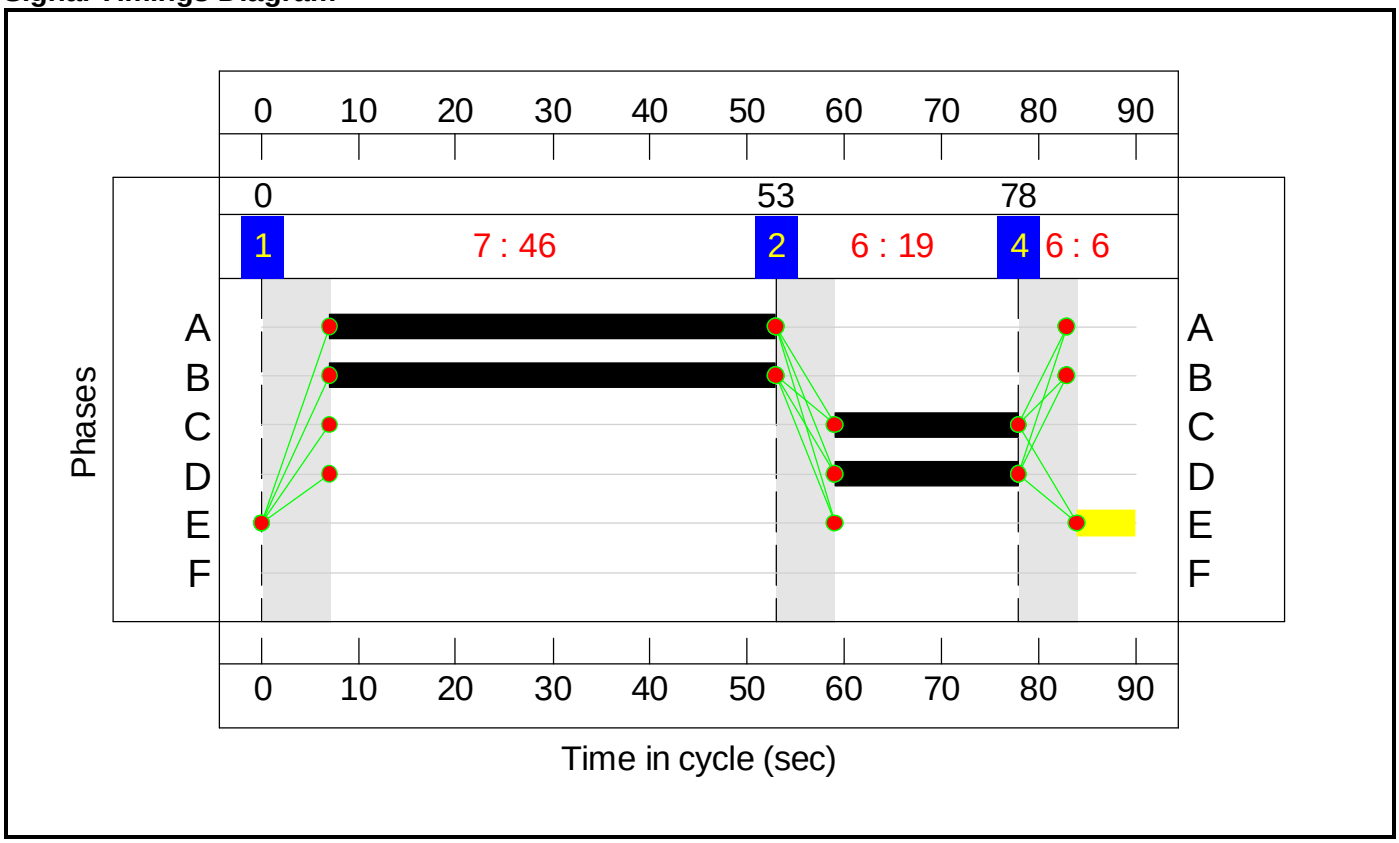
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

Signal Timings Diagram

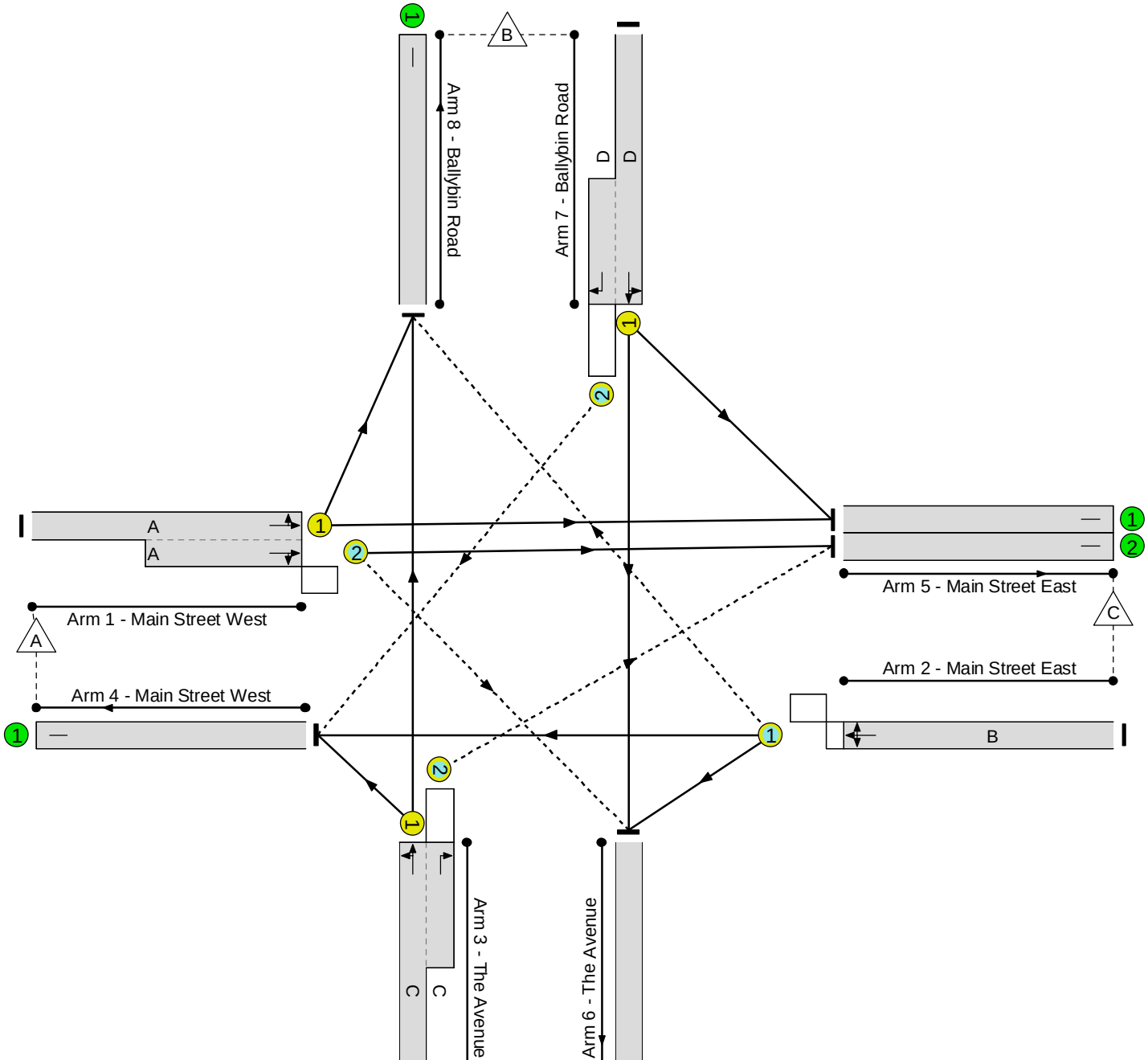


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -4.1 %
Total Traffic Delay: 26.0 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	478	1784:1863	318+332	73.5 : 73.5%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	901	1841	961	93.7%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	319	1837:1764	345+295	49.9 : 49.9%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	918	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	90	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	323	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	359	1852:1764	133+256	92.2 : 92.2%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	294	Inf	Inf	0.0%

Full Input Data And Results

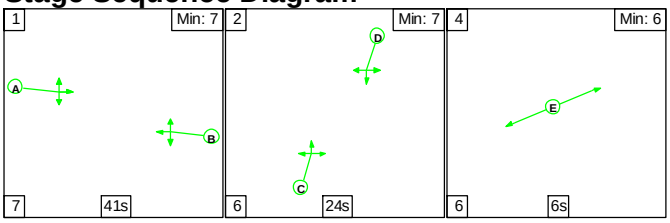
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**387**	**0**	**99**	**12.4**	**12.6**	**1.1**	**26.0**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**387**	**0**	**99**	**12.4**	**12.6**	**1.1**	**26.0**	**-**	**-**	**-**	**-**
1/1+1/2	478	478	31	0	37	1.6	1.4	0.5	3.4	25.7	3.3	1.4	4.7
2/1	901	901	35	0	0	5.0	6.2	0.0	11.2	44.9	21.0	6.2	27.2
3/1+3/2	319	319	145	0	2	2.7	0.5	0.2	3.3	37.6	3.7	0.5	4.2
4/1	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	359	359	176	0	60	3.1	4.5	0.4	8.1	80.8	5.6	4.5	10.2
8/1	294	294	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -4.1 Total Delay for Signalled Lanes (pcuHr): 26.03 Cycle Time (s): 90
PRC Over All Lanes (%): -4.1 Total Delay Over All Lanes(pcuHr): 26.03

Full Input Data And Results

Scenario 11: 'AM Base 2032 + Comm Dev' (FG11: 'AM Base 2032 + Comm Dev', Plan 1: 'Network Control Plan 1')

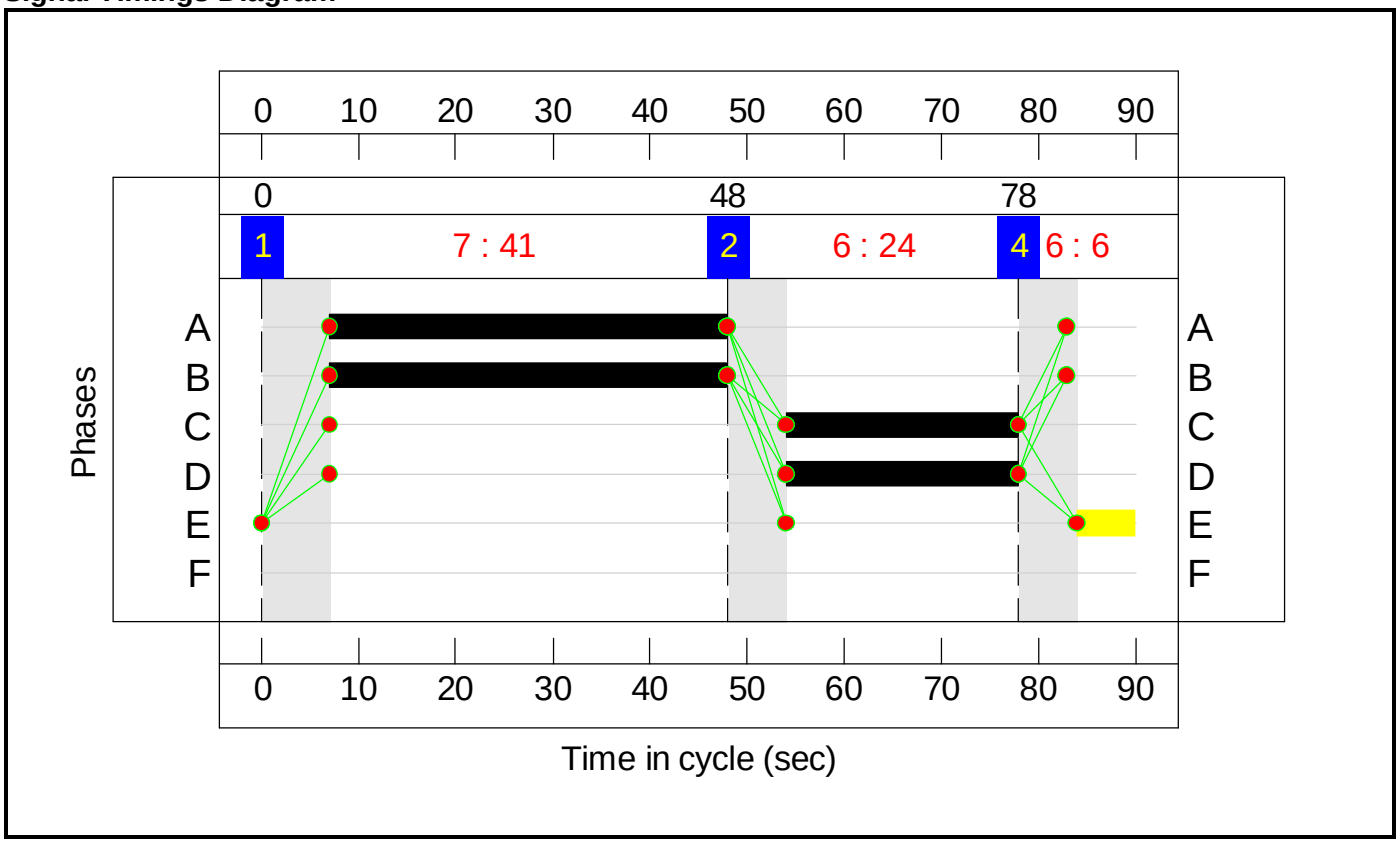
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	41	24	6
Change Point	0	48	78

Signal Timings Diagram

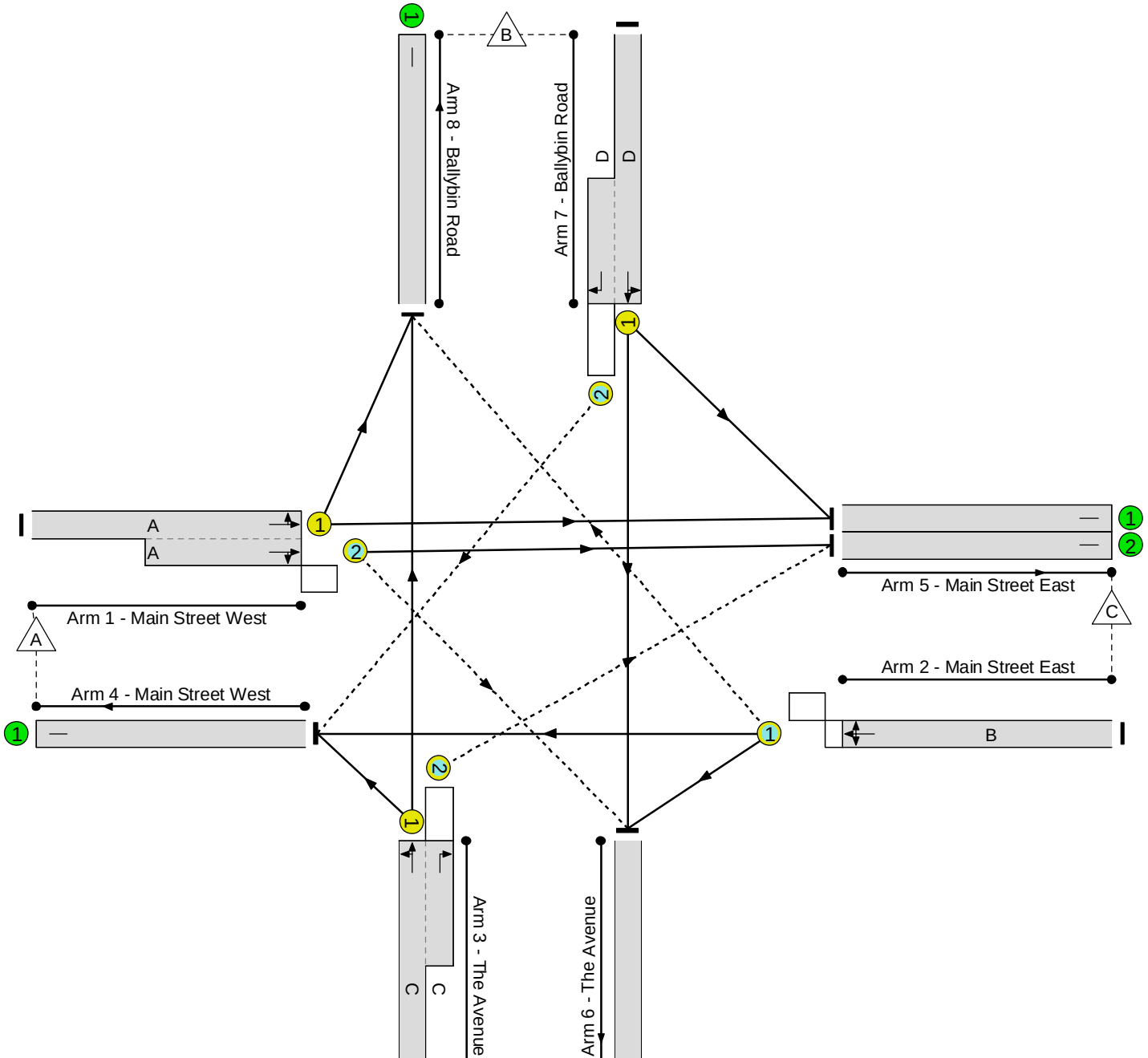


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: 1.2 %
Total Traffic Delay: 22.2 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.0%**
Ballybin Roundabout junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.0%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	41	-	975	1863:1808	687+409	89.0 : 89.0%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	41	-	431	1796	838	51.4%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	24	0	593	1819:1764	288+390	87.5 : 87.5%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	406	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	438	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	490	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	492	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	24	-	179	1826:1764	407+265	25.3 : 28.6%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	352	Inf	Inf	0.0%

Full Input Data And Results

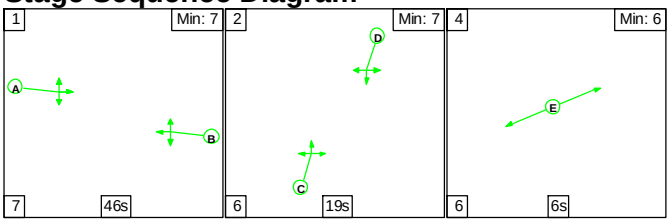
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**631**	**0**	**33**	**13.4**	**7.8**	**1.1**	**22.2**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**631**	**0**	**33**	**13.4**	**7.8**	**1.1**	**22.2**	**-**	**-**	**-**	**-**
1/1+1/2	975	975	215	0	0	5.3	3.8	0.5	9.6	35.3	15.7	3.8	19.5
2/1	431	431	32	0	0	2.0	0.5	0.1	2.7	22.2	7.5	0.5	8.1
3/1+3/2	593	593	310	0	31	4.8	3.3	0.4	8.5	51.3	8.3	3.3	11.6
4/1	406	406	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	438	438	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	490	490	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	492	492	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	179	179	74	0	2	1.2	0.2	0.1	1.6	31.4	1.9	0.2	2.1
8/1	352	352	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 1.2 Total Delay for Signalled Lanes (pcuHr): 22.23 Cycle Time (s): 90
PRC Over All Lanes (%): 1.2 Total Delay Over All Lanes(pcuHr): 22.23

Full Input Data And Results

Scenario 12: 'PM Base 2032 + Comm Dev' (FG12: 'PM Base 2032 + Comm Dev', Plan 1: 'Network Control Plan 1')

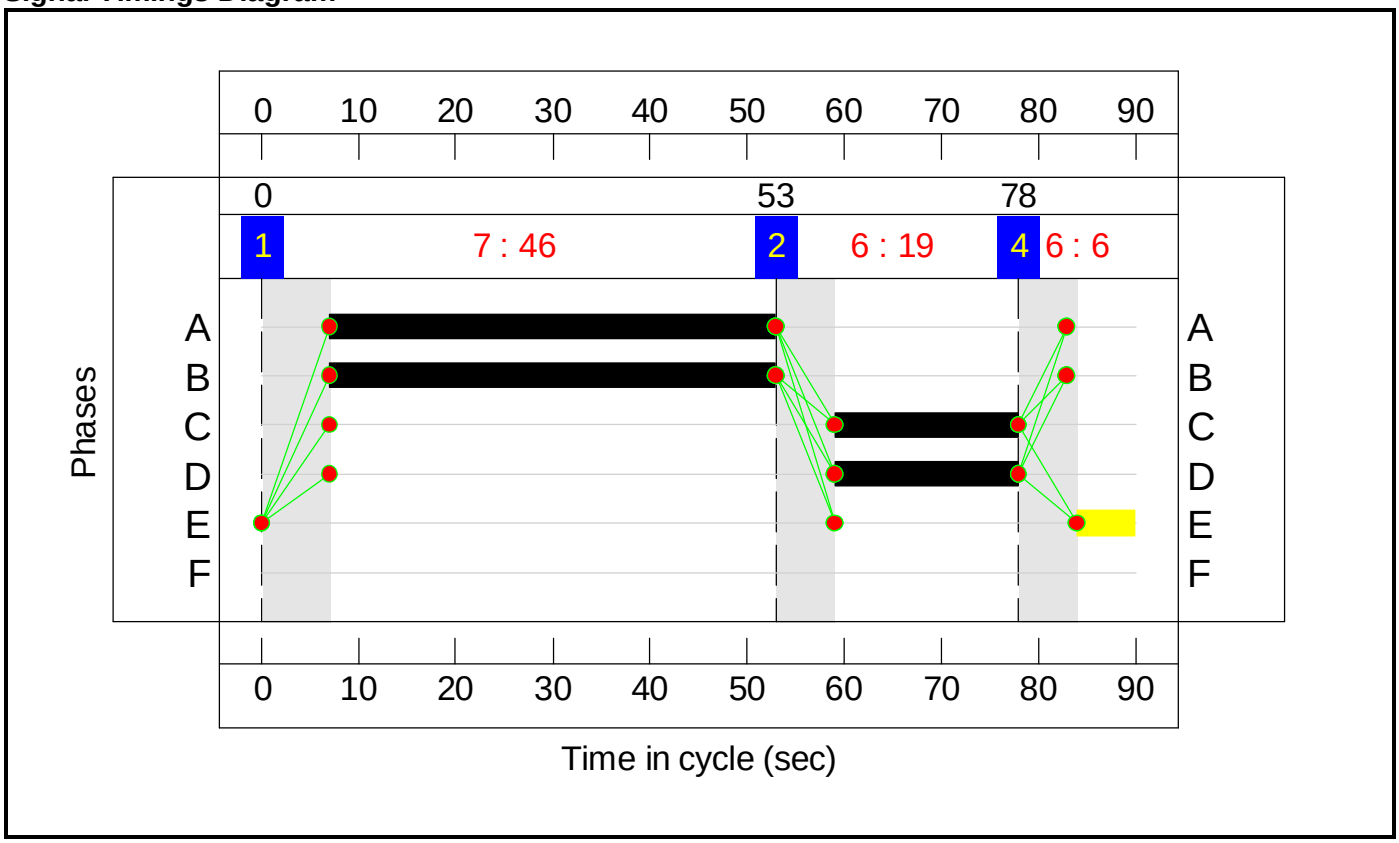
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

Signal Timings Diagram

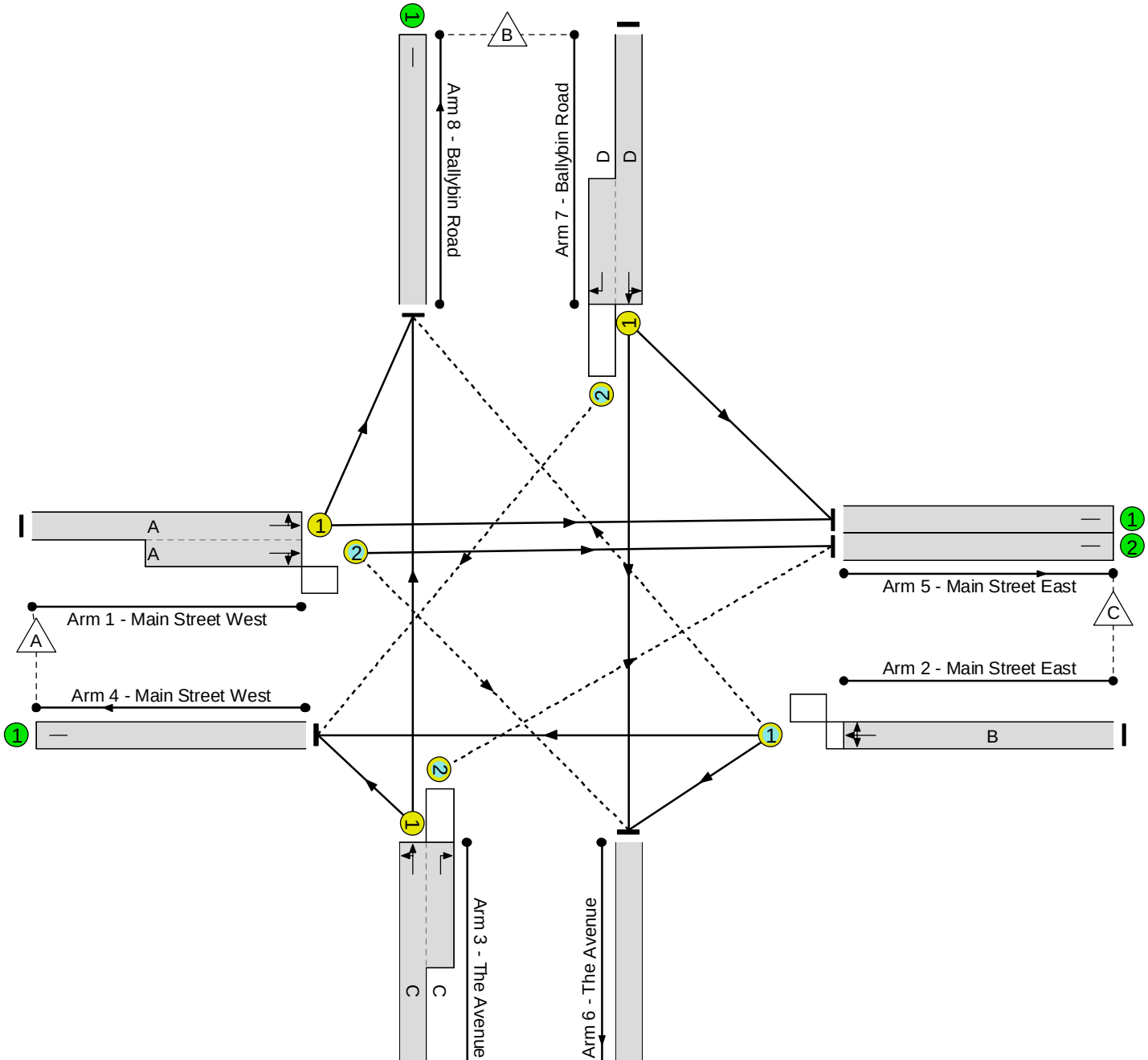


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -4.1 %
Total Traffic Delay: 26.0 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	478	1784:1863	318+332	73.5 : 73.5%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	901	1841	961	93.7%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	319	1837:1764	345+295	49.9 : 49.9%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	918	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	90	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	323	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	359	1852:1764	133+256	92.2 : 92.2%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	294	Inf	Inf	0.0%

Full Input Data And Results

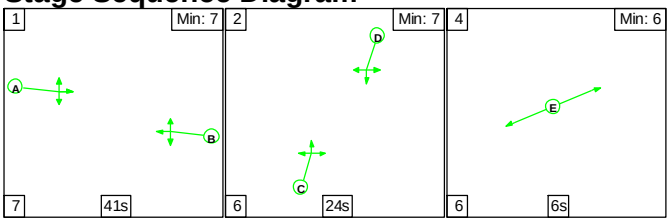
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**387**	**0**	**99**	**12.4**	**12.6**	**1.1**	**26.0**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**387**	**0**	**99**	**12.4**	**12.6**	**1.1**	**26.0**	**-**	**-**	**-**	**-**
1/1+1/2	478	478	31	0	37	1.6	1.4	0.5	3.4	25.7	3.3	1.4	4.7
2/1	901	901	35	0	0	5.0	6.2	0.0	11.2	44.9	21.0	6.2	27.2
3/1+3/2	319	319	145	0	2	2.7	0.5	0.2	3.3	37.6	3.7	0.5	4.2
4/1	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	359	359	176	0	60	3.1	4.5	0.4	8.1	80.8	5.6	4.5	10.2
8/1	294	294	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -4.1 Total Delay for Signalled Lanes (pcuHr): 26.03 Cycle Time (s): 90
PRC Over All Lanes (%): -4.1 Total Delay Over All Lanes(pcuHr): 26.03

Full Input Data And Results

Scenario 13: 'AM Base 2032 + Comm Dev + Dev' (FG13: 'AM Base 2032 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

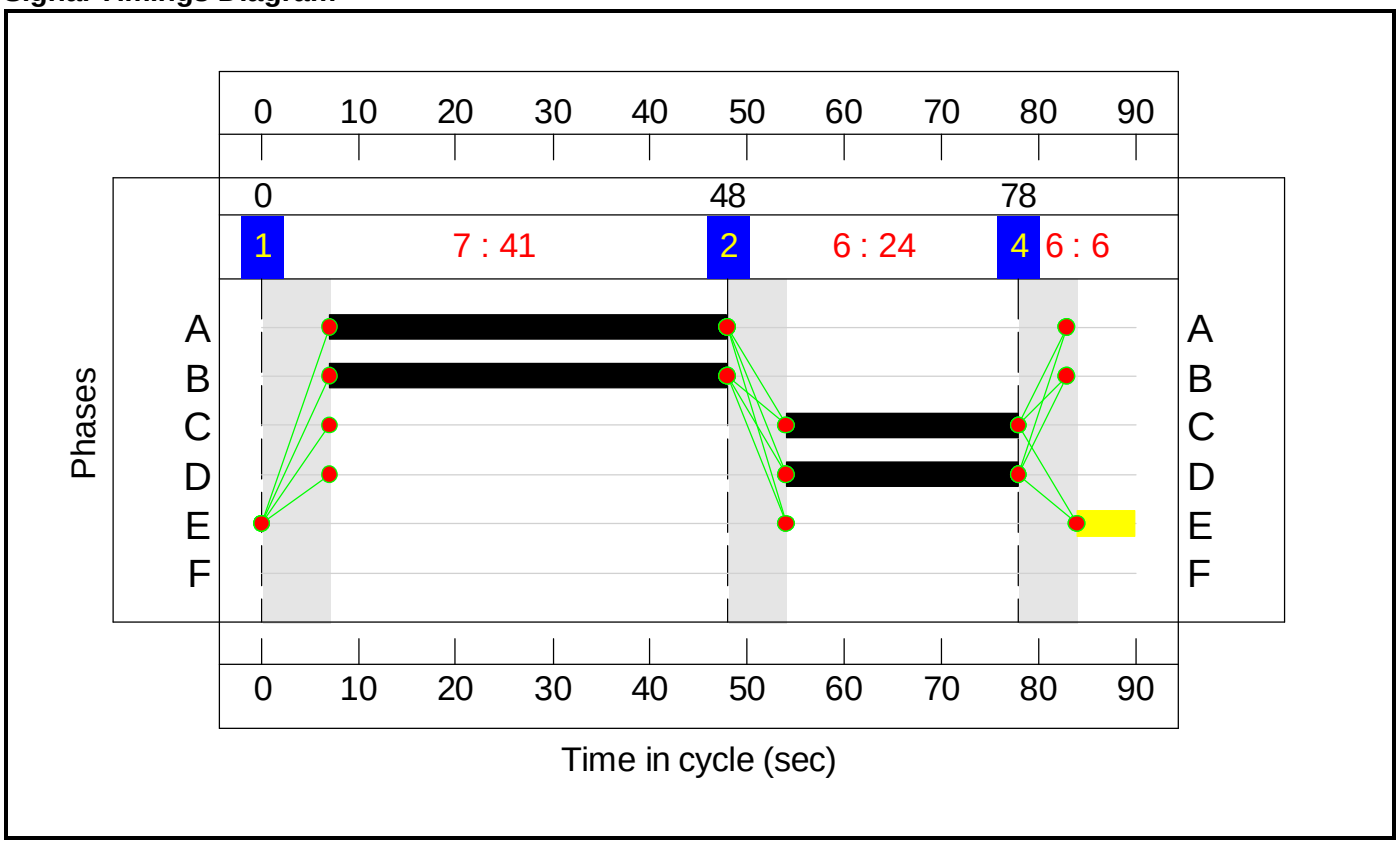
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	41	24	6
Change Point	0	48	78

Signal Timings Diagram

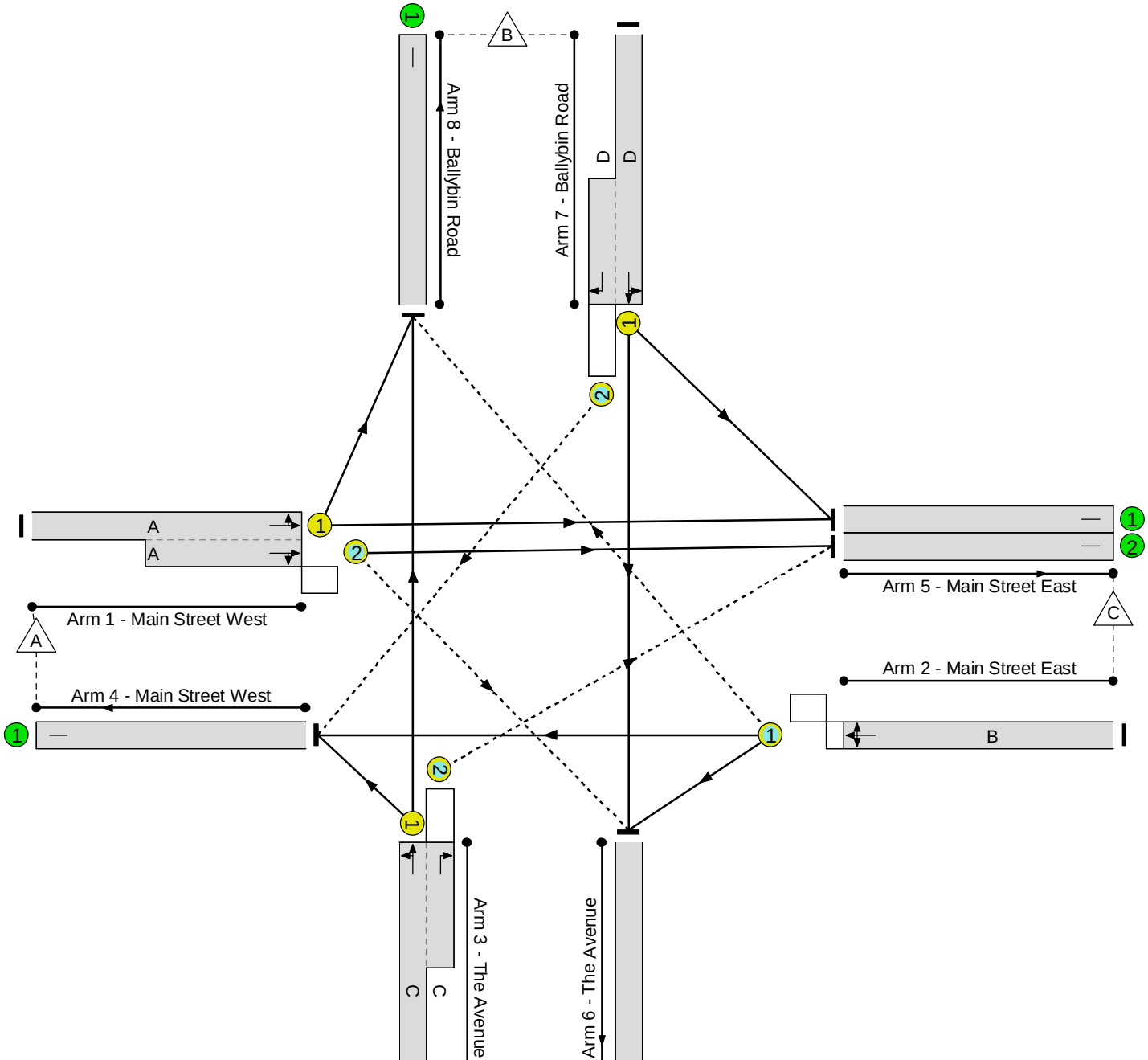


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -9.3 %
Total Traffic Delay: 36.2 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.3%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.3%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	41	-	977	1874:1764	749+260	96.8 : 96.8%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	41	-	443	1794	806	55.0%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	24	0	595	1818:1764	258+347	98.3 : 98.3%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	592	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	378	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	500	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	24	-	235	1786:1764	422+226	36.3 : 36.3%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	366	Inf	Inf	0.0%

Full Input Data And Results

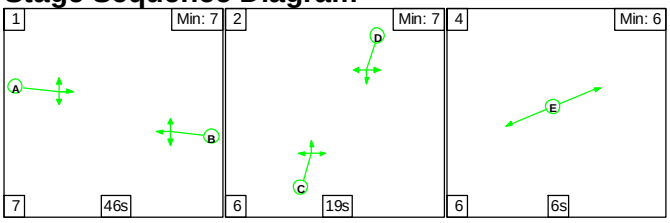
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**586**	**0**	**96**	**14.5**	**20.3**	**1.4**	**36.2**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**586**	**0**	**96**	**14.5**	**20.3**	**1.4**	**36.2**	**-**	**-**	**-**	**-**
1/1+1/2	977	977	215	0	0	5.8	9.5	0.4	15.7	58.0	20.3	9.5	29.8
2/1	443	443	24	0	20	2.1	0.6	0.3	3.0	24.6	7.8	0.6	8.4
3/1+3/2	595	595	267	0	74	5.0	9.9	0.5	15.4	93.1	8.3	9.9	18.3
4/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	592	592	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	378	378	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	500	500	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	235	235	80	0	2	1.7	0.3	0.2	2.1	32.2	3.0	0.3	3.3
8/1	366	366	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -9.3 Total Delay for Signalled Lanes (pcuHr): 36.23 Cycle Time (s): 90
PRC Over All Lanes (%): -9.3 Total Delay Over All Lanes(pcuHr): 36.23

Full Input Data And Results

Scenario 14: 'PM Base 2032 + Comm Dev + Dev' (FG14: 'PM Base 2032 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

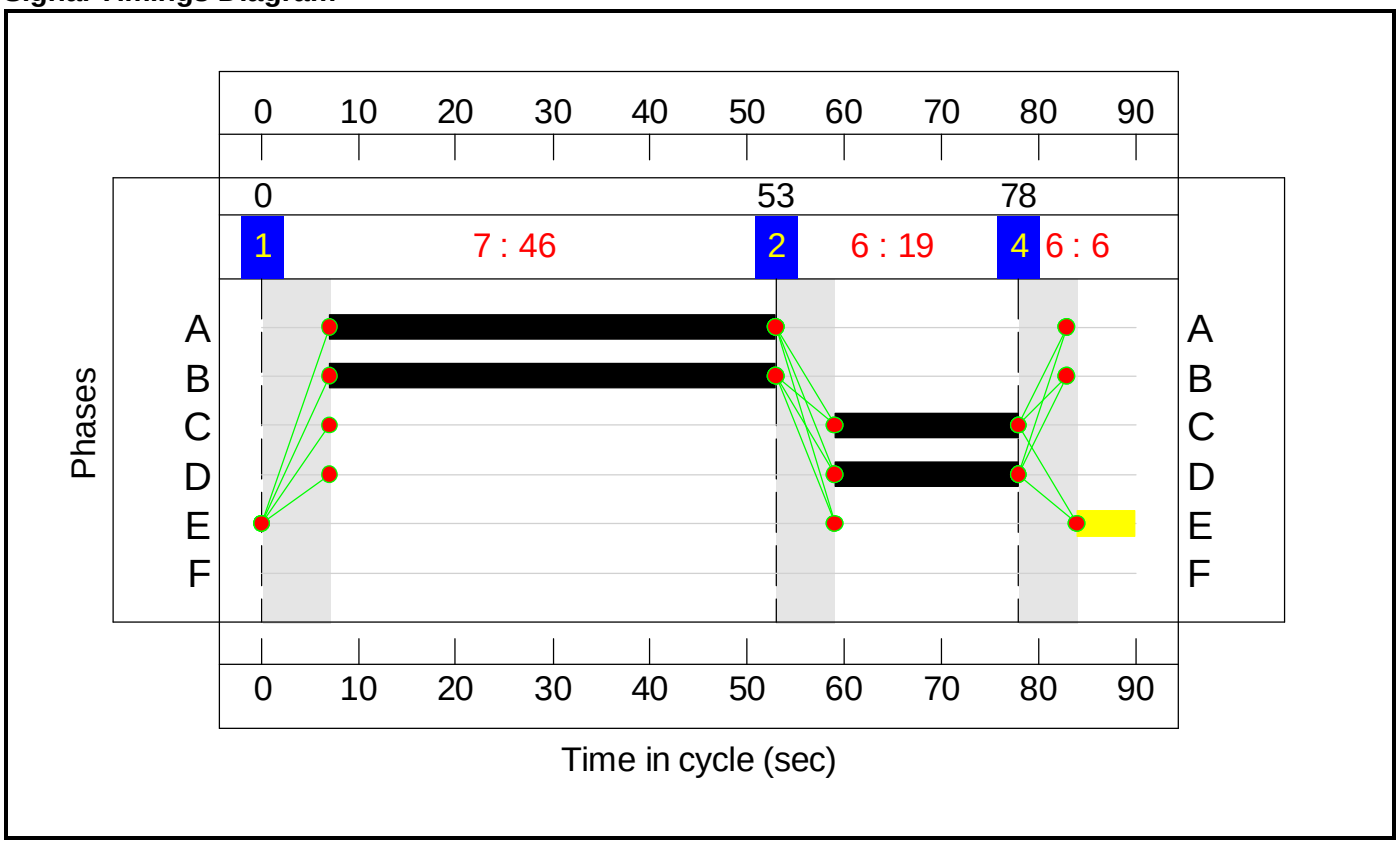
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

Signal Timings Diagram

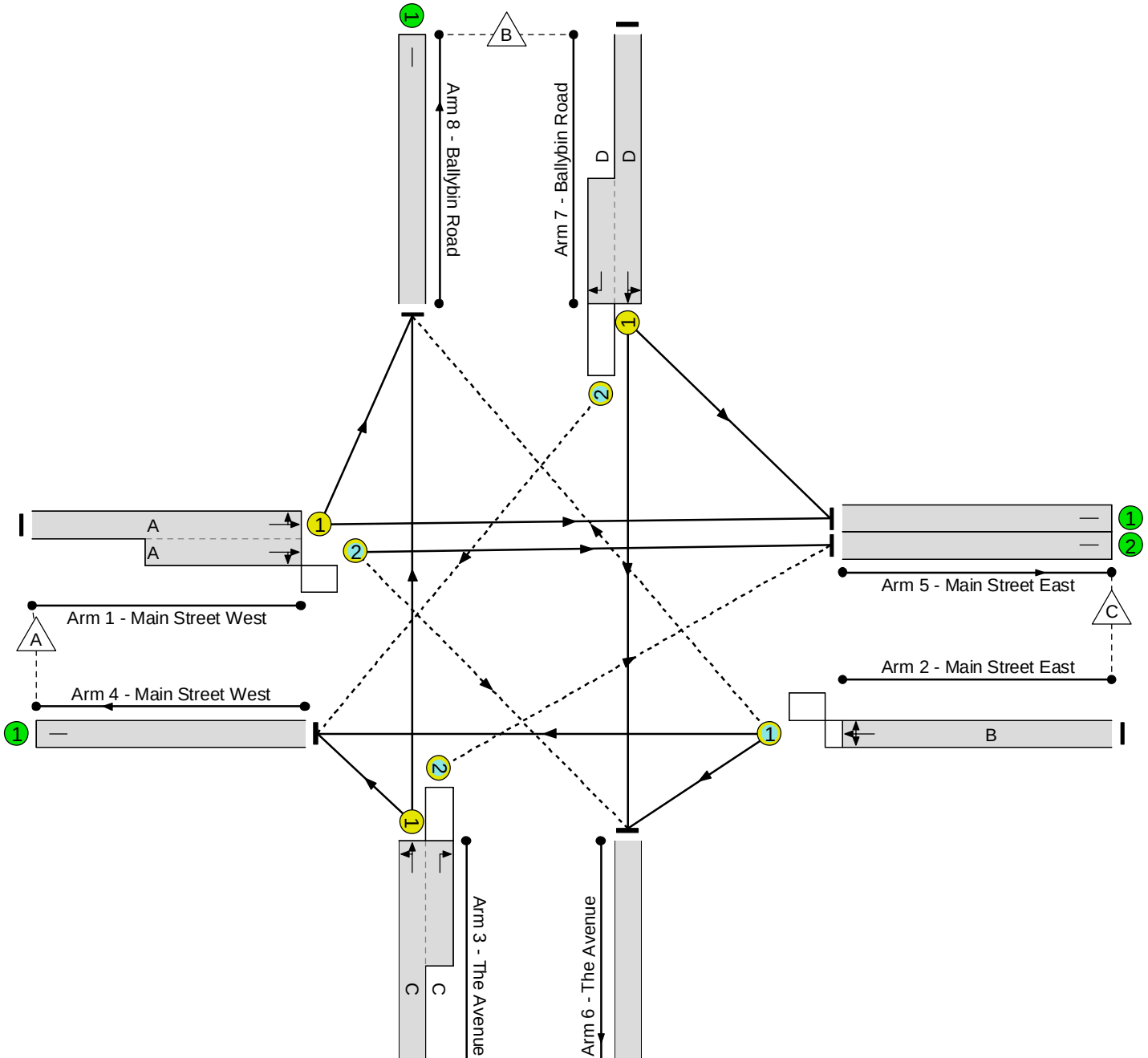


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -7.8 %
Total Traffic Delay: 32.3 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.0%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.0%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	483	1781:1864	322+337	73.3 : 73.3%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	931	1838	960	97.0%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	325	1833:1764	346+276	51.5 : 53.2%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	927	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	107	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	326	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	436	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	386	1828:1764	153+249	95.9 : 95.9%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	329	Inf	Inf	0.0%

Full Input Data And Results

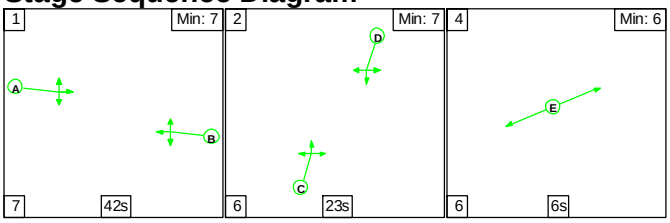
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**394**	**0**	**125**	**13.1**	**18.1**	**1.2**	**32.3**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**394**	**0**	**125**	**13.1**	**18.1**	**1.2**	**32.3**	**-**	**-**	**-**	**-**
1/1+1/2	483	483	15	0	53	1.6	1.3	0.5	3.4	25.5	3.4	1.3	4.7
2/1	931	931	64	0	1	5.4	9.7	0.0	15.1	58.2	22.5	9.7	32.2
3/1+3/2	325	325	145	0	2	2.7	0.5	0.2	3.5	38.6	3.8	0.5	4.4
4/1	927	927	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	107	107	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	326	326	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	386	386	169	0	70	3.4	6.5	0.4	10.3	96.4	5.7	6.5	12.2
8/1	329	329	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -7.8 Total Delay for Signalled Lanes (pcuHr): 32.31 Cycle Time (s): 90
PRC Over All Lanes (%): -7.8 Total Delay Over All Lanes(pcuHr): 32.31

Full Input Data And Results

Scenario 15: 'AM Base 2042' (FG15: 'AM Base 2042', Plan 1: 'Network Control Plan 1')

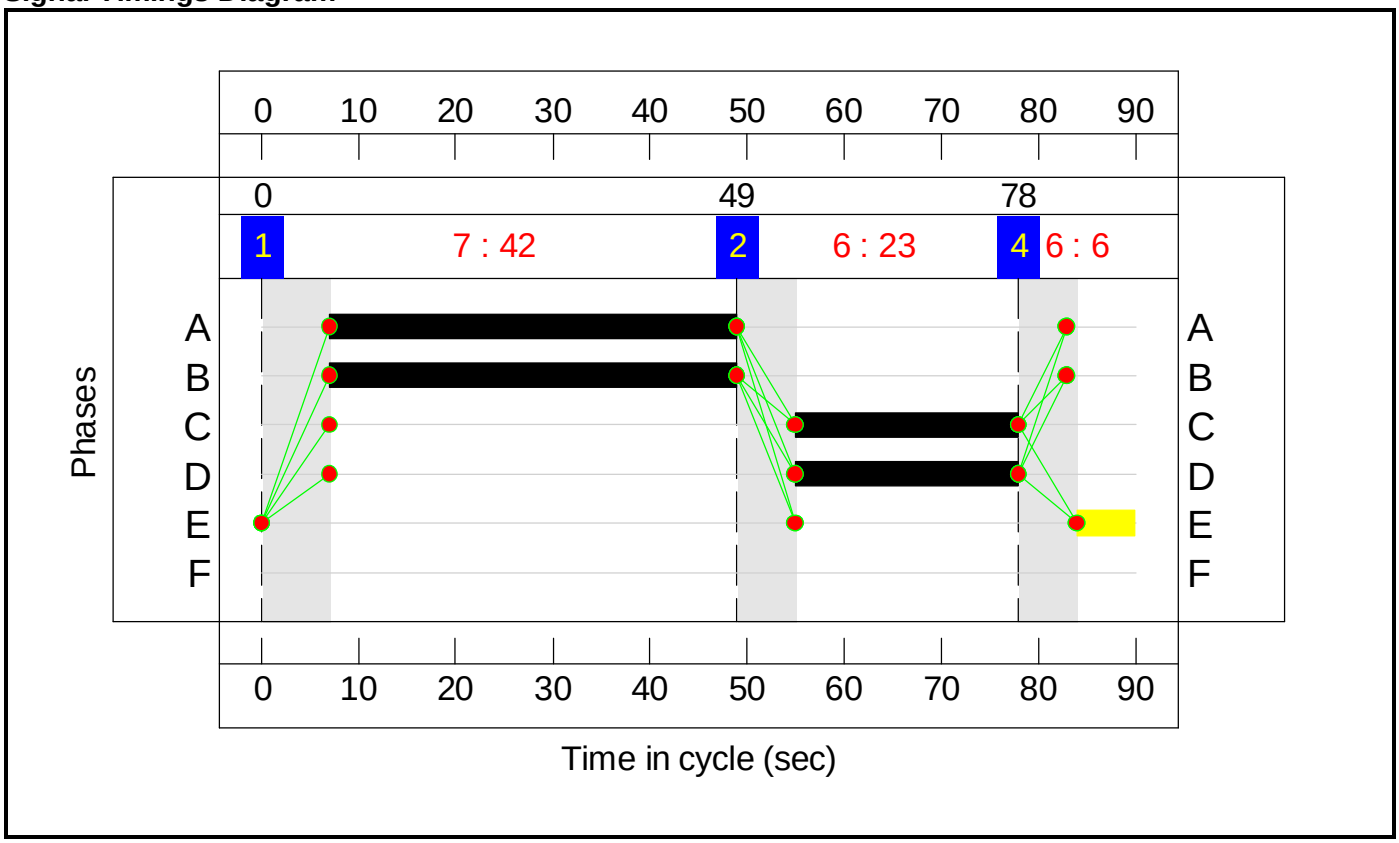
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	42	23	6
Change Point	0	49	78

Signal Timings Diagram

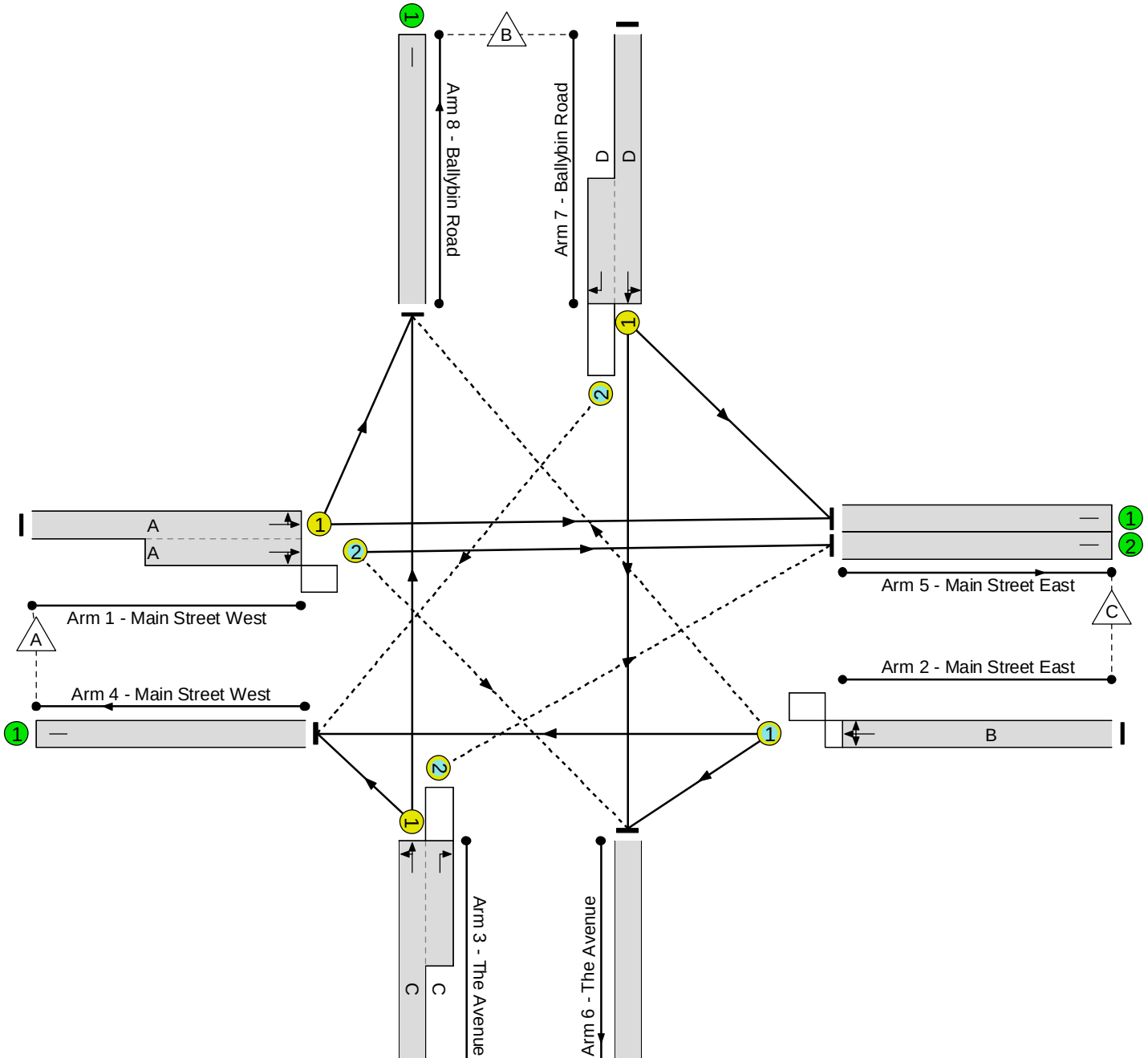


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -8.0 %
Total Traffic Delay: 34.3 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.2%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.2%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	42	-	1032	1868:1792	730+343	96.2 : 96.2%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	42	-	458	1796	858	53.4%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	23	0	625	1819:1764	274+369	97.2 : 97.2%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	462	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	23	-	190	1825:1764	395+234	27.6 : 34.6%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	373	Inf	Inf	0.0%

Full Input Data And Results

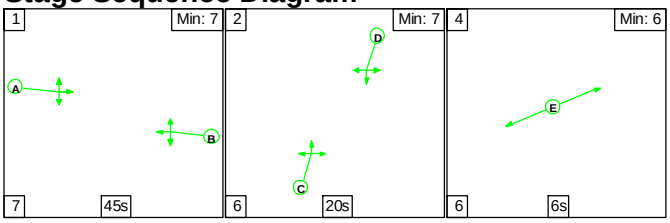
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**629**	**0**	**72**	**14.7**	**18.4**	**1.3**	**34.3**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**629**	**0**	**72**	**14.7**	**18.4**	**1.3**	**34.3**	**-**	**-**	**-**	**-**
1/1+1/2	1032	1032	227	0	0	5.9	8.9	0.5	15.2	53.1	20.3	8.9	29.1
2/1	458	458	34	0	0	2.1	0.6	0.2	2.9	22.4	8.0	0.6	8.6
3/1+3/2	625	625	289	0	70	5.4	8.8	0.4	14.5	83.8	9.6	8.8	18.3
4/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	190	190	79	0	2	1.4	0.2	0.2	1.7	32.8	2.1	0.2	2.3
8/1	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -8.0 Total Delay for Signalled Lanes (pcuHr): 34.35 Cycle Time (s): 90
PRC Over All Lanes (%): -8.0 Total Delay Over All Lanes(pcuHr): 34.35

Full Input Data And Results

Scenario 16: 'PM Base 2042' (FG16: 'PM Base 2042', Plan 1: 'Network Control Plan 1')

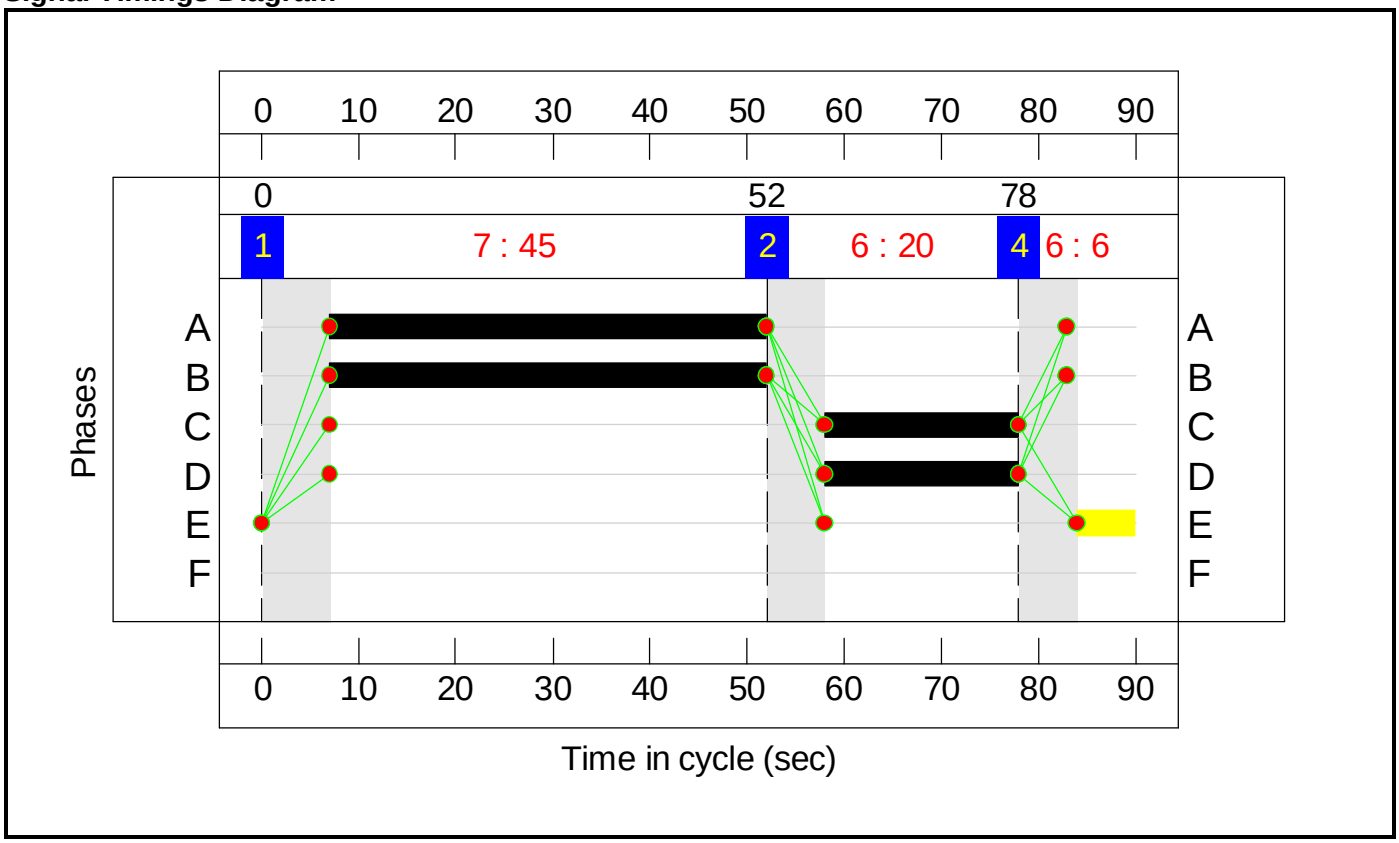
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	45	20	6
Change Point	0	52	78

Signal Timings Diagram

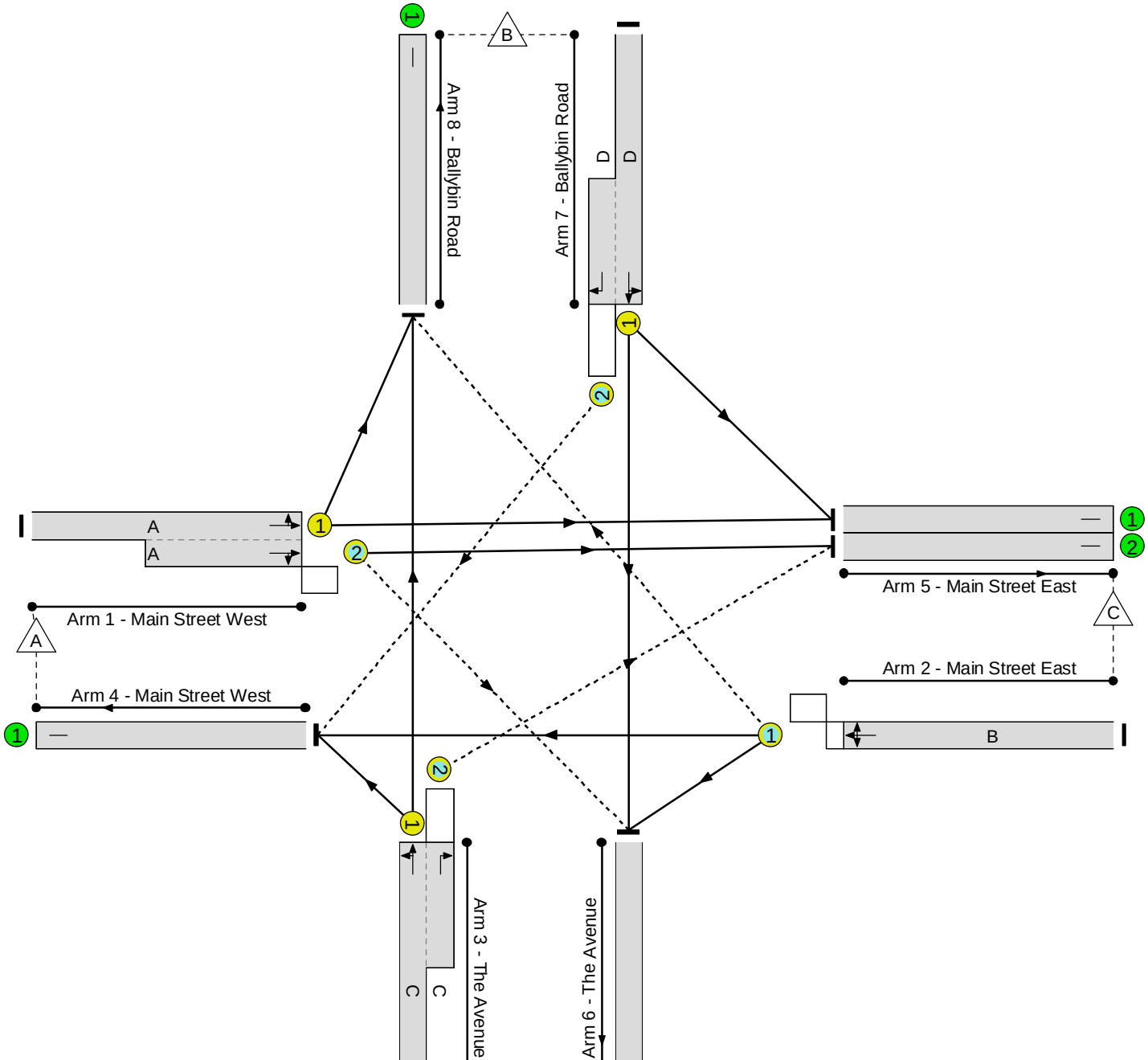


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -12.2 %
Total Traffic Delay: 41.3 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.0%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.0%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	45	-	506	1783:1864	330+346	75.0 : 75.0%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	45	-	950	1841	941	101.0%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	20	0	337	1837:1764	355+306	50.9 : 50.9%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	970	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	94	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	344	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	455	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	20	-	381	1853:1764	136+262	95.7 : 95.7%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%

Full Input Data And Results

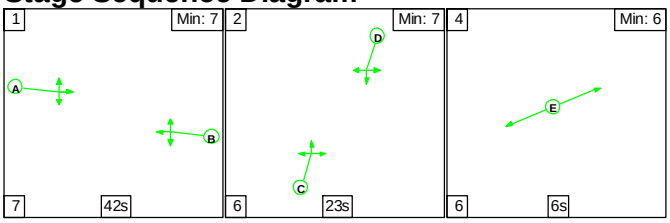
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**387**	**0**	**128**	**14.0**	**26.2**	**1.1**	**41.3**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**387**	**0**	**128**	**14.0**	**26.2**	**1.1**	**41.3**	**-**	**-**	**-**	**-**
1/1+1/2	506	506	15	0	56	1.8	1.5	0.5	3.7	26.4	3.7	1.5	5.1
2/1	950	941	35	0	1	6.2	17.8	0.0	24.0	91.1	24.0	17.8	41.8
3/1+3/2	337	337	154	0	2	2.7	0.5	0.2	3.5	37.0	3.8	0.5	4.3
4/1	964	964	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	94	94	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	344	344	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	452	452	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	381	381	182	0	69	3.3	6.4	0.4	10.1	95.5	6.0	6.4	12.4
8/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -12.2 Total Delay for Signalled Lanes (pcuHr): 41.30 Cycle Time (s): 90
PRC Over All Lanes (%): -12.2 Total Delay Over All Lanes(pcuHr): 41.30

Full Input Data And Results

Scenario 17: 'AM Base 2042 + Comm Dev' (FG17: 'AM Base 2042 + Comm Dev', Plan 1: 'Network Control Plan 1')

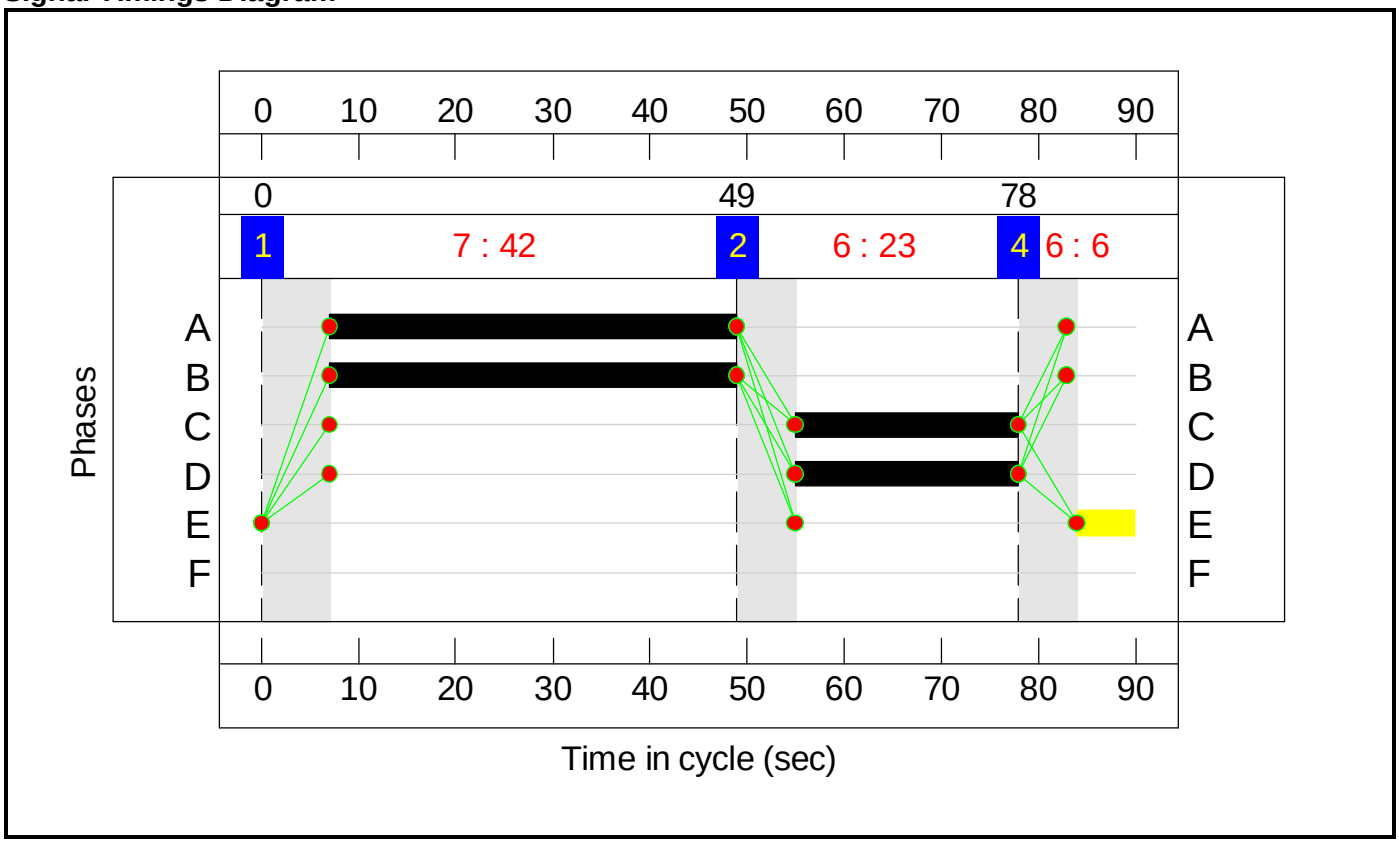
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	42	23	6
Change Point	0	49	78

Signal Timings Diagram

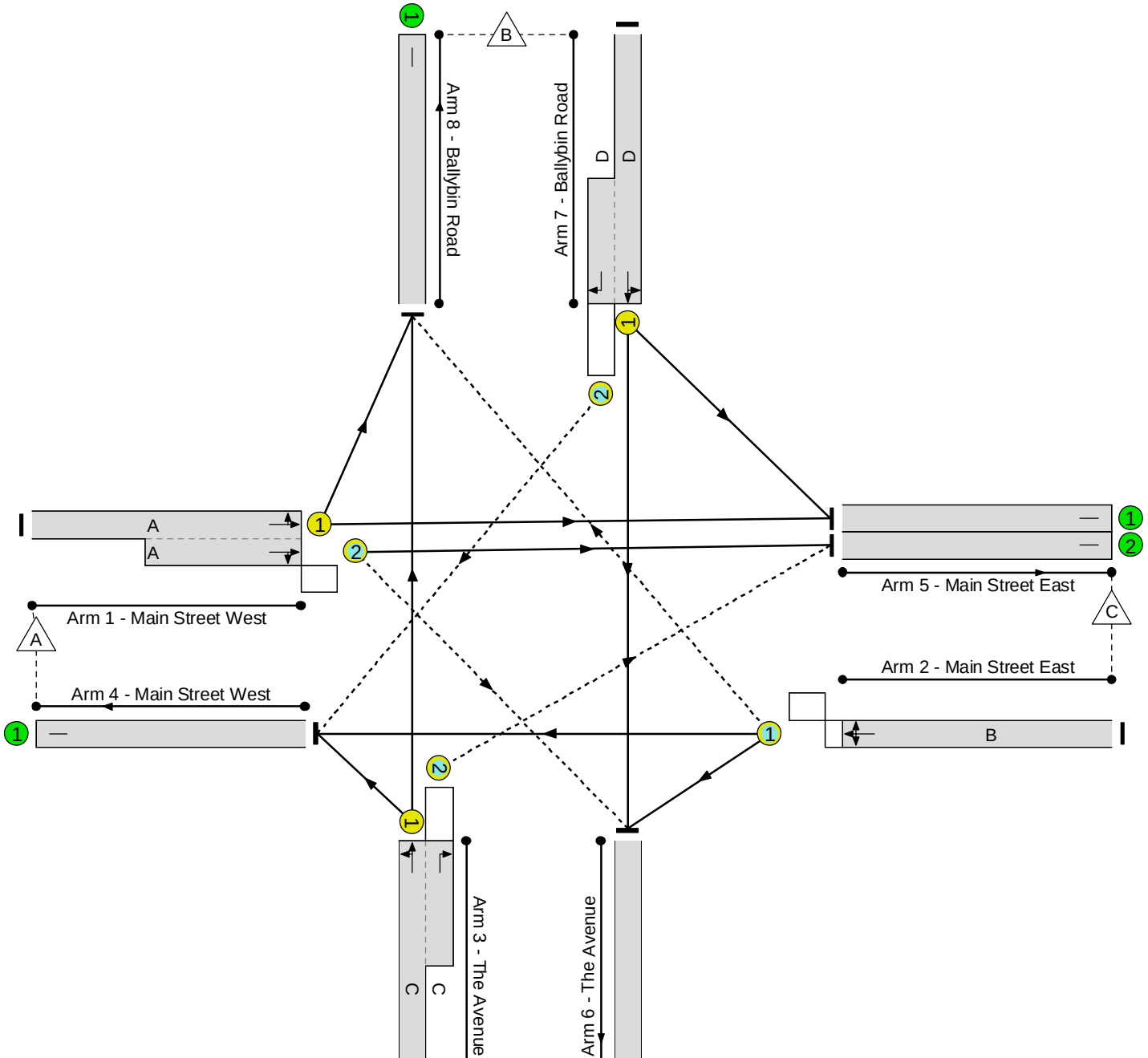


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -8.0 %
Total Traffic Delay: 34.3 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.2%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.2%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	42	-	1032	1868:1792	730+343	96.2 : 96.2%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	42	-	458	1796	858	53.4%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	23	0	625	1819:1764	274+369	97.2 : 97.2%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	462	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	23	-	190	1825:1764	395+234	27.6 : 34.6%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	373	Inf	Inf	0.0%

Full Input Data And Results

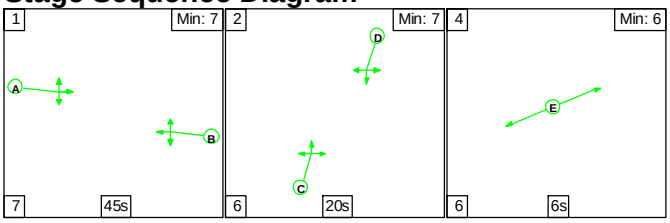
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**629**	**0**	**72**	**14.7**	**18.4**	**1.3**	**34.3**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**629**	**0**	**72**	**14.7**	**18.4**	**1.3**	**34.3**	**-**	**-**	**-**	**-**
1/1+1/2	1032	1032	227	0	0	5.9	8.9	0.5	15.2	53.1	20.3	8.9	29.1
2/1	458	458	34	0	0	2.1	0.6	0.2	2.9	22.4	8.0	0.6	8.6
3/1+3/2	625	625	289	0	70	5.4	8.8	0.4	14.5	83.8	9.6	8.8	18.3
4/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	190	190	79	0	2	1.4	0.2	0.2	1.7	32.8	2.1	0.2	2.3
8/1	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -8.0 Total Delay for Signalled Lanes (pcuHr): 34.35 Cycle Time (s): 90
PRC Over All Lanes (%): -8.0 Total Delay Over All Lanes(pcuHr): 34.35

Full Input Data And Results

Scenario 18: 'PM Base 2042 + Comm Dev' (FG18: 'PM Base 2042 + Comm Dev', Plan 1: 'Network Control Plan 1')

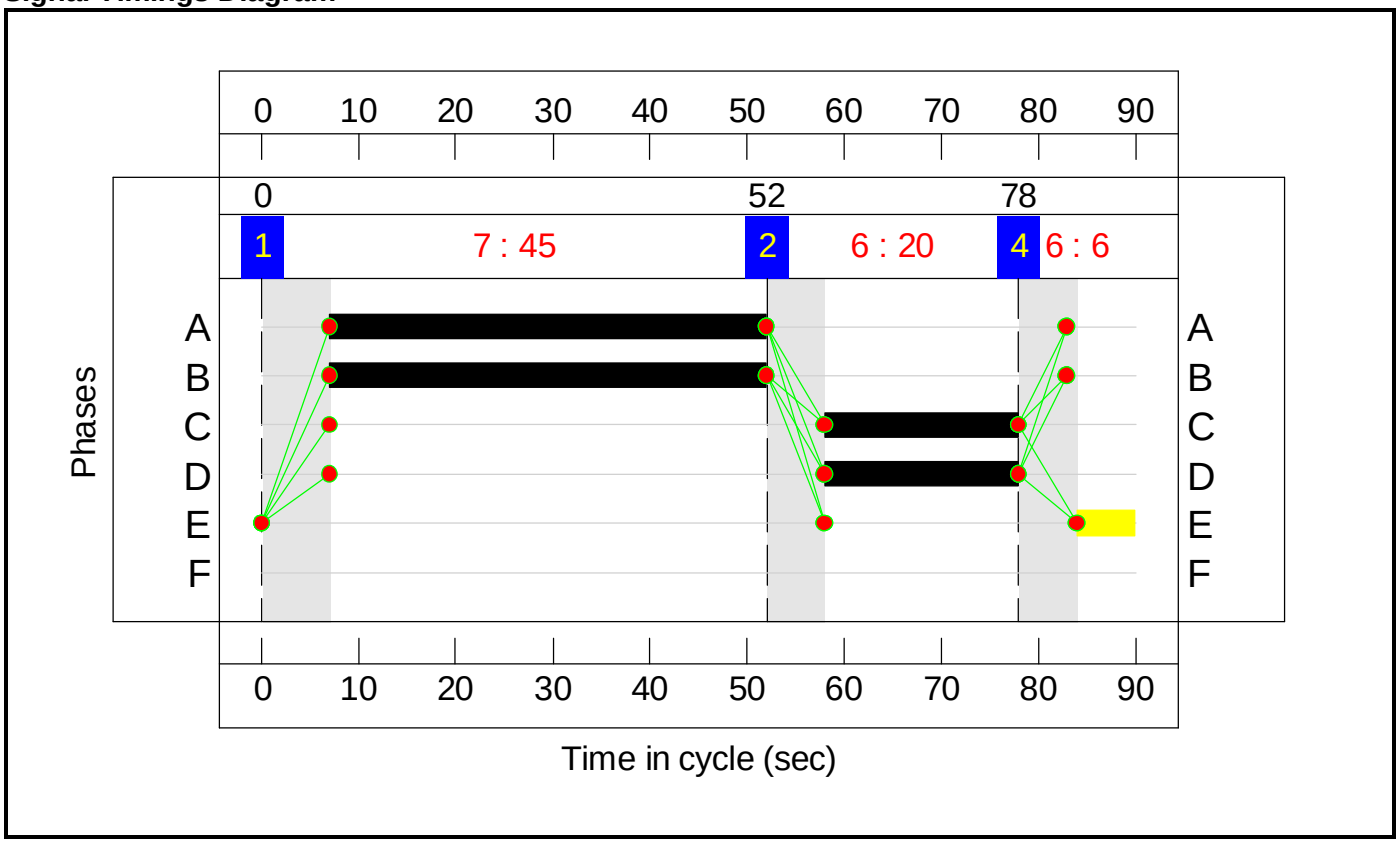
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	45	20	6
Change Point	0	52	78

Signal Timings Diagram

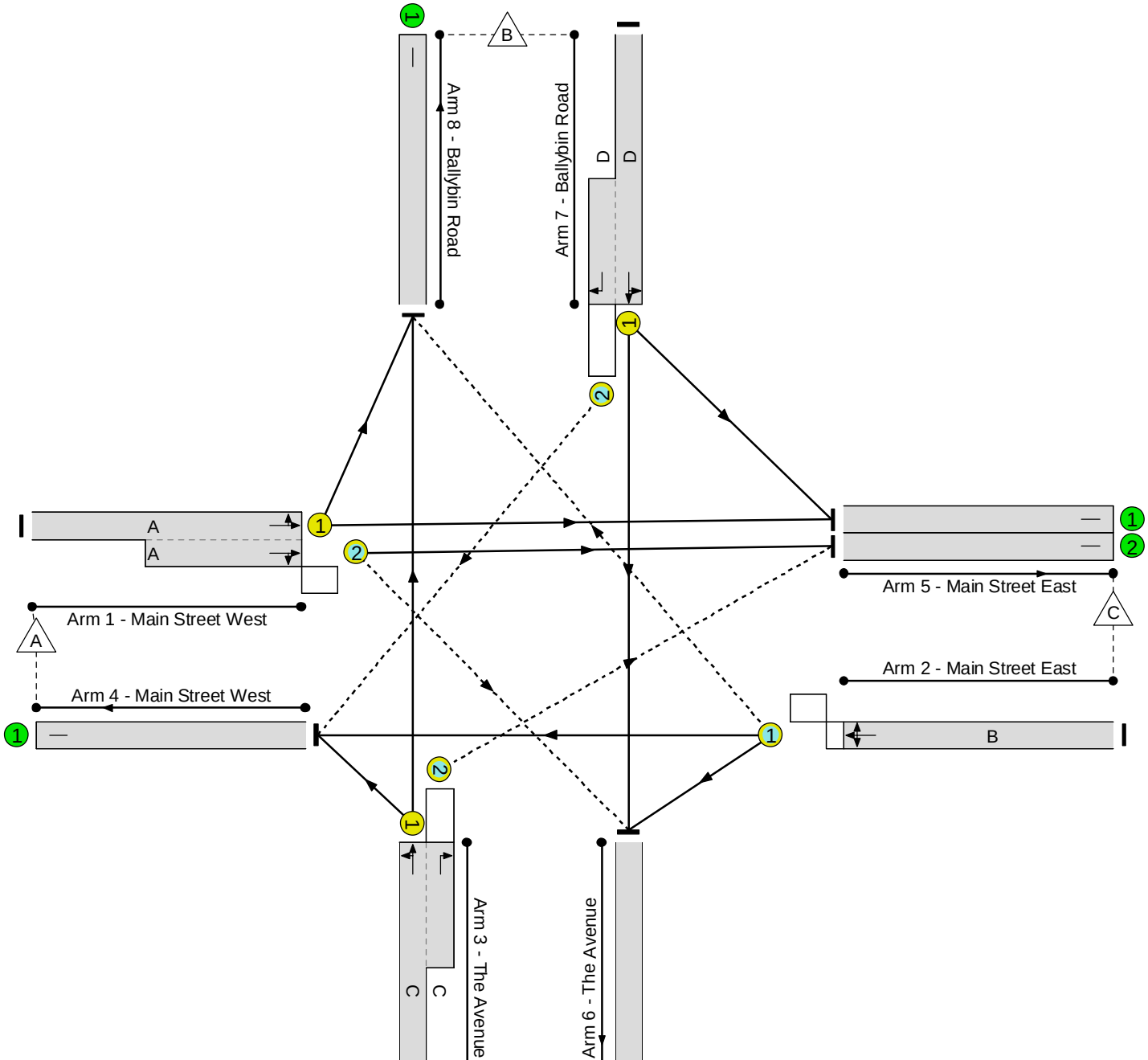


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -12.2 %
Total Traffic Delay: 41.3 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.0%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.0%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	45	-	506	1783:1864	330+346	75.0 : 75.0%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	45	-	950	1841	941	101.0%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	20	0	337	1837:1764	355+306	50.9 : 50.9%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	970	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	94	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	344	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	455	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	20	-	381	1853:1764	136+262	95.7 : 95.7%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%

Full Input Data And Results

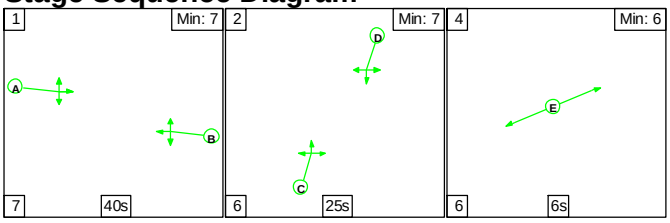
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**387**	**0**	**128**	**14.0**	**26.2**	**1.1**	**41.3**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**387**	**0**	**128**	**14.0**	**26.2**	**1.1**	**41.3**	**-**	**-**	**-**	**-**
1/1+1/2	506	506	15	0	56	1.8	1.5	0.5	3.7	26.4	3.7	1.5	5.1
2/1	950	941	35	0	1	6.2	17.8	0.0	24.0	91.1	24.0	17.8	41.8
3/1+3/2	337	337	154	0	2	2.7	0.5	0.2	3.5	37.0	3.8	0.5	4.3
4/1	964	964	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	94	94	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	344	344	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	452	452	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	381	381	182	0	69	3.3	6.4	0.4	10.1	95.5	6.0	6.4	12.4
8/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -12.2 Total Delay for Signalled Lanes (pcuHr): 41.30 Cycle Time (s): 90
PRC Over All Lanes (%): -12.2 Total Delay Over All Lanes(pcuHr): 41.30

Full Input Data And Results

Scenario 19: 'AM Base 2042 + Comm Dev + Dev' (FG19: 'AM Base 2042 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

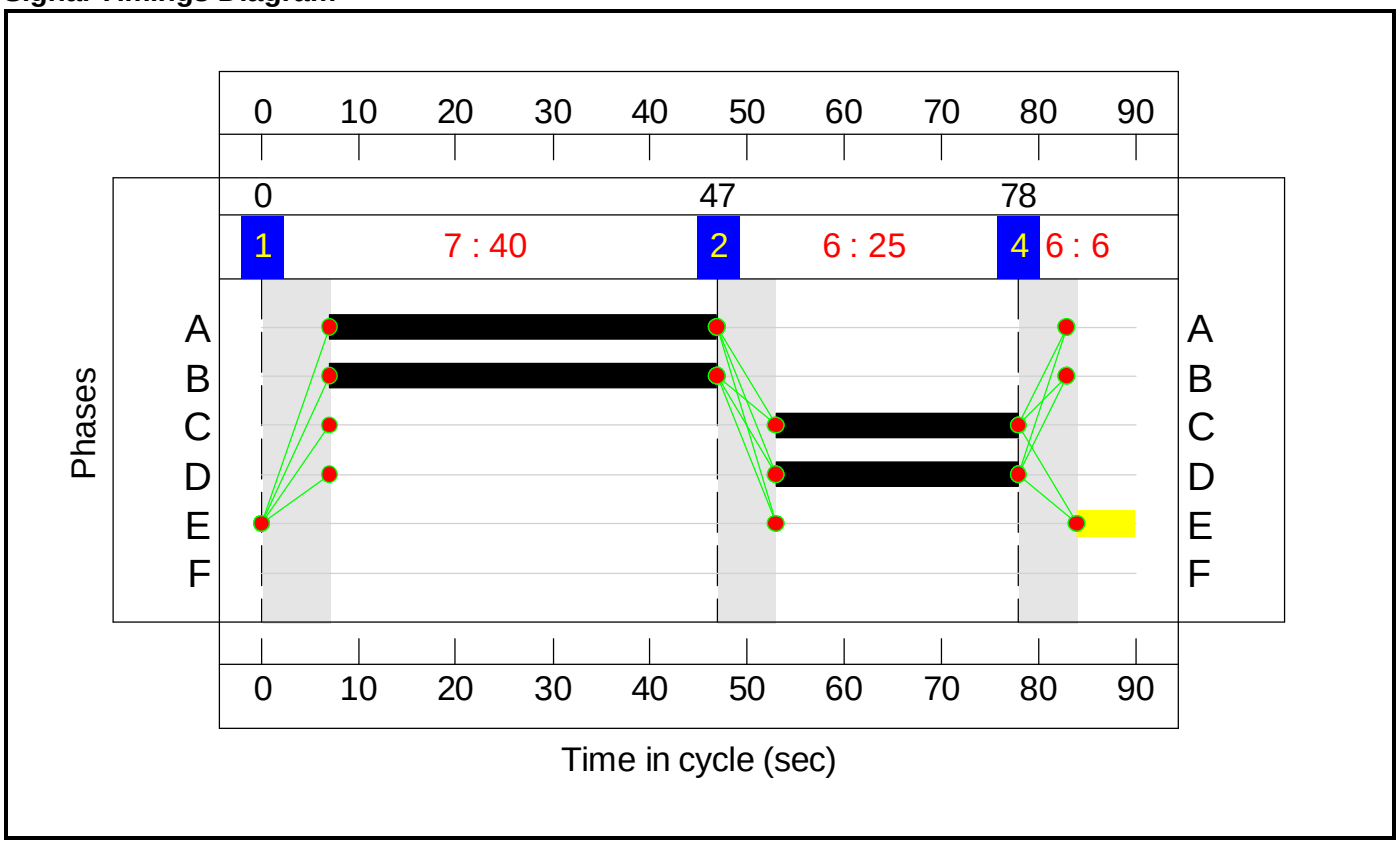
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	40	25	6
Change Point	0	47	78

Signal Timings Diagram

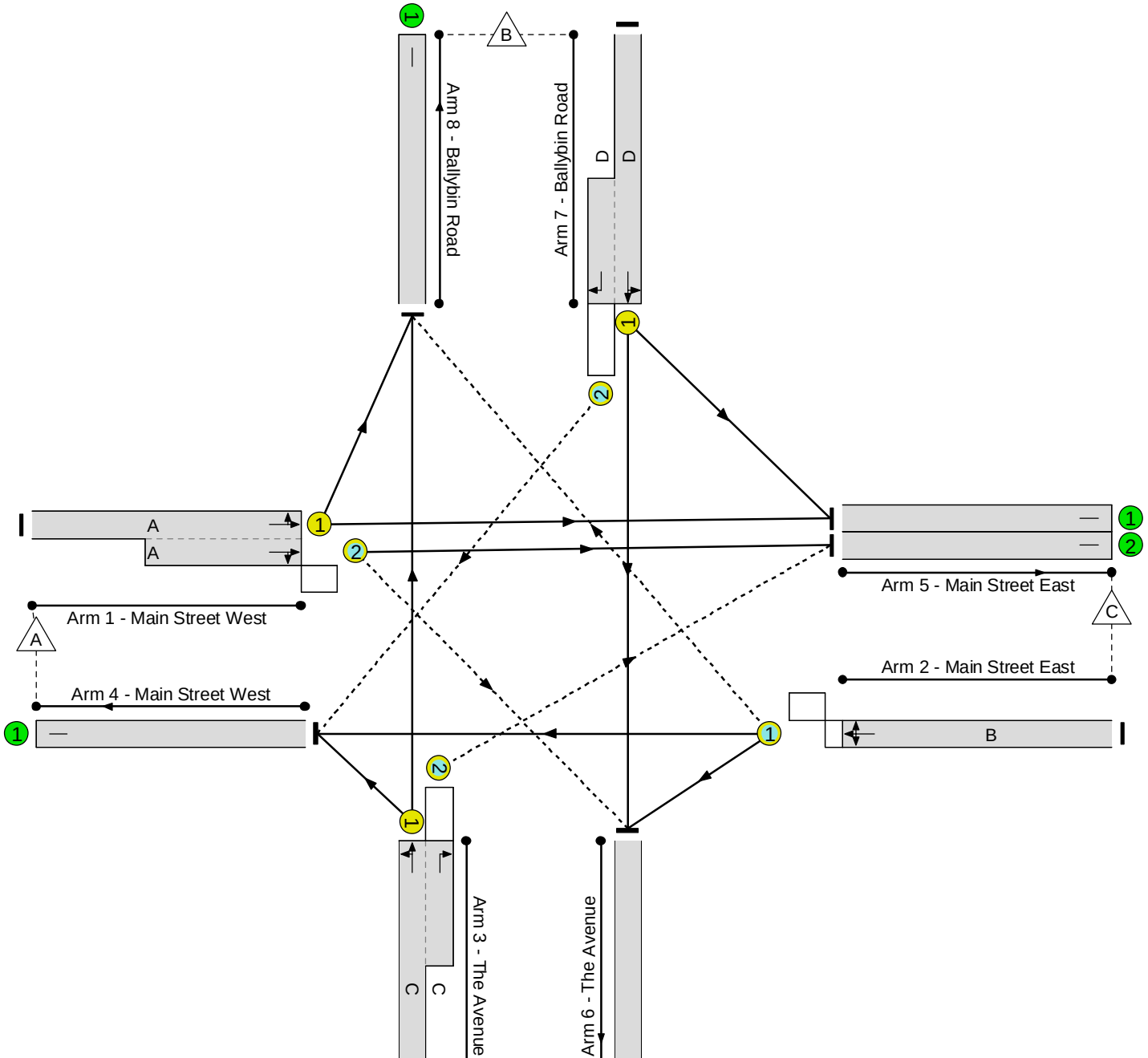


Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Ballybin Roundabout junction
PRC: -12.6 %
Total Traffic Delay: 51.4 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.4%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.4%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	40	-	1034	1869:1790	705+322	100.7 : 100.7%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	40	-	470	1795	818	57.5%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	25	0	627	1818:1764	264+354	101.4 : 101.4%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	440	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	567	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	456	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	529	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	25	-	248	1787:1764	434+235	37.1 : 37.1%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%

Full Input Data And Results

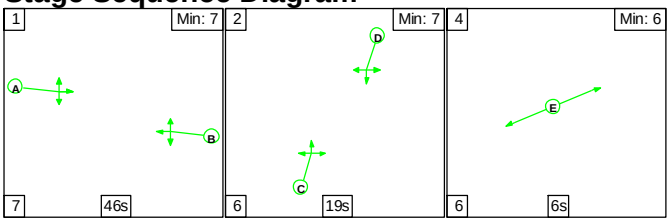
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**598**	**0**	**114**	**16.0**	**33.8**	**1.6**	**51.4**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**598**	**0**	**114**	**16.0**	**33.8**	**1.6**	**51.4**	**-**	**-**	**-**	**-**
1/1+1/2	1034	1027	225	0	0	6.8	18.0	0.5	25.2	87.9	22.3	18.0	40.3
2/1	470	470	14	0	32	2.4	0.7	0.3	3.3	25.5	8.6	0.7	9.3
3/1+3/2	627	627	274	0	80	5.2	14.8	0.6	20.7	118.6	8.9	14.8	23.7
4/1	440	440	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	527	527	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	248	248	85	0	2	1.7	0.3	0.2	2.2	31.6	3.1	0.3	3.4
8/1	385	385	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -12.6 Total Delay for Signalled Lanes (pcuHr): 51.41 Cycle Time (s): 90
PRC Over All Lanes (%): -12.6 Total Delay Over All Lanes(pcuHr): 51.41

Full Input Data And Results

Scenario 20: 'PM Base 2042 + Comm Dev + Dev' (FG20: 'PM Base 2042 + Comm Dev + Dev', Plan 1: 'Network Control Plan 1')

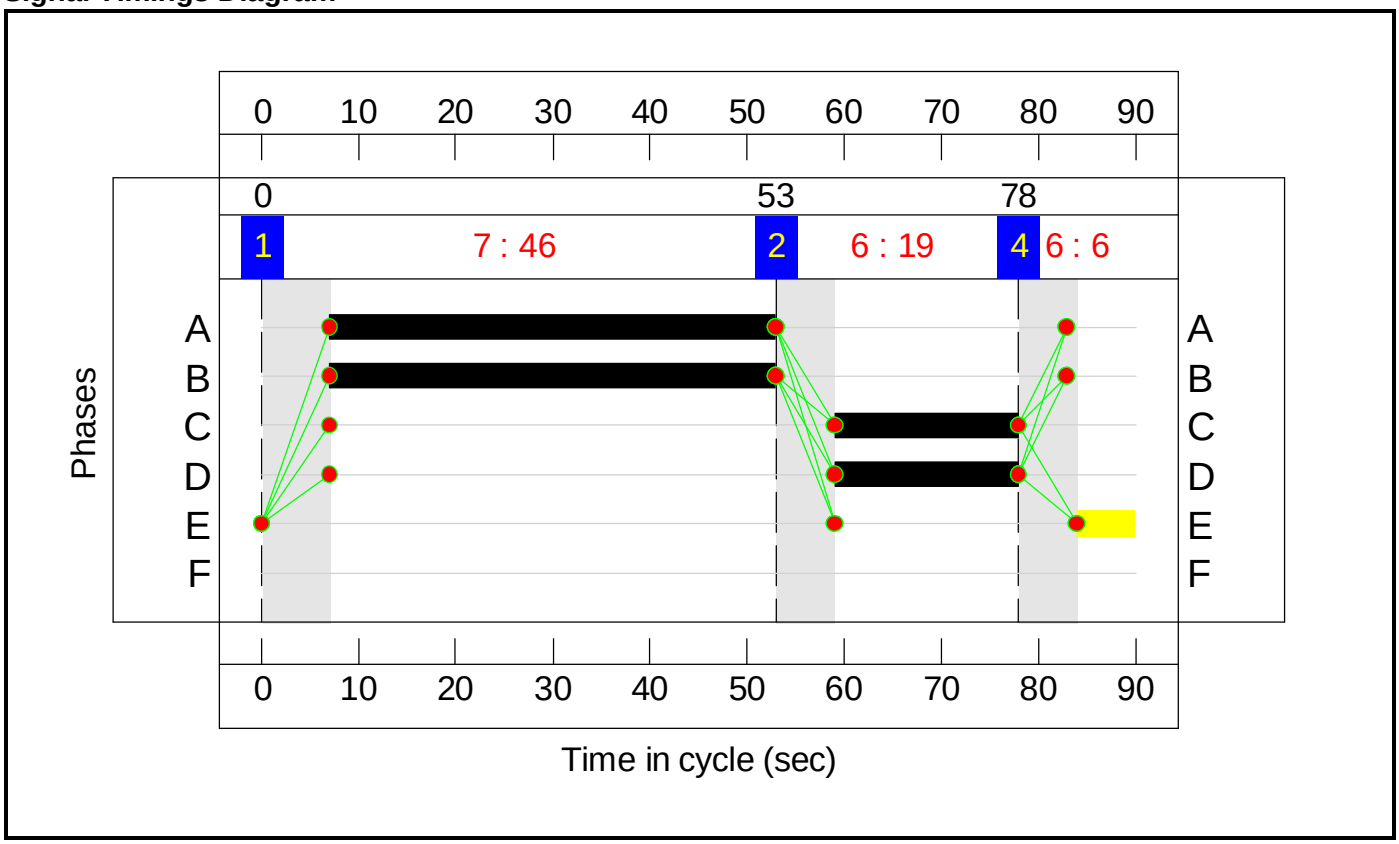
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	46	19	6
Change Point	0	53	78

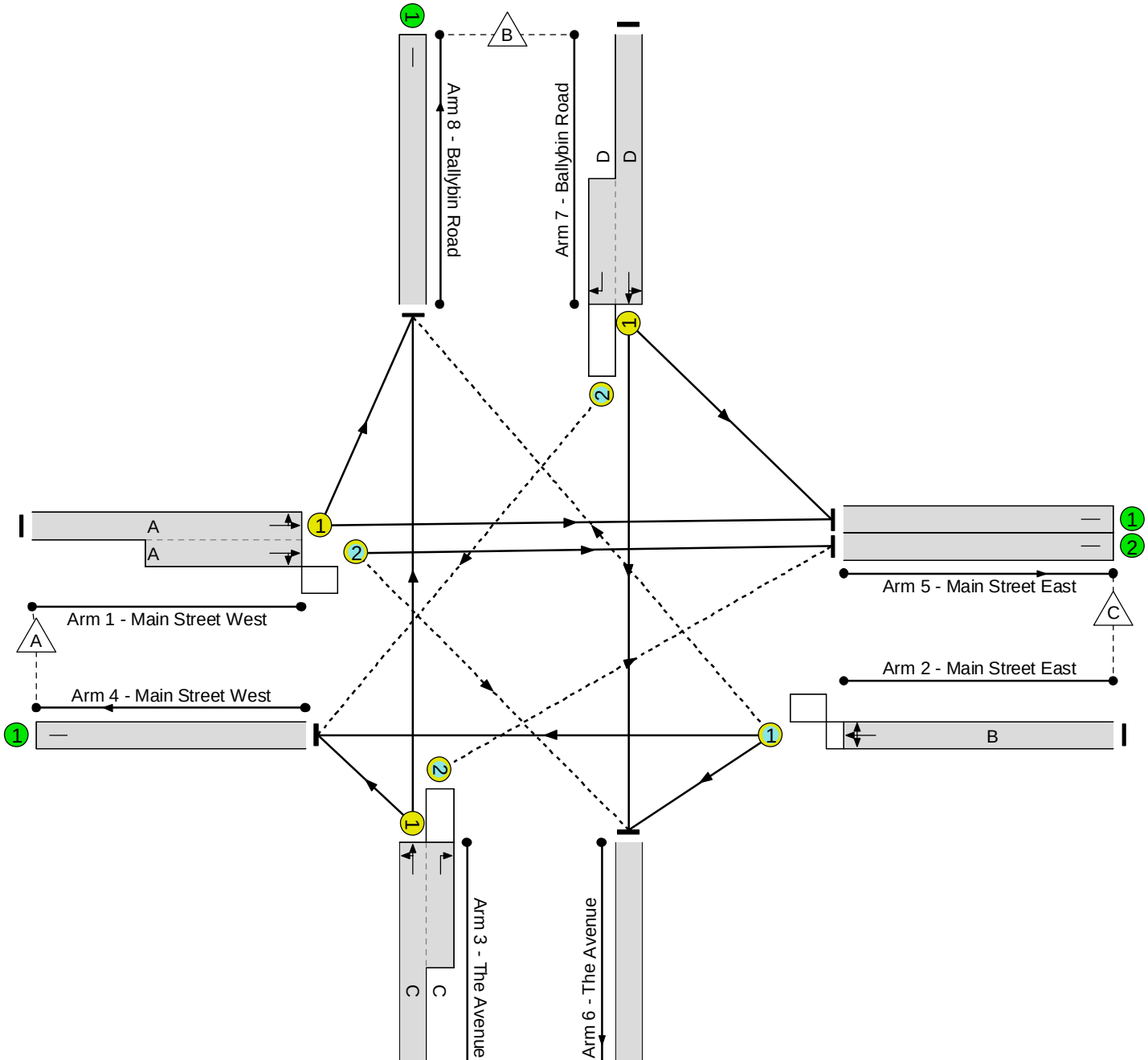
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Ballybin Roundabout junction
PRC: -14.9 %
Total Traffic Delay: 53.9 pcuHr



Full Input Data And Results

Network Results

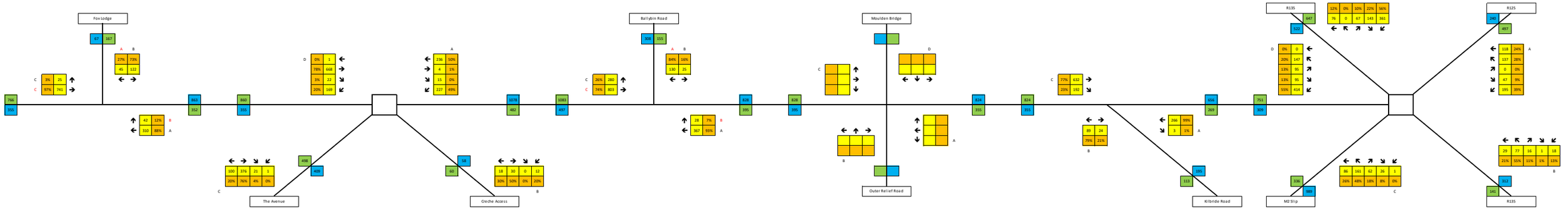
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ballybin Rbt signalisation	-	-	**N/A**	-	-		-	-	-	-	-	-	**103.4%**
Ballybin Roundabout junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**103.4%**
1/1+1/2	Main Street West Ahead Right Left	U+O	N/A	N/A	A		1	46	-	510	1781:1864	332+348	75.0 : 75.0%
2/1	Main Street East Ahead Left Right	O	N/A	N/A	B		1	46	-	980	1838	960	102.1%
3/1+3/2	The Avenue Left Right Ahead	U+O	N/A	N/A	C	F	1	19	0	343	1833:1764	345+269	54.1 : 58.0%
4/1	Main Street West	U	N/A	N/A	-		-	-	-	978	Inf	Inf	0.0%
5/1	Main Street East	U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
5/2	Main Street East	U	N/A	N/A	-		-	-	-	346	Inf	Inf	0.0%
6/1	The Avenue	U	N/A	N/A	-		-	-	-	459	Inf	Inf	0.0%
7/1+7/2	Ballybin Road Right Left Ahead	U+O	N/A	N/A	D		1	19	-	407	1829:1764	149+245	103.4 : 103.4%
8/1	Ballybin Road	U	N/A	N/A	-		-	-	-	345	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ballybin Rbt signalisation	**-**	**-**	**397**	**0**	**140**	**14.9**	**37.6**	**1.4**	**53.9**	**-**	**-**	**-**	**-**
Ballybin Roundabout junction	**-**	**-**	**397**	**0**	**140**	**14.9**	**37.6**	**1.4**	**53.9**	**-**	**-**	**-**	**-**
1/1+1/2	510	510	15	0	56	1.7	1.5	0.5	3.7	25.8	3.6	1.5	5.1
2/1	980	960	63	0	2	6.7	21.5	0.0	28.2	103.5	25.0	21.5	46.5
3/1+3/2	343	343	154	0	2	2.9	0.6	0.3	3.8	39.6	4.0	0.6	4.6
4/1	957	957	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	346	346	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	453	453	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	407	407	165	0	80	3.7	14.0	0.6	18.3	161.6	6.3	14.0	20.2
8/1	344	344	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -14.9 Total Delay for Signalled Lanes (pcuHr): 53.88 Cycle Time (s): 90
PRC Over All Lanes (%): -14.9 Total Delay Over All Lanes(pcuHr): 53.88

APPENDIX E – JUNCTION TURNING DIAGRAMS

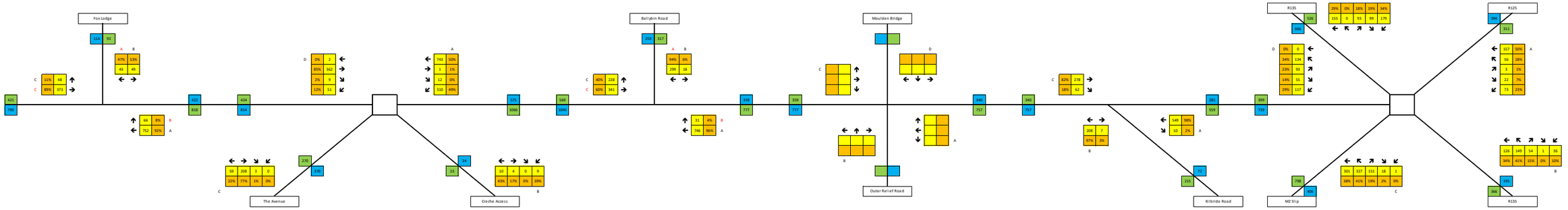


Scenario:

08:00 - 09:00 2023 AM Peak Base Network

Figure 1

SYSTRA

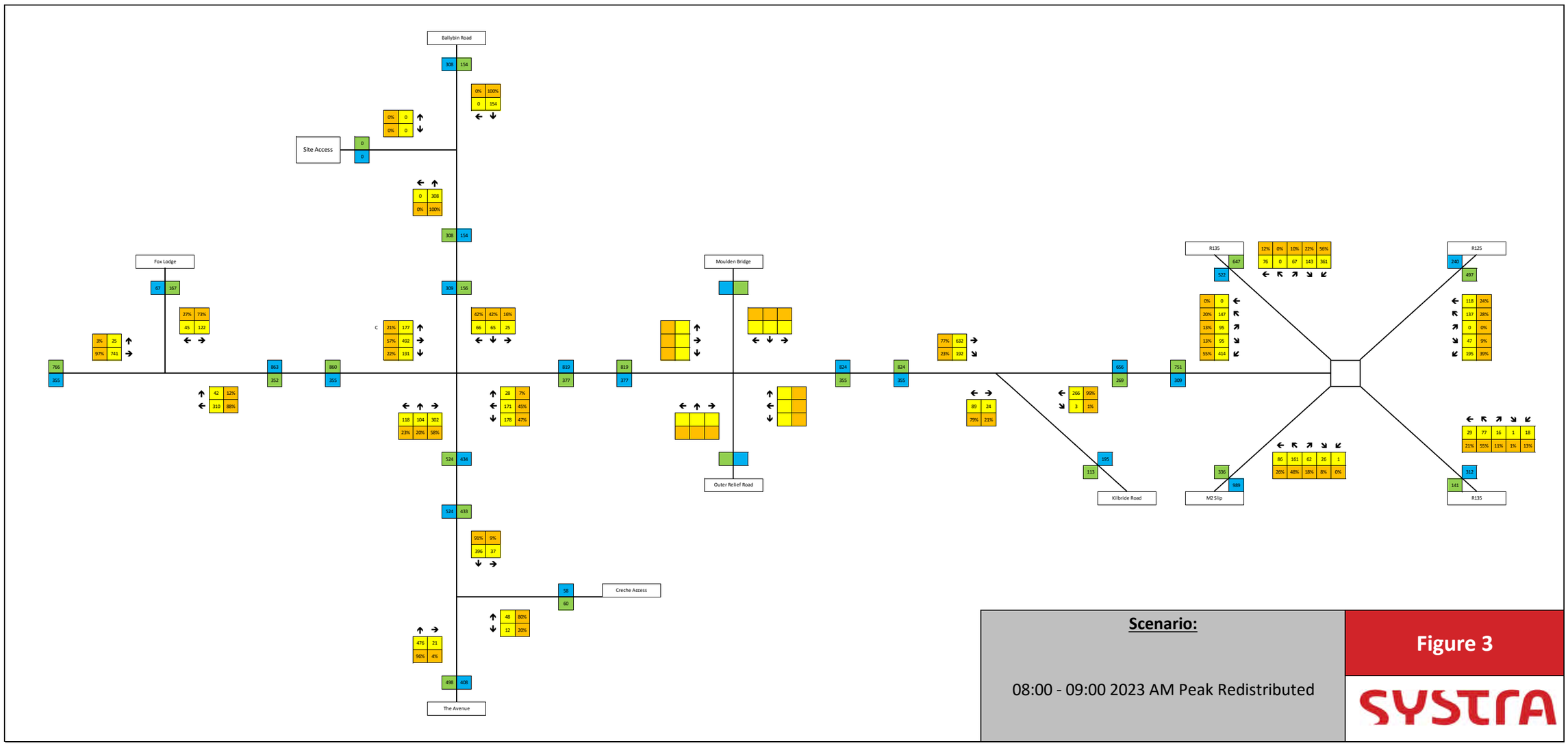


Scenario:

16:15 - 17:15 2023 PM Peak Base Network

Figure 2

SYSTRA

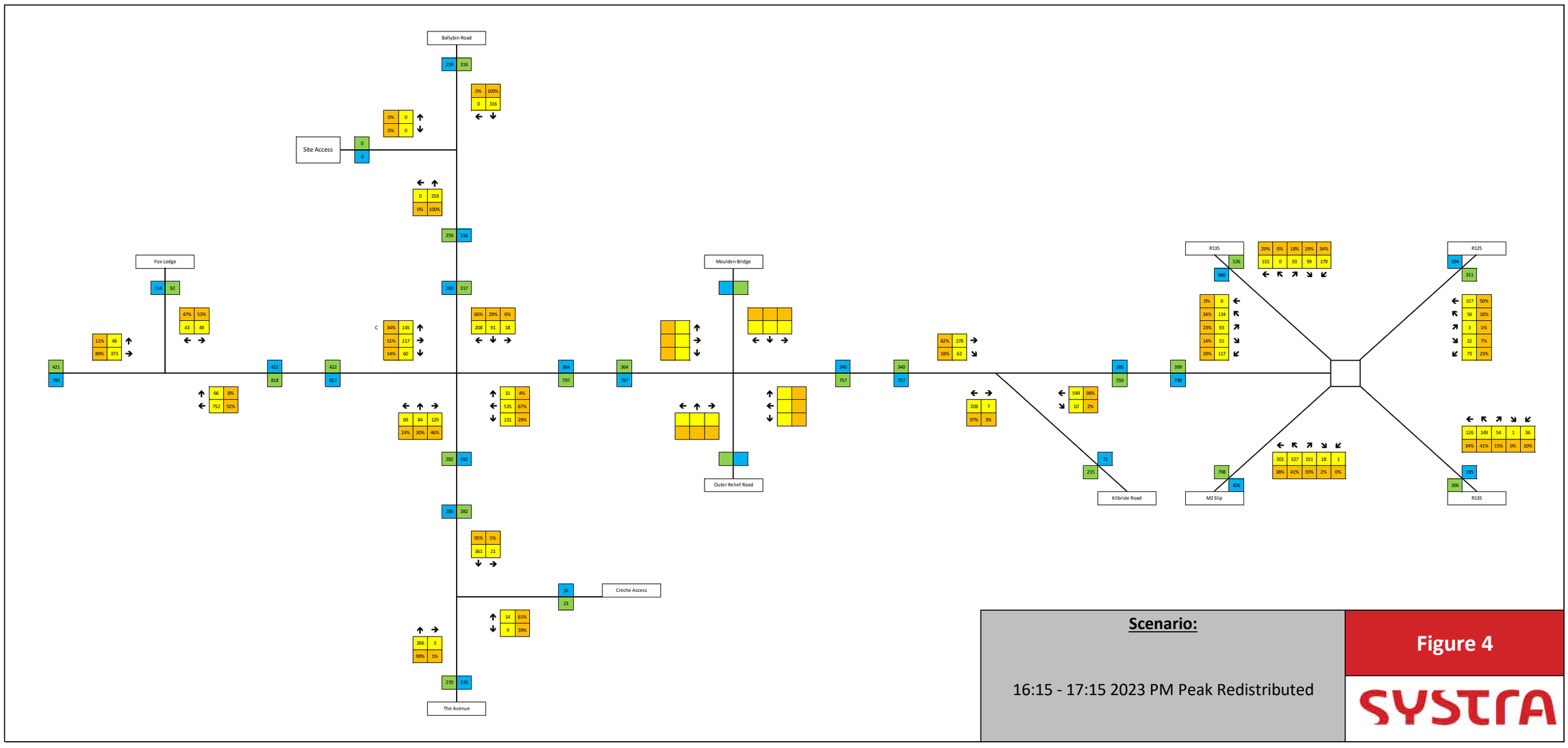


Scenario:

08:00 - 09:00 2023 AM Peak Redistributed

Figure 3

SYSTRA

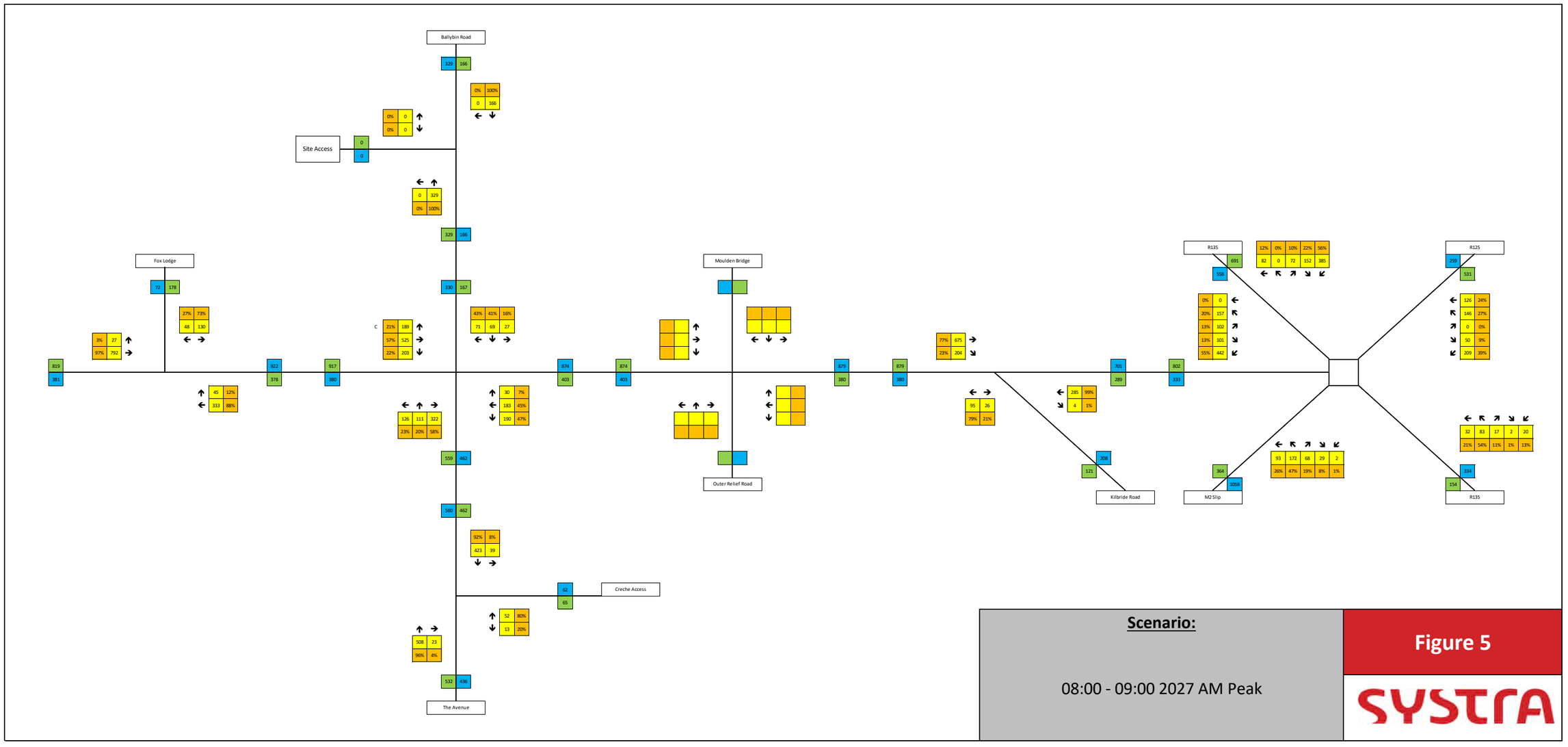


Scenario:

16:15 - 17:15 2023 PM Peak Redistributed

Figure 4

SYSTRA

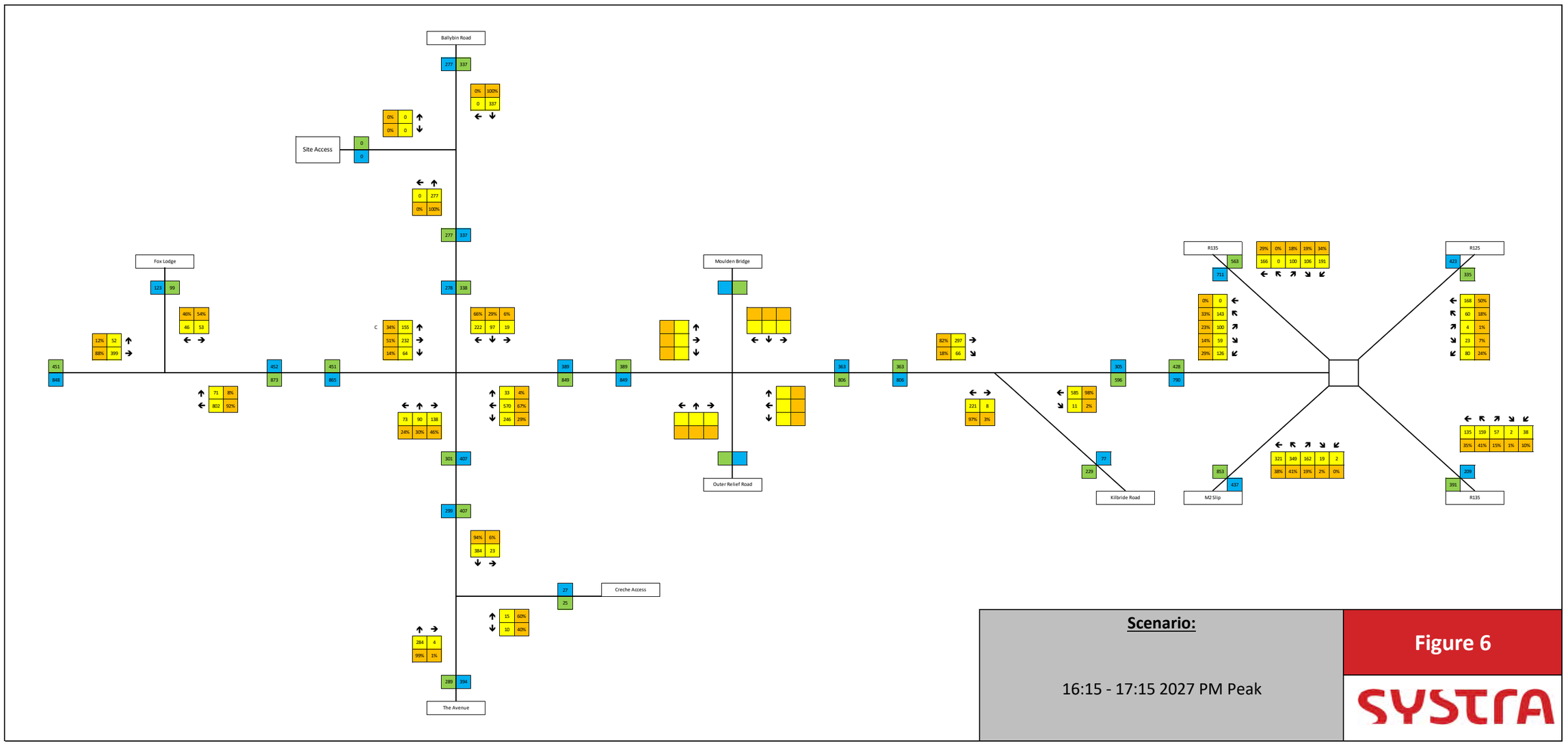


Scenario:

08:00 - 09:00 2027 AM Peak

Figure 5

SYSTRA

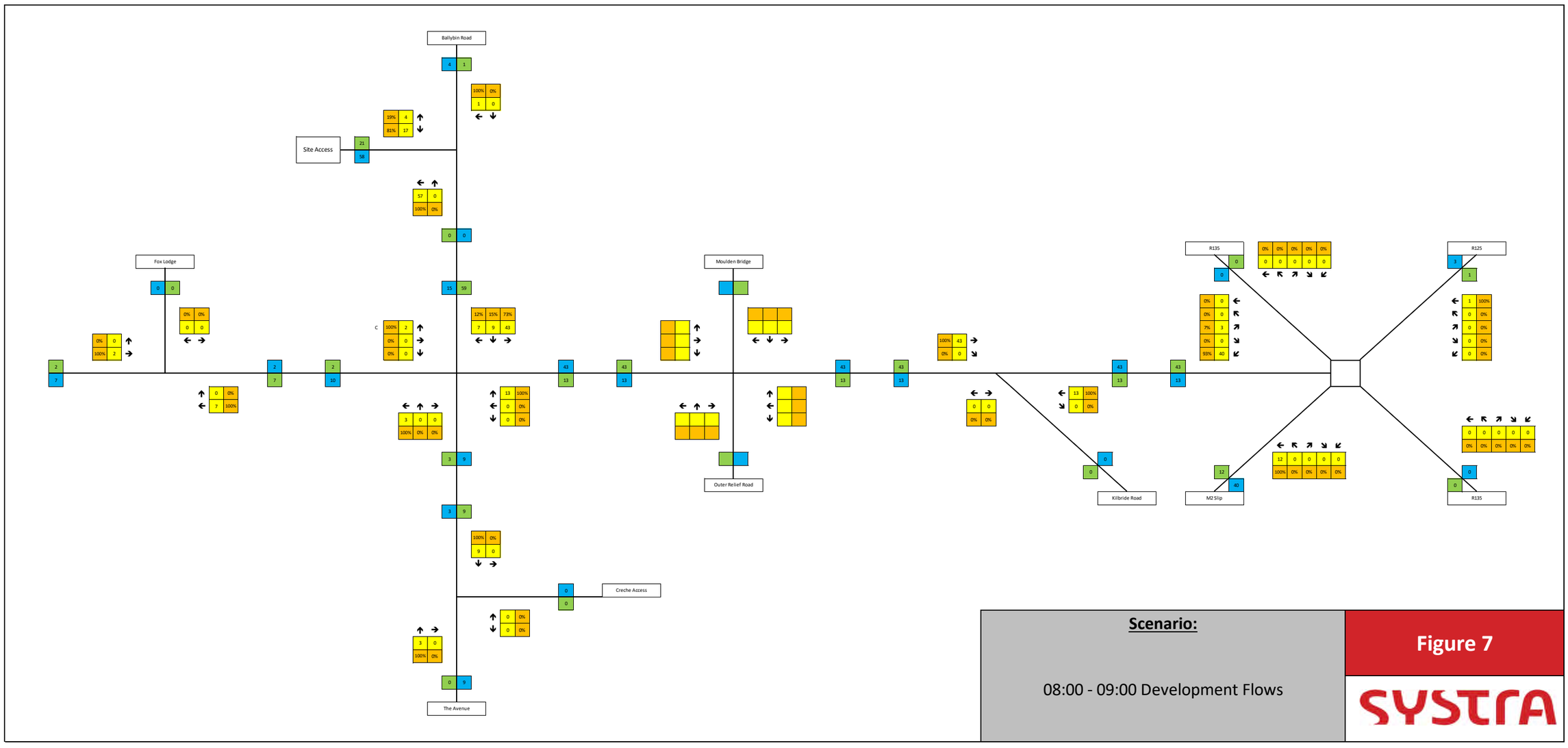


Scenario:

16:15 - 17:15 2027 PM Peak

Figure 6

SYSTRA

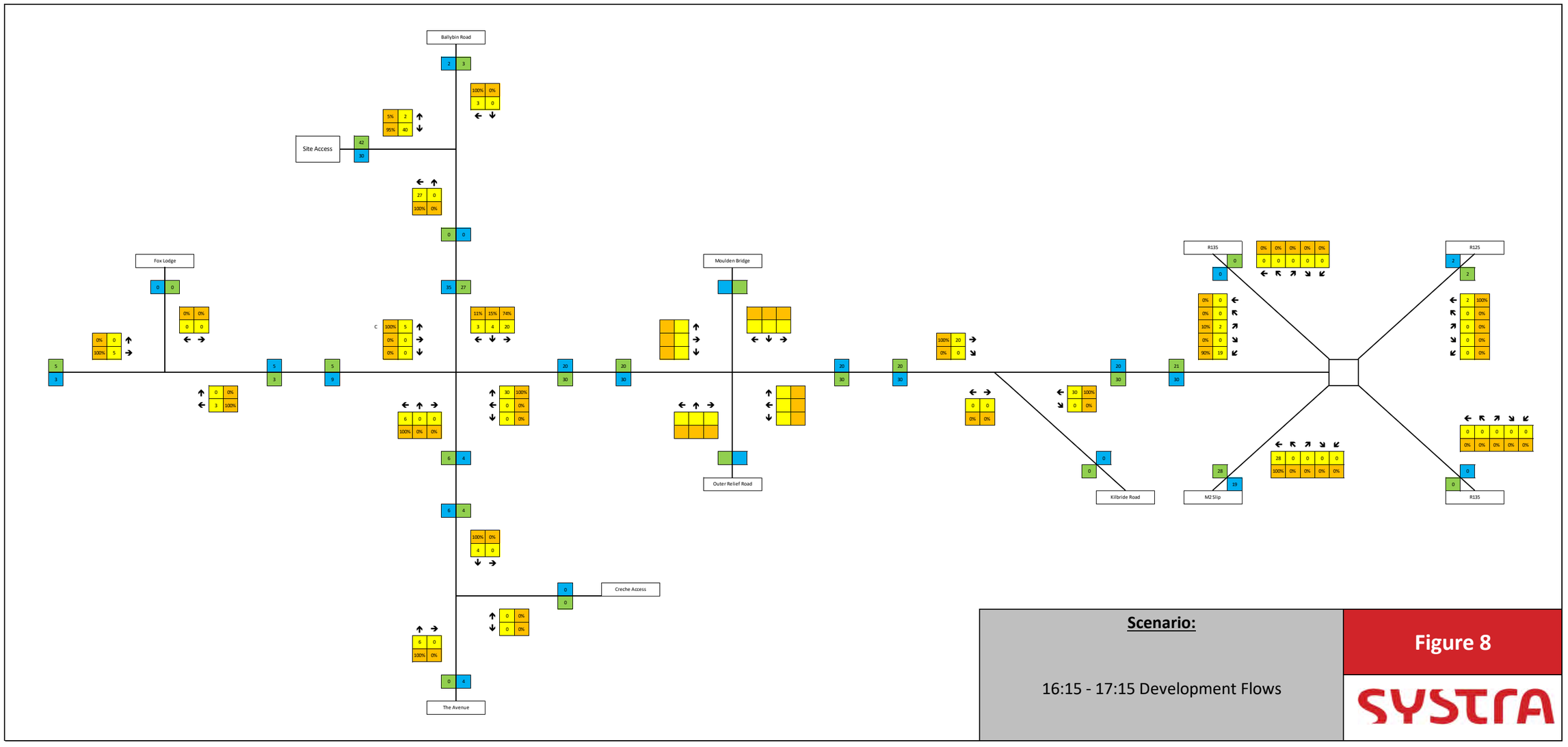


Scenario:

08:00 - 09:00 Development Flows

Figure 7

SYSTRA

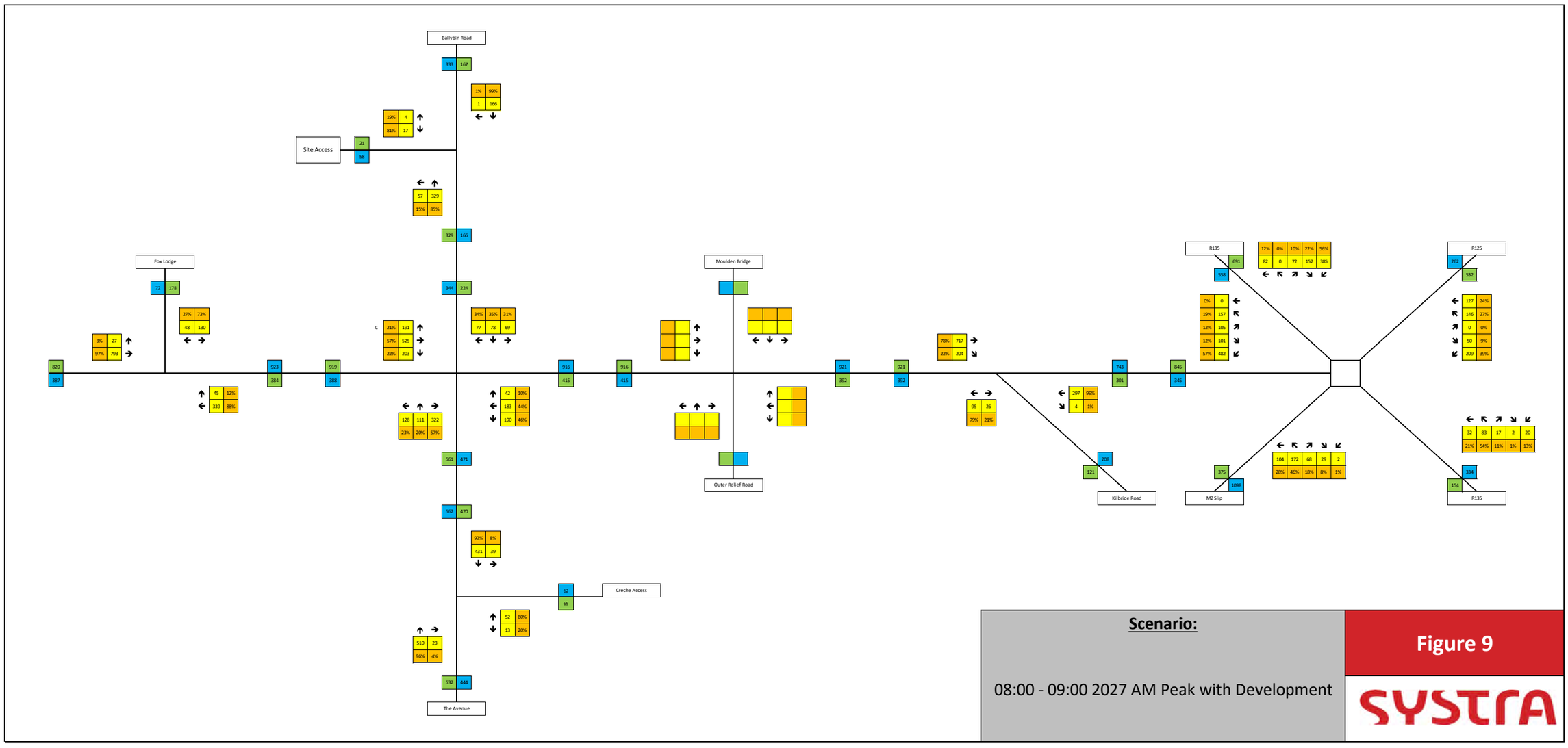


Scenario:

16:15 - 17:15 Development Flows

Figure 8

SYSTRA

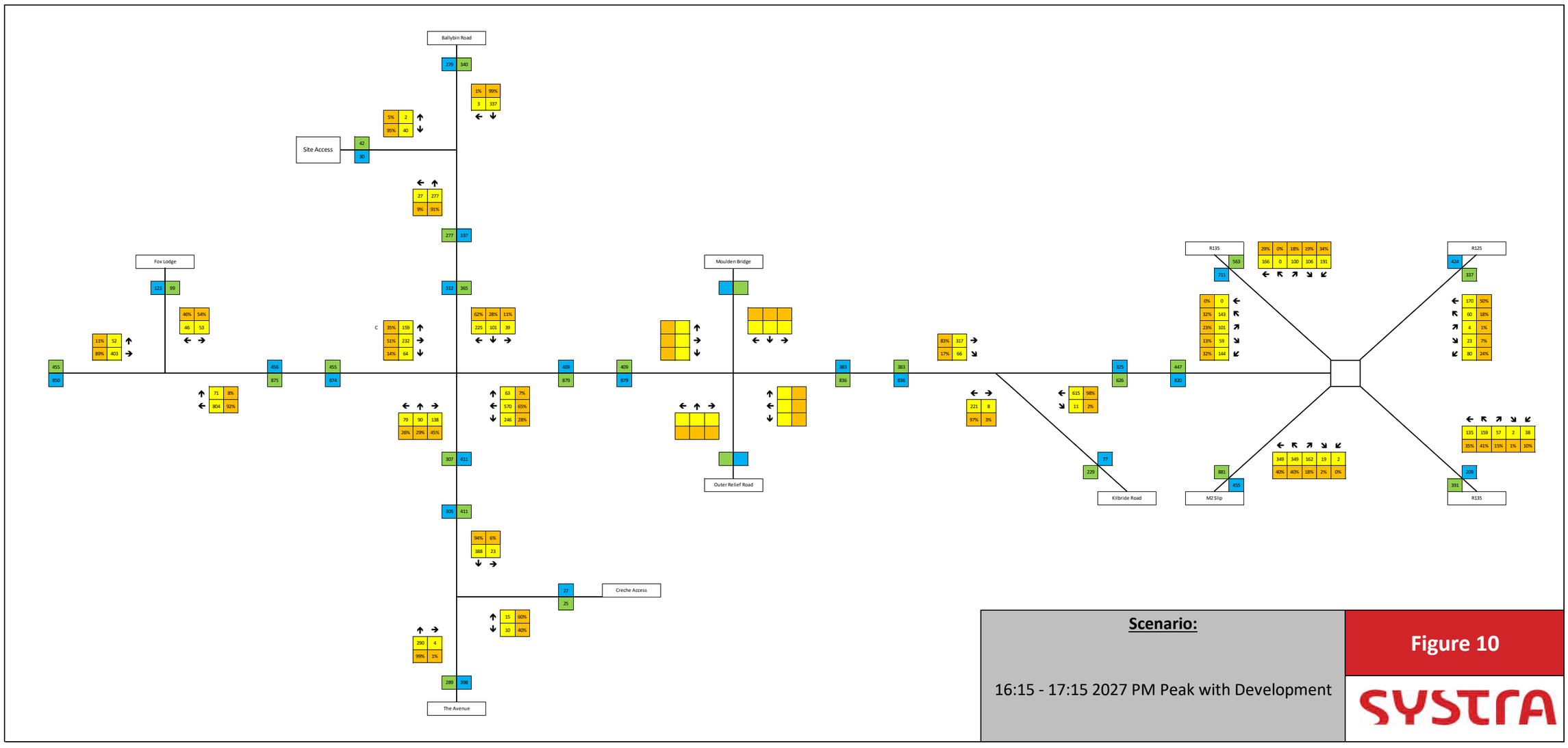


Scenario:

08:00 - 09:00 2027 AM Peak with Development

Figure 9

SYSTRA

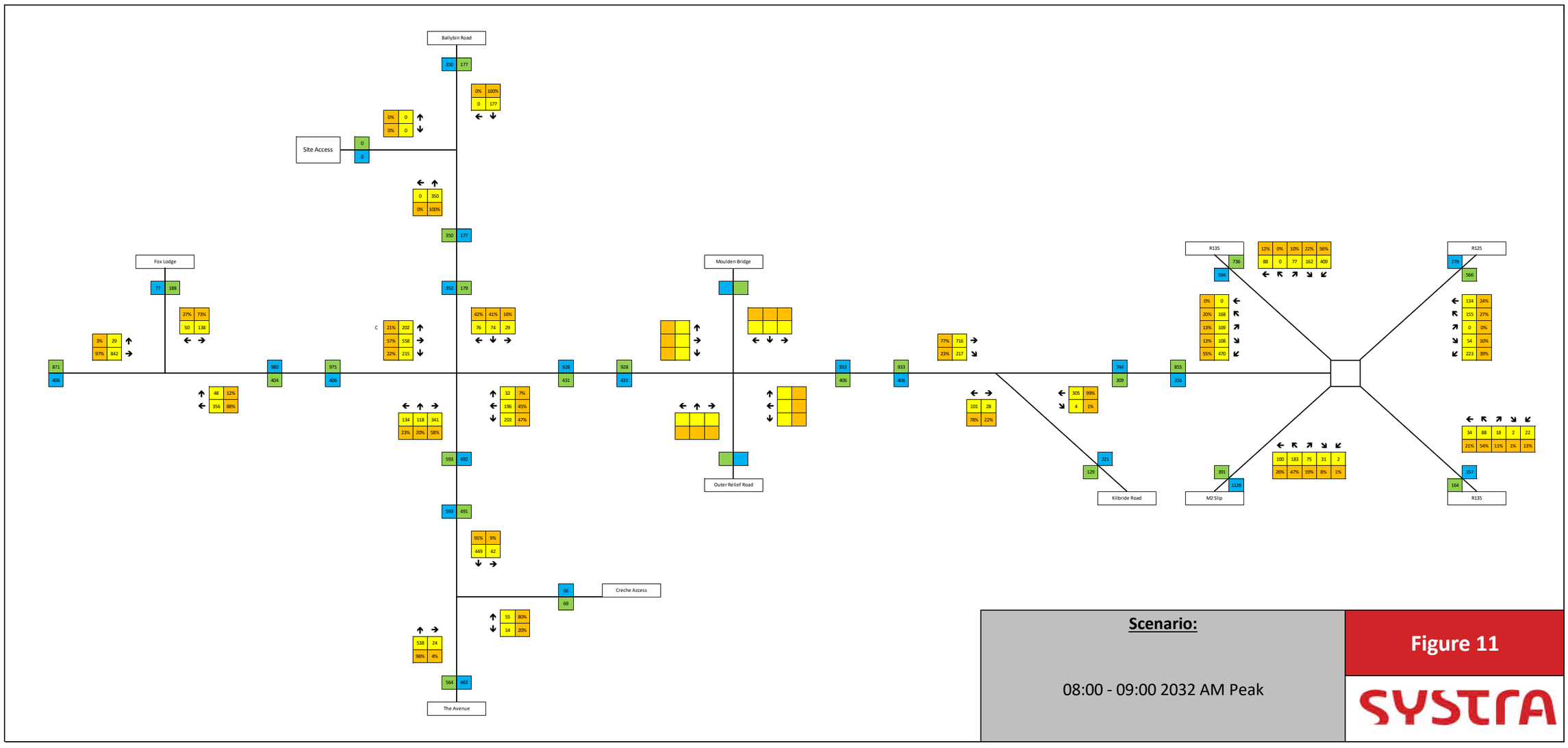


Scenario:

16:15 - 17:15 2027 PM Peak with Development

Figure 10

SYSTRA

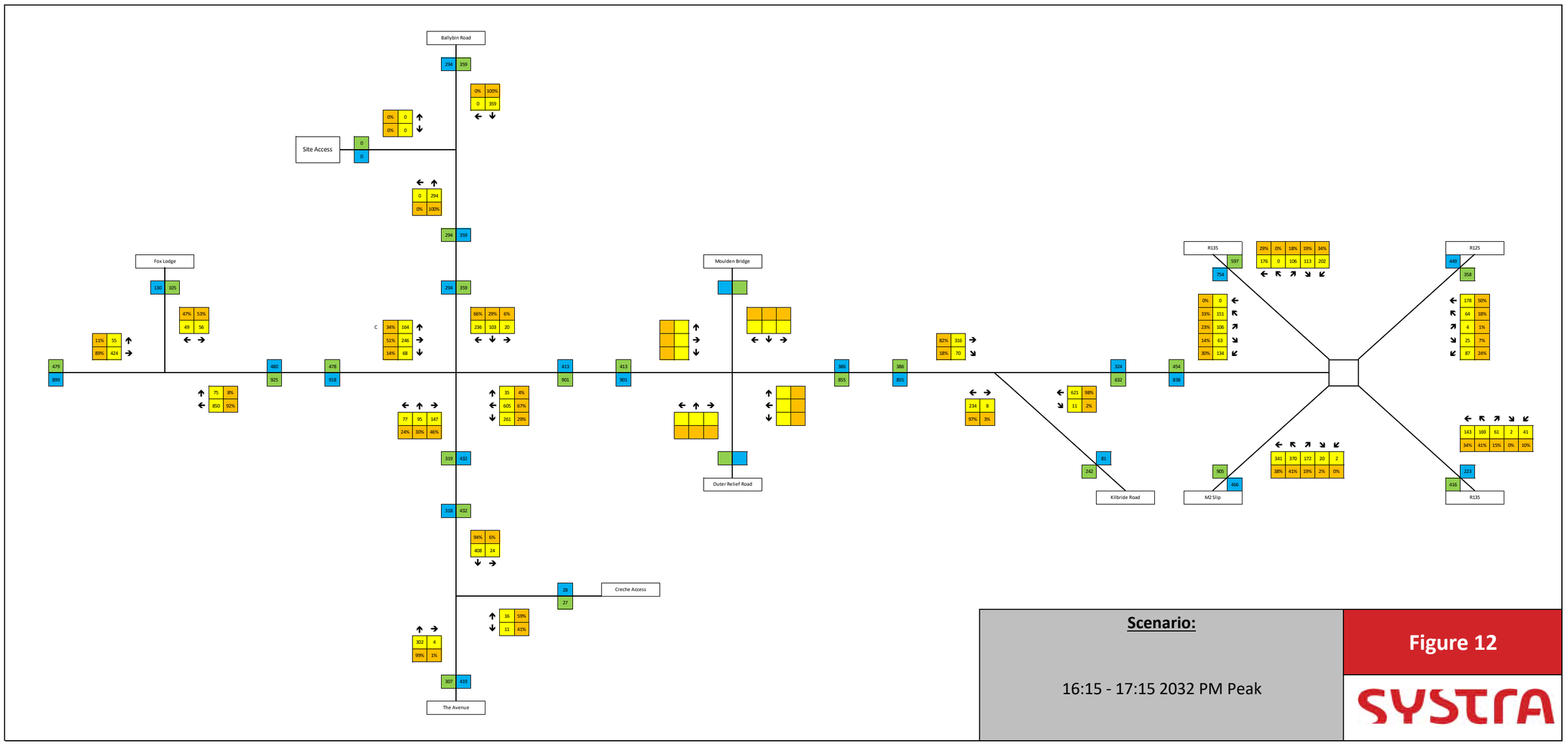


Scenario:

08:00 - 09:00 2032 AM Peak

Figure 11

SYSTRA

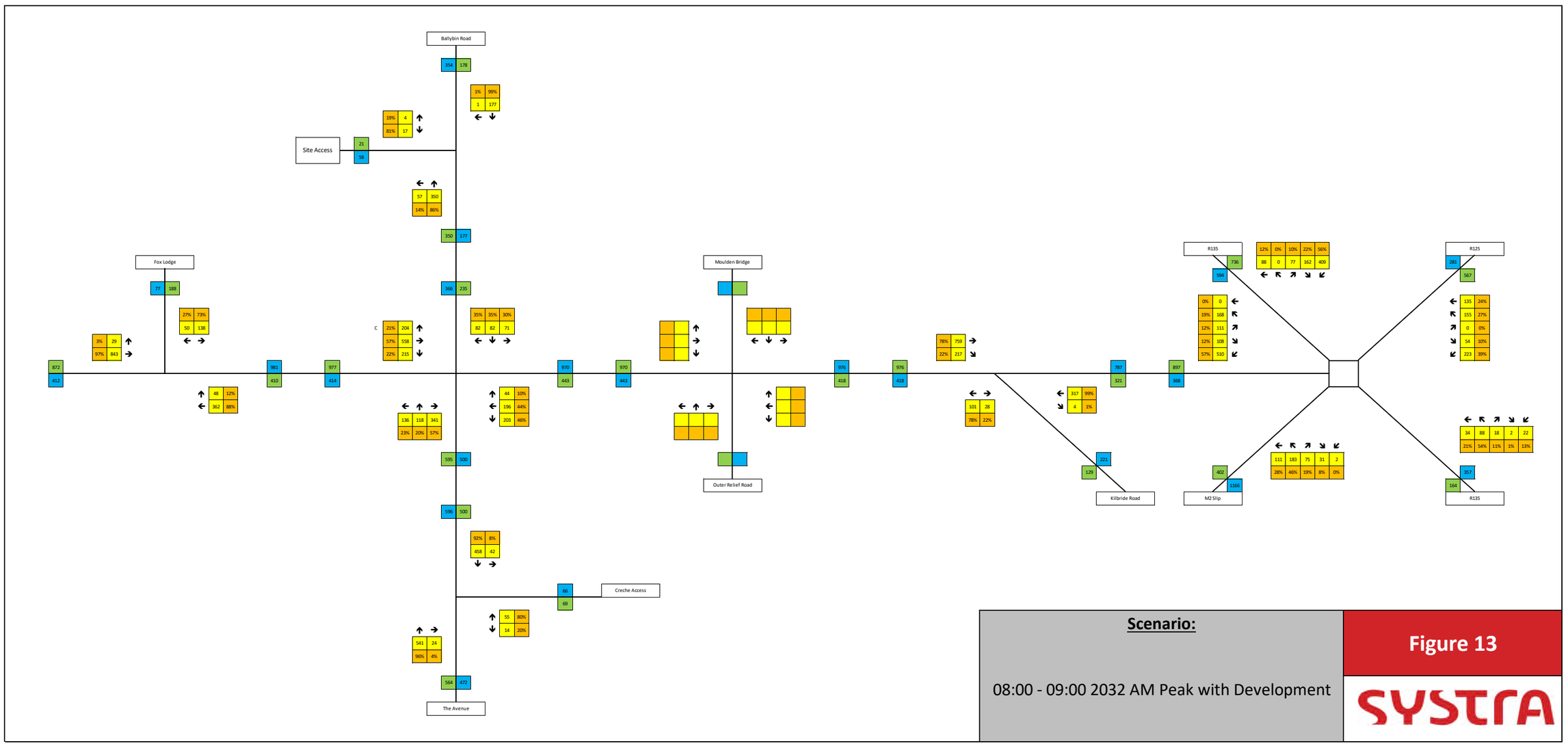


Scenario:

16:15 - 17:15 2032 PM Peak

Figure 12

SYSTRA

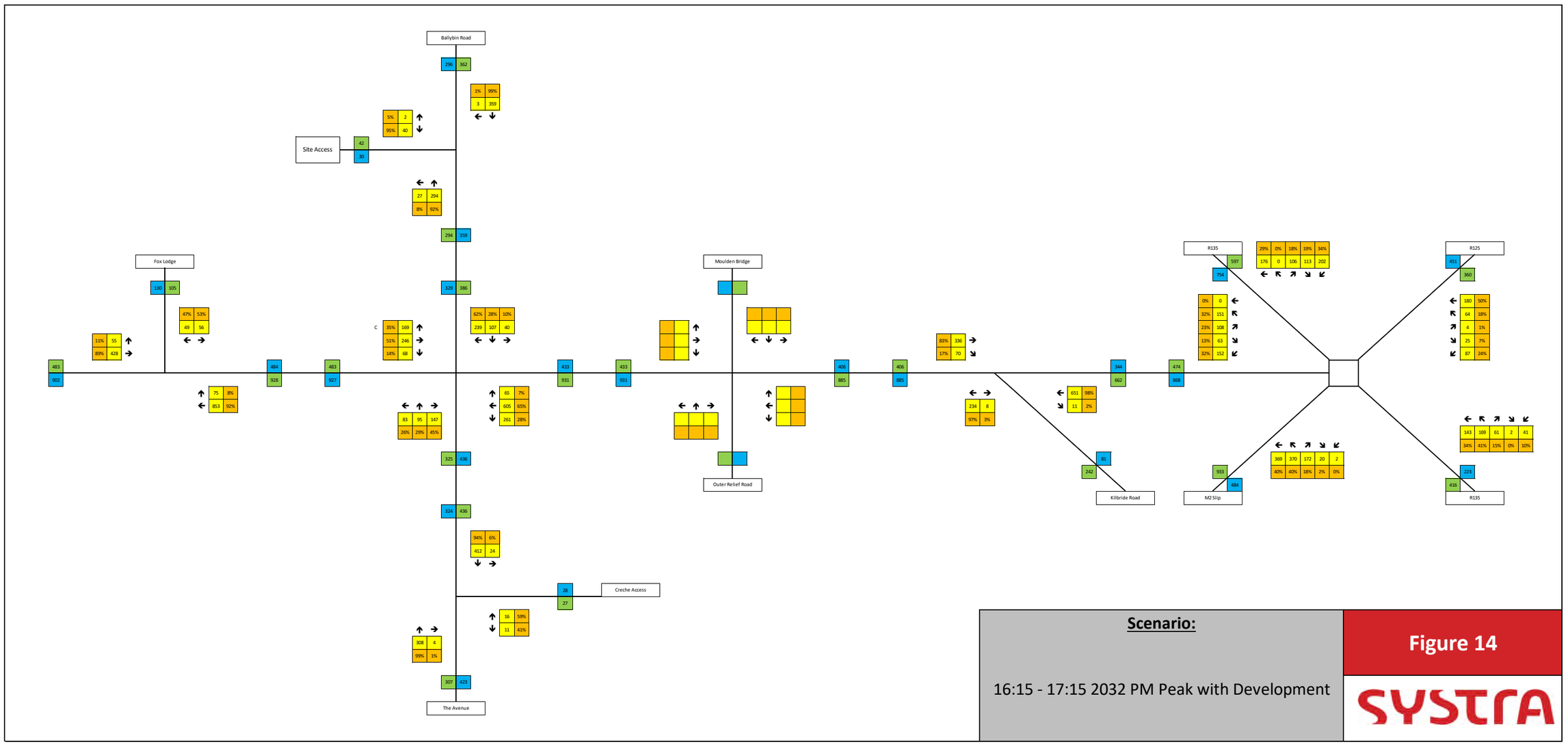


Scenario:

08:00 - 09:00 2032 AM Peak with Development

Figure 13

SYSTRA

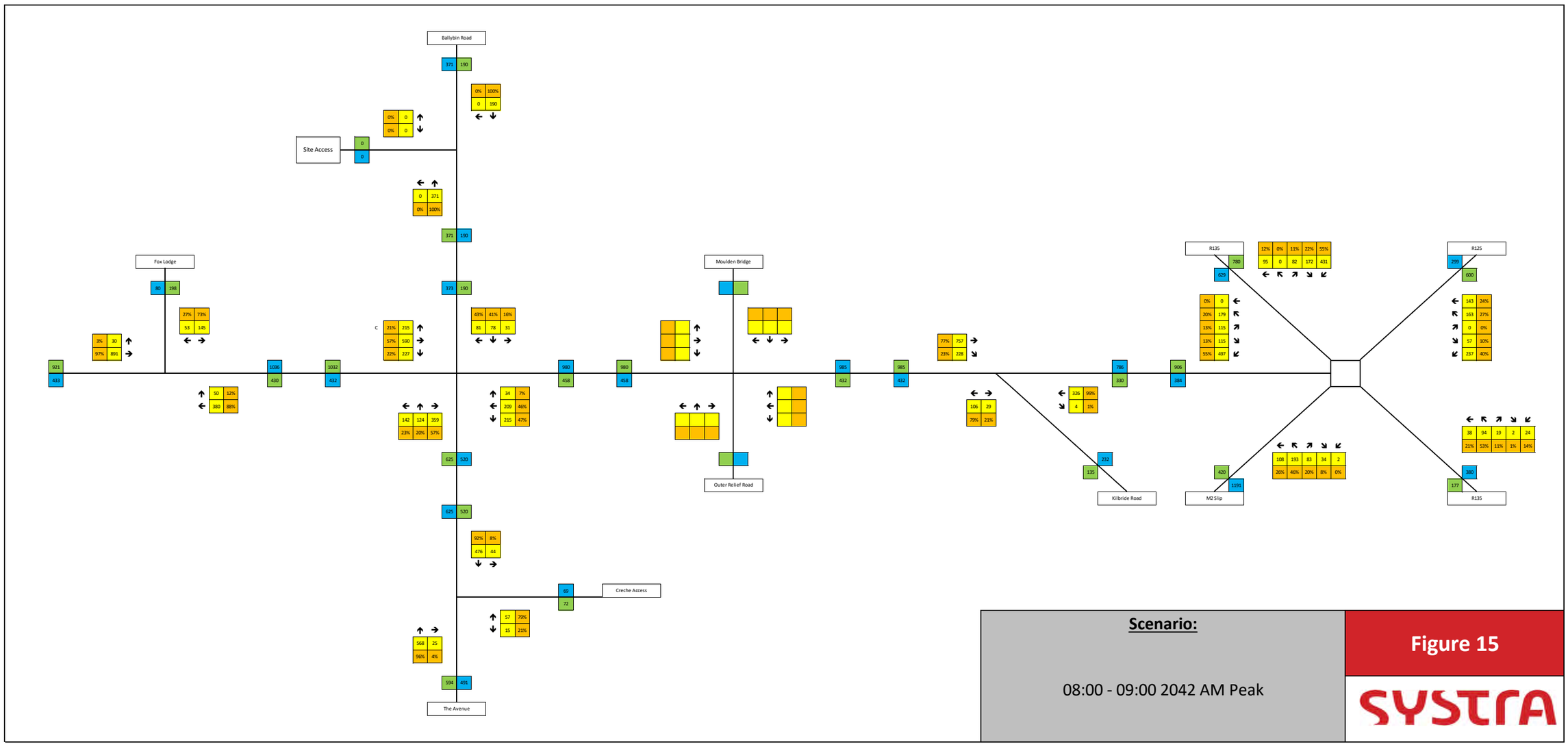


Scenario:

16:15 - 17:15 2032 PM Peak with Development

Figure 14

SYSTRA

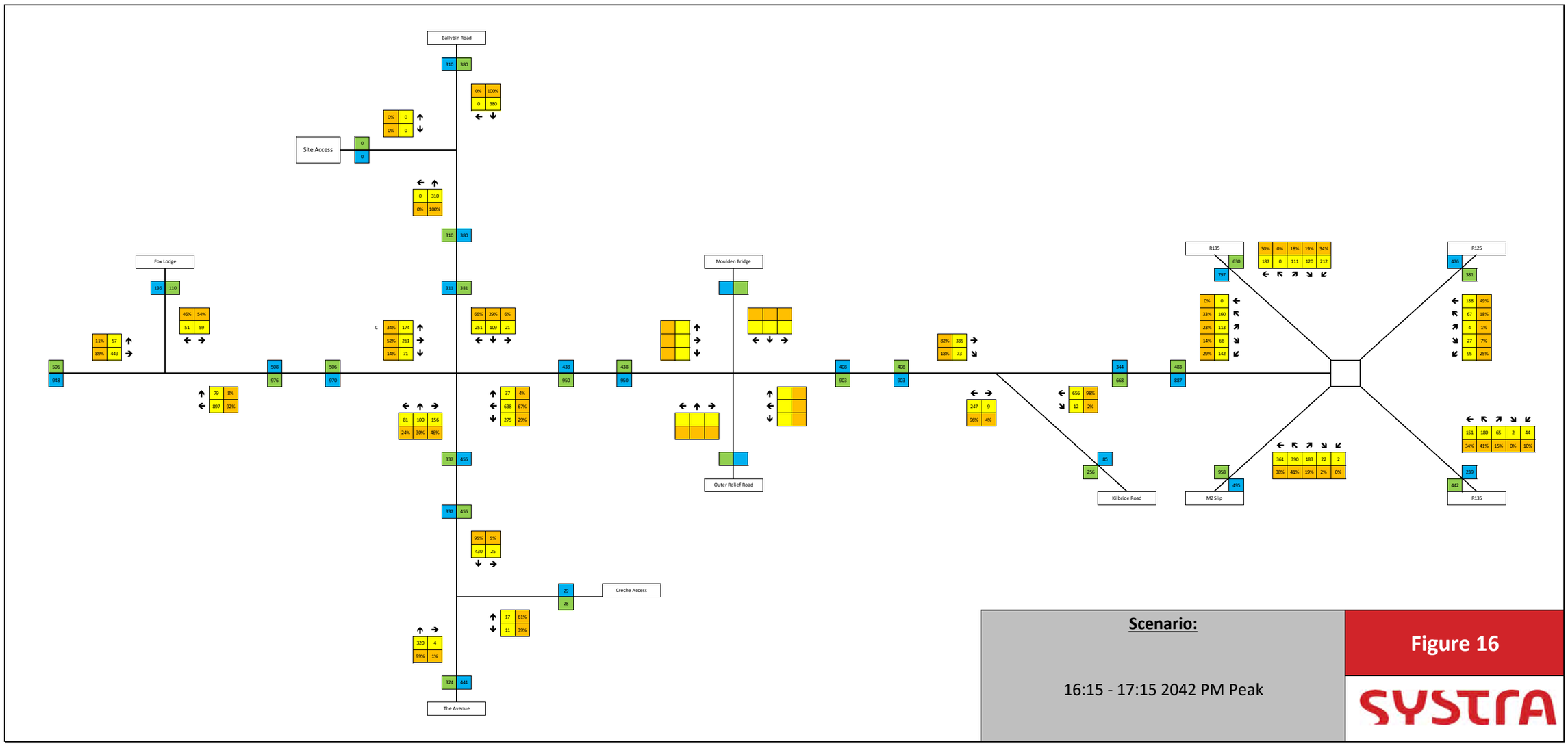


Scenario:

08:00 - 09:00 2042 AM Peak

Figure 15

SYSTRA

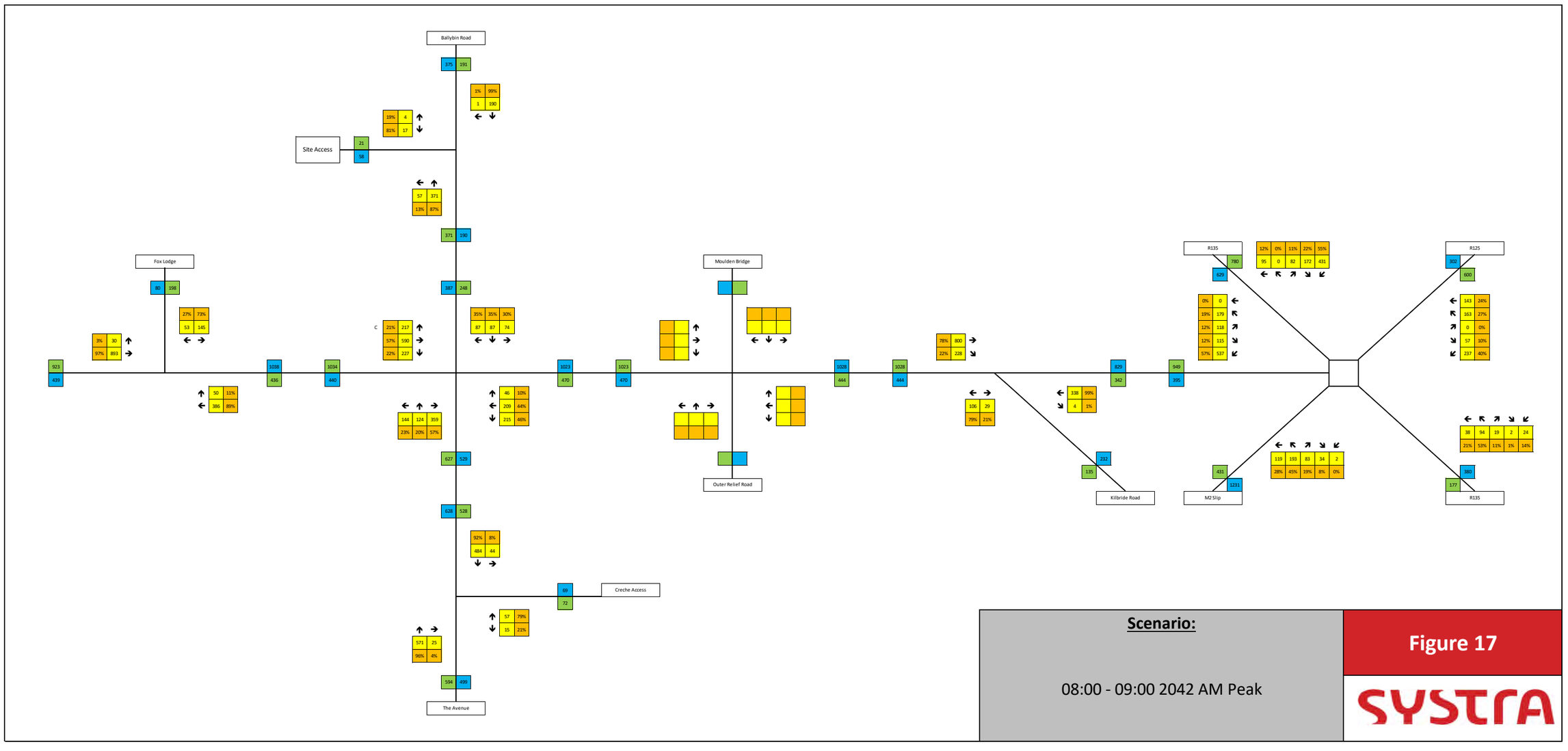


Scenario:

16:15 - 17:15 2042 PM Peak

Figure 16

SYSTRA

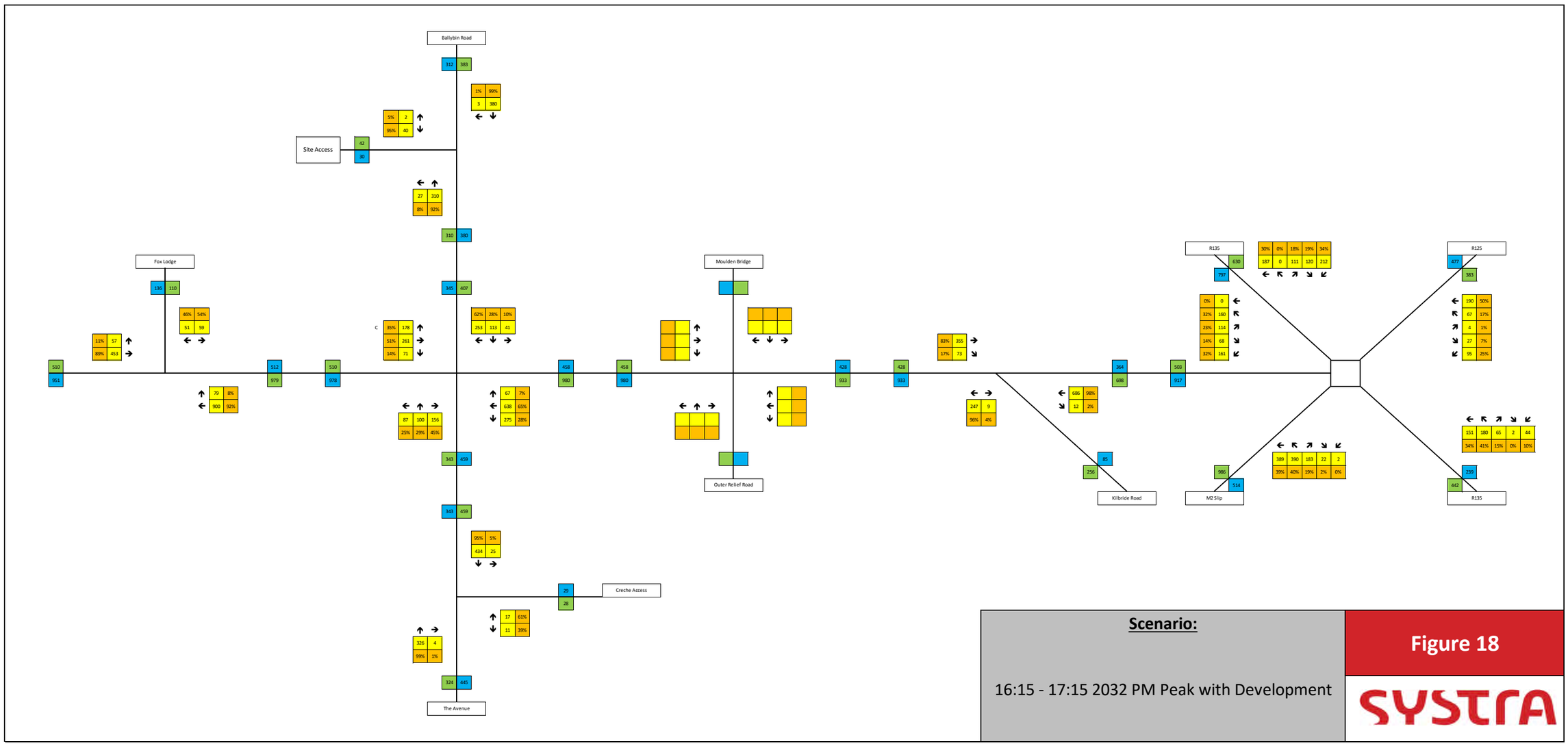


Scenario:

08:00 - 09:00 2042 AM Peak

Figure 17

SYSTRA



Scenario:

16:15 - 17:15 2032 PM Peak with Development

Figure 18

APPENDIX F – MOBILITY MANAGEMENT PLAN

Residential Development, Ballybin Road, Ratoath
Reference number IE01T23B18

21/06/2024

MOBILITY MANAGEMENT PLAN

SYSTRA

RESIDENTIAL DEVELOPMENT, BALLYBIN ROAD, RATOATH

MOBILITY MANAGEMENT PLAN

IDENTIFICATION TABLE	
Client/Project owner	Glenveagh
Project	Residential Development, Ballybin Road, Ratoath
Study	Mobility Management Plan
Type of document	Final Report
Date	21/06/2024
Reference number	IE01T23B18
Number of pages	33

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	Martin Hempell	Senior Consultant	29/11/2023	
	Checked by	Angus Spence	Senior Consultant	27/03/2024	
	Approved by	Steven Livingstone	Associate Director	27/03/2024	
2	Author	Martin Hempell	Senior Consultant	06/06/2024	Update after LRD meeting with MCC
	Checked by	Angus Spence	Senior Consultant	06/06/2024	
	Approved by	Steven Livingstone	Associate Director	06/06/2024	
3	Author	Martin Hempell	Senior Consultant	21/06/2024	Planning Version
	Checked by	Angus Spence	Senior Consultant	21/06/2024	
	Approved by	Steven Livingstone	Associate Director	21/06/2024	

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LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

1.1 General

1.1.1 SYSTRA Ltd (SYSTRA) have been appointed by the Applicant to prepare a Mobility Management Plan (MMP) to accompany a Planning Application for a proposed residential development located to the west of Ballybin Road, Ratoath, County Meath. This report should be read in conjunction with the accompanying Transport Assessment (TA).

1.2 Site Overview

1.2.1 The proposed development is located to the east of the town of Ratoath, with the site bounded to the south by the R125 Main Street, Ballybin Road to the east, residential properties to the west and north-west and open pasture to the north-east. The site will be accessed from a realigned Ballybin Road. **Figure 1** illustrates the site boundary relative to Ratoath and the R125.

Figure 1. Site Location

1.2.2 The proposed development is at a site with a total area of 5.48 hectares principally located at Main Street/R125 and Ballybin Road, Ratoath, Co. Meath. The total site contains a proposed residential development site with an area of 3.66 hectares (bisected by a proposed realigned Ballybin Road) and a proposed infrastructural development site with an area of 1.82 hectares (principally for road and related works, water services and open space amalgamation). The site is generally bound by: Fox Lodge Wood and Manor Woods and Fox Lodge Wood and Manor to the west and north; existing agricultural lands and residential development to the north and east; existing Ballybin Road and Moulden Bridge to the east; and Main Street/R125 and Jamestown Road/L1016 to the south. The site also incorporates parts of: the existing Ballybin Road (north and west of Moulden Bridge), Main Street/R125, Jamestown Road/L1016 and green open space in Fox Lodge Wood and Manor.

1.2.3 The proposed development principally consists of the demolition of 2 No. dwellings (594 square metres gross floor area combined) and 1 No. agricultural shed (988.7 square metres gross floor area) and the construction of 141 No. residential dwellings with a gross floor area of 12,428 square metres in buildings of 2 No. and 3 No. storeys. The dwellings include 117 No. houses (57 No. 2-bed, 52 No. 3-bed, 7 No. 4-bed and 1 No. 5-bed) and 24 No. maisonette/duplex units (18 No. 1-bed and 6 No. 3-bed).

1.2.4 The development also proposes a reconfiguration of the road layout at the south (Main Street/R125 and Jamestown Road/L1016) and east (Ballybin Road) of the site. Specifically, it is proposed to demolish/remove the existing 5-arm roundabout and to replace same with a new 4-arm signalised junction and reconfigured access to the existing Ratoath Childcare site. The new junction arrangement will facilitate a proposed realignment of the southern section of the existing Ballybin Road (approximately 172 metres) as the northern arm of the new signalised junction and a revised entrance for the existing dwelling to the north-east of the site at Ballybin Road (known as 'Fox Lodge Wood and Manor Farm', Eircode A84 KF97). The proposed road infrastructure works also include: road markings, traffic signals, traffic signage, footpaths and cycle infrastructure.

1.2.5 The development also proposes:

- 2 No. new multi-modal accesses onto the proposed realigned Ballybin Road to serve the bisected residential site;
- 2 No. pedestrian accesses onto Main Street/R125 and 1 No. pedestrian access onto the realigned Ballybin Road;
- Relocation of existing eastbound bus stop at Main Street/R125 approximately 130 metres to the west;
- Repurposing of the closed section of Ballybin Road as a pedestrian/cycle greenway;
- Internal roads and footpaths;
- 228 No. car parking spaces;
- Cycle parking spaces;
- Hard and soft landscaping, including public open space, communal amenity space and private amenity space (as rear gardens and terraces/balconies facing multiple directions);
- Demolition of the wall at the north-west corner of the site interfacing with Fox Lodge Wood and Manor and the amalgamation of existing public open in the estate and proposed public open space;
- Boundary treatments;
- Public lighting;

- Rooftop PV panels;
- 2 No. ESB sub-stations; and
- All other associated site and development works above and below ground.

1.2.6 This MMP has been prepared to guide the delivery and management of a package of integrated initiatives which seek to encourage and embed sustainable travel choices by residents from the outset of the development's occupation.

1.2.7 A successfully implemented MMP can provide reductions in car usage, particularly influencing levels of single-occupancy car travel, with increased trips made by car-sharing, public transport, walking and cycling; and can improve road safety and personal security for pedestrians and cyclists.

1.2.8 Mobility Management is about improving the development site's access from the outset – by designing for and enabling and promoting sustainable travel options (e.g. walking, car-sharing, cycling and public transport) to residents – and by reducing the need to travel by car to the development. MMPs can also improve the health and wellbeing of residents through the benefits of active travel and reduce the transport-related carbon impact of the development.

1.3 Report Structure

1.3.1 This report sets out the background, context and objectives of the plan, and describes a package of measures to promote and provide for the use of sustainable modes as an alternative to single occupancy car use. A strategy for implementation, target setting and monitoring is also discussed. The report is set out in the following structure:

- Chapter 1: Report Introduction;
- Chapter 2: An Introduction to Mobility Management;
- Chapter 3: Proposed Development;
- Chapter 4: Policy Context;
- Chapter 5: Baseline Site Transport Review;
- Chapter 6: Pre-occupation Baseline Mode Share;
- Chapter 7: MMP Objectives and Targets;
- Chapter 8: MMP Measures;
- Chapter 9: Monitoring and Review;
- Chapter 10: Summary

2. MOBILITY MANAGEMENT CONTEXT

2.1 Summary

2.1.1 Mobility Management is a concept to promote sustainable transport and manage the demand for car use by changing travellers' attitudes and behaviour. Mobility Management is about improving a site's access, by designing for and enabling and promoting sustainable travel options (e.g. walking, cycling and public transport) to residents. The use of Mobility Management is well established in Ireland through the Development Control process and the policy documents set out in Chapter 3. The process involves key stakeholders such as the Local Authority, public transport operators, the developer and future residents.

2.2 Benefits of Mobility Management

2.2.1 Implementing a MMP (or Travel Plan) has the following potential local benefits:

- Promoting alternative uses to the car can result in less congestion and can therefore improve safety on local roads;
- Reduced highway capacity problems can enable more sustainable travel choices;
- The local environment will be improved from reduced congestion, carbon emissions, pollution and noise;
- Increased opportunities for active healthy travel, such as walking and cycling;
- Reduces demand for parking spaces, enabling land to be put to more cost-effective or commercially beneficial use and freeing space for active travel initiatives; and
- Improved travel choice, quality and affordable access to services for all users.

2.3 Mobility Management Plan Objectives

2.3.1 The overarching objectives of the MMP are to reduce levels of private car use by encouraging people to walk, cycle, use public transport or car share. It can also reduce the number and length of trips undertaken / required.

2.3.2 The specific objective(s) of an MMP can vary depending upon the site characteristics and specific land uses which vary with each site. Nevertheless, in the context of a residential MMP, objectives can include:

Residents

- Address residents' needs for sustainable access to local amenities and employment centres;
- Promote healthy lifestyles and sustainable practices by improving the environment and the routes available for cycling and walking.

The Local Environment

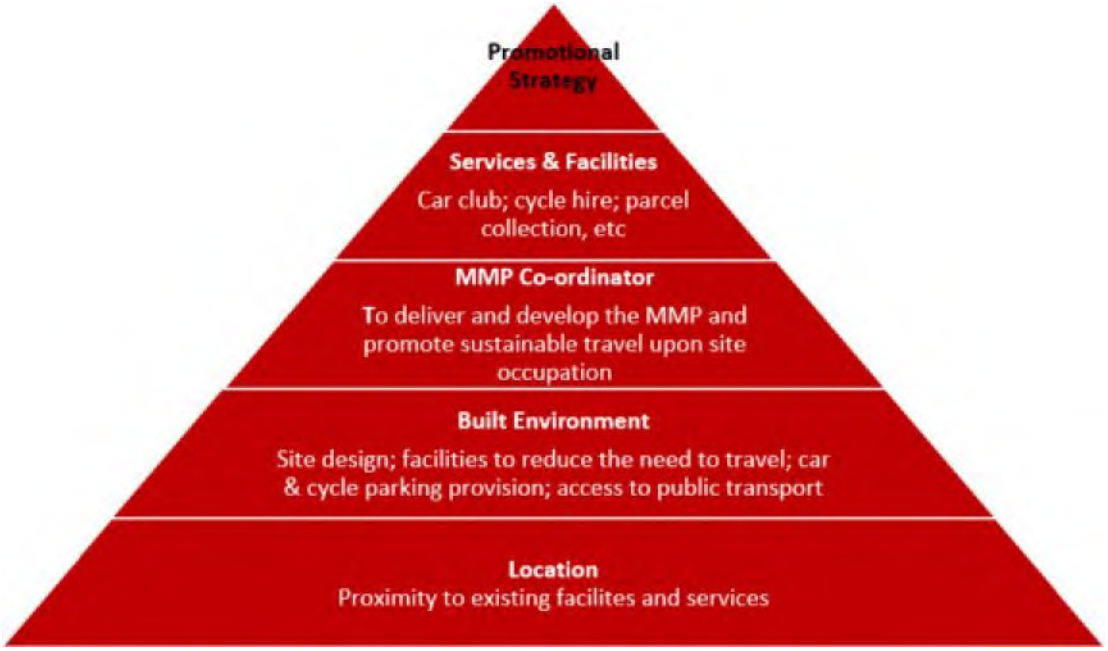
- Make local streets less dangerous, less noisy and less polluted and enhance the viability of public transport;
- Reduce the traffic generated by the development for journeys on the external road network;

- Promote equal opportunities by offering wider travel choices;
- Improve personal and wider community health; and
- Reduce air and noise pollution.

2.4 Making Mobility Management Plans Work

2.4.1 A successful MMP will address all aspects of a development that create a need to travel. The MMP 'pyramid' below demonstrates how successful plans are built on the firm foundations of location and site design. A MMP should combine hard measures (e.g. cycle parking, routes to bus stops) and soft measures (such as bus taster tickets and personalised journey planning). All measures should be integrated into the design, marketing and occupation of the site – with parking restraint often central to the success of the MMP in reducing car use.

Figure 2. The Travel Plan Pyramid



2.4.2 MMPs are evolutionary documents that should be regularly updated. In this way, MMP targets and Action Plans can be reviewed and tailored to take account of ongoing changes in travel patterns. It is therefore intended that this MMP is the starting point of a live process and will be updated on an annual basis or when required by other circumstances. MMP specific objectives should be 'SMART' (Specific, Measurable, Achievable, Realistic and Time-Bound).

3. POLICY CONTEXT

3.1 Policy and Plan Overview

3.1.1 This section provides an overview of the national, regional and local transport and other policy drivers and strategies that underpin the requirements (and benefits) of implementing a Mobility Management Plan for the proposed development. Please also see the accompanying Transport Assessment for a more detailed overview of current transport policy, plans and strategies of relevance to the site.

3.2 National Policy Context

3.2.1 This section provides an overview of the main national policy drivers and strategies that underpin the requirements (and benefits) of implementing a MMP.

Ireland 2040 Out Plan – National Planning Framework

3.2.2 The **Project Ireland 2040 - National Planning Framework** (NPF) recognises that improvements in connectivity are achievable and are necessary to boost both competitiveness and quality of life. The Ireland 2040 Vision includes the following key elements which have direct relevance to Mobility Management.

- More sustainable choices and options for people, businesses and communities that can positively influence sustainable patterns of living and working.
- The highest possible quality of life for our people and communities, underpinned by high quality, well managed built and natural environments.
- Significant improvement in local and international connectivity that underpins the competitiveness and quality of life of our people, businesses, communities and regions.

3.2.3 The NPF has been developed to deliver the following **National Strategic Outcomes** (as part of the Smart Growth Urban Initiative to achieve sustainable growth) which are pertinent to this report. These are to:

- Improve accessibility to and between centres of mass and scale and provide better integration with their surrounding areas; and
- Ensure transition to more sustainable modes of travel (walking, cycling, public transport) and energy consumption (efficiency, renewables) within an urban context.

3.2.4 The NPF seeks to enable people to live closer to where they work, moving away from the current unsustainable trends of increased commuting. It supports more energy efficient development through the location of housing and employment along public transport corridors, where people can choose to use less energy intensive public transport, rather than being dependent on the car.

3.2.5

3.2.6 The Eastern and Midland Regional Assembly (EMRA), through its "Regional Spatial and Economic Strategy", also supports travel planning. Specifically, through Regional Policy Objective (RPO) 8.7 which promotes the use of mobility management and travel plans to bring about behaviour change and more sustainable transport use.

National Sustainable Mobility Policy (2022)

3.2.7 The new National Sustainable Mobility Policy sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations. It is accompanied by an Action Plan to 2025 which contains actions to improve and expand sustainable mobility options across the country by providing safe, green, accessible and efficient alternatives to car journeys. It also includes demand management and behavioural change measures to manage daily travel demand more efficiently and to reduce journeys taken by car.

3.2.8 In line with the Climate Action Plan 2021, the policy targets 500,000 additional daily active travel and public transport journeys and a 10% reduction in vehicle kilometres by fossil fuelled cars by 2030.

3.2.9 The policy aims to make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car under the following key themes:

- Safe and Green mobility
  - Expanding walking, cycling and public transport infrastructure across the country;
  - Moving the public transport fleet to low and zero emission vehicles; and
  - Improving the safety of walking, cycling and public transport networks.
- People focused mobility
  - Making walking, cycling and public transport more accessible for all users – including those with reduced mobility, disabilities and the elderly;
  - Introducing a more attractive fare structure; and,
  - Reallocating road space to prioritise walking, cycling and public transport.
- Better integrated mobility
  - Adopting a transport-orientated approach to housing development to place new housing close to public transport; and,
  - Making it easier to switch between walking, bike, bus and rail.

Climate Action Plan (2023)

3.2.10 The Climate Action Plan (CAP) 2023 (Government of Ireland 2023) is the second update to Irelands CAP 2019 and was launched on the 21st December 2022. The CAP is a roadmap to deliver a halving of Irelands emissions by 2030.

3.2.11 The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve our emissions by 2030, and reach net zero no later than 2050, as committed to in the Programme for Government. CAP23 sets out how Ireland can accelerate the actions that are required to respond to the climate crisis, putting climate solutions at the centre of Ireland's social and economic development.

3.2.12 The transport sector has an aim of a 50% reduction in emissions by 2030. The 'Avoid' (reduce or avoid the need for travel – land use planning), 'Shift' (Shift to more environmentally friendly modes – public transport, active travel), 'Improve' (Improve the energy efficiency of vehicle technology- vehicle efficiency, clean fuels) approaches have been adopted to help achieve these targets. It also aims to:

- Reduce the total distance driven across all journeys by 20%; and,
- Ensure that walking, cycling and public transport account for 50% of all journeys.

3.2.13 Of relevance to the Proposed Development, CAP23 seeks to:

- TR/23/14 – 'Promote widespread, consistent and accelerated implementation of the Design Manual for Urban Road and Streets to ensure improved placemaking and accessibility, including delivery of 10-Minute Towns and 15-Minute Cities'; and
- TR/23/29 – 'Advance roll-out of 1,000 km walking/cycling infrastructure'.

Cycle Design Manual, 2023

3.2.14 The Cycle Design Manual (CDM) has been prepared by the National Transport Authority (NTA) and overseen by the Department of Transport. It replaces the previous National Cycle Manual, published by the NTA in 2011, which is now withdrawn.

3.2.15 The new manual places more emphasis on the range of cycles that cycle infrastructure will have to accommodate and the recommendations focus on segregating cyclists from traffic where speeds and volumes make roads unsuitable for sharing. There is also a general presumption towards segregating pedestrians and cyclists where possible.

3.2.16 This guidance is build on five key requirements for cycle-friendly infrastructure:

- Safety;
- Coherence;
- Directness;
- Comfort; and
- Attractiveness.

Get Ireland Active – The National Physical Activity Plan (NPAP), 2016

3.2.17 Another key policy driver for the encouragement of active, healthy commuting trips is the Get Ireland Active – National Physical Activity Plan. Launched in 2016, this plan recognises that physical inactivity is a demonstrated clear risk to health and wellbeing in Ireland.

3.2.18 The NPAP is about creating increased opportunities for people to be active in ways which fit in to their everyday lives and which suit individual needs, circumstances and interests, and to remove the barriers which people face to being active – by encouraging a supportive environment where physical activity becomes normal.

3.2.19 The NPAP focuses on the use of the natural and built environment. It recognises that promoting active transport is the most practical and sustainable way to increase physical activity as part of people's everyday routine. It specifically identifies the role of walking or cycling for utility transport as a means to increase people's physical activity levels.

3.2.20 In accordance with the Plan, this MMP includes measures that promote the health benefits of active travel to users of the Proposed Development.

3.3 Local Policy

Meath County Development Plan 2021 – 2027

3.3.1 The Meath County Development Plan 202-2017 sets out a Vision for Movement Strategy which seeks to achieve sustainable patterns of transport in accordance with national and regional policy :

> *"It is a strategic aim of this Development Plan to create attractive efficient compact settlements which reduce the need to travel and improve the quality of life for inhabitants. Land use and the manner in which it is developed is the primary influencing factor for travel demand"*

3.3.2 Specific to Ratoath, the Plan sets out sustainable travel mode share targets for the town, to be achieved by 2026, based on mode share data collected in 2016:

- Travel on foot target 24%
- Travel by cycle target 4%
- Travel by bus target 11%

3.3.3 Achievement of these targets is expected to bring about an overall reduction in car journeys generated by the town from 65% to 57%.

4. EXISTING SITE CONDITIONS

4.1 Site Location

4.1.1 The proposed development is located to the west of the town of Naas, with the site bounded to the south by the R125 Main Street, Ballybin Road to the east, residential properties to the west and north-west and open pasture to the north-east. The site will be accessed from a realigned Ballybin road, as part of proposed junction improvements to the R125 / Jamestown Road / Ballybin Road junction.

4.2 Pedestrian and Cyclist Infrastructure

4.2.1 The R125 has good infrastructure for both pedestrians and cyclists in the area of the site. Cycle paths which are off-carriageway and lightly segregated from the adjacent footways run past the site on both side of the road. That on the southern side runs from east of the Ballybin roundabout to The Village Green, some 300 metres east of the site.

4.2.2 A similar but shorter arrangement exists on the northern side of the road, with a cycle path and footway that runs east from the Fox Lodge Woods development access road past the Ballybin roundabout and on to the Ratoath Outer Relief Road.

4.2.3 The two cycle paths and footways are connected by a signalised pelican crossing to the east of the Fox Lodge Woods access, The Road. **Figure 3** illustrates the general characteristics of the R125 travelling east towards the site and the Ballybin roundabout.

Figure 3. General Characteristics of R125 (Travelling Towards Ballybin roundabout)

4.2.4 In order to provide appropriate pedestrian and cyclist access to the proposed development, the Applicant will deliver dedicated pedestrian and cycle ways, with associated crossing facilities, at the redeveloped R125 / Ballybin Road / Jamestown Road junction.

4.3 Public Transport

4.3.1 The nearest bus stops to the site are the Ballybin Roundabout stops, located adjacent to the site on the R125 Main Road. These stops are served by four bus services, as shown in **Table 1**.

Table 1. Bus Services at Ballybin Roundabout Bus Stops

SERVICE	ROUTE	FREQUENCY
103	Dublin – Ashbourne - Ratoath	3 per hour
105	Blanchardstown – Ashbourne – Ratoath - Drogheda	2 per hour
105X	UCD Belfield – Dublin – Finglas – Ratoath – Fairyhouse Cross	Peak hours only AM - 3 services to UCD PM – 3 services from UCD
109A	Dublin Airport – Ashbourne – Ratoath – Dunshaughlin – Navan - Kells	1 per hour

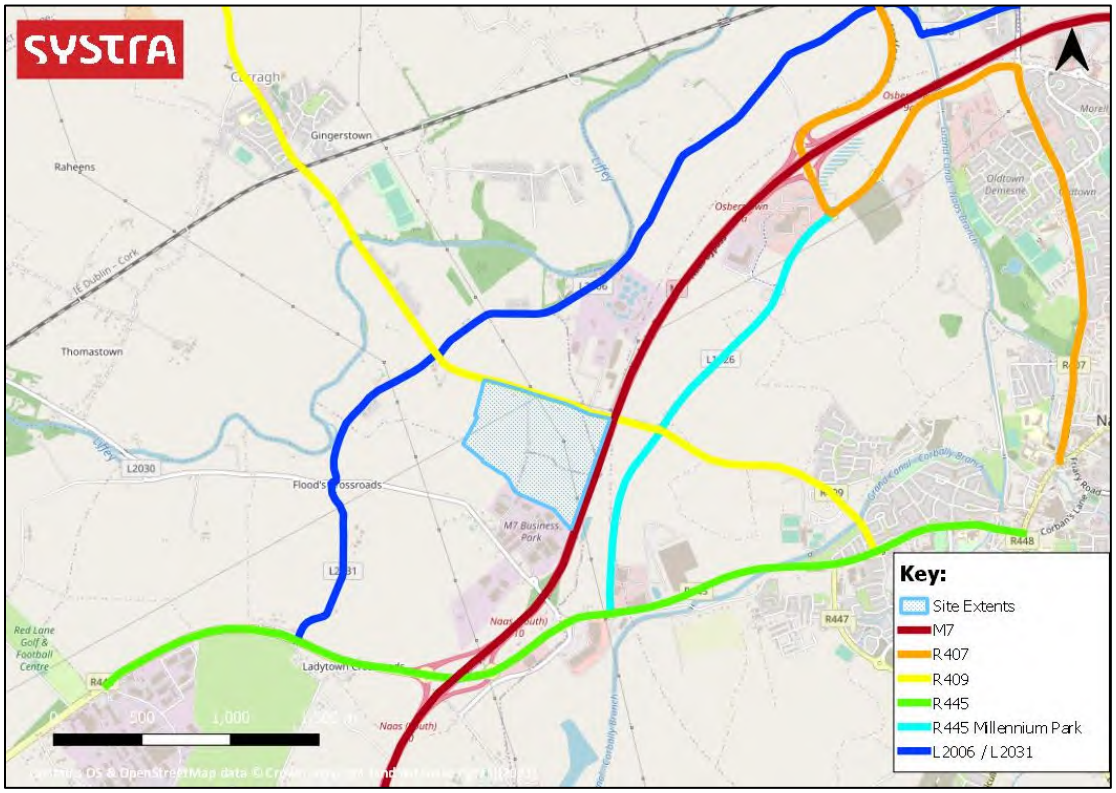
4.3.2 The nearest train station is located at M3 Parkway, a station on a branch of the Western Commuter Train line. The station is located approximately 10.5km south of the site (a 15-minute drive) and has free park and ride facilities. Dunboyne station, located one stop south of M3 Parkway, is accessible via a linked public transport journey with the service 105 bus.

4.3.3 M3 Parkway and Dunboyne sees hourly services to Clonsilla, where a transfer can be made for services to Dublin Connolly. Some peak hour services operate directly to Docklands.

4.4 Surrounding Road Network

4.4.1 This section provides a brief summary of the surrounding road network, while a more extensive investigation will be undertaken in the emerging TA. **Figure 4** illustrates the key routes of the surrounding road network.

Figure 4. Surrounding Road Network



R125

4.4.2 The R125 is an important east-west route which runs through Ratoath and connects the M3 to the west of Dunshaughlin to the M2 at Nine Milestone to the east. From the M2 it continues eastwards towards Swords.

4.4.3 In the vicinity of the site it has a single carriageway in both directions, is straight and well sighted, and is if generous width. It meets to the Ballybin roundabout at the south-eastern corner of the site and connects to Jamestown Road, which loops to the south of Ratoath town centre to connect with the R155 to the west.

L5018 Ballybin Road

4.4.4 Ballybin Road runs along the eastern flank of the site from a priority junction with R125 Main Road, east of the Ballybin Roundabout. It runs north-east towards Cookstown and the northern edges of Ashbourne.

4.4.5 The road is relatively narrow along much of its length, with a meandering alignment which limits visibility in places. It is subject to a speed limit of 80 km/h.

4.4.6 Ballybin Road does not have footways on either side, nor does it make any provision specifically for cyclists.

4.4.7 The Ratoath Outer Relief Road is being constructed in sections and, on completion, will provide a new route around the south-eastern side of the town. The currently completed section connects to the R125 Main Street at a new signal junction some 350 metres east of the Ballybin roundabout.

4.4.8 Meath County Council has aspirations to extend the RORR northwards to connect with Ballybin Road, with a view to reducing the amount of through traffic movements within the centre of the town.

5. DEVELOPMENT PROPOSALS

5.1 Overview

5.1.1 The proposed development comprises 116 no. residential units, car parking, green space and associated site access works. The gross site area is 5.48 Ha. An indicative layout of the proposed development is illustrated in **Figure 5**.

Figure 5. Indicative Site Layout

5.2 Site Access

5.2.1 To support the development and development in the wider area, the applicant seeks to upgrade the existing Ballybin Roundabout to a 4-arm signalised junction. The revised junction layout will incorporate a realigned Ballybin Road as the northern arm of the junction.

5.2.2 The upgrades will also incorporate pedestrian and cycle crossings into all arms of the junction. Segregated pedestrian and cycleways will tie into the existing Part 8 scheme proposals as well as extending active travel infrastructure north along Ballybin Road to the location of the existing Fox Lodge Farm access.

5.2.3 The junction improvements will also include a relocation of the existing eastbound bus stop to the south of the site approximately 130m west of its existing location.

5.2.4 The development will take access from this realigned Ballybin Road.

5.3 Car Parking

5.3.1 The rate of car parking within the development has been provided in line with the Sustainable Residential Development and Compact Settlements (SRDCS) Guidelines which are set out in **Table 2**.

Table 2. Extract of SPPR 3 – Car Parking from SRDCS

LOCATION	MAXIMUM CAR PARKING PROVISION
Five Cities	1no. space per dwelling
Accessible Locations	1.5no. spaces per dwelling
Intermediate and Peripheral Locations	2no. spaces per dwelling

5.3.2 Due to the site's location it would be classified as a "Peripheral" location in the SRDCS and thus the maximum car parking provision is 2no. spaces per dwelling.

5.3.3 The emerging Transport Assessment will set out the proposed number of car parking spaces to be provided within the site. This will give consideration to site accessibility and layout, in accordance with the County Development Plan and the draft Compact Settlement Guidance.

5.4 Pedestrian and Cycle Facilities

5.4.1 The majority of roads within the site feature footways on both sides of the carriageway with a nominal width of 2m and tactile paving at crossing where appropriate. The site also features a network of paths through the open green space, connecting into Main Street in two locations, Fox Lodge Woods and Manor and the realigned Ballybin Road.

5.4.2 The realigned Ballybin Road and the proposed upgrades to the Ballybin Roundabout will tie into and enhance the active travel proposals adjacent to the site. These enhancements will provide high-quality active travel infrastructure and enable sustainable access to local amenities such as the adjacent bus stop, Ratoath town centre and education facilities accessed from Jamestown Road.

5.4.3 To complement the active travel enhancements brought forward as part of the Ballybin Roundabout junction improvements the development will include a number of additional active travel connections. These include a network of paths through the open green space within the site and connections to Fox Lodge Woods and Manor and to Main Street west of the junction.

5.5 Public Transport

5.5.1 The bus stop currently situated alongside the western arm of the Ballybin Roundabout is proposed to be relocated to the west. This location will be outwith the envelope of the signalised junction and ensures that no existing services require rerouting to serve the bus stop. A dedicated pedestrian access point to the development site from the R125 Main Street is provided at the south-western periphery. This access provides a direct route for residents to the relocated bus stop.

6. AIMS, OBJECTIVES AND TARGETS

6.1 General

6.1.1 In order to measure the ongoing success of the MMP and its various measures, it is important that a series of targets and objectives are established at the outset.

6.1.2 As this is a pre-occupation MMP, it is expected that the final targets of the MMP will be taken forward upon site occupation. As such, the pre-occupation baseline targets noted below should be at this time considered as guidance until post–occupation baseline surveys are undertaken

6.2 Aims and Objectives

6.2.1 The overall aim of the MMP is for the Proposed Development is to minimise the proportion of single occupancy vehicle trips generated, in favour of sustainable transport trips. This includes commuter trips, which have a great influence on traffic congestion during weekday AM and PM peak periods.

6.2.2 A number of objectives have been established to assist in achieving the overarching aim:

- To improve the travel options for residents and visitors;
- To raise awareness of sustainable 'smarter travel' modes available to all Site users;
- To reduce the number of single occupancy car trips made to and from the Site through the promotion of alternative modes of travel;
- To promote health, social and economic benefits of sustainable travel; and
- To minimise and manage car use.

6.2.3 The aim and objectives above align with overall policy requirements, as highlighted in Section 2 of this report.

6.3 Pre-Occupation Baseline Mode Share

6.3.1 To ensure a representative mode share of the area, Data from the 2022 Ireland Census has been interrogated to determine the mode share for travel to work and school. The proposed site is within the Small Area 167078023. The mode share for this Small Area is outlined in **Table 3**. The mode share has also been adjusted to remove people who predominantly work from home.

Table 3. 2022 Ireland Census Transport Mode Share

MODE	SHARE	EXCL. WFH
On Foot	20%	22%
Bicycle	6%	7%
Public Transport	5%	6%
Car Driver	40%	44%

MODE	SHARE	EXCL. WFH
Car passenger	17%	19%
Other	2%	2%
Work from home	9%	-

6.3.2 **Table 3** indicates that the majority of people will travel by car (63%) and that the majority of these (44%) will be drivers. Approximately 29% of people will travel by active travel modes (22% by foot and 7% by bicycle), and 6% of people will travel by public transport. The remaining 2% will travel by other modes (e.g. van, motorbike, or taxi).

6.4 Targets

6.4.1 Targets are measurable goals by which the progress of the MMP will be assessed. Targets are essential for monitoring progress and success of the MMP. Targets should be 'SMART' – Specific, Measurable, Achievable, Realistic and Time-bound in order for the outcome of the MMP to be quantified.

6.4.2 Since the overall aim of the MMP is to reduce reliance upon the private car, it is appropriate to set a target which relates to this aim. The targets set are related to decreasing the single occupancy car use mode share and increasing sustainable travel modes.

6.4.3 **Table 4** below represents the indicative baseline mode share targets for residents and the subsequent post-occupation targets, in years three and five of occupancy of the proposed development. As stated earlier, these baseline results are indicative, and it is recommended that a travel survey is taken within six months of occupation to set a new baseline mode share.

Table 4. Resident Travel Mode Split % Targets

TIMESCALE	SINGLE-OCCUPANCY VEHCILE USE	PUBLIC TRANSPORT MODES	ACTIVE TRAVEL MODES	CAR SHARING
Indicative Baseline (Year 1) - 2025	42%	8%	30%	20%
Post-Occupation (Year 3) - 2028	36%	10%	32%	22%
Post-Occupation (Year 5) - 2030	32%	12%	32%	24%

6.4.4 The targets show that the MMP will aim to promote sustainable travel, with a target of decrease single occupancy vehicle use to 32% in Year 5. The reasons for setting these targets by Year 5 of occupancy of the Proposed Development are:

- High quality cycling infrastructure in the vicinity of the site, with ample visitor cycle spaces provided for visitors;
- Incorporation of pedestrian and cycle crossing facilities at the redeveloped R125 / Ballybin Road / Jamestown Road junction; and
- Proximity to bus stops offering a range of both local and strategic connectivity.

6.4.5 The final mode share targets over a three and five-year period will be set once the Post-Occupation baseline mode share is known, which will be obtained through the baseline travel surveys.

7. MMP MEASURES

7.1 Overview

7.1.1 This section of the report outlines the measures and incentives that will be promoted on Proposed Development to encourage all users to actively choose sustainable travel wherever practical.

7.2 Development Design / Location

7.2.1 The development is being designed with sustainable transport in mind. A high level of on-site infrastructure is proposed which includes secure cycle parking and high quality pedestrian / cycle links through the development to connect with the external transport network. Links externally to the Proposed Development are being improved, the applicant will provide shared pedestrian and cycle crossing facilities on all arms of the redeveloped R125 / Ballybin Road / Jamestown Road junction. Such infrastructure will provide links to the relocated bus layby, located to the east of this junction.

7.3 Mobility Manager

7.3.1 A Mobility Manager (MM) will be assigned by the Applicant prior to occupation of the Site. The MM will be responsible for the implementation, administration and monitoring of the MMP. The MM will be the first point of contact for residents and visitors for all matters regarding travel to and from site.

7.3.2 The remit of the MM includes the following:

- To develop and oversee the implementation of the initiatives outlined in the plan;
- Monitor the progress of the plan;
- To encourage and market the plan;
- Promote the social, economic and environmental benefits of sustainable travel, including journey sharing, car sharing, and local cycle walking schemes and events; and
- Provide sustainable travel information including available bus, rail services, as well as walking and cycling maps.

7.4 Personalised Travel Planning

7.4.1 Personal Travel Planning (PTP) is a well-established and proven method that encourages people to make more sustainable travel choices. Typically using motivational interviewing techniques, it seeks to overcome the habitual use of the car, enabling more journeys to be made on foot, bike, public transport or in shared cars. This is achieved through the provision of tailored information, incentives and motivation directly to individuals to help them voluntarily make more informed travel choices.

7.4.2 The tools and techniques to encourage people to travel sustainably include:

- One-to-one conversations, either at the face-to face or by telephone, between individuals and trained field officers to encourage and motivate a change in behaviour;
- The provision of information and support on how to travel sustainably, for example, maps or guides about the local bus network, walking and cycling routes, and bike training/maintenance classes.

7.4.3 A successful PTP approach can deliver:

- Reduced congestion and reduce car use;
- Individual health improvements through increased walking and cycling;
- Greater use of public transport;
- Better air quality and reduce traffic noise;
- More use of local services by residents;
- Support sustainable economic growth by reducing peak hour congestion;
- Encourage more active lifestyles to address health and well-being issues; and
- Promote environmentally responsible travel choices and carbon reduction by helping reduce individual carbon footprints.

7.5 Information and Promotion

7.5.1 Travel information for residents and visitors is essential to achieve an awareness of sustainable travel options which are available in the local area.

Accessible Travel Information and Facility Awareness On-Site

7.5.2 The MM should ensure that sustainable travel information is communicated to residents. This could be achieved through delivery of a welcome pack that discloses how such modes of travel could be used in accessing key amenities in Ratoath and locations further afield.

7.6 Pedestrian Measures

7.6.1 There is proposed to be a number of internal pedestrian routes within the lands, allowing access to the Site, alongside dedicated pedestrian access points. These are key to encourage walking to and from the Site.

7.7 Cycling Measures

7.7.1 Cycle parking will be provided in accordance with Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024) and Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities (2023). It is therefore assumed that for units with a private garden, cycles can be securely stored within the curtilage of each individual residential plot. For units with communal outdoor space, cycle parking is provided.

7.7.2 Where a private garden is not present, such as with the maisonette units, secure cycle storage is provided at a rate of 1 space per bed. This is in line with MCDP standards. 1 visitor space should be provided per two housing units, without private gardens. There are 24 such units and so 12 visitor cycle spaces should be provided.

7.7.3 It is important that the MM encourages residents and, where appropriate, visitors, to make use of the existing facilities and further encourages cycling to the site. A range of measures should therefore be offered which include various information and incentive based measures as well as physical improvements, as detailed below:

- Where available, the provision of local cycling maps, and cycling times to key destinations; and
- A route database which would allow cyclists to team up for journeys.

7.8 Public Transport Measures

7.8.1 The measures to increase public transport use should focus on the promotion of existing facilities but also look for opportunities to make improvements to better suit the needs of the residents and visitors. Measures should include:

- Provision of bus timetables of local bus services, including maps of routes and locations of bus stops near the development (to be displayed notice boards and masterplan lands website). These could be provided as part of a resident welcome pack; and
- Engage in discussions with the local bus operators to explore where improvements to the bus service routes and timetables can be made to better serve the residents and visitors.

7.9 Managing Car Use

Car Sharing

7.9.1 Car-sharing is perhaps the most attractive alternative to single occupancy vehicle travel because of its door to door directness and convenience. The main benefit of car-sharing is that each person, other than the driver, in the car could equate to a vehicle trip removed from the road.

7.9.2 The main disadvantage is that it requires a degree of commitment to a common schedule. Car-sharing can be implemented by most organisations, although there are certain criteria which can make them more successful, these include:

- Consistent work hours;
- High percentage of residents with commutes longer than 10 miles, or 20 minutes; and
- High percentage of residents with low to moderate salaries.

7.9.3 Establishing a car-share community for residents willing to car-share could aid in reducing single-occupancy car use. This could be usefully extended to school runs, reducing the requirements for all school children to be taken to their place of education by a unique vehicle.

8. MONITORING STRATEGY

8.1 General

8.1.1 This section sets out the monitoring strategy for the MMP. The monitoring strategy is important for assessing how effectively the MMP has been in achieving its aim, objectives and targets. It can help identify measures that are not meeting objectives and reallocate resources accordingly. An MMP is a continuous and evolving document requiring monitoring, review and revision to ensure that it remains relevant.

8.2 Travel Survey

8.2.1 A resident and visitor travel questionnaire should be undertaken to monitor the mode share patterns within the first six months following occupation of the Proposed Development. This will inform the baseline travel patterns (currently indicative), and subsequently future targets.

8.2.2 Further monitoring of targets will take place by the MM in years three and five of occupation to adjust any targets assumed, and in order to assess the change in modal split. These surveys should take place in the same month as the year one monitoring in order to ensure consistency.

1.1.1 Monitoring results will be analysed to enable the following:

- Measurement of the success of the MMP, enabling focused improvement on areas that have not achieved the desired modal shift, via appropriate revisions to the MMP measures;
- Identification of early success stories of the MMP, which can help to encourage further participation and build momentum for sustainable travel;
- Ensuring that changing travel patterns are considered and that the MMP measures can be updated to reflect the needs of employees; and
- Allowing targets which have been set too low or unrealistically high to be readjusted.

8.3 Reporting

8.3.1 The results of the travel survey, and findings from the ongoing monitoring activities, should be provided in monitoring reports.

8.3.2 In the event that initial targets set out in the MMP are not met, this will not be seen a failure, rather as a calibration exercise for future target setting and an MMP measures review.

9. SUMMARY AND CONCLUSIONS

9.1 Summary

9.1.1 SYSTRA Ltd (SYSTRA) have been appointed by the Applicant to prepare a Mobility Management Plan (MMP) to accompany a Planning Application of a Large Scale Residential Development Application principally located at Main Street/R125 and Ballybin Road, Ratoath, Co. Meath.

9.1.2 This report should be read in conjunction with the accompanying Transport Assessment. The MMP is the principal mitigation measure proposed by the TA to address the anticipated transport impacts of the development.

9.1.3 This MMP has been prepared to promote sustainable travel choices and reduce reliance on private car, associated with residents and visitor trips to the Proposed Development. This MMP should be read in conjunction with the Transport Assessment that has been prepared for the Proposed Development.

9.1.4 This MMP has been written in accordance with policy requirements, by seeking to ensure promotion of sustainable transport to and from the Site.

9.1.5 A package of measures has been noted to ensure that targets can be met. The measure include the appointment of a Mobility Manager, a resident induction containing sustainable travel information, marketing and promotion of travel event, provision of personalised travel planning and monitoring / surveys.

9.1.6 As the MMP is a continuous and evolving document it requires monitoring, review and revision to ensure that it remains relevant. Baseline monitoring surveys should be undertaken within 6 months of occupation, with this MMP being updated as a result..

9.2 Conclusion

9.2.1 In conclusion, this MMP provides a mechanism for influencing the travel behaviour of residents and visitors of the Site, with a focus on encouraging sustainable travel modes, in particular walking and cycling.

SYSTRA provides advice on transport, to central, regional and local government, agencies, developers, operators and financiers.

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Latin America:
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North America:
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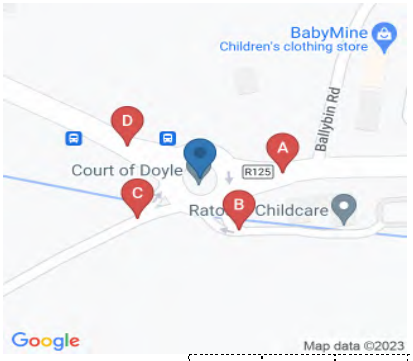
APPENDIX G – QUEUE LENGTH SURVEYS



IDASO

Survey Name: 336 23493 - Ratoath, Co Meath Queue Report
Site: Site 1
Location: R125/The Avenue Roundabout
Date: Thu 19-Oct-2023

TIME	A1	A2	B	C1	C2	D
07:00	0	0	0	0	5	50
07:15	0	0	0	0	10	150#
07:30	0	0	0	5	45	150#
07:45	0	0	0	5	10	150#
08:00	5	0	5	5	10	150#
08:15	20	10	10	5	10	150#
08:30	5	5	5	5	10	60
08:45	5	10	15	10	10	150#
09:00	5	15	0	5	15	150#
09:15	5	0	0	5	5	35
09:30	5	5	10	5	5	40
09:45	5	0	0	5	10	10
10:00	0	0	0	0	0	0
10:15	0	0	0	0	0	0
10:30	0	0	0	0	0	0
10:45	0	0	0	0	0	0
11:00	0	0	0	0	0	0
11:15	0	0	0	0	0	0
11:30	0	0	0	0	0	0
11:45	0	0	0	0	0	0
12:00	0	0	0	0	0	0
12:15	0	0	0	0	0	0
12:30	0	0	0	0	0	0
12:45	0	0	0	0	0	0

TIME	A1	A2	B	C1	C2	D
13:00	0	0	0	0	0	0
13:15	0	0	0	0	0	0
13:30	0	0	0	0	0	0
13:45	0	0	0	0	0	0
14:00	0	0	0	0	0	0
14:15	0	0	0	0	0	0
14:30	0	0	0	0	0	0
14:45	0	0	0	0	0	0
15:00	0	0	0	0	0	0
15:15	0	0	0	0	0	0
15:30	0	0	0	0	0	0
15:45	0	0	0	0	0	0
16:00	0	0	0	5	10	5
16:15	0	0	0	10	25	15
16:30	10	15	5	5	20	10
16:45	5	20	5	5	25	15
17:00	0	0	5	5	15	10
17:15	0	25	15	10	20	10
17:30	0	20	15	10	15	30
17:45	0	15	10	10	25	10
18:00	0	0	5	15	20	15
18:15	0	0	0	5	10	35
18:30	0	0	0	5	20	45
18:45	0	0	0	5	35	50

Queue's are measured in meters

..... Cannot be seen from camera
+ Signifies queue stretches to a minimum length of x and beyond the view of the camera
# Signifies queue stretches to the next significant junction
* Indicates an estimated queue length due to obscured vision.
M Indicates that the lane ends and the vehicles queing merged into another lane to queue.

Queue lengths are compiled from CCTV observations and are therefore subject to the limitations of the camera view.

IDASO

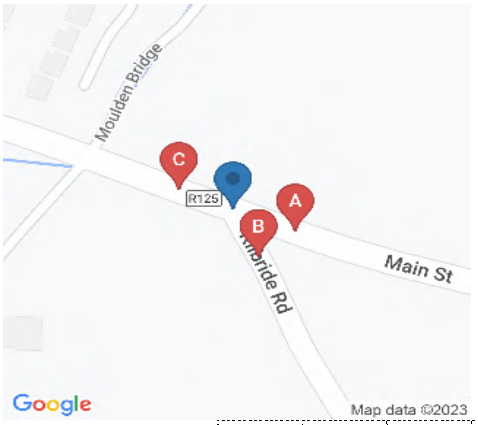
Survey Name: 336 23493 - Ratoath, Co Meath Queu
Site: Site 2
Location: R125 Main Street/ Ballybin Road
Date: Thu 19-Oct-2023

TIME	A1	A2	B	C
07:00	5	25	0	0
07:15	15M	25	5	35#
07:30	0	25	5	35#
07:45	5	20	20	35#
08:00	5	55	15	35#
08:15	10	25	25	0
08:30	0	30	15	0
08:45	15M	65	25	35#
09:00	0	35	25	0
09:15	5	50	15	0
09:30	5	30	35	0
09:45	5	20	20	0
10:00	0	0	0	0
10:15	0	0	0	0
10:30	0	0	0	0
10:45	0	0	0	0
11:00	0	0	0	0
11:15	0	0	0	0
11:30	0	0	0	0
11:45	0	0	0	0
12:00	0	0	0	0
12:15	0	0	0	0
12:30	0	0	0	0
12:45	0	0	0	0

TIME	A1	A2	B	C
13:00	0	0	0	0
13:15	0	0	0	0
13:30	0	0	0	0
13:45	0	0	0	0
14:00	0	0	0	0
14:15	0	0	0	0
14:30	0	0	0	0
14:45	0	0	0	0
15:00	0	0	0	0
15:15	0	0	0	0
15:30	0	0	0	0
15:45	0	0	0	0
16:00	0	110+	35	0
16:15	5	50	20	0
16:30	0	65	45	35#
16:45	0	55	25	0
17:00	0	110+	25	0
17:15	5	110+	25	5
17:30	0	110+	35	10
17:45	0	80	20	0
18:00	0	110+	30	0
18:15	5	55	30	0
18:30	5	55	25	10
18:45	5	75	15	0

Queue's are measured in meters

.....	Cannot be seen from camera
+	Signifies queue stretches to a minimum length of x and beyond the view of the camera
#	Signifies queue stretches to the next significant junction
*	Indicates an estimated queue length due to obscured vision.
M	Indicates that the lane ends and the vehicles queing merged into another lane to queue.



IDASO

Survey Name: 336 23493 - Ratoath, Co Meath Queu
Site: Site 3
Location: R125/Kilbride Road
Date: Thu 19-Oct-2023

TIME	A	B	C
07:00	0	0	20
07:15	0	5	10
07:30	0	5	20
07:45	0	5	0
08:00	10	15	340#
08:15	10	10	0
08:30	15	5	35
08:45	15	20	60
09:00	10	5	25
09:15	0	5	30
09:30	0	10	10
09:45	0	10	5
10:00	0	0	0
10:15	0	0	0
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
12:00	0	0	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0

TIME	A	B	C
13:00	0	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	0	0	0
14:45	0	0	0
15:00	0	0	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	65	10	20
16:15	70	30	10
16:30	70	15	10
16:45	75	35	20
17:00	140+	45	15
17:15	140+	50	0
17:30	140+	75	0
17:45	140+	25	15
18:00	140+	15	20
18:15	5	20	45
18:30	15	20	10
18:45	0	15	5

Queue's are measured in meters

.....	Cannot be seen from camera
+	Signifies queue stretches to a minimum length of x and beyond the view of the camera
#	Signifies queue stretches to the next significant junction
*	Indicates an estimated queue length due to obscured vision.
M	Indicates that the lane ends and the vehicles queing merged into another lane to queue.

IDASO

Survey Name: 336 23493 - Ratoath, Co Meath Queu
Site: Site 4
Location: Nine Mile Roundabout
Date: Thu 26-Oct-2023

TIME	A1	A2	A3	B1	B2	C1	C2	D1	D2	E1	E2
07:00	25	10	5	20	5	5	0	5	15	15	50
07:15	20	15	5	10	15	5	0	15	40	75	75
07:30	30	15M	20	10	5	5	0	15	35	35	80
07:45	30	15	20M	10	10	10	5	10	40	30	120
08:00	5	10	20M	15	5	25	15	25M	45	20	35
08:15	20	15	20M	25	15	15	5	10	105	20	25
08:30	40	15M	20M	25	10	25	15	25	40	25	40
08:45	35	15M	20M	20	10	10	15	10	45	15	35
09:00	20	10	10	25	10	25	20	15	25	10	35
09:15	15	10	20M	10	5	5	5	10	15	10	20
09:30	10	5	15	10	5	5	0	15	25	10	20
09:45	35	10	5	10	5	10	0	15	15	10	35
10:00	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0

Queue's are measured in meters

.....	Cannot be seen from camera
+	Signifies queue stretches to a minimum length of x and beyond the view of the camera
#	Signifies queue stretches to the next significant junction
*	Indicates an estimated queue length due to obscured vision.
M	Indicates that the lane ends and the vehicles queing merged into another lane to queue.

ueue Rep

TIME	A1	A2	A3	B1	B2	C1	C2	D1	D2	E1	E2
13:00	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0
16:00	20	10	10	30	10	35	15	15	100	20	55
16:15	30	10	15	35	20	45	10	15	45	10	40
16:30	15	15	20M	20	10	50	20	20	20	5	30
16:45	5	5	10	20	10	40	15	20	15	10	30
17:00	0	5	15	15	10	25	10	15	20	20	30
17:15	5	5	10	15	15	155	15	20	15	5	25
17:30	15	5	10	20	10	55	30	25M	20	15	20
17:45	0	5	5	15	5	50	30	20	25	5	20
18:00	0	10	5	15	5	30	25	10	25	15	25
18:15	15	15	10	15	0	40	5	20	25	10	10
18:30	0	5	10	5	5	35	10	15	10	0	20
18:45	5	0	10	5	0	40	5	15	20	5	20

IDASO

Survey Name: 336 23493 - Ratoath, Co Meath Queu
Site: Site 5
Location: R125 (Main Street)/Fox Lodge Road
Date: Thu 19-Oct-2023

TIME	A	B	C
07:00	10	5	45
07:15	15	5	70
07:30	10	10	120+
07:45	15	15	120+
08:00	20	15	120+
08:15	15	30	120+
08:30	15	25	120+
08:45	15	30	120+
09:00	15	30	120+
09:15	15	10	45
09:30	5	5	50
09:45	5	0	0
10:00	0	0	0
10:15	0	0	0
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
12:00	0	0	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0

TIME	A	B	C
13:00	0	0	0
13:15	0	0	0
13:30	0	0	0
13:45	0	0	0
14:00	0	0	0
14:15	0	0	0
14:30	0	0	0
14:45	0	0	0
15:00	0	0	0
15:15	0	0	0
15:30	0	0	0
15:45	0	0	0
16:00	5	30	5
16:15	30	30	10
16:30	10	35	40
16:45	5	10	0
17:00	25	0	0
17:15	15	30	10
17:30	10	25	35
17:45	25	45	40
18:00	20	15	0
18:15	20	20	40
18:30	35	30	0
18:45	20	25	60

Queue's are measured in meters

.....	Cannot be seen from camera
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#	Signifies queue stretches to the next significant junction
*	Indicates an estimated queue length due to obscured vision.
M	Indicates that the lane ends and the vehicles queing merged into another lane to queue.

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Latin America:
Lima, Mexico, Rio de Janeiro, Santiago, São Paulo

North America:
Little Falls, Los Angeles, Montreal, New-York, Philadelphia, Washington

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