

Proposed McDonald's Drive Thru Molesworth Street, Rochdale

Transport Assessment

14.02.25

McDonald's Restaurant Ltd

AMA Project Number: 53024-001

Andrew Moseley Associates
15 St Paul's Street
Leeds
LS1 2JG

www.amatp.co.uk
info@amatp.co.uk

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REPORT PRODUCTION TEAM

Name	Initials	Job Title
Jonathan Hazell	JH	Principal Transport Planner
Rosie Ward	RW	Principal Transport Planner
Elizabeth Theakston	ET	Graduate Transport Planner

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1 INTRODUCTION

1.1 OVERVIEW

- 1.1.1 Andrew Moseley Associates (AMA) have been commissioned to prepare a Transport Assessment (TA) and Interim Travel Plan (ITP) in connection with the submission of a detailed planning application for a proposed McDonald's Restaurant with Drive-Thru located, located on land to the south-west of the A671 Molesworth Street, Rochdale.
- 1.1.2 The Local Planning Authority (LPA) and Local Highway Authority (LHA) is Rochdale Borough Council (RBC).
- 1.1.3 The site currently operates as a surface car park, We Buy Any Car compound and an extension of the Premier Kia sales forecourt. The proposed application site is bound to the north by the junction of Molesworth Street and Water Street, to the east by Molesworth Street, to the west by Water Street and to the south by an area of car parking and an industrial unit with associated scrap yard. The location of the site is illustrated in [Figure 3-1](#).
- 1.1.4 It is proposed that the site will be accessed by all modes of transport, including deliveries, via the existing point of access in the form of an upgraded T-junction to the north of the site from Water Street. A detailed site layout plan is attached at [Appendix A](#).
- 1.1.5 The purpose of this report is to review the local highway network and the sustainable accessibility of the proposed development and to assess the development proposals in a local transport context.
- 1.1.6 This TA has been prepared with reference to the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), local RBC policy and Places for Everyone Plan' Joint Development Plan Document.
- 1.1.7 This TA will demonstrate that the site is well served by existing transport provision and is accessible to a range of key services and facilities.
- 1.1.8 The TA will also demonstrate that the traffic generated by the proposed development can be accommodated on the surrounding road network without resulting in any significant impact upon the capacity of the highway network and road safety.
- 1.1.9 An ITP has also been prepared which sets out measures to encourage sustainable travel patterns and reduce the reliance on private car use.

1.2 REPORT STRUCTURE

- 1.2.1 The structure of the report is set out as follows:
 - ▶ [Section 2](#) – outlines the policy background at a national and local level.
 - ▶ [Section 3](#) – provides a description of the site location, highway network surrounding the site, and examines the accessibility of the site by sustainable modes of travel. This section also considers the accessibility of a range of key services and facilities as well as a review of personal injury collisions
 - ▶ [Section 4](#) – describes the development proposals with regard to the proposed quantum of development, the proposed means of access to the site, servicing, parking provision and drive thru queue capacity.
 - ▶ [Section 5](#) – summarises the assessment parameters and trips rates that have been adopted within this TA.
 - ▶ [Section 6](#) – examines the impact of development traffic on the local highway network and presents the results of the future year junction assessments to determine the potential impact of the proposals.
 - ▶ [Section 7](#) – provides a summary of the TA.

2 POLICY BACKGROUND

2.1 NATIONAL POLICY

- 2.1.1 The National Planning Policy Framework (NPPF) came into effect in 2012. The document was designed to supersede and simplify previous national planning documents and their policies. The National Planning Policy Framework was revised in response to the Proposed reforms to the National Planning Policy Framework and other changes to the Planning system consultation on 12 December 2024 and sets out the government's planning policies for England and how these are expected to be applied.
- 2.1.2 This revised framework replaces the previous Nation Planning Policy Framework published in March 2012, revised in July 2018, updated in February 2012, revised in July 2021, updated in September 2023 and revised in December 2023.
- 2.1.3 The preparation of this TA is consistent with national transport policy guidance set out in the NPPF which advocates the submission of such documents to support applications for new developments which generate traffic movements.
- 2.1.4 The NPPF states under the subheading 'Considering development proposals', within the 'Promoting Sustainable Transport' chapter that:

115. In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;

b) safe and suitable access to the site can be achieved for all users;

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code⁴⁸; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach

116. Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.

117. Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

118. All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored.

- 2.1.5 **Section 3** of this report highlights the existing sustainable travel modes within the vicinity of the site and demonstrates that the development will be well suited to this location.
- 2.1.6 **Section 6** of this report assesses the traffic associated with the development on the surrounding road network and will identify mitigation measures where necessary to ensure that the impact of the development is not severe.
- 2.1.7 The Government's objectives set out in the revised NPPF are to ensure that new developments are provided in sustainable locations, where the need to travel is minimised and the use of sustainable modes can be maximised.

2.2 REGIONAL POLICY

Greater Manchester Transport Strategy 2040

- 2.2.1 In January 2021, TfGM published a 2040 Vision for Transport to develop flexible and customer-focused travel choices, supported by smart information, ticketing and payment systems, across a truly integrated Greater Manchester transport network. The Transport Strategy states an ambition for a well-connected, zero carbon Regional Centre at the heart of the North.
- 2.2.2 Under Policy 3, the Transport Strategy states that TfGM will “maintain a programme of interventions encouraging people to make sustainable journeys, supported through journey planning tools, and information to encourage travel behaviour change and mode shift, in order to make the most efficient use of available capacity (particularly during peak periods)”. Such interventions comprise:
 - ▶ “Reducing the carbon and environmental cost of journeys;
 - ▶ New ways of working which make the best use of the transport network;
 - ▶ Delivering public health benefits through enabling more active travel;
 - ▶ Improving access to key services and jobs;
 - ▶ Maximising sustainable travel in new developments; and
 - ▶ Becoming more resilient to disruption.”
- 2.2.3 Under Policy 4, TfGM will also “work with developers to ensure that new developments are accessible by sustainable modes, and to reduce transport emissions and impacts on the highway network”. This will be in accordance with the principles of:
 - ▶ “Reducing the need to travel;
 - ▶ Reducing the need to travel by car, and the distance travelled;
 - ▶ Maximising accessibility by sustainable modes;
 - ▶ Making the best use of existing infrastructure, particularly through increasing the density of development close to public transport nodes;
 - ▶ Maximising opportunities to provide additional public transport; and
 - ▶ Designing to encourage active travel.”
- 2.2.4 It is considered that the above principles are reflected in this TA which seeks to promote active and sustainable travel.

Places for Everyone

- 2.2.5 Places for Everyone is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes, and sustainable growth. It has been published by the GMCA on behalf of the nine districts.
- 2.2.6 The plan is a joint development plan of the nine districts which determines the kind of development that takes place in their boroughs, maximising the use of brownfield land and urban spaces while protecting Green Belt land from the risk of unplanned development.
- 2.2.7 It also ensures all new developments are sustainably integrated into Greater Manchester's transport network or supported by new infrastructure.
- 2.2.8 The Places for Everyone Plan aims to:
 - ▶ Sets out how the nine boroughs should develop up until 2039;
 - ▶ Identifies the amount of new development that will come forward across the 9 districts, in terms of housing, offices, and industry and warehousing, and the main areas in which this will be focused;
 - ▶ Supports the delivery of key infrastructure, such as transport and utilities;
 - ▶ Protects the important environmental assets across the city region;
 - ▶ Allocates sites for employment and housing outside of the existing urban area; and
 - ▶ Defines a new Green Belt boundary for Greater Manchester.

2.3 LOCAL POLICY

Rochdale Unitary Development Plan

- 2.3.1 The Rochdale Unitary Development Plan (1999 – 2016) remains in place until the Rochdale Allocations Development Plan is adopted. It's main role is to guide the future use and development of land and buildings. It sets out a framework of policies to:
 - ▶ Control the location and quality of new development;
 - ▶ Encourage and stimulate new development, where appropriate;
 - ▶ Protect and improve the environment; and
 - ▶ Safeguard the Borough's most important natural and built assets.
- 2.3.2 Under Policy G/A/1 (Part One Policy) – Accessibility, the UNP states that the council will “seek to facilitate accessibility for all by integrating land-use development and transport, reducing the need to travel and promoting choice in the availability of transport, including walking, cycling and public transport. New development and new transport infrastructure shall be located, designed and integrated with its surroundings in such a way as to:
 - ▶ Reduce the growth in length and number of motorised journeys;
 - ▶ Facilitate access by walking, cycling and public transport – including for people with restricted mobility - in order to widen travel choice for all and reduce reliance on the private car;
 - ▶ Provide for access for goods vehicles and cars, taxis, private hire vehicles motorcycles, mopeds and motor scooters, such as to meet the operational needs of the development and ensure access for people with restricted mobility, but minimise the adverse impacts of motorised transport on the wider community and environment; and
 - ▶ Facilitate the movement of goods by rail where practicable.
- 2.3.3 It is considered that the above principles are reflected in this TA which seeks to promote active and sustainable travel.

Rochdale Adopted Core Strategy

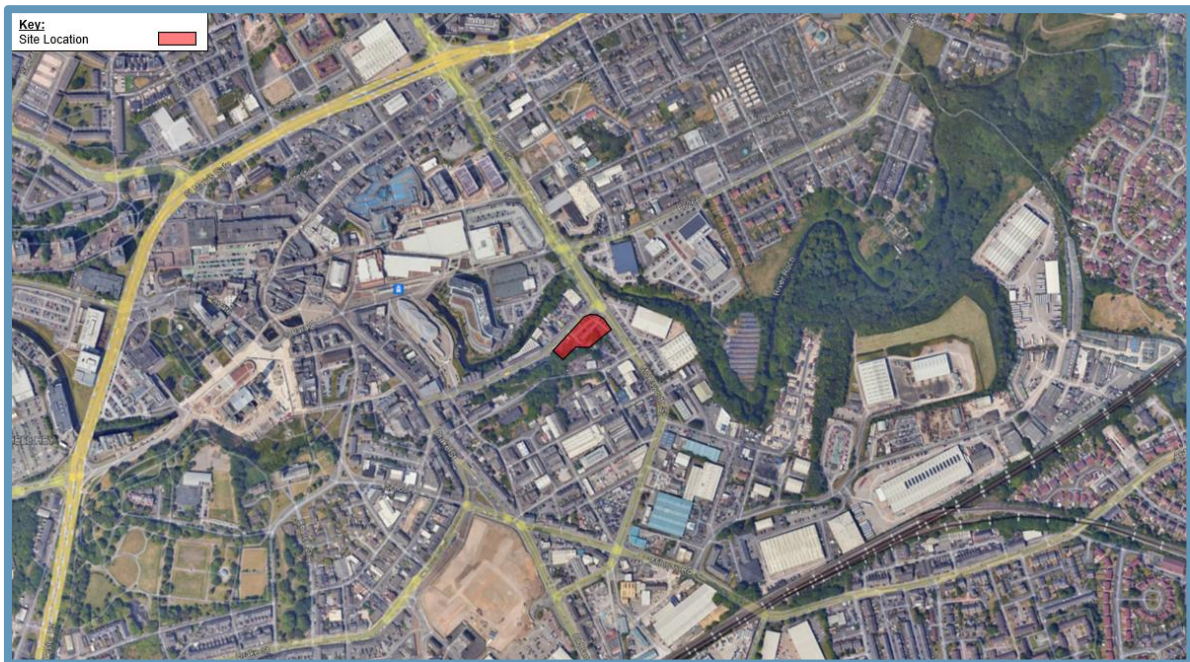
- 2.3.4 The Rochdale Adopted Core Strategy was adopted in October 2016 and sets out the long-term spatial strategy for future development of Rochdale Borough until 2028.
- 2.3.5 In terms of accessibility, the main challenges are highlighted as follow:
- ▶ “Ensuring transport improvements are co-ordinated with, and support, future development;
 - ▶ Solving congestion at peak times across the borough;
 - ▶ Improving transport links to the city centre for employment and leisure; and
 - ▶ Improving accessibility to jobs in the borough and elsewhere in Greater Manchester.”
- 2.3.6 Chapter 11 of the Core Strategy states that “to improve accessibility and enhance sustainable travel, our policies seek to:
- ▶ deliver transport improvements at a strategic, borough-wide and local level to support development proposals;
 - ▶ ensure that development is in the most appropriate and accessible locations;
 - ▶ minimise trips, especially single occupancy car journeys, and trip length;
 - ▶ promote wider travel choice and increase trips made by sustainable forms of travel, including public transport, cycling and walking;
 - ▶ support measures that enhance safety and access for people with impaired mobility, protect traffic-sensitive town centres and residential communities; and,
 - ▶ reduce emissions from traffic (particularly NOx gases, PM10 particulates and CO2 levels) contributing to Greater Manchester Local Transport Plan (GMLTP) and national targets by encouraging more sustainable travel choices and forms of travel, more active and healthier travel behaviour and take advantage of technological innovations.”
- 2.3.7 As a result, Policy T2 advocates that “[RBC] will improve accessibility by locating development where good access to public transport is available or can be provided, backed by measures to reduce the need for travel and effective provision for cyclists, pedestrians and people with impaired mobility. Development will be appropriately located to minimise the need to travel by car and the number and length of car trips made to access local amenities.”

3 EXISTING CONDITIONS AND SUSTAINABLE TRANSPORT

3.1 SITE LOCATION

- 3.1.1 The site currently operates as a surface car park, We Buy Any Car compound and an extension of the Premier Kia sales forecourt.
- 3.1.2 The proposed application site is bound to the north by the junction of Molesworth Street and Water Street, to the east by Molesworth Street, to the west by Water Street and to the south by an area of car parking and an industrial unit with associated scrap yard.
- 3.1.3 The location of the site is illustrated in [Figure 3-1](#).

Figure 3-1 Site Location Plan



3.2 EXISTING LAND USE

- 3.2.1 The site is located to the south west of the A671 Molesworth Street and currently operates as a surface car park, We Buy Any Car compound and an extension of the Premier Kia sales forecourt.
- 3.2.2 The car dealership site can be accessed via three points of vehicular access from Water Street. As part of the development proposals, two of the existing access points will be closed up and the footpath will be reinstated subject to detailed design and local authority approval.
- 3.2.3 It is proposed that access to the new development will be gained via the existing western access point via an upgraded arrangement.
- 3.2.4 For an overly robust assessment, the traffic generated by the existing legal land use will not be subtracted from the calculated McDonald's Drive Thru impact assessments.

3.3 LOCAL HIGHWAY NETWORK

- 3.3.1 It is proposed that the site will be accessed via an upgraded T-junction to the north of the site from Water Street.
- 3.3.2 Forming the northwestern boundary of the application site Water Street is a single carriageway two-way road which routes in a general northeast / southwest alignment. Water Street is subject to a 20mph speed limit, is street lit and has footways present along both sides of the carriageway.

- 3.3.3 The traffic regulation order of double yellow lines is in place on both sides of the carriageway for the majority of Water Street and three on street parking bays are available with parking restrictions of Monday – Saturday 8am-6pm with payment machines available.
- 3.3.4 To the north of the site Water Street forms a priority T junction with Molesworth Street. A kerbed central island is in place on Molesworth Street with a right-turn lane available for vehicles turning right into Water Street. Water Street tapers at the junction with Molesworth Street with a dedicated right-turn lane marked which is available for vehicles turning right onto Molesworth Street, reducing the queuing on Water Street.
- 3.3.5 Molesworth Street runs in a general northwest / southeast alignment and is subject to a 30mph speed limit. To the east of the site it is a single carriageway two-way road. To the west of the site Molesworth Street splits into three lanes on both sides of the carriageway at the signalised junction of the A671 Molesworth Street, John Street, B6266 Entwisle Road and Smith Street before reducing to two lanes on both sides of the carriageway. Molesworth Street is street lit and has footways on both sides of the carriageway.
- 3.3.6 Approximately 450m northwest of the site Molesworth Street/John Street connects to the A58 St Mary's Gate via a signal-controlled crossroads. This is part of the Strategic Road Network which connects to other key routes facilitating travel throughout Rochdale. The A58 provides access to the west of Rochdale through to the market town of Bury and the M66 with travel both northbound and southbound.
- 3.3.7 The M62 is available approximately 5.4km south of the site and facilitates eastbound and westbound connectivity on the Strategic Road Network.
- 3.3.8 The site is considered to be well located for access to both local and regional networks.

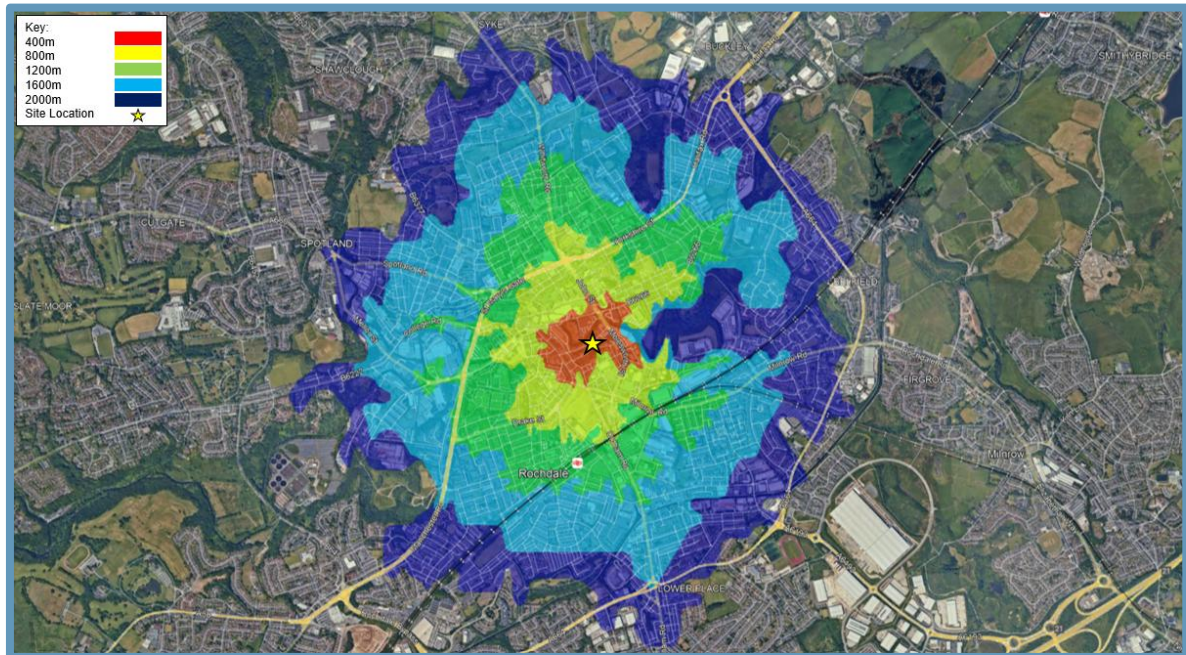
3.4 WALKING ACCESSIBILITY

- 3.4.1 The Government's objectives set out in the NPPF are to ensure that new developments are provided in sustainable locations, where the need to travel is minimised and the use of sustainable modes can be maximised. Whilst superseded by the NPPF, the transport policies in the former PPG13 set out specific guidance related to walking:

“Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under 2 kilometres” (Para 74)

- 3.4.2 These potential walking catchments have been used in the consideration of the accessibility of the site set out below.
- 3.4.3 Walking is recognised as the most important mode of travel at a local level in that it offers the greatest potential to replace short car trips, particularly those under two kilometres. As such, consideration has been given to the existing pedestrian facilities in the vicinity of the proposed development. The plan attached at [Figure 3-2](#) shows that areas within the 2km catchment area include the majority of Rochdale, providing a feasible means of access by foot for both employees and customers.

Figure 3-2 2km Walking Catchment Plan



- 3.4.4 Footways are present along both sides of Water Street from which the site would be accessed. The footway network continues throughout Rochdale, providing access to the amenities and residential areas within the vicinity of the site.
- 3.4.5 Several controlled crossing points are available to the north of the site facilitating safe pedestrian movements across Molesworth Street, the closest controlled crossing point being approximately 90m northwest of the site. Signalised crossing points are also available at the junction of Water Street and Drake Street approximately 300m west of the site.
- 3.4.6 Uncontrolled crossing points with dropped kerbs and tactile paving are also available in proximity to the site facilitating pedestrian movements across quieter local roads.
- 3.4.7 It is therefore considered that the pedestrian network surrounding the site is of a very high quality.

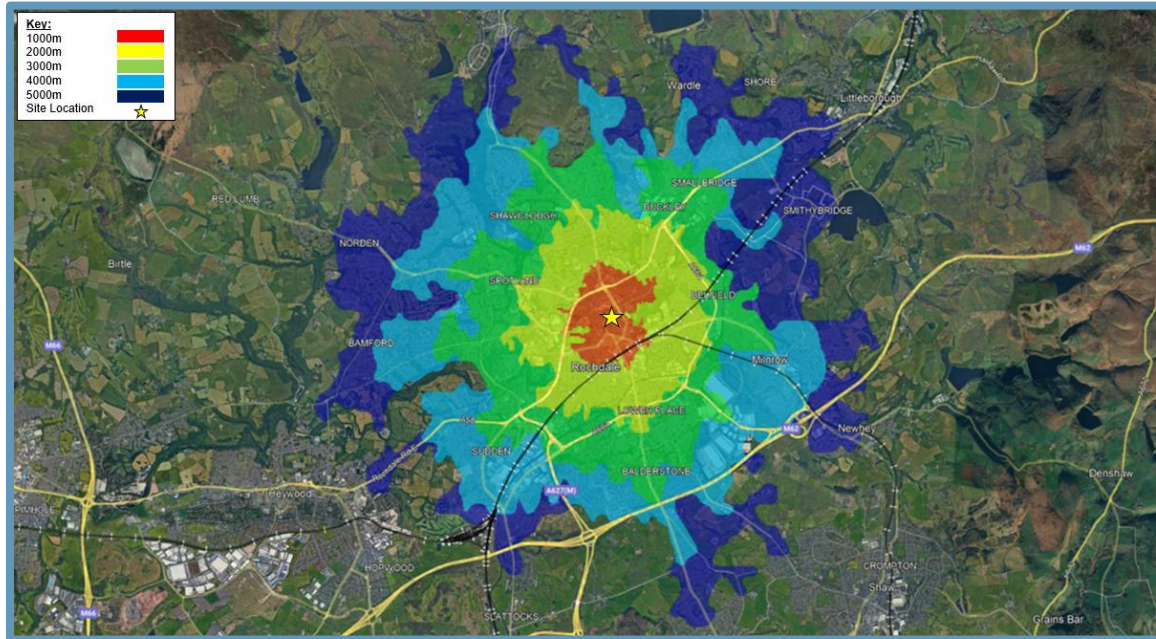
3.5 CYCLING ACCESSIBILITY

- 3.5.1 Whilst superseded by the NPPF, the transport policies in the former PPG13 set out specific guidance related to cycling:

“Cycling also has potential to substitute for short car trips, particularly those under 5 kilometres, and to form part of a longer journey by public transport” (Para 77)

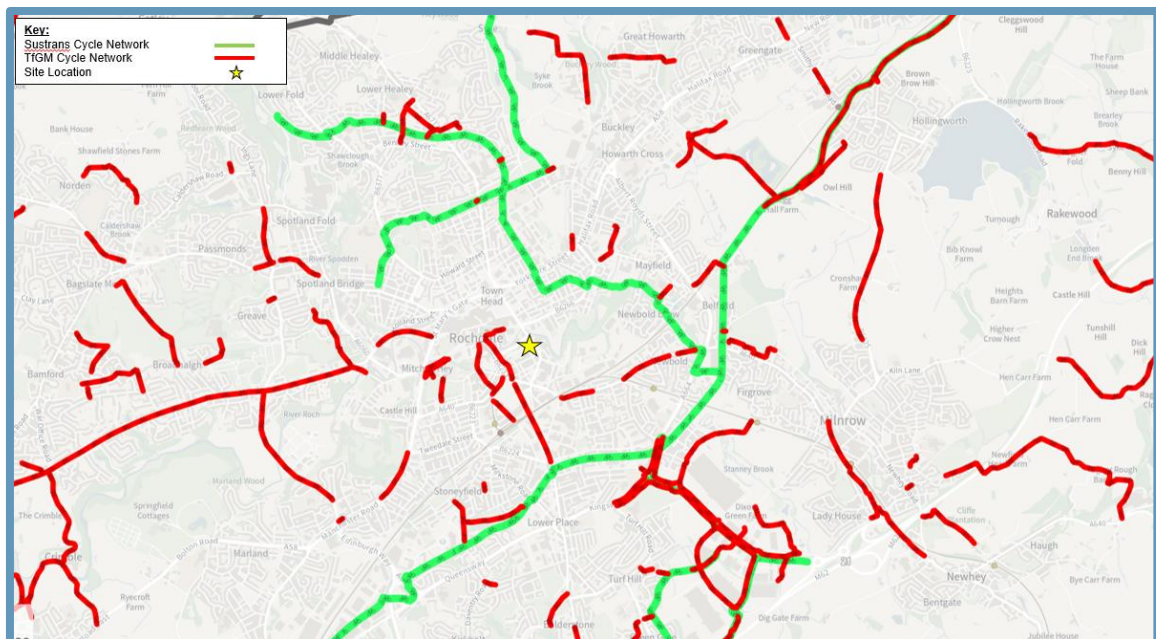
- 3.5.2 Cycling has the potential to substitute for short car trips, particularly less than five kilometres. As such, all areas and facilities within a reasonable walking distance can also be considered to be within a reasonable cycling distance.
- 3.5.3 The plan attached at [Figure 3-3](#) shows the 5km cycling catchment from the site. The 5km cycling distance from the application site includes the entirety of Rochdale and the surrounding residential areas of Norden, Bamford, Sudden, Milnrow and Smithybridge.

Figure 3-3 5km Cycling Catchment Plan



- 3.5.4 The National Cycle Route 92 runs to the north of the site and provides access north to Whitworth which can be accessed from Entwisle Road approximately 115m northwest of the site with a mixture of on road and traffic free cycle paths.
- 3.5.5 To the south of the site, National Cycle Route 66 runs in an east/west alignment through Rochdale. This can be accessed via the National Cycle Route 92 which provides access to areas such as Littleborough to the northeast of the site and the edge of Middleton to the south of the site, the majority of this route being traffic free.
- 3.5.6 An extract from The Greater Manchester Open Data Infrastructure Map (GMODIN) and the cycle routes available is attached at [Figure 3-4](#).

Figure 3-4 Cycle Network Plan



3.6 PUBLIC TRANSPORT

Bus Services

- 3.6.1 The site benefits from being located 200m (2.5 minutes walking distance) from Rochdale Interchange off Water Street. A location plan of the interchange is attached at [Figure 3-5](#).
- 3.6.2 This features 12 bus stands with a total of 27 regular bus services available meaning staff and visitors at the development have a large choice of bus services available and it is likely to be used by staff.

Figure 3-5 Public Transport Location Plan



Tram Services

- 3.6.3 The nearest tram station to the site Rochdale Town Centre located approximately 450m northwest from the site (6 minutes walking distance) which can be accessed by foot or cycle via the surrounding highway network. The tram stop is therefore within acceptable walking distances for commuting and linked trip purposes.
- 3.6.4 The tram stop also provides a direct connection to Rochdale rail station as a key interchange location for staff travelling to / from the application site.
- 3.6.5 Details of the mentioned tram services were obtained from recent timetables [Table 3-1](#) summarises local tram service details and route information.

Table 3-1 Local Tram Services

Destination	Monday – Friday	Saturday	Sunday
Rochdale Town Centre – East Didsbury	12 minutes	12 minutes	15 minutes

- 3.6.6 The tram is therefore a likely mode of transport for staff at the development with its highly frequent service.

Rail Services

- 3.6.7 Rochdale is the nearest rail station to the site which is located approximately 1km to the south of the proposed site access which can be accessed by foot or cycle via the surrounding highway network as well as directly by tram. The station is therefore within acceptable walking distances for commuting and linked trip purposes.
- 3.6.8 Rochdale train station can also be accessed via direct connections from the 'Rochdale Town Centre' tram stop, providing a key interchange location for staff travelling to / from the application site.
- 3.6.9 Rochdale train station is a local transport hub which is supplied with a ticket office and ticket machines. The station is also equipped with sheltered cycle storage facilities for 16 cycles with CCTV.
- 3.6.10 Details of the direct rail services are provided below in [Table 3-2](#).

Table 3-2 Local Rail Services

Destination	Train Operator	Mon-Fri	Sat	Sun
Leeds	Northern	20 mins	20 mins	30 mins
Headbolt Lane	Northern	60 mins	60 mins	60 mins
Manchester Victoria	Northern	10/15 mins	10/20 mins	20/30 mins
Blackburn	Northern	30 mins	30 mins	60 mins
Wigan Wallgate	Northern	30 mins	30 mins	60 mins
Chester	Northern	60 mins	60 mins	60 mins

- 3.6.11 There is the opportunity for future employees to access the site by train with only a short walk, cycle or tram ride from Rochdale train station.

3.7 PERSONAL INJURY COLLISION RECORDS

- 3.7.1 Personal Injury Collision (PIC) data for the local highway network in the vicinity of the site for the most recent five-year period of available data (January 2019 - December 2023) has been obtained from the online Crashmap database.
- 3.7.2 The study area includes a 90m stretch of the A671 Molesworth Street at the site frontage, Water Street where the site is accessed and the signalised crossroads of Molesworth Street, Smith Street, John Street and the B6266 Entwisle Road to the north of the site.
- 3.7.3 Details of the study area are provided in [Appendix B](#).
- 3.7.4 Within the study area a total of five collisions have occurred, of which three are classed as slight and two are classed as serious in severity.
- 3.7.5 At the junction of Robinson Street and the A671 Molesworth Street a slight collision resulted in a single pedal cyclist casualty and a serious collision resulted in serious injury to a single pedestrian.
- 3.7.6 At the signalised crossroads of Molesworth Street, Smith Street, John Street and the B6266 Entwisle Road two slight incidents resulted in slight injury to a total of two pedestrians.
- 3.7.7 Based on the highly infrequent nature of PICs within the vicinity of the site and on the local highway network, it is considered that further analysis of accident data is not required. The collision identifies no hotspots and identifies no highways safety concerns within the vicinity of the site.

4 DEVELOPMENT PROPOSALS

4.1 DEVELOPMENT PROPOSALS AND SITE LAYOUT

- 4.1.1 The development proposals are for a 474m² Gross External Area (GEA) / 422m² Gross Internal Area (GIA) McDonald's Restaurant with Drive-Thru, including associated site access, servicing arrangements and parking. It is expected that the restaurant would operate 24 hours per day Monday to Sunday.
- 4.1.2 A copy of the proposed site layout is included in [Appendix A](#).

4.2 SITE ACCESS DESIGN AND VISIBILITY SPLAYS

- 4.2.1 Customer vehicular and service vehicle access is proposed to the north-western extent of the site via the upgraded priority T-junction which serves the existing land use.
- 4.2.2 Site access visibility splays are also provided in line with the Manual for Streets (MfS) in accordance with the posted 20mph speed limit. Therefore, 2.4m x 25m visibility splays are set out in drawing no. AMA/53024/SK001 and is attached at [Appendix C](#).
- 4.2.3 To ensure that the visibility splays remain free from obstruction, it is proposed that the parking bays currently located along Water Street will be relocated to a new position along Water Street. To ensure that the visibility splay will remain clear from obstruction, double yellow lines are proposed along Water Street either side of the access, this will be achieved via a Traffic Regulation Order (TRO).
- 4.2.4 To limit the loss of on-street parking spaces along Water Street, the development proposes the relocation of three parking bays. These will remain open to the public for pay and display usage by vehicles that would have previously parked on Water Street.
- 4.2.5 Details of the visibility splay and associated three parking bays that require relocation are detailed in AMA/53024/SK001, attached at [Appendix C](#).
- 4.2.6 As part of the development proposals, two of the existing access points will be closed up and the footpath will be reinstated subject to detailed design and LA approval.
- 4.2.7 Within the site, safe pedestrian routes will be provided via paved footways and marked crossing facilities.

4.3 SERVICING ARRANGEMENTS

- 4.3.1 McDonald's has been trading in the UK since 1974. The company operates over 1,348 fast service restaurants (+90 ROI) of which around 1,204 are restaurants with drive thru facilities.
- 4.3.2 Martin Brower are McDonald's sole distributor for all its products and have a fleet of 150 vehicles. They utilise multi-temperature vehicles which allows all of the restaurant's requirements for frozen, chilled and ambient products to be delivered in one visit. This therefore reduces the number of deliveries each restaurant receives.
- 4.3.3 Restaurants typically receive three deliveries per week. Servicing McDonald's restaurants whilst they are open is a common practise and does not present any operational difficulties.
- 4.3.4 Martin Brower use a sophisticated computerised planning tool (Paragon), which enables requirements of delivery destinations to be set and ensures they are complied with on every occasion the delivery is planned. The restaurant is allocated a 2-hour delivery slot and the delivery will be planned within this. Notification of the planned delivery is emailed to the restaurant two days before delivery. On the day of the delivery, the GPS system linked to Paragon will automatically email the restaurant 30-minutes prior to the vehicles arrival.

- 4.3.5 The goods are typically delivered by Rigid Truck, up to 11.105m in length. This is usually parked for between 15 minutes – 1 hour within the 2-hour delivery slot. The duration of the stay depends upon the range and quantity of products to be delivered.
- 4.3.6 Deliveries would be scheduled to arrive at quiet trading periods. Deliveries during lunchtime (12:00 – 14:00 hours) are avoided to minimise any delays in deliveries. When a delivery occurs, staff help to unload the delivery cages and store the food.
- 4.3.7 It is proposed that servicing will be undertaken from within the car park adjacent to the building. A representative from Martin Brower will visit the site prior to the restaurant trading and assess the designated delivery area. Any special requirements (although there are none anticipated in this instance) will be communicated to their transport and scheduling department.
- 4.3.8 The service vehicle swept path analysis is presented in [Appendix D](#). The analysis demonstrates that a delivery vehicle can enter, manoeuvre around the car park to unload and exit the site. Prior to the delivery vehicle arriving, staff will ensure that the parking bays required to be used for servicing are vacated and coned off.
- 4.3.9 Refuse collection is undertaken by a private contractor 3 times per week.
- 4.3.10 Waste minimisation and recycling are promoted. Waste minimisation has been achieved through the re-design of tray liners and specifying the use of light weight bin liners. Food wastage is minimised through the use of a computer system which monitors the amount of food served at given times of day resulting in more accurate preparation and ordering of stock. This therefore reduces the quantum of waste and frequency of collection required.
- 4.3.11 Service vehicles also collect empty delivery trays and crates which are returned to supplies for reuse.
- 4.3.12 Cooking oil from restaurants is collected by Martin Brower's delivery vehicles and is recycled into bio diesel. The bio diesel is used as fuel by all McDonald's delivery vehicles, resulting in a carbon saving of 8,200 tonnes per annum.
- 4.3.13 The arrangements described above follow a 'tried and tested' methodology used successfully across the UK and there are no reasons to suggest why it could not be successfully undertaken in this location.

4.4 PARKING

- 4.4.1 As detailed in the attached Site Layout Plan, the proposed McDonalds layout would have 35 parking bays, sized at 2.5m x 5m, and three motorcycle bays within its demise, split specifically as:
 - ▶ 29 standard bays;
 - ▶ 2 bays for "blue badge" holders (including additional 1.2m surround);
 - ▶ 2 electric vehicle (EV) charging bays, one of which is accessible; and
 - ▶ 2 reserve bays for occasional drive-thru customer use;
 - ▶ 3 motorcycle bays.
- 4.4.2 A review of the Rochdale Adopted Core Strategy "Appendix 5 – Schedule of Parking Standards" states that the Maximum parking standards for 'Fast Food Drive Through' requires a provision of 1 spaces per 8.5m² GFA.
- 4.4.3 Based on the proposed GEA of 474m², a maximum level of parking required on site is 56 spaces.
- 4.4.4 The proposals for 35 parking bays is considered sufficient and will accommodate the anticipated demand of the proposed development. The proposed level of parking provision is in line with McDonald's operational requirements as proven over numerous sites across the country. The proposed level of parking provision has also been shown to be suitable based on the surveyed peak parking demand set out within [Section 5.9](#).
- 4.4.5 There will be six secure cycle parking spaces provided close to the restaurant near the entrance of the building, via three "Sheffield" type stands.

4.4.6 The proposed level of parking provision is therefore considered to be appropriate.

4.5 DRIVE-THRU LANE OPERATION

4.5.1 The drive-thru lane forms an integral part of the McDonald's operation and this lane is shown adjacent to the northern and eastern edges of the building.

4.5.2 When a customer wishes to purchase a meal without leaving their vehicle, the following steps are taken:

- ▶ Enter the drive-thru lane;
- ▶ Place an order at a Customer Order Display (COD) units;
- ▶ Pay at the first booth; and
- ▶ Collect meal from the second booth.

4.5.3 In the event that a customer places a large or unusual order, which could take longer to prepare (and potentially delay other drivers using the drive thru lane), then a member of staff will divert them to one of the 'reserve bays'. Once the order is ready, a member of staff will carry the meal from the restaurant to the customer.

4.5.4 In order to assist with order taking, the proposals include a side-by-side ordering process, so that customer orders can be prepared quicker. Drivers waiting to order would use one of the two COD units within the drive thru lane depending upon how many vehicles are waiting. Both COD units would operate simultaneously at all times of the day, and in practice, can be likened to a dual pay barrier arrangement at multi-storey car parks across the country.

5 ASSESSMENT PARAMETERS

5.1 INTRODUCTION

- 5.1.1 This section sets out the methodology and assessment parameters used in assessing the proposed development and its potential impact on the highway network.

5.2 BASE TRAFFIC SURVEYS

- 5.2.1 Traffic surveys were undertaken at the junctions that are predicted to experience an increase of more than 30 two-way trips as a result of the development proposals. These are as follows:
- ▶ Water Street / A671 Molesworth Street priority T-junction; and
 - ▶ A671 Molesworth Street / Smith Street / B6266 Entwisle Road signalised crossroad junction.
- 5.2.2 The traffic surveys were undertaken between the hours of 07:00 – 10:00 for the AM network peak period; 16:00 – 19:00 for the PM peak period; and 11:00 – 13:00 for the Saturday inter peak period. The surveys were conducted on Friday 28th June and Saturday 29th June 2024, in a neutral period outside of school holidays.
- 5.2.3 The resultant network peak periods were concluded to occur between:
- ▶ Friday network AM peak hour between 08:30 and 09:30;
 - ▶ Friday network PM peak hour between 16:00 to 17:00; and
 - ▶ Saturday network peak hour between 11:45 to 12:45.
- 5.2.4 For the purposes of the junction capacity modelling, the above surveys have been converted to Passenger Car Units (PCUs). The resultant 2024 surveyed flows are illustrated at [Appendix E](#).

5.3 ASSESSMENT YEARS

- 5.3.1 In line with national guidance the anticipated opening year is required for the future horizon assessment. Therefore, a horizon period of five years to 2030 has been assessed within this TA.

5.4 TRAFFIC GROWTH

- 5.4.1 The National Traffic Model (NTM) within TEMPro has been used to identify appropriate growth factors. The Middle Super Output Area (MSOA) Rochdale 010 has been selected within which the site is situated.
- 5.4.2 The resultant growth factors are set out in [Table 5-1](#).

Table 5-1 TEMPro Growth Factors – Rochdale 010

Period	AM Peak	PM Peak	Saturday Peak
2024 - 2025	1.0073	1.0066	1.0062
2024 - 2030	1.0669	1.0640	1.0634

- 5.4.3 Details of the resultant 2024, 2025 'Uplifted' and 2030 Future traffic flows are set out at [Appendix E](#) which sets out all traffic flow diagrams associated with the proposals.

5.5 DEVELOPMENT TRAFFIC GENERATION

Comparable McDonald's Restaurants

- 5.5.1 McDonald's operates in excess of 1,250 restaurants across the UK and it is key to their business to ensure efficient operation of all sites to ensure quality of service and efficiency. McDonalds regularly undertake traffic counts and customer interview surveys on newly opened and existing sites to provide robust data for new restaurants in terms of trip generation and types of trips.
- 5.5.2 McDonald's highways consultants (ADL) have previously commissioned counts and customer interview surveys at a number of McDonald's restaurants. Of these, three restaurants have been identified which have similar characteristics of the proposed site, i.e., have a drive-thru, are located adjacent to the strategic road network, and are surrounded by a similar level of development.
- ▶ Sheen Road, Bristol – BS3 4EG;
 - ▶ Morris St, Wigan, WN1 3RB; and
 - ▶ 202/218 Walton Rd, Liverpool, L4 4BB
- 5.5.3 These restaurants are considered to be the best comparable restaurants for the following reasons:
- ▶ All restaurants are located on suburban key supporting arterial routes;
 - ▶ All restaurants are located within a short distance of a significant retail / shopping offering; and
 - ▶ The restaurants are of a similar scale to the proposal.
- 5.5.4 The average of the three survey results has been taken as the proposed traffic generation for the site for the Friday PM and Saturday Peaks. The resultant peak hour traffic generations are detailed in [Table 5-2](#), full details are provided in [Appendix E](#).

Table 5-2 Existing McDonald's Surveys – Average Vehicle Trip Generation

Peak Hour	Proposed Traffic	
	In	Out
Weekday 17:00 – 18:00	78	83
Saturday 12:00 – 13:00	91	96

- 5.5.5 Average specific trip restaurant rates are considered appropriate and highly robust for use as there is proven to be no significant relationship between McDonald's traffic and floor area, dining area, seating numbers or parking provision with each restaurant having a varying number of trips generated, therefore the above is considered appropriate and is not adjusted by any specific variable.

TRICS Database

- 5.5.6 To ensure the highest trip generation for the proposed development has been assessed in each scenario, the TRICS database has also been interrogated.
- 5.5.7 For the TRICS report, Drive-Thru's in 'Edge of Town Centre', 'Suburban' locations have been selected – all of the sites included are occupied by McDonald's, ensuring the data is relevant to the proposals.
- 5.5.8 Whilst outside of the recorded AM, PM and Saturday network peak hours, the peak hour selected from the TRICS output for the respective peaks are 08:00 to 09:00, 18:00 to 19:00 and 12:00 to 13:00, ensuring a highly robust assessment.
- 5.5.9 The TRICS report is attached at [Appendix F](#) and the resultant trip rates and generation set out below in [Table 5-3](#).

Table 5-3 TRICS McDonald's – Vehicle Trip Rates and Generation

Peak Period	Trip Rates		Proposed Traffic	
	Arrivals	Departures	Arrivals	Departures
Weekday 08:00 – 09:00	14.554	14.645	61	62
Weekday 18:00 – 19:00	21.718	22.939	92	97
Saturday 12:00 – 13:00	25.952	26.298	110	111

- 5.5.10 As there are no existing surveys during the AM peak period, the resultant TRICS trip rates and generation will be used for the AM peak period. For the PM and Saturday peak periods, the higher of the existing surveys and TRICS generated trips will be used for the site, ensuring a robust assessment of the site.
- 5.5.11 As set out within [Table 5-3](#), the TRICS trip generations for the proposed McDonalds store are higher than the surveyed flows set out in [Table 5-2](#) at the existing McDonald's stores in the PM and Saturday peak period.
- 5.5.12 Therefore, to ensure a robust approach, the TRICS trip generations will be used for the AM, PM and Saturday peak assessments.

5.6 MCDONALD'S TRIP BY TYPE

- 5.6.1 Interview surveys were undertaken at the three surveyed restaurants on both a Friday and Saturday during the survey periods. The purpose of the customer interview surveys was to establish the type of trips visiting a McDonald's restaurant with drive-thru facilities which are of similar location, characteristics and in proximity to supporting retail uses.
- 5.6.2 Four primary trip types are referred to in this report as follows:

Additional Trips:

- ▶ These are specific car journeys to visit the McDonald's whereby customers return to their original location immediately after completing their visit:
 - e.g. Home → McDonald's → Home
- ▶ In the case of the proposed restaurant these are specific car journeys to visit the restaurant.

Diverted Trips:

- ▶ These are trips where a driver is already on the network and alters their route to visit the McDonald's:
 - e.g. Home → McDonald's → Other Home Work → McDonald's → Home
- ▶ In the case of the proposed restaurant these are existing trips on A671 Molesworth Street which divert to the site.

Pass By Trips:

- ▶ These are also trips which are already on the network in any event which as the driver passes the site, they decide to make a visit.
- ▶ In the case of the proposed restaurant and for robustness of the assessment these would be existing trips on the A671 Molesworth Street which turn into the site.

Shared Trips:

- ▶ These are existing trips on the network which are shared with the retail land uses in close proximity to the restaurants.
- ▶ In the case of the proposed restaurant these are existing trips to the local facilities within the vicinity of the site that would also visit the restaurant.

- 5.6.3 It should be noted that ‘Additional Trips’ are not necessarily all ‘new’ trips as customers of the new restaurant may well have previously visited other restaurants or hot food takeaway locations. Collectively pass-by and diverted can be referred to as ‘existing trips’ as these represent existing vehicles already on the network.
- 5.6.4 To ascertain the split of trip types, the same McDonald’s sites as used to identify the trip generation have been reviewed.
- 5.6.5 Surveys included questions relating to customer behaviour and trip patterns. The average trip type profiles of the three sites are set out in [Table 5-4](#), and have been applied to the proposed trip generation outlined above. Note the split of trip types for the Friday PM have been applied to the Friday AM scenario.
- 5.6.6 Whilst the surveyed sites included a proportion of shared trips (averaging 25% on Fridays and 36% on Saturdays), as noted above, it is not considered that there will be a notable level of trip sharing in this location. As such, this proportion of trips have been added to the ‘existing’ category.

Table 5-4 Proposed Trips by Type

Trip Type	Definition	Friday PM		Saturday	
		No.	%	No.	%
Additional Trips	Same origin & destination McDonald’s sole purpose of trip	12	19%	15	21%
Existing Trips	Different origin & destination	9	14%	8	11%
	Same origin & destination McDonald’s not sole purpose of trip	27	42%	21	32%
Shared Trip	Visit local facilities before or after McDonald’s	12	25%	22	36%
Total Survey		59	100%	66	100%

- 5.6.7 [Table 5-4](#) details that on a Friday PM Peak 19% of trips to the McDonald’s restaurant could be expected to be additional trips and 81% would be existing on the road network. For the Saturday Peak 21% would be additional trips and 79% already existing on the road network.
- 5.6.8 The results also demonstrate that 25% and 36% for the Friday and Saturday peaks respectively could be expected to be shared trips following visits to nearby local facilities.
- 5.6.9 Based upon the McDonald’s proportional trip types proposed in [Table 5-4](#), the proposed peak hour traffic has been split into additional, pass by / diverted and shared trips in [Table 5-5](#).

Table 5-5 Proposed Trip Generation By Type

Trip Type	From Surveys			From Surveys			From Surveys		
	Friday AM			Friday PM			Saturday		
	%	In	Out	%	In	Out	%	In	Out
Additional	19%	11	12	19%	18	19	21%	24	24
Pass-by / Diverted	81%	53	53	81%	78	82	79%	91	92
Total	100%	64	65	100%	96	101	100%	115	116

5.6.10 Whilst no surveys were undertaken at the chosen McDonald's stores in the AM peak period, it has been assumed that the trip proportions from the PM peak would be similar and have therefore been applied to the trips in the AM peak period.

5.6.11 The following trips would therefore be generated by the proposed restaurant in the peak hours:

Friday AM Peak

- ▶ 26 'new' two-way trips on the network; and
- ▶ 106 two-way trips as 'existing journeys' making a visit to the restaurant.

Friday PM Peak

- ▶ 37 'new' two-way trips on the network; and
- ▶ 160 two-way trips as 'existing journeys' making a visit to the restaurant.

Saturday Peak

- ▶ 48 'new' two-way trips on the network; and
- ▶ 183 two-way trips as 'existing journeys' making a visit to the restaurant.

5.6.12 As detailed, it is anticipated that the proposed restaurant would result in 23, 37 and 48 'new' trips during the restaurants three busiest peak hours of the week, resulting in a worst case of less than one new trip every minute.

5.6.13 This is not considered to be of a significant impact, however for robustness the impact of the proposed development on the existing highway network is assessed in [Section 6](#) of this TA.

5.7 TRIP DISTRIBUTION

Additional Trips

5.7.1 It can be assumed that those trips that are new to the network, specifically to visit the site, will come from the local area. It is not envisaged customers will travel a significant distance to access a McDonald's. Furthermore, existing McDonald's already present in Kingsway Retail Park to the east of the site and in Sandbrook Park Shopping Centre to the south-west of the site.

5.7.2 It is therefore considered that customers will travel from neighbouring suburbs. On this basis, the following distribution for additional trips is proposed.

5.7.3 On this basis, the following distribution for the predicted additional trips is set out in [Table 5-6](#) and is detailed in [Appendix E](#).

Table 5-6 *New Trip Distribution*

Link	% Assignment
Water Street (W)	20%
A671 (S)	40%
Smith Street	10%
A671 (N)	15%
Entwisle Road	15%

5.7.4 The additional trip distribution has been applied to the additional trip generation. The resultant additional trip assignment is set out in [Appendix E](#).

Pass-By Trips

- 5.7.5 The 'pass-by' McDonald's trips expected to divert to the site have been distributed onto the road network proportionately to the existing surveyed base traffic movements along the A671 Molesworth Street, fronting the application site.
- 5.7.6 The pass-by trip distribution has been applied to the pass-by trip generation. The resultant pass-by trip assignment is set out in [Appendix E](#).

5.8 MCDONALD'S PROPOSED PEDESTRIAN TRIPS

- 5.8.1 The number of proposed pedestrian trips are summarised in [Table 5-7](#), which are based upon the average pedestrian trips surveyed across the three McDonald's restaurants.

Table 5-7 Customer Interview – Average Pedestrian Trips

	Peak Hour	In	Out
Friday	17:00 to 18:00	38	35
Saturday	13:00 to 14:00	42	32

- 5.8.2 Pedestrian footways are proposed across the application site, linking Water Street directly to the restaurant.

5.9 PARKING DEMAND

- 5.9.1 The maximum parking demand for the proposed McDonald's (including staff, reserved bays and accessible parking) is expected to be as follows based on the demand surveyed at the three comparable sites:
- ▶ Friday – 20 vehicles; and
 - ▶ Saturday – 24 vehicles.
- 5.9.2 The parking proposals for 35 spaces on site (including two accessible bays) is therefore sufficient to accommodate the expected level of demand.

5.10 DRIVE-THRU QUEUE

- 5.10.1 The proposed drive-thru queues are based upon the average queues of the three surveyed restaurant sites which are summarised in [Table 5-8](#). This includes all vehicles waiting in the drive-thru lane back from the collection booth.

Table 5-8 Drive Thru Queue - Average

	Friday PM Peak	Saturday Peak
Min Q	0	0
Max Q	7	9
Average	4	4

- 5.10.2 The proposed drive-thru lane has the capacity to accommodate approximately double the max recorded vehicles and therefore is more than suitable to meet anticipated demand during peak times.

5.11 SUMMARY

- 5.11.1 The trip generation for the proposed restaurant was derived based on a number of existing McDonald's restaurant sites of similar size, location and characteristics, as well as the TRICS database.

- 5.11.2 The assumptions behind the proportions of additional, existing and shared trips generated by the development are considered appropriate and robust.
- 5.11.3 These assumptions were applied to the future year assessment and the impact of the proposed restaurant on the capacity of the highway network is detailed in [Section 6](#).

6 TRAFFIC MODELLING AND DEVELOPMENT IMPACTS

6.1 INTRODUCTION

6.1.1 To determine the impact of the proposed development traffic on the local highway network, the following scenarios have been assessed:

- ▶ 2024 Base;
- ▶ 2025 'Uplifted' Base;
- ▶ 2030 Future; and
- ▶ 2030 Future + Development.

6.1.2 Junctions9 software has been used to prepare models for the priority-controlled junctions. Junctions9 software analyses the traffic movements on each arm of the junction and assesses the junctions Ratio Flow to Capacity (RFC) and queue lengths in PCU's.

6.1.3 LinSig software analyses the maximum Degree of Saturation (DoS) and the Mean Max Queue (MMQ) of each arm of the junction. The report also sets out the Practical Reserve Capacity (PRC) of the overall junction as well as the total delay for vehicles travelling through the junction.

6.1.4 To ensure an accurate assessment of the signal-controlled junction, a signal specification was obtained from Greater Manchester Urban Traffic Control Unit to replicate observed queues.

6.1.5 The detailed modelling outputs are in [Appendix G](#).

6.2 JUNCTION MODELLING RESULTS

Site Access / Water Street– JUNCTIONS 9 Results

6.2.1 **Table 6-1** sets out the operational capacity at the Site Access / Water Street priority-controlled T-junction.

Table 6-1 Site Access / Water Street T-Junction

Arms	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
2030 Base + Development						
Site Access	0.15	0	0.25	0	0.27	0
Water Street (W)	0.00	0	0.01	0	0.01	0

6.2.2 **Table 6-1** identifies the Site Access / Water priority-controlled T-junction is predicted to operate well within its theoretical capacity, with minimal queuing and delay during the 'with development' future year scenario.

Water Street / A671 Molesworth Street – JUNCTIONS 9 Results

- 6.2.3 **Table 6-2** sets out the operational capacity at the Site Access / Water Street priority-controlled T-junction.

Table 6-2 Water Street / A671 Molesworth Street T-Junction

Arms	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
2024 Base						
Water Street (W)	0.49	1	0.49	1	0.54	1
Molesworth Street (S)	0.56	1	0.56	1	0.55	1
2025 'Uplifted' Base						
Water Street (W)	0.49	1	0.75	3	0.54	1
Molesworth Street (S)	0.56	1	0.67	2	0.55	1
2030 Future						
Water Street (W)	0.53	1	0.83	4	0.59	1
Molesworth Street (S)	0.61	2	0.73	3	0.60	2
2030 Future + Development Traffic						
Water Street (W)	0.64	2 (+1)	1.19	36 (+32)	0.84	4 (+3)
Molesworth Street (S)	0.68	2	0.85	6 (+3)	0.73	3 (+1)

- 6.2.4 The results show that the priority T-junction is predicted to operate above the operational capacity in both the '2029 Base + Development' PM scenario resulting in a RFC value of 0.83 and SAT scenario resulting in a RFC value of 0.84. It is calculated that the proposed development results in no increase in RFC in the PM scenario but results in a 0.25 increase in RFC in the SAT scenario on the Water Street minor arm.
- 6.2.5 It should be noted that the junction capacity assessment detailed in **Table 6-2** provides an absolute worst-case scenario whereby all 'pass-by' trips are routed through the Molesworth Street / Water Street junction, when in reality a proportion of these trips will likely be routed via Water Street (W) before then travelling southbound on Drake Street.
- 6.2.6 The development proposals result in an additional 125 two-way vehicle movements through the junction during the AM peak, 190 two-way vehicle movements through the junction during the PM peak and 221 two-way vehicle movements during the SAT peak. This equates to between 3 to 4 additional vehicles per minute through the junction which would not justify improvements to the T-junction.
- 6.2.7 As detailed above in **Table 6-2**, the proposed McDonald's development would have a negligible impact on the operation on the main flow arms of the A671 Molesworth Street, with the majority of the traffic resulting on the minor Water Street arm.
- 6.2.8 It should be noted that the modelling exercise provides an absolute worst-case assessment of the associated impact on the Water Street / A671 junction. It is therefore considered that during the remaining hours throughout the week, the McDonald's would generate significantly less traffic and therefore would result in a lesser impact at the junction.

A671 Molesworth Street / Smith Street / B6266 Entwisle Road –LINSIG Results

6.2.9 **Table 6-3** sets out the operational capacity at the A671 Molesworth Street / Smith Street / B6266 Entwisle Road signalised crossroad junction.

Table 6-3 A671 Molesworth Street / Smith Street / B6266 Entwisle Road

Arms	AM Peak		PM Peak		SAT Peak	
	DoS	MMQ	DoS	MMQ	DoS	MMQ
2024 Base						
John Street (N)	70.3%	8	88.3%	14	74.5%	10
Entwisle Road (E)	50.2%	7	71.2%	9	70.8%	8
Molesworth Street (S)	69.0%	9	89.0%	17	72.8%	11
Smith Street (W)	46.8%	2	79.9%	5	58.6%	3
PRC / Total Delay (puchr)	27.6%		1.1%		20.8%	
2025 'Uplifted' Base						
John Street (N)	70.9%	9	88.8%	14	75.4%	10
Entwisle Road (E)	50.9%	7	71.8%	8	71.4%	8
Molesworth Street (S)	69.5%	10	89.5%	17	74.6%	10
Smith Street (W)	46.8%	2	79.9%	5	59.2%	3
PRC / Total Delay (puchr)	26.9%		0.5%		19.4%	
2030 Future						
John Street (N)	74.8%	10	93.6%	17	79.2%	11
Entwisle Road (E)	53.3%	8	76.1%	10	75.1%	9
Molesworth Street (S)	72.9%	11	95.1%	20	78.0%	11
Smith Street (W)	50.6%	2	84.9%	6	63.1%	3
PRC / Total Delay (puchr)	20.4%		-5.7%		13.6%	
2030 Future + Development Traffic						
John Street (N)	75.0%	10	94.0%	17	79.6%	11
Entwisle Road (E)	53.7%	8	76.1%	10	75.1%	9
Molesworth Street (S)	73.2%	11	95.5%	21 (+1)	78.7%	12 (+1)
Smith Street (W)	51.3%	2	86.2%	6	64.3%	3
PRC / Total Delay (puchr)	20.1%		-6.1%		13.0%	

6.2.10 **Table 6-3** identifies that all arms operate within the junction's maximum theoretical capacity with the proposed development resulting in a negligible impact on the operation and queueing of the signalised crossroad junction.

6.2.11 The development proposals result in an additional 10 two-way vehicle movements through the junction during the AM peak, 12 in the PM peak and 19 two-way vehicle movements during the Saturday peak. This equates to an additional vehicle every three minutes through the junction which would not justify improvements to the junction. The inclusion of the development traffic results in a negligible impact.

7 SUMMARY

- 7.1.1 AMA has prepared this Transport Assessment in connection with the submission of a detailed planning application for a proposed McDonald's Restaurant with Drive-Thru located to the south-west of the A671 Molesworth Street, Rochdale.
- 7.1.2 The following summarises the key points:
- ▶ The site currently operates as a surface car park, We Buy Any Car compound and an extension of the Premier Kia sales forecourt. The proposed application site is bound to the north by the junction of Molesworth Street and Water Street, to the east by Molesworth Street, to the west by Water Street and to the south by an area of car parking and an industrial unit with associated scrap yard;
 - ▶ It is proposed that the site will be accessed by all modes of transport, including deliveries, via the existing point of access in the form of an upgraded T-junction to the north of the site from Water Street;
 - ▶ The report has shown that the development proposals will be accessible by a range of travel modes and have been developed to accord with current national and local transport policies, including those set out within the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), and local planning policy;
 - ▶ The site is highly accessible by public transport being located within 500m of Rochdale Interchange and the Rochdale Town Centre tram stop as well as benefitting from good walking and cycling links;
 - ▶ The development proposals are forecast to generate some 129, 197 and 231 two-way vehicle trips during the AM, PM and Saturday peak hours respectively. However, the proposals only result in 19% and 21% of this traffic being 'new / additional' to the network;
 - ▶ A Travel Plan has also been prepared which sets out measures to encourage sustainable travel patterns and reduce the reliance on private car use; and
 - ▶ The impact of the development generated traffic on the surrounding area has been shown not to be of a severe impact on either highway capacity or road safety and as such is concluded that the development proposals could be accommodated without resulting any detrimental impact upon the highway network.
- 7.1.3 This TA has demonstrated that the traffic associated with the development proposals can be accommodated on surrounding highway network without having a severe impact in accordance with the NPPF.
- 7.1.4 Therefore, there are no overriding traffic and transportation reasons preventing the local highway authority from recognising that the proposals are acceptable nor why planning permission could not be granted.

APPENDICES

Appendix A Proposed Site Layout

Appendix B Collision Data

Appendix C Site Access Design and Visibility Splays

Appendix D Swept Path Analysis

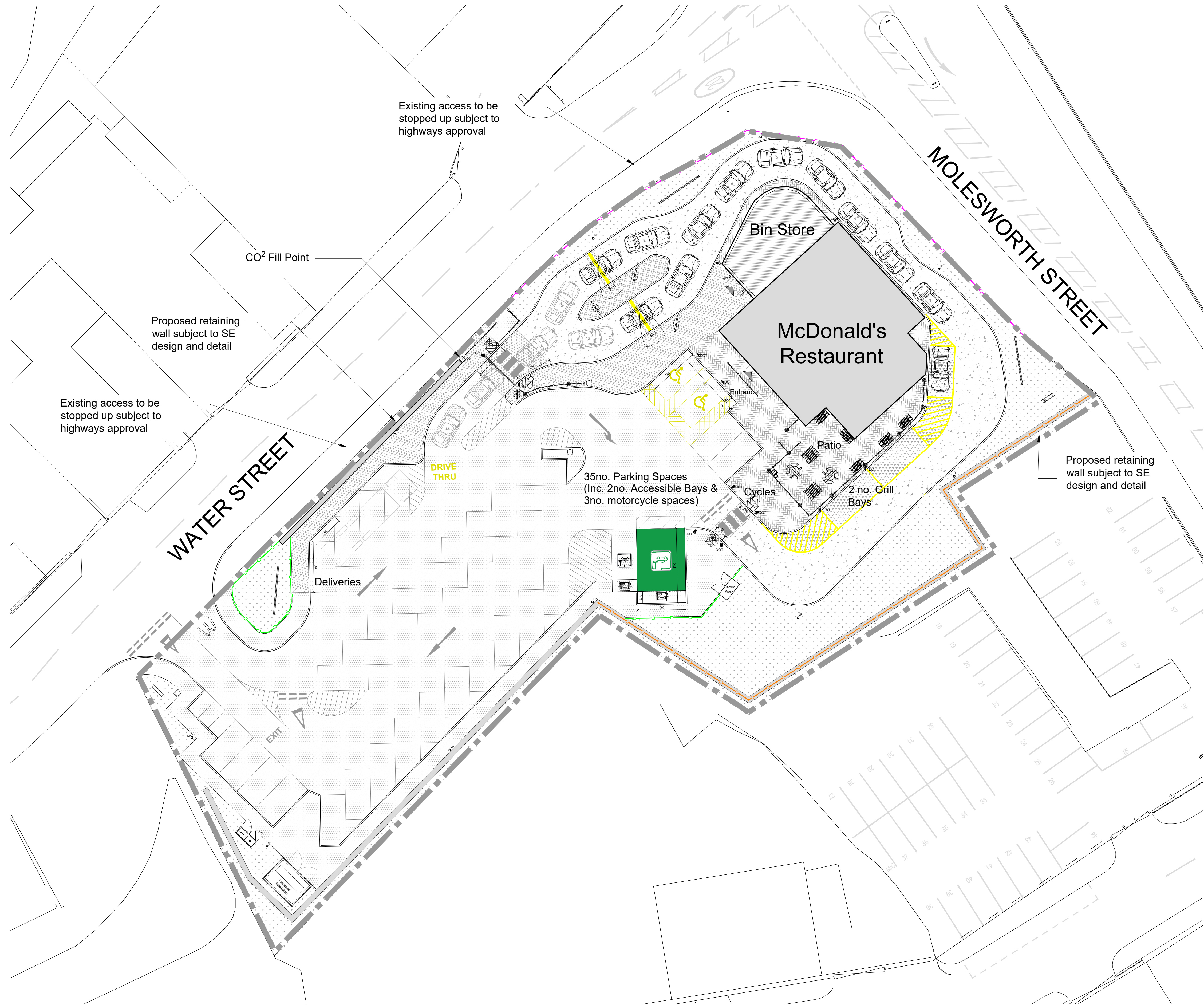
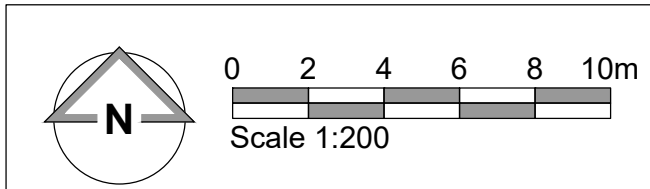
Appendix E Traffic Flow Diagrams

Appendix F TRICS Report

Appendix G Modelling Outputs



Appendix A
Proposed Site Layout



Patio Aubliam Furniture Schedule	
Circular Table - 4 Seat 1600mm Ø (H 780mm) Galvanised steel frame with laminated timber effect finish	
Rectangular Table - 8 Seat 600mm x 2600mm (H 780mm) Galvanised steel frame with laminated timber effect finish	
Rectangular Table - 4 Seat 1250mm x 1450mm (H 780mm) Galvanised steel frame with laminated timber effect finish	
Rectangular Table - 2 Seat 700mm x 1450mm (H 780mm) Galvanised steel frame with laminated timber effect finish	
Trash Bin 482 x 462mm (H 1217mm). Galvanised steel frame with laminated timber effect finish	
Ash Bin 297 x 297mm (H 891mm) Galvanised steel frame with laminated timber effect finish	
Parasol 2.1 m Orthogonal Parasol (black canopy with white McDonald's text)	

General Site Proposal Notes:
DOT denotes Department of Transport Signs. For Signage type refer to AEW drawing no. 13484_AEW_2285_1000
DK denotes drop kerb to be installed
All drive thru related road markings to be in yellow thermoplastic material
Car park related road markings to be in white thermoplastic material
Standard parking bays to be finished in white thermoplastic material
All junction road markings to be finished in white thermoplastic material
Accessible parking bays to be lined in yellow thermoplastic material to current Part M standards with relevant DOT signage and drop kerbs as indicated
Parked order bays to be lined in yellow thermoplastic material with relevant DOT signage
All pedestrian crossings set out in white thermoplastic material. Tactile paving where crossing leads to safe destination
Drop kerbs to be installed along delivery routes

- NOTES**
- All dimensions and levels are to be checked on site.
 - Any discrepancies are to be reported to the architect before any work commences.
 - This drawing shall not be scaled to ascertain any dimensions. Work to figured dims only.
 - This drawing shall not be reproduced without express written permission from AEW.
 - Title overlay drawings and ownership boundaries are produced using all reasonable endeavours. AEW cannot be responsible for the accuracy or scale discrepancy of base plans supplied to them.
 - All works are to be undertaken in accordance with Building Regulations and the latest British Standards.
 - All proprietary materials and products are to be used strictly in accordance with the manufacturers recommendations.

CDM 2015
Client notified of duties: **At Design Workshop**
Principal Designer: **CSS**
Unless noted below, all known hazards have been highlighted on the drawing:

Drawing based on:

- Glanville's Topographical Site Survey, Drawing no. 4230334/4101, Dated: June 2024
- OS Map

McDonald's Demise Boundary Indicated:

Proposed Schedule of Parking	
Accessible Bays	02
Grill Bays	02
EVCP Bays	02
General Bays	29
Total Parking Bays	35
Motorcycles Bays	03

Schedule of Areas	
Proposed Site Area (Hectares)	0.3945
Proposed Building (GEA / m²) (Excluding Carport)	474

Proposed Site Finishes	
Tarmacadam - Car Park	
Imprinted concrete - An-entrained concrete with full layer works, hardening agent and curing system, through-colour concrete grey, London cobble pattern, Drive Thru Lane	
Manholes 200x100 Charcoal Keyblock Paving - Patio	
Tarmacadam - Footpaths	
Turf & low level struts - Soft Landscaping	
Brushed concrete - DT lane where road markings and delivery route	
Cranked bollards Painted Black	
Tactile Blister Paving	
Target Bin	
*LP Denotes Lamppost	LP
150mm Diameter stainless steel protective bollard	BOL
Proposed 1100MM Close Boarded Timber Fence	
Proposed 600MM Timber Knee Rail Fence	
Proposed 1100MM Armco Barrier	
Proposed Retaining Wall	

A	12/12/2024	VJJB	TSS
-	15/11/2024	HF	TSS
REV	Date	Drawn by -	Checked by -
Status	Purpose of Issue		
S2	For Information		
drawing stage	Planning		
client	McDonald's Restaurants Ltd		

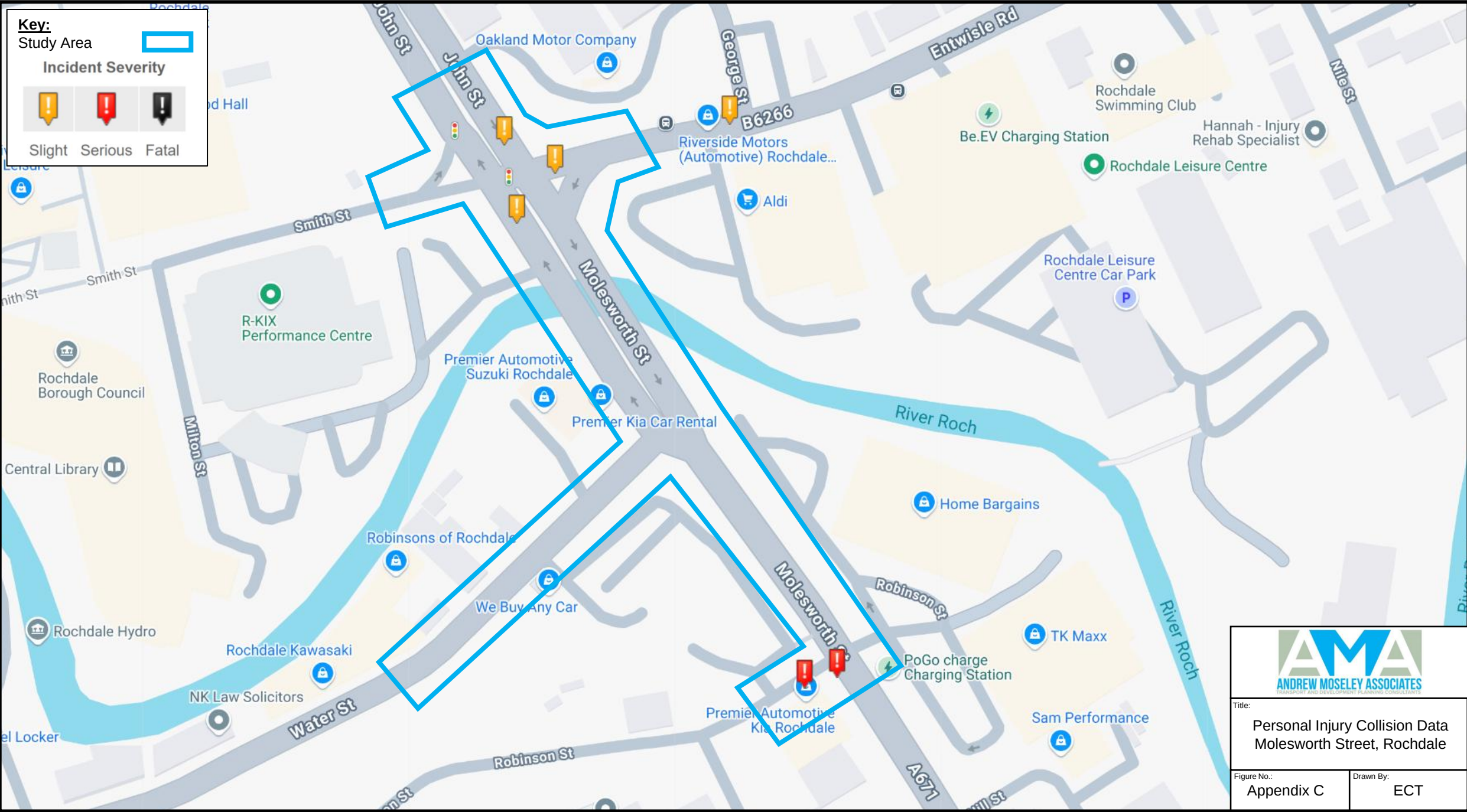
project	store	
MOLESWORTH STREET, ROCHDALE		2285
drawing title	Proposed Site Plan	
date	15/11/2024	drawn HF
scale@A1	1:200	checked TSS

Proposed Site Plan

PLANNING



Appendix B
Collision Data

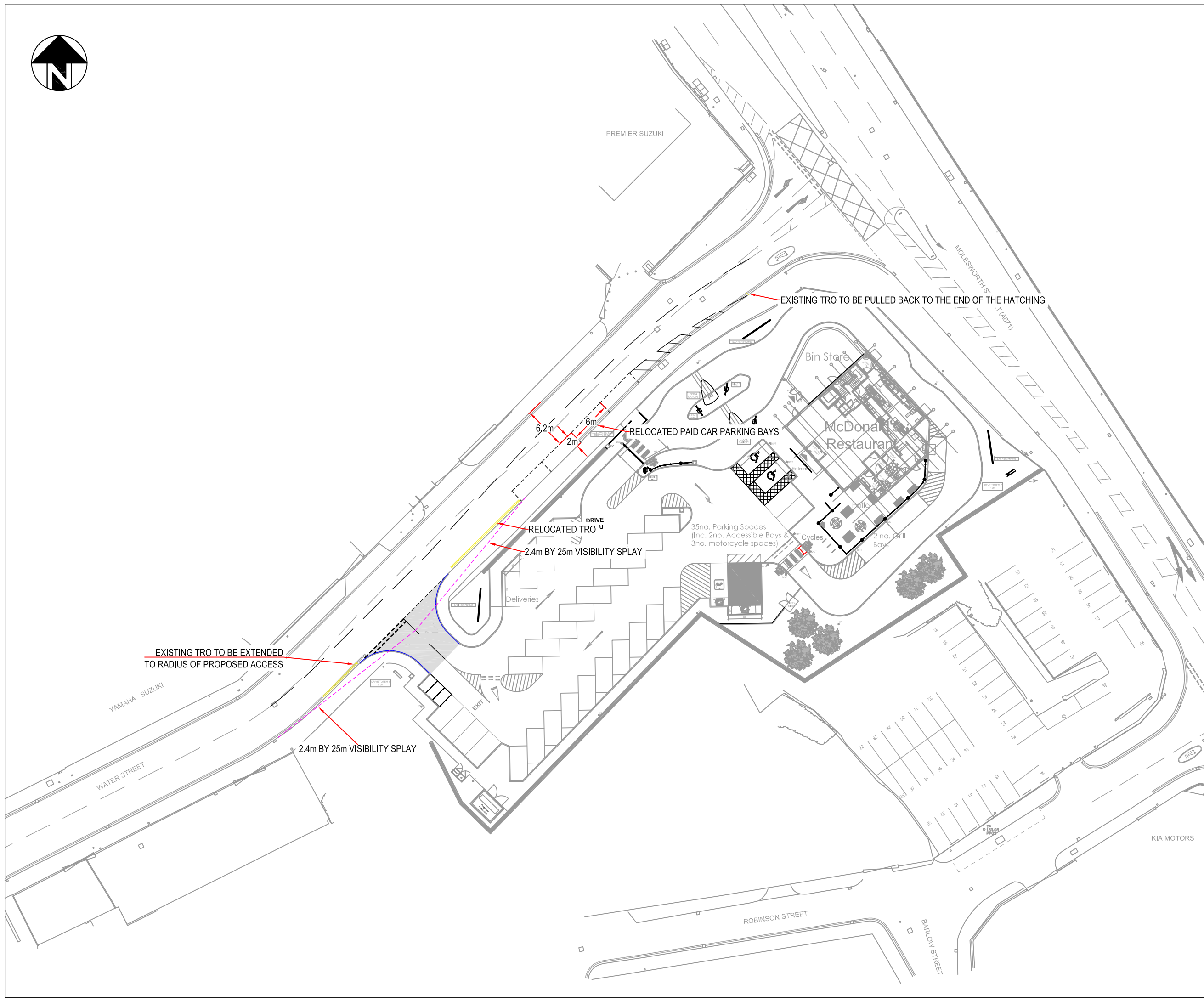


Title:
Personal Injury Collision Data
Molesworth Street, Rochdale

Figure No.: Appendix C	Drawn By: ECT
---------------------------	------------------



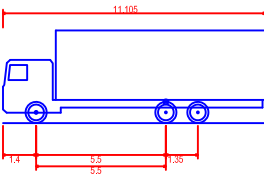
Appendix C
Site Access Design and Visibility
Splays



P02	Updated Site Layout	13.02.25	RW
P01	Preliminary Issue	04.12.24	CF
		Transport & Infrastructure Consultants 15 St Paul's Street Second Floor Leeds LS1 2JG www.amatp.co.uk	
Project: MOLESWORTH STREET, ROCHDALE			
Client: MCDONALDS RESTAURANTS LTD			
Drawing: PROPOSED SITE ACCESS AND AMENDMENTS			
Drawn By: CF		Date: 04.12.2024	
Checked: RW		Scale: 1:500	Paper: A3
Drawing No. AMA-53024-SK003			Rev. P02



Appendix D
Swept Path Analysis



MB - Mercedes Centurion 2545L 26T 11.105m Rigid
Overall Length 11.105m
Overall Width 2.600m
Overall Body Height 3.923m
Min Body Ground Clearance 0.440m
Track Width 2.482m
Lock to lock time 4.00s
Wall to Wall Turning Radius 9.403m

Church

39

WATER STREET 123.7m

Car Park

Deliveries

GALLOW'S HEIGHT RESTRICTOR

COD & CANOPY

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

SIGN 1

Car Park

35no. Parking Spaces
(Inc. 2no. Accessible Bays &
3no. motorcycle spaces)

Bin Store

McDonald's
Restaurant

Cycles

2 no. Grill
Bays

Patio

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

ENTRANCE

P04	Updated to suit revised site layout	10.02.25	RW
P03	Updated to suit revised site layout	18.11.24	MSF
P02	Updated to suit revised site layout	12.11.24	MSF
P01	Preliminary Issue	23.09.24	RW

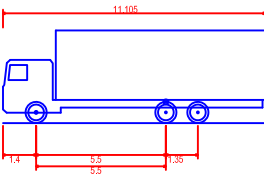
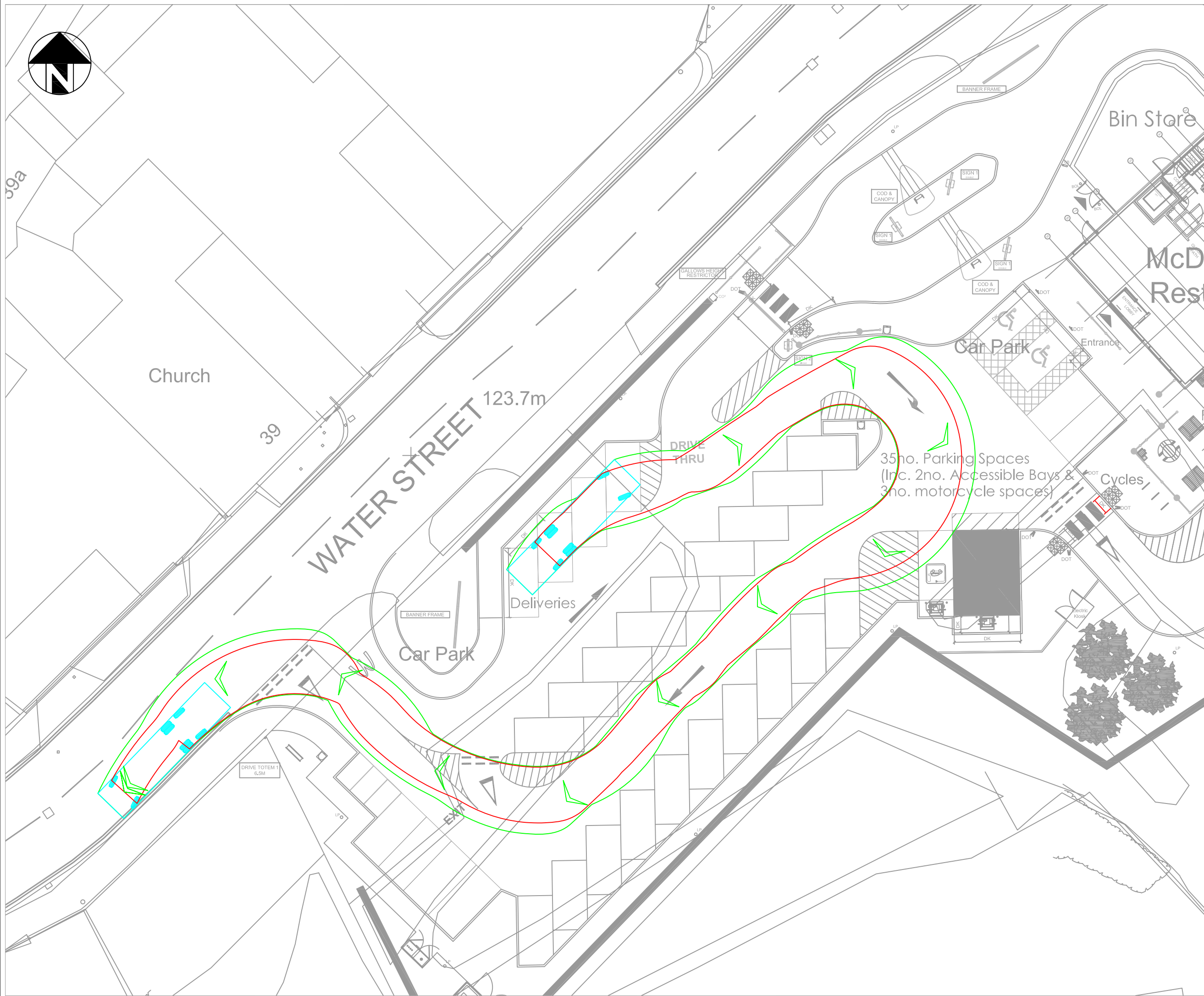
AMA
ANDREW MOSELEY ASSOCIATES
Transport & Infrastructure Consultants
15 St Paul's Street
Second Floor
Leeds
LS1 2JG
www.amatp.co.uk

Project:
**MOLESWORTH STREET,
ROCHDALE**

Client:
MCDONALD'S RESTAURANT LTD

Drawing:
**11.105m RIGID SERVICE VEHICLE
SWEPT PATH ANALYSIS - ACCESS**

Drawn By:	RW	Date:	23.09.2024
Checked:	AMM	Scale:	1:250
Drawing No.	AMA-53024-ATR003-1.4	Paper:	A3
		Rev.	P04



MB - Mercedes Centurion 2545L 26T 11.105m Rigid
Overall Length 11.105m
Overall Width 2.600m
Overall Body Height 3.923m
Min Body Ground Clearance 0.440m
Track Width 2.482m
Lock to lock time 4.00s
Wall to Wall Turning Radius 9.403m

P04	Updated to suit revised site layout	10.02.25	RW
P03	Updated to suit revised site layout	18.11.24	MSF
P02	Updated to suit revised site layout	12.11.24	MSF
P01	Preliminary Issue	23.09.24	RW

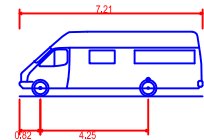


Project:
**MOLESWORTH STREET,
ROCHDALE**

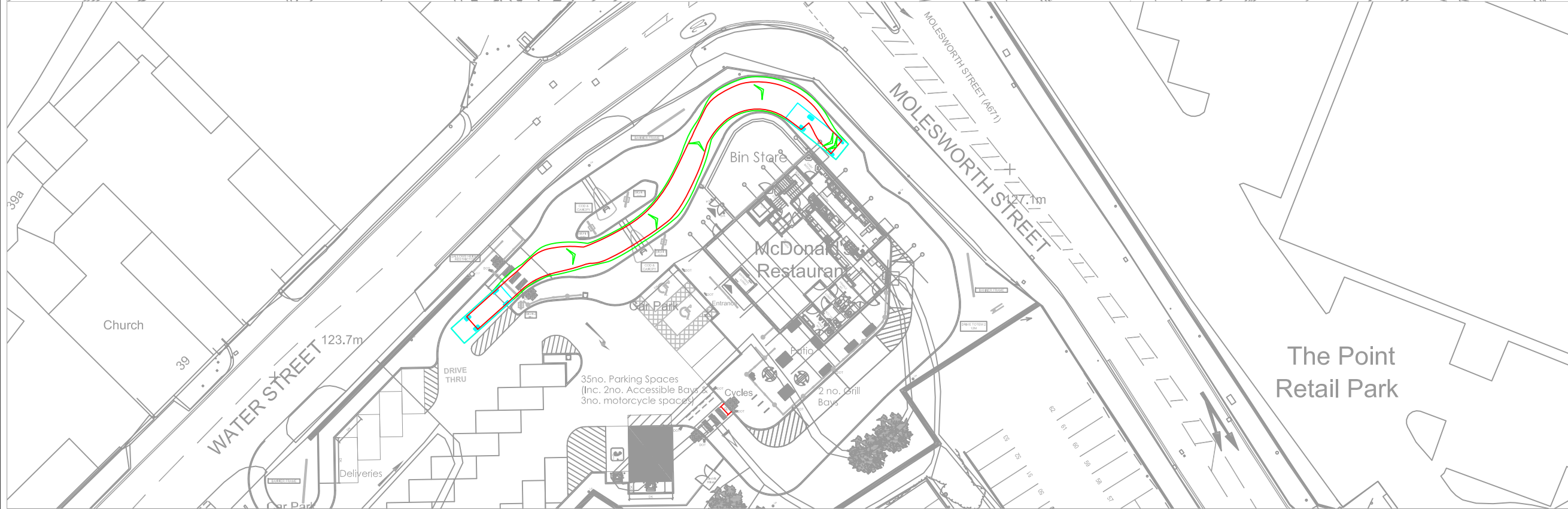
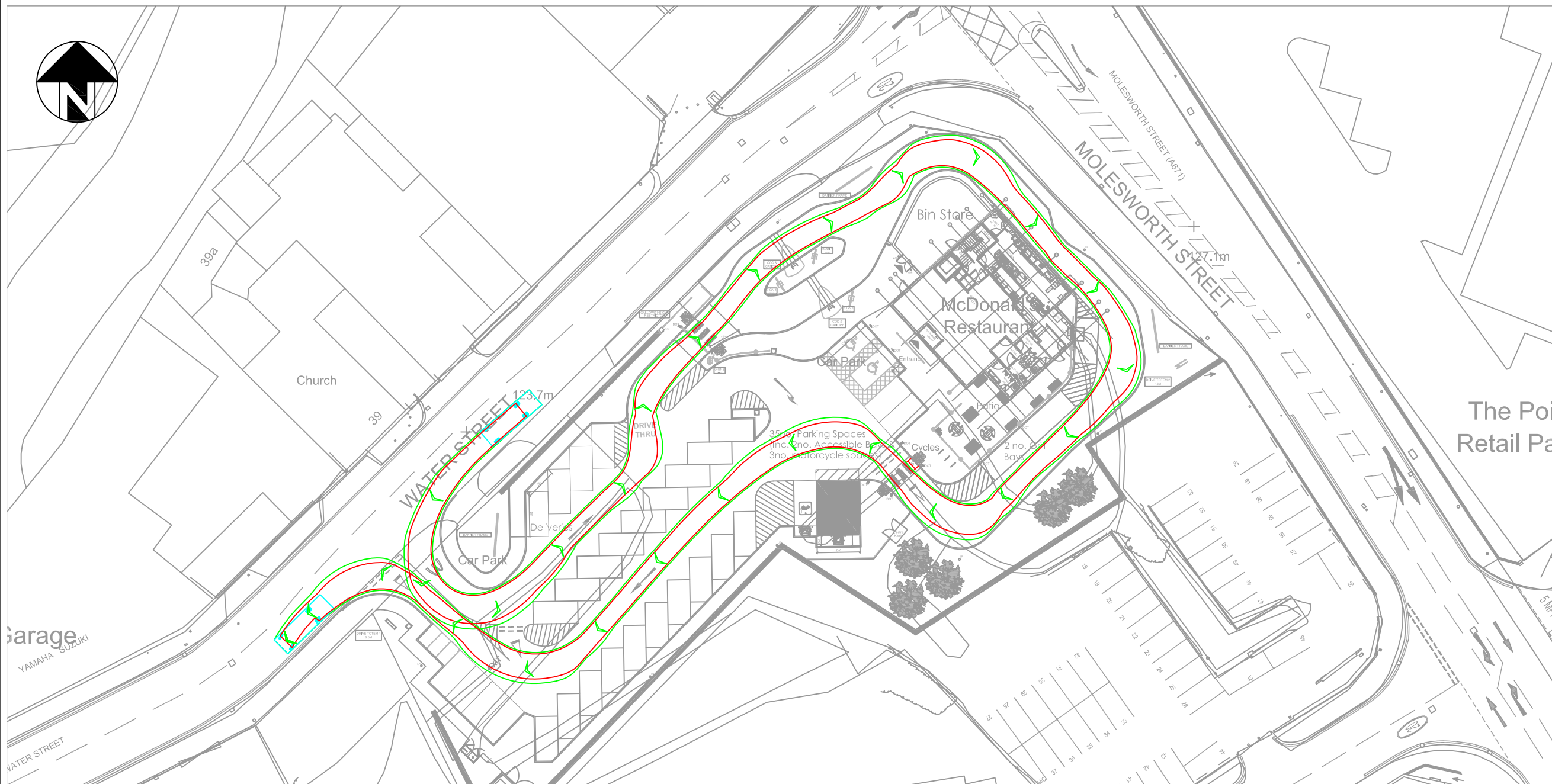
Client:
MCDONALD'S RESTAURANT LTD

Drawing:
**11.105m RIGID SERVICE VEHICLE
SWEPT PATH ANALYSIS - EGRESS**

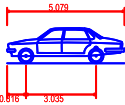
Drawn By: RW		Date: 23.09.2024	
Checked: AMM		Scale: 1:250	Paper: A3
Drawing No. AMA-53024-ATR003-2.4			Rev. P04



7.5t Panel Van
Overall Length 7.210m
Overall Width 2.192m
Overall Body Height 2.544m
Min Body Ground Clearance 0.316m
Track Width 1.865m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 7.400m



P04	Updated to suit revised site layout	10.02.25	RW
P03	Updated to suit revised site layout	18.11.24	MSF
P02	Updated to suit revised site layout	12.11.24	MSF
P01	Preliminary Issue	23.09.24	RW
 ANDREW MOSELEY ASSOCIATES Transport & Infrastructure Consultants 15 St Paul's Street Second Floor Leeds LS1 2JG www.amatp.co.uk			
Project: MOLESWORTH STREET, ROCHDALE			
Client: MCDONALD'S RESTAURANT LTD			
Drawing: 7.5t PANEL VAN - DRIVE THRU LANE			
Drawn By:	RW	Date:	23.09.2024
Checked:	AMM	Scale:	1:500
Drawn No.	AMA-53024-ATR003-3.4	Paper:	A3
		Rev.	P04



Large Car (2006)
Overall Length
Overall Width
Overall Body Height
Min Body Width
Max Track Width
Lock to lock time
Kerb to Kerb Turning Radius

5.079m
1.872m
1.525m
0.310m
1.831m
4.00s
5.900m

P04	Updated to suit revised site layout	10.02.25	RW
P03	Updated to suit revised site layout	18.11.24	MSF
P02	Updated to suit revised site layout	12.11.24	MSF
P01	Preliminary Issue	23.09.24	RW



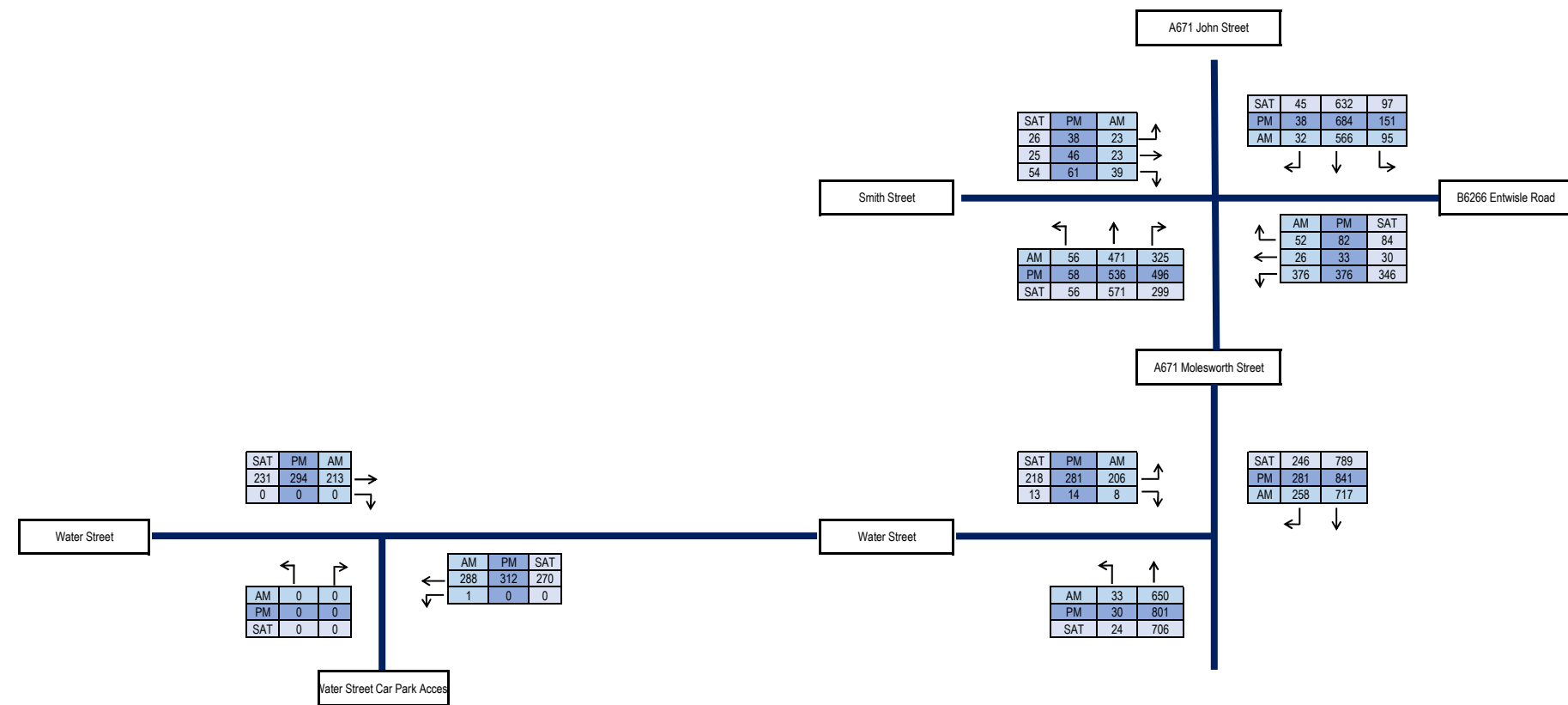
Project:
**MOLESWORTH STREET,
ROCHDALE**

Client:
MCDONALD'S RESTAURANT LTD

Drawing:
**LARGE CAR SWEEP PATH
ANALYSIS**

Drawn By: RW		Date: 23.09.2024	
Checked: AMM	Scale: 1:250		Paper: A3
Drawing No. AMA-53024-ATR003-4.4			Rev. P04

Appendix E
Traffic Flow Diagrams



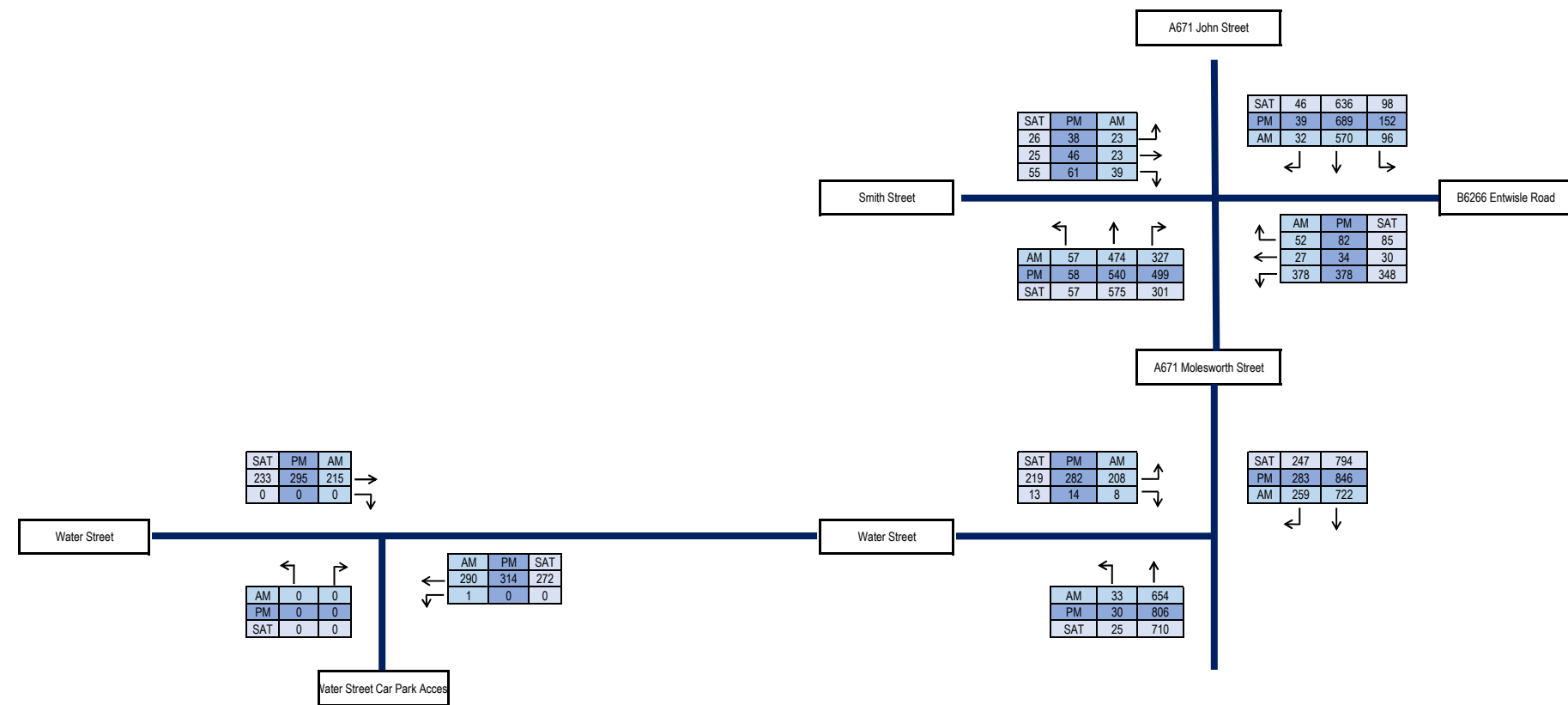
Molesworth Street, Rochdale

2024 Base

14/02/2025

Job Number - AMA/53024

Appendix E.1



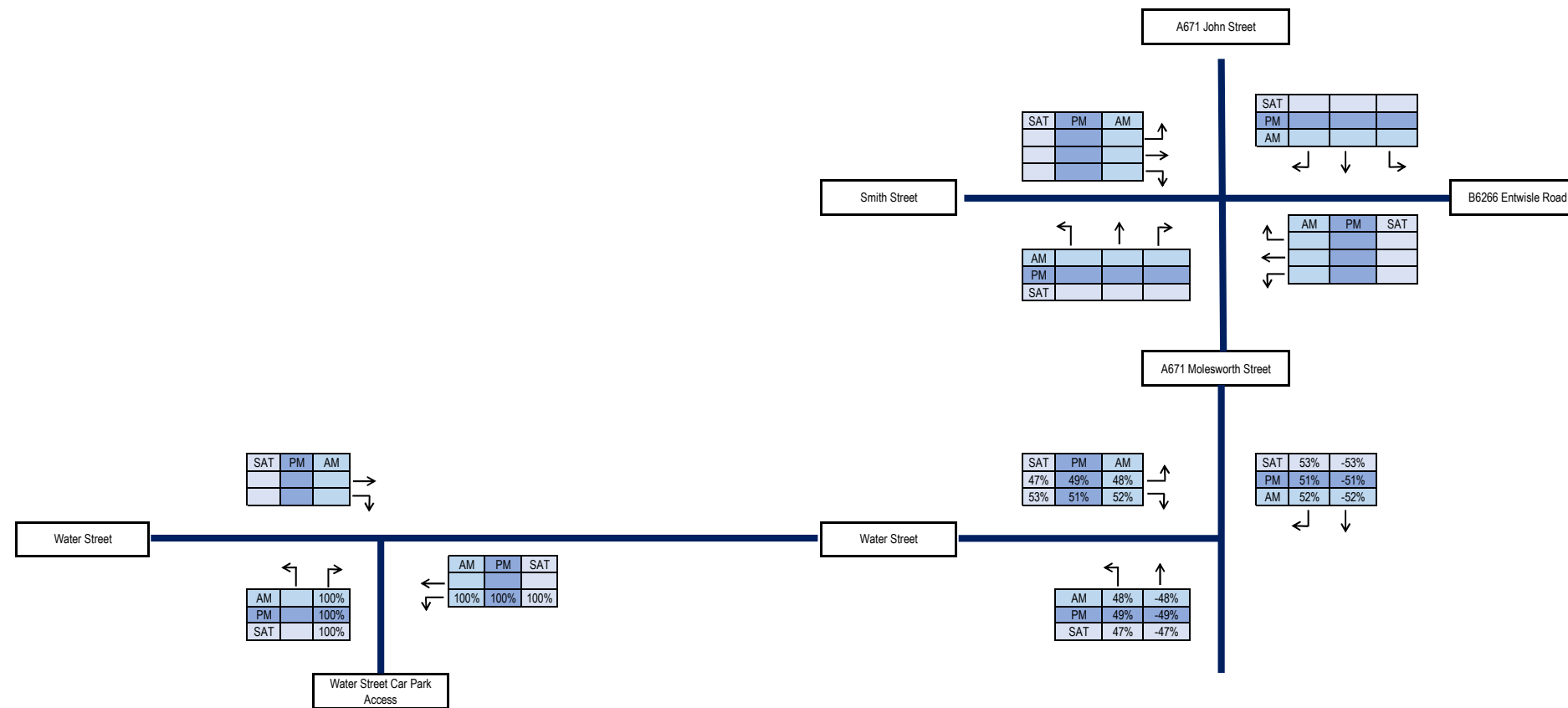
Molesworth Street, Rochdale

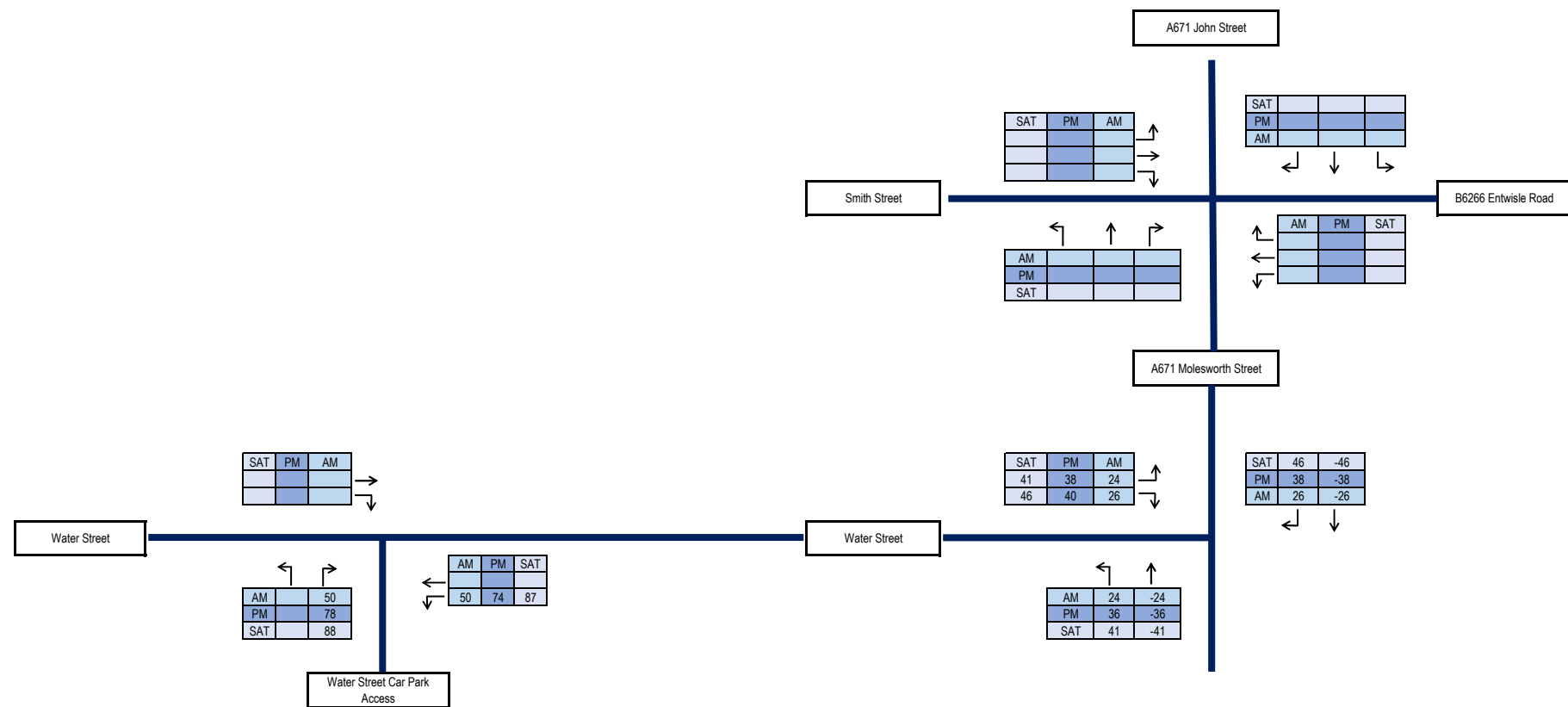
2025 'Uplifted' Base

14/02/2025

Job Number - AMA/53024

Appendix E.1





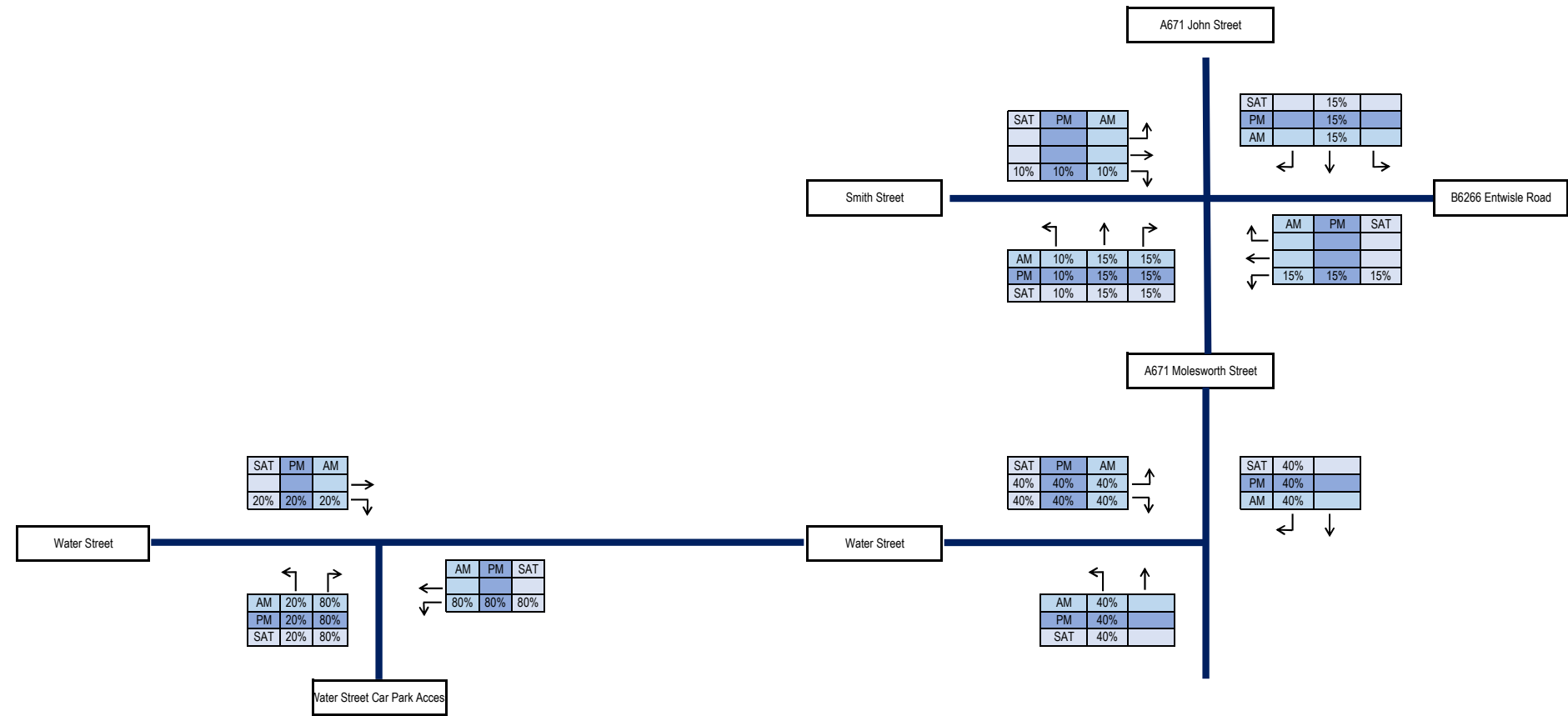
Molesworth Street, Rochdale

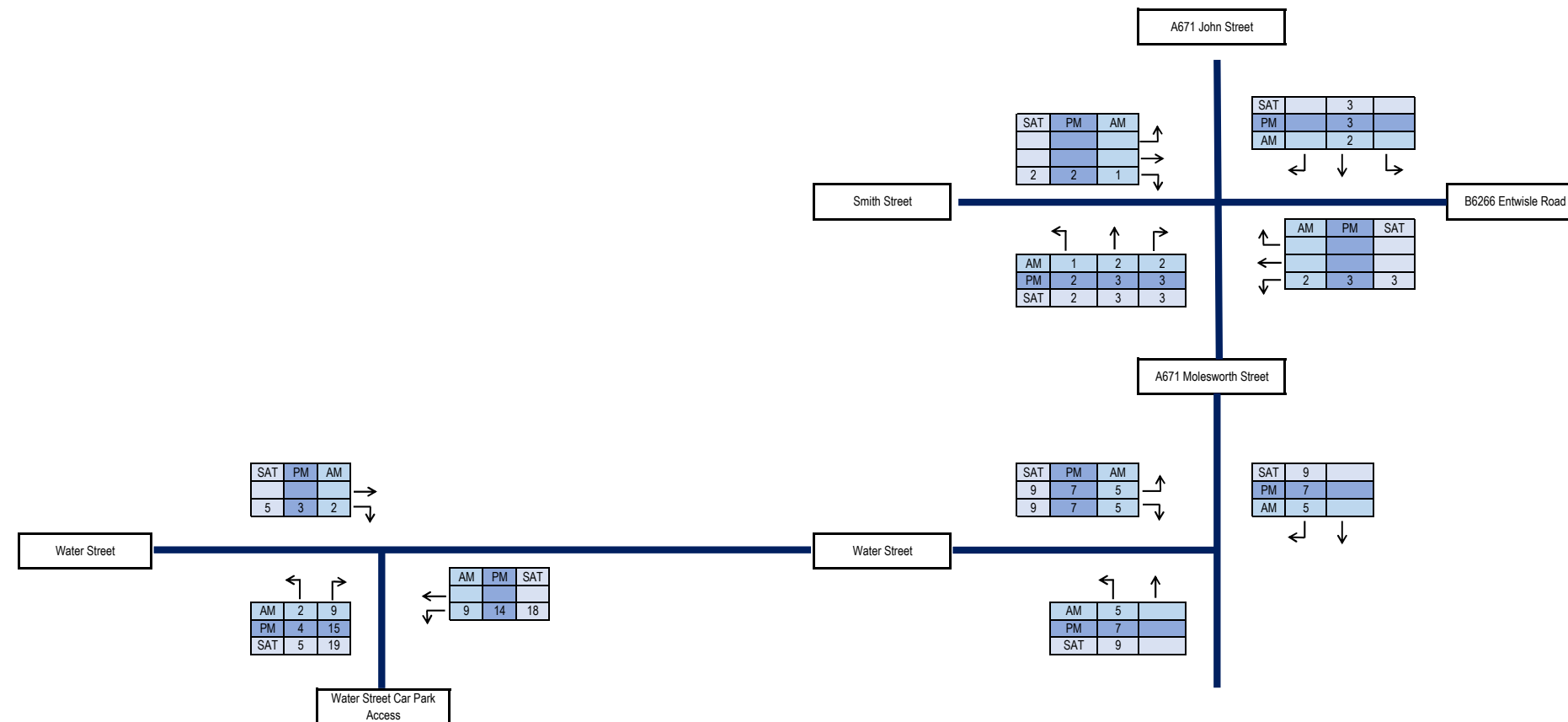
'Pass-By' Assignment

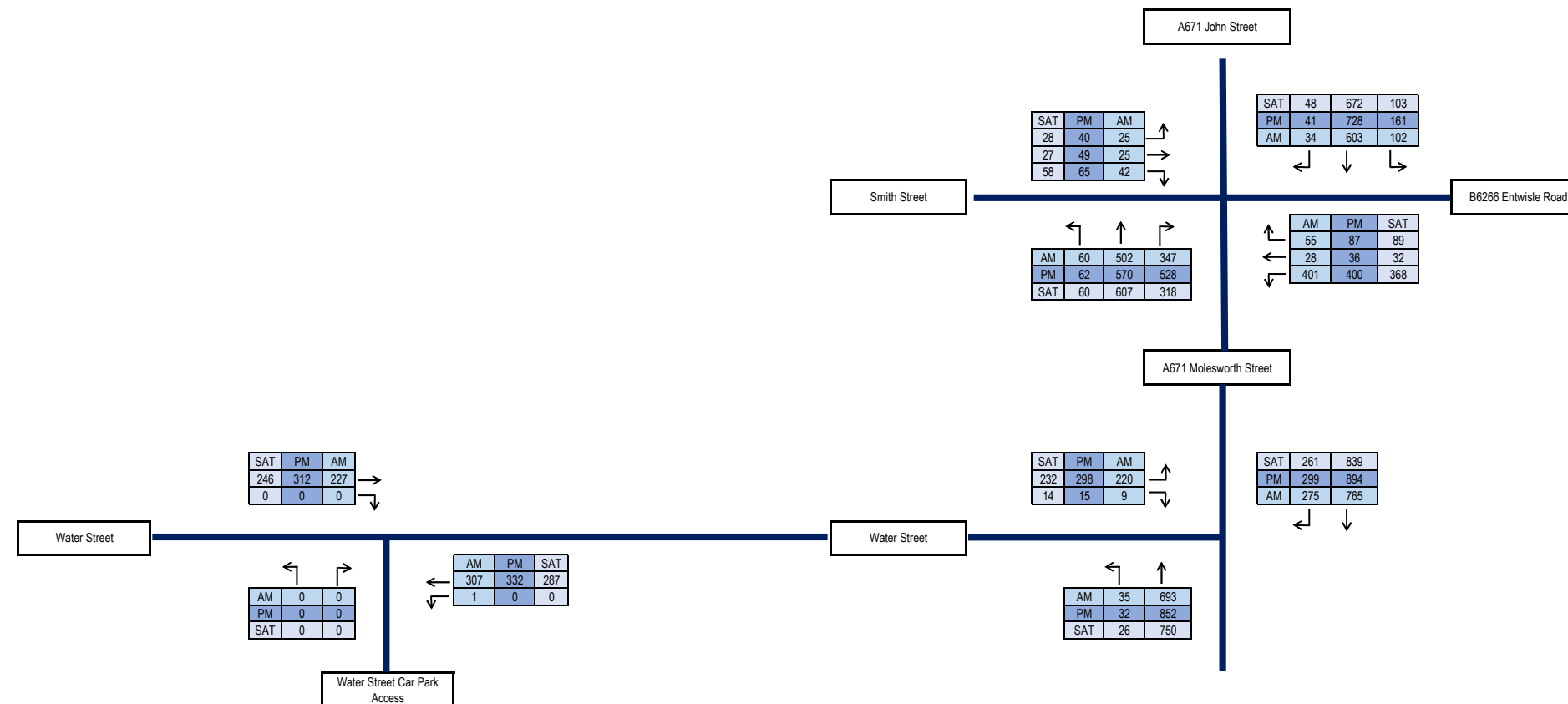
14/02/2025

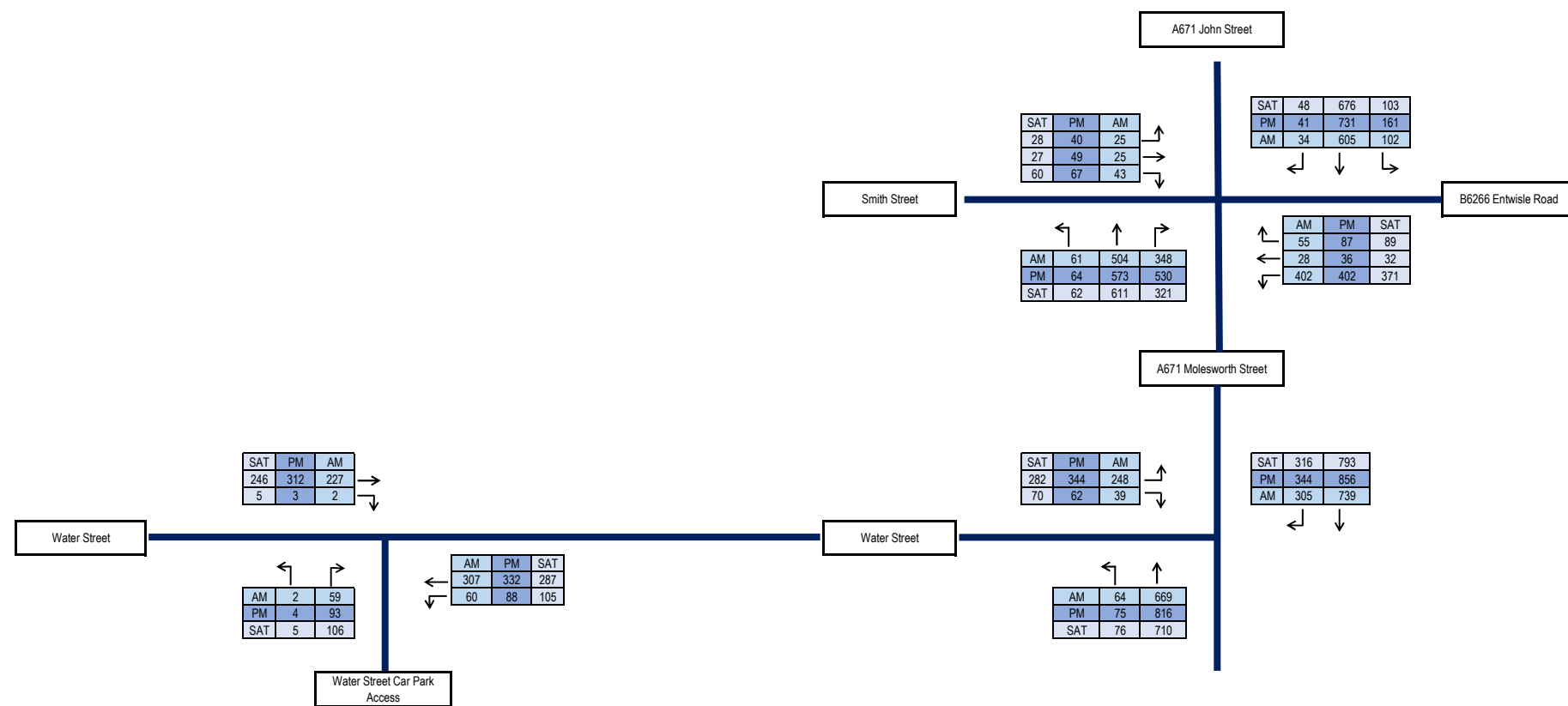
Job Number - AMA/53024

Appendix E.4









Molesworth Street, Rochdale

2030 Future Base + Development

14/02/2025

Job Number - AMA/53024

Appendix E.7

Appendix F
TRICS Report

Calculation Reference: AUDIT-710001-240409-0409

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : D - FAST FOOD - DRIVE THROUGH
TOTAL VEHICLES

Selected regions and areas:

04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	BY BARNSLEY	1 days
08	NORTH WEST	
	MS MERSEYSIDE	1 days
09	NORTH	
	TV TEES VALLEY	1 days
11	SCOTLAND	
	AD ABERDEEN CITY	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 400 to 472 (units: sqm)
 Range Selected by User: 182 to 800 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 25/05/23

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

Selected survey days:

Tuesday 3 days
 Friday 3 days

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

Selected survey types:

Manual count 6 days
 Directional ATC Count 0 days

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

Selected Locations:

Edge of Town Centre 4
 Suburban Area (PPS6 Out of Centre) 2

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:

Industrial Zone 1
 Residential Zone 1
 Retail Zone 1
 Built-Up Zone 2
 No Sub Category 1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 2 days - Selected
 Servicing vehicles Excluded 8 days - Selected

Secondary Filtering selection:

Use Class:

Not Known 6 days

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

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days
50,001 to 100,000	1 days

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

Population within 5 miles:

75,001 to 100,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	1 days

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

Travel Plan:

No	6 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	6 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	AD-06-D-01	MCDONALD' S	ABERDEEN CITY
	BEDFORD ROAD		
	ABERDEEN		
	KITTYBREWSTER RET. PK		
	Edge of Town Centre		
	Retail Zone		
	Total Gross floor area:	472 sqm	
	Survey date: TUESDAY	19/11/19	Survey Type: MANUAL
2	BY-06-D-02	MCDONALD'S	BARNSELY
	UPPER NEW STREET		
	BARNSELY		
	Edge of Town Centre		
	Built-Up Zone		
	Total Gross floor area:	415 sqm	
	Survey date: TUESDAY	08/09/20	Survey Type: MANUAL
3	CA-06-D-02	MCDONALD'S	CAMBRIDGESHIRE
	NEWMARKET ROAD		
	CAMBRIDGE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	435 sqm	
	Survey date: TUESDAY	19/09/17	Survey Type: MANUAL
4	LN-06-D-01	MCDONALD'S	LINCOLNSHIRE
	RUSTON WAY		
	LINCOLN		
	Edge of Town Centre		
	Built-Up Zone		
	Total Gross floor area:	435 sqm	
	Survey date: FRIDAY	28/06/19	Survey Type: MANUAL
5	MS-06-D-01	MCDONALD'S	MERSEYSIDE
	SAINT HELENS LINKWAY		
	SAINT HELENS		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Gross floor area:	463 sqm	
	Survey date: FRIDAY	16/04/21	Survey Type: MANUAL
6	TV-06-D-01	MCDONALD'S	TEES VALLEY
	BURN ROAD		
	HARTLEPOOL		
	Edge of Town Centre		
	Industrial Zone		
	Total Gross floor area:	400 sqm	
	Survey date: FRIDAY	04/09/20	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
IW-06-D-01	Not McDonalds
NS-06-D-01	Not McDonalds
WM-06-D-04	Not McDonalds
WO-06-D-01	Not McDonalds

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	438	7.314	4	438	6.571	4	438	13.885
07:00 - 08:00	5	437	11.259	5	437	9.794	5	437	21.053
08:00 - 09:00	5	437	13.547	5	437	12.723	5	437	26.270
09:00 - 10:00	5	437	14.554	5	437	14.645	5	437	29.199
10:00 - 11:00	6	437	15.878	6	437	15.496	6	437	31.374
11:00 - 12:00	6	437	15.573	6	437	14.924	6	437	30.497
12:00 - 13:00	6	437	22.366	6	437	21.336	6	437	43.702
13:00 - 14:00	6	437	19.275	6	437	20.496	6	437	39.771
14:00 - 15:00	6	437	15.305	6	437	15.458	6	437	30.763
15:00 - 16:00	6	437	18.588	6	437	18.015	6	437	36.603
16:00 - 17:00	6	437	19.847	6	437	20.534	6	437	40.381
17:00 - 18:00	6	437	21.679	6	437	21.756	6	437	43.435
18:00 - 19:00	6	437	21.718	6	437	22.939	6	437	44.657
19:00 - 20:00	6	437	18.779	6	437	19.198	6	437	37.977
20:00 - 21:00	6	437	16.183	6	437	17.405	6	437	33.588
21:00 - 22:00	6	437	13.550	6	437	13.817	6	437	27.367
22:00 - 23:00	4	428	14.594	4	428	14.478	4	428	29.072
23:00 - 24:00	4	428	7.647	4	428	8.990	4	428	16.637
Total Rates:			287.656			288.575			576.231

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.

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The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected: 400 - 472 (units: sqm)
 Survey date range: 01/01/16 - 25/05/23
 Number of weekdays (Monday-Friday): 6
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 4

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

Calculation Reference: AUDIT-710001-240409-0456

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : D - FAST FOOD - DRIVE THROUGH

TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	TB TORBAY	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	KS KIRKLEES	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 420 to 447 (units: sqm)
Range Selected by User: 182 to 800 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 25/05/23

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:

Saturday 2 days

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

Selected survey types:

Manual count 2 days
Directional ATC Count 0 days

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

Selected Locations:

Town Centre 1
Suburban Area (PPS6 Out of Centre) 1

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:

Retail Zone 1
Built-Up Zone 1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included X days - Selected
Servicing vehicles Excluded 2 days - Selected

Secondary Filtering selection:Use Class:

Not Known 2 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:

20,001 to 25,000 2 days

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

Secondary Filtering selection (Cont.):

<u>Population within 5 miles:</u>	
125,001 to 250,000	1 days
250,001 to 500,000	1 days

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

<u>Car ownership within 5 miles:</u>	
0.6 to 1.0	1 days
1.1 to 1.5	1 days

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

<u>Travel Plan:</u>	
No	2 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.

<u>PTAL Rating:</u>	
No PTAL Present	2 days

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

LIST OF SITES relevant to selection parameters

1	KS-06-D-01	MCDONALD'S	KIRKLEES
	NORTHGATE		
	HECKMONDWIKE		
	Town Centre		
	Built-Up Zone		
	Total Gross floor area:	420 sqm	
	Survey date: SATURDAY	20/05/17	Survey Type: MANUAL
2	TB-06-D-01	MCDONALD'S	TORBAY
	HELE ROAD		
	TORQUAY		
	Suburban Area (PPS6 Out of Centre)		
	Retail Zone		
	Total Gross floor area:	447 sqm	
	Survey date: SATURDAY	30/03/19	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 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH

TOTAL VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	447	19.016	1	447	18.121	1	447	37.137
08:00 - 09:00	1	447	22.371	1	447	22.371	1	447	44.742
09:00 - 10:00	1	447	27.293	1	447	24.385	1	447	51.678
10:00 - 11:00	2	434	16.378	2	434	17.993	2	434	34.371
11:00 - 12:00	2	434	20.069	2	434	18.685	2	434	38.754
12:00 - 13:00	2	434	26.874	2	434	25.375	2	434	52.249
13:00 - 14:00	2	434	25.952	2	434	26.298	2	434	52.250
14:00 - 15:00	2	434	23.414	2	434	24.567	2	434	47.981
15:00 - 16:00	2	434	19.723	2	434	20.877	2	434	40.600
16:00 - 17:00	2	434	23.645	2	434	22.376	2	434	46.021
17:00 - 18:00	2	434	23.760	2	434	24.683	2	434	48.443
18:00 - 19:00	2	434	23.299	2	434	23.299	2	434	46.598
19:00 - 20:00	2	434	18.800	2	434	19.839	2	434	38.639
20:00 - 21:00	2	434	15.340	2	434	15.686	2	434	31.026
21:00 - 22:00	2	434	12.687	2	434	11.765	2	434	24.452
22:00 - 23:00	2	434	7.612	2	434	8.304	2	434	15.916
23:00 - 24:00	2	434	6.459	2	434	6.113	2	434	12.572
Total Rates:			332.692			330.737			663.429

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.

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Parameter summary

Trip rate parameter range selected: 420 - 447 (units: sqm)
 Survey date range: 01/01/16 - 25/05/23
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 2
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

SUMMARY OF McDONALD'S SURVEY DATA
BRISTOL (2014)

Table A Surveyed Traffic: Bristol

Friday			Saturday		
Time	In	Out	Time	In	Out
16:00	66	60	11:00	57	56
17:00	60	69	12:00	79	80
18:00	58	57	13:00	77	79
-	-	-	14:00	96	103
Total	184	186	Total	309	318

Table B Surveyed Pedestrians: Bristol

Friday			Saturday		
Time	In	Out	Time	In	Out
16:00	53	46	11:00	42	31
17:00	53 (2)	46 (2)	12:00	37 (1)	42 (1)
18:00	24	27	13:00	51	39
-	-	-	14:00	30	39
Total	130	119	Total	160	151

() Denotes cyclists inclusive

Table C Drive Thru Queues: Bristol

	Friday	Saturday
Min Q	0	0
Max Q	6	11
Average Q	3	4

Table D Surveyed Parking Demand: Bristol

Friday		Saturday	
Time	No	Time	No
16:00	19	11:00	21
16:15	18	11:15	19
16:30	15	11:30	19 (1)
16:45	23 (1)	11:45	19
17:00	23	12:00	24 (1)
17:15	19	12:15	27 (2)
17:30	12	12:30	23
17:45	11	12:45	18
18:00	11	13:00	25 (1)
18:15	10	13:15	25 (1)
18:30	14 (2)	13:30	20 (1)
18:45	11 (1)	13:45	19
19:00	12	14:00	23 (1)
-	-	14:15	23
-	-	14:30	16
-	-	14:45	21 (1)
-	-	15:00	14

() Denotes circulating vehicles inclusive

Table E Surveyed Customer Activity: Bristol

Activity		Friday		Saturday	
		No	%	No	%
1	Drive in, use restaurant, drive out	18	10%	44	15%
2	Drive in, use restaurant, eat in vehicle, drive out	18	10%	29	10%
3	Drive in, drive thru, drive out	100	58%	139	47%
4	Drive in, use drive thru, park, eat in vehicle drive out	13	8%	57	18%
5	Drive in, park, do not use restaurant, drive out	15	9%	12	4%
6	Drive in, park, use restaurant, walk off site (or vice versa), drive out	2	1%	8	3%
7	Drive in, drive straight out	7	4%	8	3%
Total		173	100%	297	100%

Table F Customer Interview Survey Results: Bristol

Trip Type	Definition	Friday		Saturday	
		No	%	No	%
Additional Trips	Same origin & destination McDonald's sole purpose of trip	14	26%	20	29%
Existing Trips	Different origin & destination	9	17%	18	26%
	Same origin & destination McDonald's not sole purpose of trip	14	26%	8	11%
Shared Trip	Visit adjacent shops and facilities before or after McDonald's	17	31%	24	34%
Total		54	100%	70	100%

APPENDIX X.X

SUMMARY OF EXISTING McDONALD'S STORE DATA

WALTON ROAD, LIVERPOOL, L4 4BD

Table A Surveyed Traffic: Walton Road, Liverpool

Friday			Saturday		
Time	In	Out	Time	In	Out
16:00	84	85	11:00	56	55
17:00	86	90	12:00	89	79
18:00	95	87	13:00	91	94
-	-	-	14:00	88	85
Total	265	262	Total	324	313

Table B Surveyed Pedestrians: Walton Road, Liverpool

Friday			Saturday		
Time	In	Out	Time	In	Out
16:00	30	22	11:00	17	12
17:00	32	31	12:00	36	29
18:00	25	33	13:00	40	30
-	-	-	14:00	45	31
Total	87	86	Total	127	102

Table C Surveyed Drive Thru Queues: Walton Road, Liverpool

	Friday	Saturday
Min Q	0	0
Max Q	8	9
Average Q	4	5

Table D Surveyed Parking Demand: Walton Road, Liverpool

Friday		Saturday	
Time	Parking Demand	Time	Parking Demand
16:00	17	11:00	10
16:15	13	11:15	13
16:30	11	11:30	21
16:45	9	11:45	19
17:00	13	12:00	11
17:15	10	12:15	15
17:30	7	12:30	15
17:45	8	12:45	11
18:00	11	13:00	16
18:15	11	13:15	10
18:30	11	13:30	8
18:45	12	13:45	13
19:00	15	14:00	15
-	-	14:15	17
-	-	14:30	20
-	-	14:45	17
-	-	15:00	17

Table 5C Surveyed Customer Activity: Walton Road, Liverpool

Activity		Friday		Saturday	
		No	%	No	%
1	Drive in, use restaurant, drive out	45	19%	65	22%
2	Drive in, use restaurant, eat in vehicle, drive out	8	3%	3	1%
3	Drive in, drive thru, drive out	164	67%	186	61%
4	Drive in, use drive thru, park, eat in vehicle, drive out	25	10%	36	12%
5	Drive in, park, do not use restaurant, drive out	0	0%	6	2%
6	Drive in, park, use restaurant, walk off site (or visa versa), drive out	1	1%	4	1%
7	Drive in/drive out	0	0%	3	1%
Total		243	100%	303	100%

Table 5E Customer Interview Survey Results: Walton Road, Liverpool

Trip Type	Definition	Friday		Saturday	
		No	%	No	%
Additional Trips	Same origin & destination McDonald's sole purpose of trip	20	29%	17	21%
Existing Trips	Different origin & destination	17	24%	6	8%
	Same origin & destination McDonald's <u>not</u> sole purpose of trip	18	26%	27	33%
Shared Trip	Visit nearby foodstores (Aldi or Iceland)	15	21%	31	38%
Total		70	100%	81	100%

SUMMARY OF McDONALD'S SURVEY DATA
MORRIS STREET, WIGAN (2015)

Table A Surveyed Traffic: Wigan

Friday			Saturday		
Time	In	Out	Time	In	Out
16:00	76	79	11:00	62	56
17:00	93	96	12:00	94	77
18:00	88	91	13:00	104	115
-	-	-	14:00	85	88
Total	257	266	Total	345	336

Table B Surveyed Pedestrians: Wigan

Friday			Saturday		
Time	In	Out	Time	In	Out
16:00	38	28	11:00	7	7
17:00	29	27	12:00	12	7
18:00	11	19	13:00	34	28
-	-	-	14:00	22	30
Total	78	74	Total	75	72

() Denotes cyclists inclusive

Table C Drive Thru Queues: Wigan

	Friday	Saturday
Min Q	0	0
Max Q	8	8
Average Q	4	3

Table D Surveyed Parking Demand: Wigan

Friday		Saturday	
Time	No	Time	No
16:00	29	11:00	13
16:15	24	11:15	21
16:30	20	11:30	18
16:45	18	11:45	16
17:00	23	12:00	19
17:15	20	12:15	18
17:30	24	12:30	25
17:45	21	12:45	31
18:00	21	13:00	31
18:15	20	13:15	30
18:30	23	13:30	28
18:45	25	13:45	25
19:00	18	14:00	22
-	-	14:15	16
-	-	14:30	23
-	-	14:45	24
-	-	15:00	22

Table E Surveyed Customer Activity: Wigan

Activity		Friday PM		Saturday	
		No	%	No	%
1	Drive in, use restaurant, drive out	52	21	75	23
2	Drive in, use restaurant, eat in vehicle, drive out	12	5	2	1
3	Drive in, drive thru, drive out	161	66	215	65
4	Drive in, use drive thru, park, eat in vehicle drive out	16	7	33	10
5	Drive in, park, do not use restaurant, drive out	1	0	3	1
6	Drive in, park, use restaurant, walk off site (or vice versa), drive out	0	0	0	0
7	Drive in, drive straight out	2	1	1	0
Total		244	100%	329	100%

Table F Customer Trip Types: Wigan

Trip type	Details	Friday PM		Saturday	
		No	%	No	%
Additional	McD main purpose for trip	1	2%	7	12%
Existing	Different origin/destination	0	0%	0	0%
	Same origin/destination, McD not main reason for trip	48	74%	29	51%
Shared nearby	Shared with Tesco Extra	5	24%	11	37%
	Shared with Wigan Town Centre Shopping	11		10	
Total		65	100%	57	100%

Appendix G
Modelling Outputs

Junctions 9															
PICADY 9 - Priority Intersection Module															
Version: 9.5.1.7462 © Copyright TRL Limited, 2019															
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk															
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution															

Filename: Site Access - Water Street T-Junction.j9

Path: C:\AMA\AMA\AMA - McDonald's\004 - West\53024 - Molesworth Street, Rochdale\D Models and Drawings\PICADY

Report generation date: 13/02/2025 16:26:02

- »2030 Future Base + Dev, AM
- »2030 Future Base + Dev, PM
- »2030 Future Base + Dev , SAT

Summary of junction performance

	AM					PM					SAT				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2030 Future Base + Dev															
Stream B-AC	D1	0.2	9.36	0.15	A	D2	0.3	11.16	0.25	B	D3	0.4	10.99	0.27	B
Stream C-AB		0.0	5.29	0.00	A		0.0	5.03	0.01	A		0.0	5.26	0.01	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

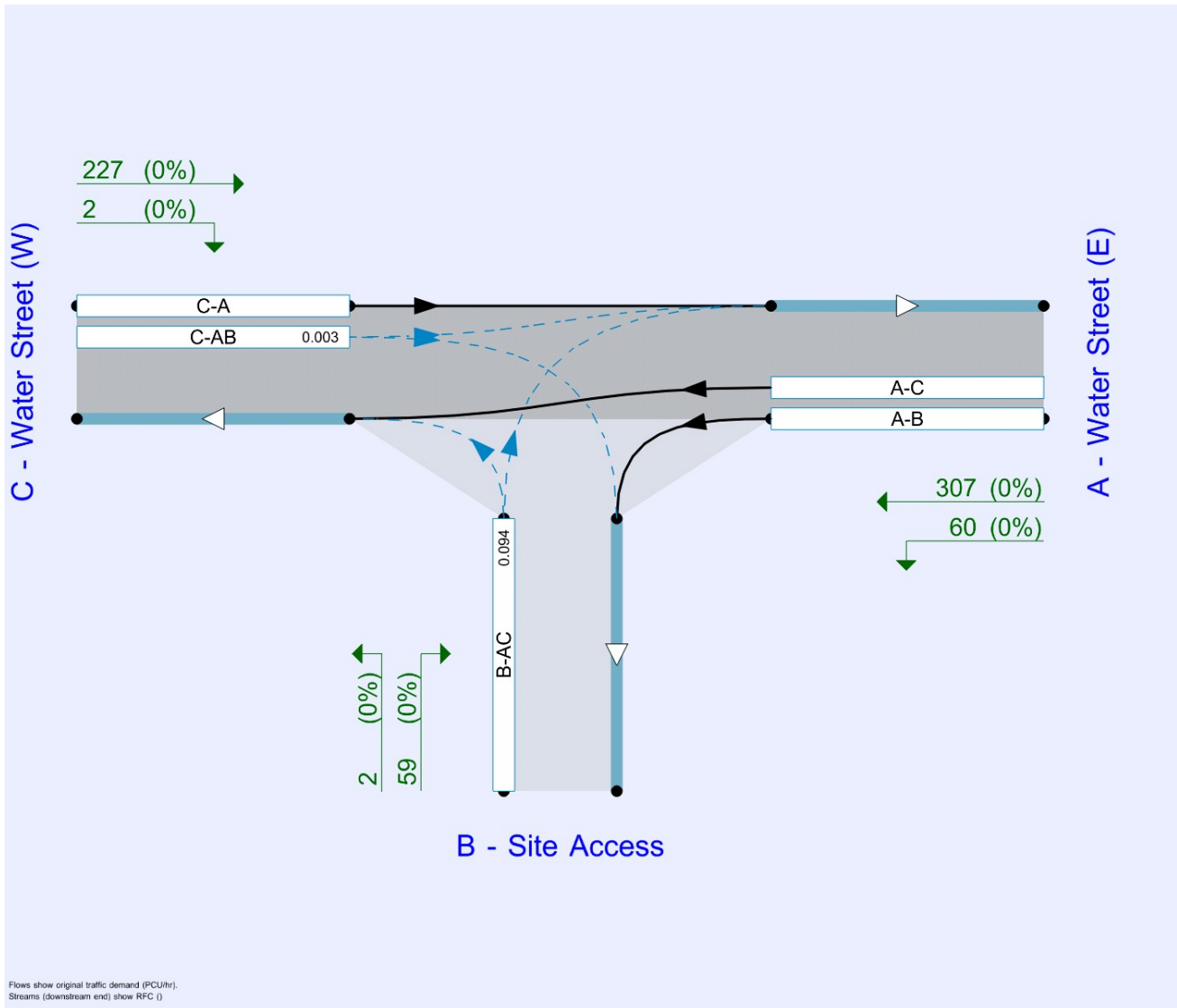
File summary

File Description

Title	
Location	
Site number	
Date	08/08/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Modellinglaptop
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2030 Future Base + Dev	AM	ONE HOUR	08:15	09:45	15
D2	2030 Future Base + Dev	PM	ONE HOUR	15:45	17:15	15
D3	2030 Future Base + Dev	SAT	ONE HOUR	11:30	13:00	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2030 Future Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.89	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Water Street (E)		Major
B	Site Access		Minor
C	Water Street (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Water Street (W)	8.30			90.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane	4.50	18	27

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	571	0.094	0.237	0.149	0.338
B-C	737	0.102	0.257	-	-
C-B	626	0.218	0.218	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2030 Future Base + Dev	AM	ONE HOUR	08:15	09:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Water Street (E)		✓	367	100.000
B - Site Access		✓	61	100.000
C - Water Street (W)		✓	229	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Water Street (E)	B - Site Access	C - Water Street (W)
From	A - Water Street (E)	0	60	307
	B - Site Access	59	0	2
	C - Water Street (W)	227	2	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Water Street (E)	B - Site Access	C - Water Street (W)
From	A - Water Street (E)	0	0	0
	B - Site Access	0	0	0
	C - Water Street (W)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.15	9.36	0.2	A
C-AB	0.00	5.29	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	491	0.094	46	0.1	8.076	A
C-AB	2	683	0.003	2	0.0	5.286	A
C-A	170			170			
A-B	45			45			
A-C	231			231			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	474	0.116	55	0.1	8.576	A
C-AB	3	695	0.004	3	0.0	5.196	A
C-A	203			203			
A-B	54			54			
A-C	276			276			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	67	452	0.149	67	0.2	9.355	A
C-AB	3	713	0.005	3	0.0	5.071	A
C-A	249			249			
A-B	66			66			
A-C	338			338			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	67	452	0.149	67	0.2	9.362	A
C-AB	3	713	0.005	3	0.0	5.071	A
C-A	249			249			
A-B	66			66			
A-C	338			338			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	474	0.116	55	0.1	8.586	A
C-AB	3	695	0.004	3	0.0	5.196	A
C-A	203			203			
A-B	54			54			
A-C	276			276			

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	491	0.094	46	0.1	8.096	A
C-AB	2	683	0.003	2	0.0	5.288	A
C-A	170			170			
A-B	45			45			
A-C	231			231			

2030 Future Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2030 Future Base + Dev	PM	ONE HOUR	15:45	17:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Water Street (E)		✓	420	100.000
B - Site Access		✓	97	100.000
C - Water Street (W)		✓	315	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Water Street (E)	B - Site Access	C - Water Street (W)
	A - Water Street (E)	0	88	332
	B - Site Access	93	0	4
	C - Water Street (W)	312	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Water Street (E)	B - Site Access	C - Water Street (W)
	A - Water Street (E)	0	0	0
	B - Site Access	0	0	0
	C - Water Street (W)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.25	11.16	0.3	B
C-AB	0.01	5.03	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	476	0.153	72	0.2	8.905	A
C-AB	3	719	0.005	3	0.0	5.028	A
C-A	234			234			
A-B	66			66			
A-C	250			250			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	456	0.191	87	0.2	9.739	A
C-AB	4	739	0.006	4	0.0	4.897	A
C-A	279			279			
A-B	79			79			
A-C	298			298			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	429	0.249	106	0.3	11.133	B
C-AB	6	768	0.008	6	0.0	4.721	A
C-A	341			341			
A-B	97			97			
A-C	366			366			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	429	0.249	107	0.3	11.162	B
C-AB	6	768	0.008	6	0.0	4.723	A
C-A	341			341			
A-B	97			97			
A-C	366			366			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	456	0.191	88	0.2	9.771	A
C-AB	4	739	0.006	4	0.0	4.899	A
C-A	279			279			
A-B	79			79			
A-C	298			298			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	476	0.153	73	0.2	8.946	A
C-AB	3	719	0.005	3	0.0	5.028	A
C-A	234			234			
A-B	66			66			
A-C	250			250			

2030 Future Base + Dev , SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2030 Future Base + Dev	SAT	ONE HOUR	11:30	13:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Water Street (E)		✓	392	100.000
B - Site Access		✓	111	100.000
C - Water Street (W)		✓	251	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Water Street (E)	B - Site Access	C - Water Street (W)
	A - Water Street (E)	0	105	287
	B - Site Access	106	0	5
	C - Water Street (W)	246	5	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Water Street (E)	B - Site Access	C - Water Street (W)
	A - Water Street (E)	0	0	0
	B - Site Access	0	0	0
	C - Water Street (W)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.27	10.99	0.4	B
C-AB	0.01	5.26	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

11:30 - 11:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	490	0.171	83	0.2	8.820	A
C-AB	5	689	0.007	5	0.0	5.263	A
C-A	184			184			
A-B	79			79			
A-C	216			216			

11:45 - 12:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	100	473	0.211	100	0.3	9.629	A
C-AB	7	703	0.009	7	0.0	5.169	A
C-A	219			219			
A-B	94			94			
A-C	258			258			

12:00 - 12:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	450	0.272	122	0.4	10.961	B
C-AB	9	723	0.012	9	0.0	5.042	A
C-A	268			268			
A-B	116			116			
A-C	316			316			

12:15 - 12:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	450	0.272	122	0.4	10.989	B
C-AB	9	723	0.012	9	0.0	5.042	A
C-A	268			268			
A-B	116			116			
A-C	316			316			

12:30 - 12:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	100	473	0.211	100	0.3	9.663	A
C-AB	7	703	0.009	7	0.0	5.172	A
C-A	219			219			
A-B	94			94			
A-C	258			258			

12:45 - 13:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	490	0.171	84	0.2	8.866	A
C-AB	5	689	0.007	5	0.0	5.263	A
C-A	184			184			
A-B	79			79			
A-C	216			216			

Junctions 9															
PICADY 9 - Priority Intersection Module															
Version: 9.5.1.7462															
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Filename: Water Street - Molesworth Street T-Junction.j9

Path: C:\AMA\AMA\AMA - McDonald's\004 - West\53024 - Molesworth Street, Rochdale\D Models and Drawings\PICADY

Report generation date: 14/02/2025 08:43:59

- »2025 Base, AM
- »2025 Base, PM
- »2025 Base, SAT
- »2030 Base , AM
- »2030 Base, PM
- »2030 Base, SAT
- »2030 Base + Dev, AM
- »2030 Base + Dev, PM
- »2030 Base + Dev, SAT

Summary of junction performance

	AM					PM					SAT				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2025 Base														
Stream B-C	D1	1.0	15.20	0.49	C	D2	2.8	33.86	0.75	D	D3	1.2	17.50	0.54	C
Stream B-A		0.1	22.85	0.05	C		0.2	42.43	0.15	E		0.1	27.26	0.10	D
Stream C-AB		1.3	16.20	0.56	C		2.0	22.82	0.67	C		1.2	16.25	0.55	C
	2030 Base														
Stream B-C	D4	1.1	17.03	0.53	C	D5	4.2	49.91	0.83	E	D6	1.4	20.23	0.59	C
Stream B-A		0.1	26.89	0.07	D		0.3	61.72	0.22	F		0.1	33.13	0.12	D
Stream C-AB		1.6	18.54	0.61	C		2.8	27.19	0.73	D		1.5	18.42	0.60	C
	2030 Base + Dev														
Stream B-C	D7	1.7	23.15	0.64	C	D8	35.6	319.82	1.19	F	D9	4.3	53.66	0.84	F
Stream B-A		0.4	37.14	0.31	E		5.4	287.23	1.02	F		1.7	88.62	0.67	F
Stream C-AB		2.1	22.07	0.68	C		5.9	36.62	0.85	E		2.7	25.66	0.73	D

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

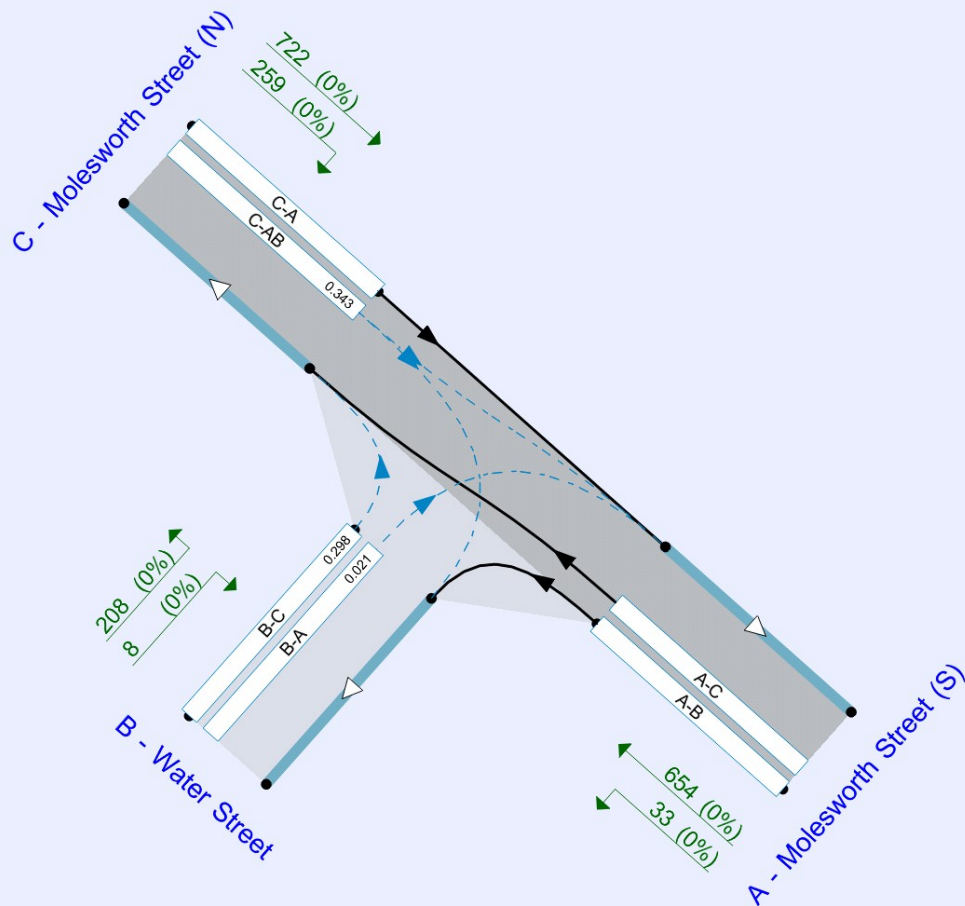
File summary

File Description

Title	
Location	
Site number	
Date	08/08/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Modellinglaptop
Description	

Units

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



Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC (l)

The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2025 Base	AM	ONE HOUR	08:15	09:45	15
D2	2025 Base	PM	ONE HOUR	15:45	17:15	15
D3	2025 Base	SAT	ONE HOUR	11:30	13:00	15
D4	2030 Base	AM	ONE HOUR	08:15	09:45	15
D5	2030 Base	PM	ONE HOUR	15:45	17:15	15
D6	2030 Base	SAT	ONE HOUR	11:30	13:00	15
D7	2030 Base + Dev	AM	ONE HOUR	08:15	09:45	15
D8	2030 Base + Dev	PM	ONE HOUR	15:45	17:15	15
D9	2030 Base + Dev	SAT	ONE HOUR	11:30	13:00	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2025 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Molesworth Street (S)		Major
B	Water Street		Minor
C	Molesworth Street (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Molesworth Street (N)	6.90	✓	2.50	✓	3.30	95.0	✓	10.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Water Street	Two lanes	3.00	3.00	37	41

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	538	0.089	0.225	0.142	0.322
B-C	650	0.096	0.242	-	-
C-B	704	0.262	0.262	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2025 Base	AM	ONE HOUR	08:15	09:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	687	100.000
B - Water Street		✓	216	100.000
C - Molesworth Street (N)		✓	981	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	33	654
	B - Water Street	8	0	208
	C - Molesworth Street (N)	722	259	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.49	15.20	1.0	C
B-A	0.05	22.85	0.1	C
C-AB	0.56	16.20	1.3	C
C-A				
A-B				
A-C				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	525	0.298	155	0.4	9.672	A
B-A	6	285	0.021	6	0.0	12.893	B
C-AB	195	569	0.343	193	0.5	9.531	A
C-A	544			544			
A-B	25			25			
A-C	492			492			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	187	501	0.373	186	0.6	11.422	B
B-A	7	235	0.031	7	0.0	15.780	C
C-AB	233	542	0.429	232	0.7	11.558	B
C-A	649			649			
A-B	30			30			
A-C	588			588			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	229	466	0.492	228	0.9	15.022	C
B-A	9	167	0.053	9	0.1	22.722	C
C-AB	287	509	0.564	285	1.2	15.926	C
C-A	793			793			
A-B	36			36			
A-C	720			720			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	229	466	0.492	229	1.0	15.197	C
B-A	9	166	0.053	9	0.1	22.847	C
C-AB	287	509	0.564	287	1.3	16.199	C
C-A	793			793			
A-B	36			36			
A-C	720			720			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	187	501	0.373	188	0.6	11.575	B
B-A	7	234	0.031	7	0.0	15.866	C
C-AB	233	542	0.429	235	0.8	11.778	B
C-A	649			649			
A-B	30			30			
A-C	588			588			

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	525	0.298	157	0.4	9.800	A
B-A	6	284	0.021	6	0.0	12.953	B
C-AB	195	569	0.343	196	0.5	9.684	A
C-A	544			544			
A-B	25			25			
A-C	492			492			

2025 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2025 Base	PM	ONE HOUR	15:45	17:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	836	100.000
B - Water Street		✓	296	100.000
C - Molesworth Street (N)		✓	1129	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	30	806
	B - Water Street	14	0	282
	C - Molesworth Street (N)	846	283	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.75	33.86	2.8	D
B-A	0.15	42.43	0.2	E
C-AB	0.67	22.82	2.0	C
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	212	495	0.429	209	0.7	12.468	B
B-A	11	240	0.044	10	0.0	15.639	C
C-AB	213	539	0.395	211	0.6	10.868	B
C-A	637			637			
A-B	23			23			
A-C	607			607			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	254	464	0.547	252	1.2	16.847	C
B-A	13	182	0.069	12	0.1	21.252	C
C-AB	255	508	0.502	253	1.0	14.064	B
C-A	760			760			
A-B	27			27			
A-C	725			725			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	310	415	0.748	305	2.6	31.008	D
B-A	15	101	0.152	15	0.2	41.499	E
C-AB	324	481	0.673	320	2.0	21.860	C
C-A	920			920			
A-B	33			33			
A-C	887			887			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	310	415	0.749	310	2.8	33.860	D
B-A	15	100	0.154	15	0.2	42.429	E
C-AB	324	481	0.673	323	2.0	22.817	C
C-A	920			920			
A-B	33			33			
A-C	887			887			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	254	463	0.547	260	1.3	18.171	C
B-A	13	180	0.070	13	0.1	21.604	C
C-AB	255	508	0.502	259	1.0	14.672	B
C-A	760			760			
A-B	27			27			
A-C	725			725			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	212	495	0.429	214	0.8	12.906	B
B-A	11	239	0.044	11	0.0	15.770	C
C-AB	213	539	0.395	215	0.7	11.137	B
C-A	637			637			
A-B	23			23			
A-C	607			607			

2025 Base, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2025 Base	SAT	ONE HOUR	11:30	13:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	735	100.000
B - Water Street		✓	232	100.000
C - Molesworth Street (N)		✓	1041	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	25	710
	B - Water Street	13	0	219
	C - Molesworth Street (N)	794	247	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.54	17.50	1.2	C
B-A	0.10	27.26	0.1	D
C-AB	0.55	16.25	1.2	C
C-A				
A-B				
A-C				

Main Results for each time segment

11:30 - 11:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	165	514	0.321	163	0.5	10.205	B
B-A	10	271	0.036	10	0.0	13.751	B
C-AB	186	559	0.333	184	0.5	9.546	A
C-A	598			598			
A-B	19			19			
A-C	535			535			

11:45 - 12:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	197	487	0.405	196	0.7	12.359	B
B-A	12	219	0.053	12	0.1	17.363	C
C-AB	222	531	0.418	221	0.7	11.584	B
C-A	714			714			
A-B	22			22			
A-C	638			638			

12:00 - 12:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	447	0.540	239	1.1	17.198	C
B-A	14	147	0.097	14	0.1	27.058	D
C-AB	273	494	0.553	271	1.2	15.990	C
C-A	873			873			
A-B	28			28			
A-C	782			782			

12:15 - 12:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	446	0.540	241	1.2	17.501	C
B-A	14	146	0.098	14	0.1	27.261	D
C-AB	273	494	0.553	273	1.2	16.252	C
C-A	873			873			
A-B	28			28			
A-C	782			782			

12:30 - 12:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	197	486	0.405	199	0.7	12.594	B
B-A	12	218	0.054	12	0.1	17.486	C
C-AB	222	531	0.418	224	0.7	11.795	B
C-A	714			714			
A-B	22			22			
A-C	638			638			

12:45 - 13:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	165	514	0.321	166	0.5	10.368	B
B-A	10	270	0.036	10	0.0	13.825	B
C-AB	186	559	0.333	187	0.5	9.692	A
C-A	598			598			
A-B	19			19			
A-C	535			535			

2030 Base , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2030 Base	AM	ONE HOUR	08:15	09:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	728	100.000
B - Water Street		✓	229	100.000
C - Molesworth Street (N)		✓	1040	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	35	693
	B - Water Street	9	0	220
	C - Molesworth Street (N)	765	275	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.53	17.03	1.1	C
B-A	0.07	26.89	0.1	D
C-AB	0.61	18.54	1.6	C
C-A				
A-B				
A-C				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	166	518	0.320	164	0.5	10.119	B
B-A	7	270	0.025	7	0.0	13.676	B
C-AB	207	561	0.369	205	0.6	10.054	B
C-A	576			576			
A-B	26			26			
A-C	522			522			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	198	491	0.403	197	0.7	12.190	B
B-A	8	217	0.037	8	0.0	17.224	C
C-AB	247	533	0.464	246	0.8	12.506	B
C-A	688			688			
A-B	31			31			
A-C	623			623			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	242	453	0.534	240	1.1	16.752	C
B-A	10	145	0.069	10	0.1	26.671	D
C-AB	307	500	0.613	304	1.5	18.080	C
C-A	838			838			
A-B	39			39			
A-C	763			763			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	242	453	0.534	242	1.1	17.028	C
B-A	10	144	0.069	10	0.1	26.892	D
C-AB	307	500	0.613	306	1.6	18.536	C
C-A	838			838			
A-B	39			39			
A-C	763			763			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	198	491	0.403	200	0.7	12.415	B
B-A	8	216	0.038	8	0.0	17.360	C
C-AB	247	533	0.464	250	0.9	12.841	B
C-A	688			688			
A-B	31			31			
A-C	623			623			

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	166	518	0.320	166	0.5	10.277	B
B-A	7	269	0.025	7	0.0	13.752	B
C-AB	207	561	0.369	208	0.6	10.249	B
C-A	576			576			
A-B	26			26			
A-C	522			522			

2030 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		10.15	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2030 Base	PM	ONE HOUR	15:45	17:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	884	100.000
B - Water Street		✓	313	100.000
C - Molesworth Street (N)		✓	1193	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	32	852
	B - Water Street	15	0	298
	C - Molesworth Street (N)	894	299	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.83	49.91	4.2	E
B-A	0.22	61.72	0.3	F
C-AB	0.73	27.19	2.8	D
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	224	486	0.462	221	0.8	13.417	B
B-A	11	223	0.051	11	0.1	16.937	C
C-AB	225	530	0.425	222	0.7	11.597	B
C-A	673			673			
A-B	24			24			
A-C	641			641			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	268	452	0.593	266	1.4	19.094	C
B-A	13	161	0.084	13	0.1	24.288	C
C-AB	270	498	0.542	268	1.1	15.561	C
C-A	803			803			
A-B	29			29			
A-C	766			766			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	328	396	0.828	318	3.8	41.872	E
B-A	17	76	0.216	16	0.3	58.861	F
C-AB	362	493	0.733	356	2.6	25.310	D
C-A	952			952			
A-B	35			35			
A-C	938			938			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	328	395	0.831	326	4.2	49.910	E
B-A	17	75	0.221	16	0.3	61.716	F
C-AB	362	493	0.733	361	2.8	27.188	D
C-A	952			952			
A-B	35			35			
A-C	938			938			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	268	451	0.594	279	1.5	22.034	C
B-A	13	159	0.085	14	0.1	24.985	C
C-AB	270	498	0.542	276	1.2	16.667	C
C-A	803			803			
A-B	29			29			
A-C	766			766			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	224	486	0.462	227	0.9	14.046	B
B-A	11	222	0.051	11	0.1	17.124	C
C-AB	225	530	0.425	227	0.8	11.960	B
C-A	673			673			
A-B	24			24			
A-C	641			641			

2030 Base, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2030 Base	SAT	ONE HOUR	11:30	13:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	776	100.000
B - Water Street		✓	246	100.000
C - Molesworth Street (N)		✓	1100	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	26	750
	B - Water Street	14	0	232
	C - Molesworth Street (N)	839	261	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.59	20.23	1.4	C
B-A	0.12	33.13	0.1	D
C-AB	0.60	18.42	1.5	C
C-A				
A-B				
A-C				

Main Results for each time segment

11:30 - 11:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	175	506	0.345	173	0.5	10.731	B
B-A	11	256	0.041	10	0.0	14.633	B
C-AB	197	551	0.357	194	0.5	10.030	B
C-A	632			632			
A-B	20			20			
A-C	565			565			

11:45 - 12:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	209	477	0.437	208	0.8	13.326	B
B-A	13	201	0.063	12	0.1	19.106	C
C-AB	235	522	0.450	234	0.8	12.459	B
C-A	754			754			
A-B	23			23			
A-C	674			674			

12:00 - 12:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	255	433	0.590	253	1.4	19.706	C
B-A	15	125	0.123	15	0.1	32.745	D
C-AB	291	486	0.598	288	1.4	17.990	C
C-A	921			921			
A-B	29			29			
A-C	826			826			

12:15 - 12:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	255	433	0.590	255	1.4	20.227	C
B-A	15	124	0.124	15	0.1	33.135	D
C-AB	291	486	0.598	290	1.5	18.415	C
C-A	921			921			
A-B	29			29			
A-C	826			826			

12:30 - 12:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	209	476	0.438	211	0.8	13.681	B
B-A	13	200	0.063	13	0.1	19.301	C
C-AB	235	522	0.450	237	0.8	12.768	B
C-A	754			754			
A-B	23			23			
A-C	674			674			

12:45 - 13:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	175	506	0.345	176	0.5	10.937	B
B-A	11	255	0.041	11	0.0	14.727	B
C-AB	197	551	0.357	198	0.6	10.214	B
C-A	632			632			
A-B	20			20			
A-C	565			565			

2030 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2030 Base + Dev	AM	ONE HOUR	08:15	09:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	733	100.000
B - Water Street		✓	287	100.000
C - Molesworth Street (N)		✓	1044	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	64	669
	B - Water Street	39	0	248
	C - Molesworth Street (N)	739	305	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.64	23.15	1.7	C
B-A	0.31	37.14	0.4	E
C-AB	0.68	22.07	2.1	C
C-A				
A-B				
A-C				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	187	509	0.367	184	0.6	11.021	B
B-A	29	267	0.110	29	0.1	15.060	C
C-AB	230	560	0.410	227	0.7	10.735	B
C-A	556			556			
A-B	48			48			
A-C	504			504			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	223	478	0.466	222	0.9	13.988	B
B-A	35	214	0.164	35	0.2	20.052	C
C-AB	275	532	0.516	273	1.0	13.813	B
C-A	664			664			
A-B	58			58			
A-C	601			601			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	273	429	0.637	270	1.6	22.210	C
B-A	43	141	0.305	42	0.4	36.091	E
C-AB	348	510	0.682	344	2.0	21.154	C
C-A	802			802			
A-B	70			70			
A-C	737			737			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	273	428	0.638	273	1.7	23.152	C
B-A	43	140	0.307	43	0.4	37.145	E
C-AB	348	510	0.682	348	2.1	22.070	C
C-A	802			802			
A-B	70			70			
A-C	737			737			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	223	477	0.467	226	0.9	14.517	B
B-A	35	212	0.165	36	0.2	20.524	C
C-AB	275	532	0.516	279	1.1	14.413	B
C-A	664			664			
A-B	58			58			
A-C	601			601			

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	187	508	0.367	188	0.6	11.274	B
B-A	29	266	0.110	30	0.1	15.248	C
C-AB	230	560	0.410	231	0.7	11.013	B
C-A	556			556			
A-B	48			48			
A-C	504			504			

2030 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		57.07	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2030 Base + Dev	PM	ONE HOUR	15:45	17:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	891	100.000
B - Water Street		✓	406	100.000
C - Molesworth Street (N)		✓	1200	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	75	816
	B - Water Street	62	0	344
	C - Molesworth Street (N)	856	344	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.19	319.82	35.6	F
B-A	1.02	287.23	5.4	F
C-AB	0.85	36.62	5.9	E
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	259	469	0.552	254	1.2	16.397	C
B-A	47	220	0.212	46	0.3	20.551	C
C-AB	259	529	0.490	255	0.9	12.998	B
C-A	644			644			
A-B	56			56			
A-C	614			614			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	309	424	0.730	304	2.4	28.973	D
B-A	56	157	0.355	55	0.5	34.907	D
C-AB	314	501	0.626	311	1.6	18.656	C
C-A	765			765			
A-B	67			67			
A-C	734			734			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	379	319	1.189	308	20.0	156.212	F
B-A	68	71	0.968	56	3.5	187.736	F
C-AB	531	627	0.847	517	5.1	30.626	D
C-A	790			790			
A-B	83			83			
A-C	898			898			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	379	318	1.190	317	35.6	319.820	F
B-A	68	67	1.018	61	5.4	287.228	F
C-AB	531	627	0.847	527	5.9	36.622	E
C-A	790			790			
A-B	83			83			
A-C	898			898			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	309	406	0.761	395	14.1	231.826	F
B-A	56	152	0.368	75	0.6	56.700	F
C-AB	314	501	0.626	330	1.8	22.821	C
C-A	765			765			
A-B	67			67			
A-C	734			734			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	259	468	0.554	310	1.3	30.142	D
B-A	47	218	0.215	48	0.3	21.408	C
C-AB	259	529	0.490	262	1.0	13.670	B
C-A	644			644			
A-B	56			56			
A-C	614			614			

2030 Base + Dev, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		13.22	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2030 Base + Dev	SAT	ONE HOUR	11:30	13:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		✓	786	100.000
B - Water Street		✓	352	100.000
C - Molesworth Street (N)		✓	1109	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	A - Molesworth Street (S)	0	76	710
	B - Water Street	70	0	282
	C - Molesworth Street (N)	793	316	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.84	53.66	4.3	F
B-A	0.67	88.62	1.7	F
C-AB	0.73	25.66	2.7	D
C-A				
A-B				
A-C				

Main Results for each time segment

11:30 - 11:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	212	488	0.435	209	0.8	12.788	B
B-A	53	251	0.210	52	0.3	17.948	C
C-AB	238	549	0.433	235	0.7	11.351	B
C-A	597			597			
A-B	57			57			
A-C	535			535			

11:45 - 12:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	254	449	0.565	252	1.2	18.077	C
B-A	63	195	0.323	62	0.5	27.013	D
C-AB	285	521	0.547	283	1.2	15.053	C
C-A	712			712			
A-B	68			68			
A-C	638			638			

12:00 - 12:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	310	376	0.825	301	3.7	42.945	E
B-A	77	117	0.659	73	1.6	75.211	F
C-AB	375	514	0.729	369	2.6	24.064	C
C-A	846			846			
A-B	84			84			
A-C	782			782			

12:15 - 12:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	310	371	0.837	308	4.3	53.662	F
B-A	77	115	0.668	76	1.7	88.624	F
C-AB	375	514	0.729	374	2.7	25.665	D
C-A	846			846			
A-B	84			84			
A-C	782			782			

12:30 - 12:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	254	444	0.571	265	1.4	21.246	C
B-A	63	192	0.327	68	0.5	29.973	D
C-AB	285	521	0.547	291	1.3	16.030	C
C-A	712			712			
A-B	68			68			
A-C	638			638			

12:45 - 13:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	212	487	0.436	215	0.8	13.345	B
B-A	53	250	0.211	54	0.3	18.451	C
C-AB	238	549	0.433	240	0.8	11.705	B
C-A	597			597			
A-B	57			57			
A-C	535			535			

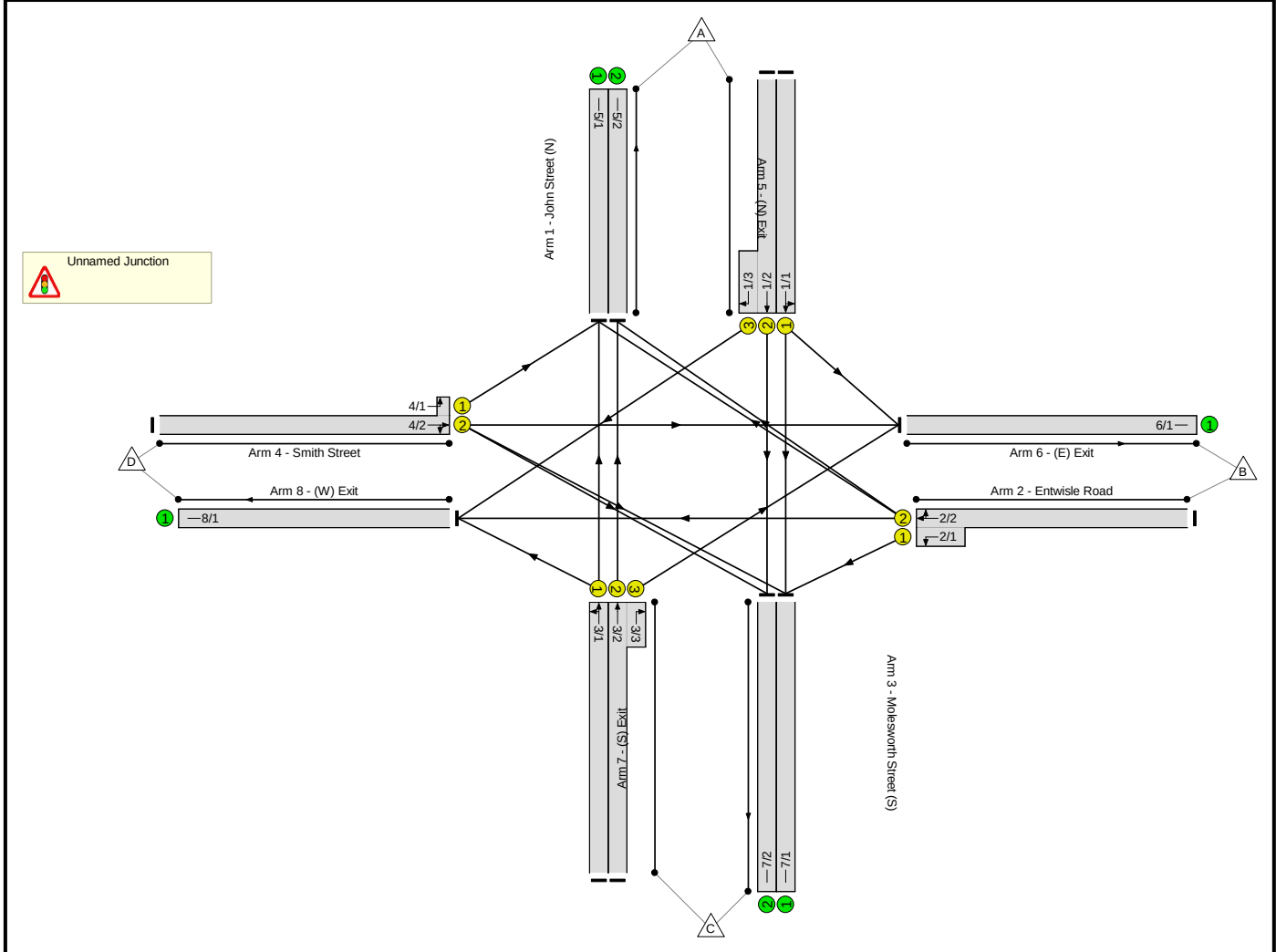
Full Input Data And Results

Full Input Data And Results

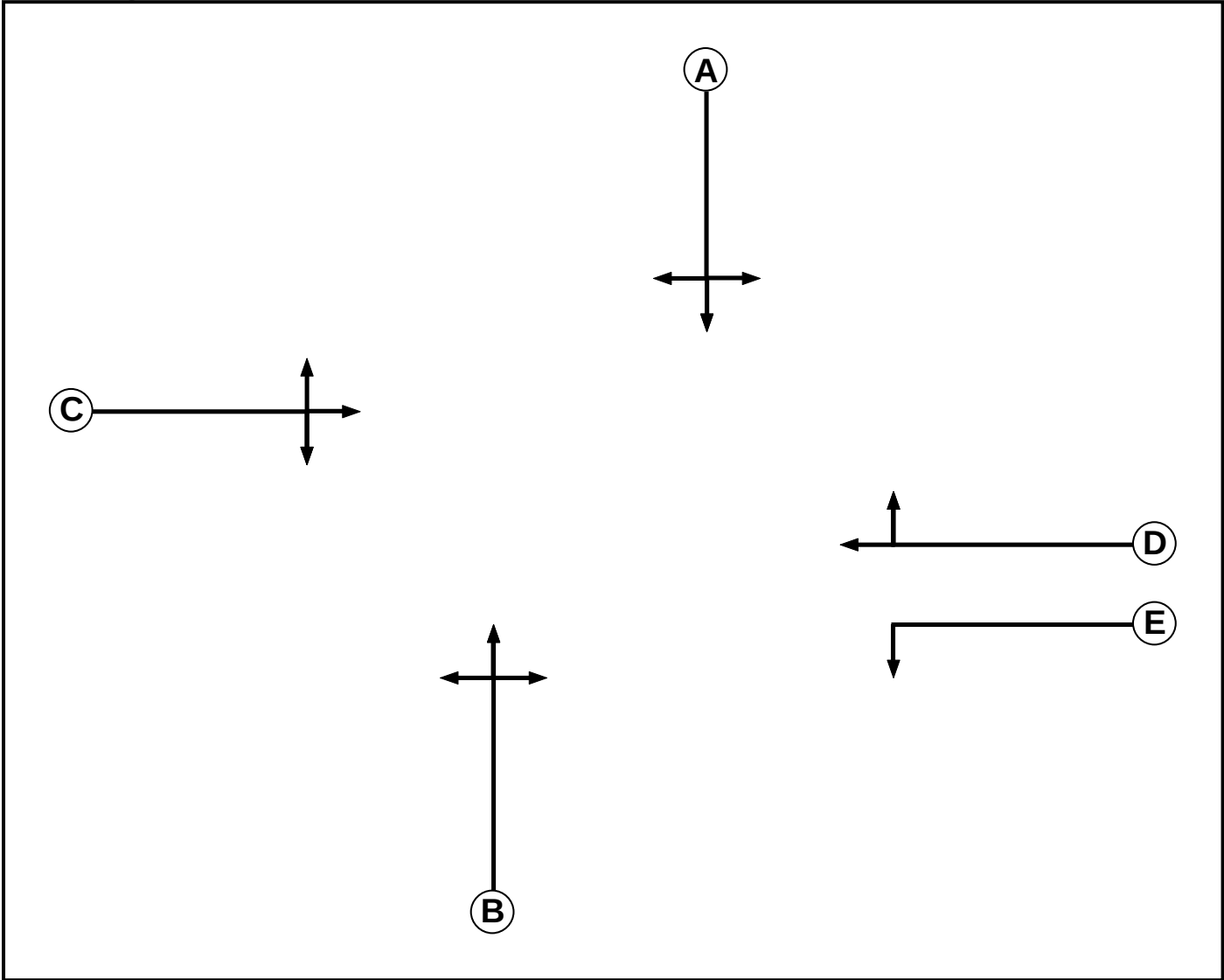
User and Project Details

Project:	53024 – Molesworth Street, Rochdale
Title:	Molesworth Street / Entwisle Road signalised crossroad junction
Location:	Rochdale
Additional detail:	
File name:	Molesworth Street - Entwisle Road Crossroad Junciton - 13.02.25
Author:	RW
Company:	Andrew Moseley Associates
Address:	15 St Pauls Street, Leeds

Network Layout Diagram



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	Traffic		7	7

Full Input Data And Results

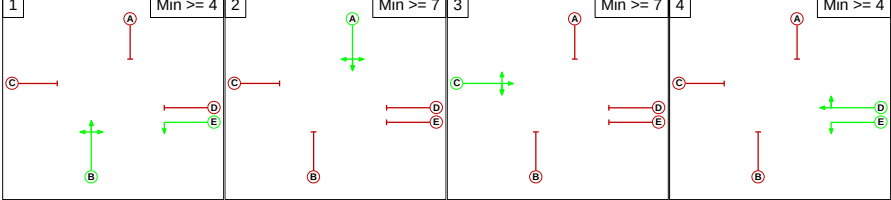
Phase Intergreens Matrix

Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		6	6	6	8
	B	6		8	6	-
	C	6	6		6	9
	D	7	6	9		-
	E	4	-	4	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage	To Stage				
		1	2	3	4
	1		6	8	6
	2	8		6	8
	3	9	6		9
	4	6	7	9	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: Unnamed 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 (John Street (N))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 6 Left	8.55
1/2 (John Street (N))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 7 Ahead	400.00
1/2 (John Street (N))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 7 Ahead	400.00
1/3 (John Street (N))	U	A	2	3	5.0	Geom	-	3.70	0.00	Y	Arm 8 Right	7.60
2/1 (Entwisle Road)	U	E	2	3	3.9	Geom	-	4.70	0.00	Y	Arm 7 Left	15.50
2/2 (Entwisle Road)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Right	11.00
2/2 (Entwisle Road)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 8 Ahead	400.00
3/1 (Molesworth Street (S))	U	B	2	3	60.0	Geom	-	3.45	0.00	Y	Arm 5 Ahead	400.00
3/1 (Molesworth Street (S))	U	B	2	3	60.0	Geom	-	3.45	0.00	Y	Arm 8 Left	14.90
3/2 (Molesworth Street (S))	U	B	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 5 Ahead	400.00
3/3 (Molesworth Street (S))	U	B	2	3	3.6	Geom	-	3.60	0.00	Y	Arm 6 Right	6.80
4/1 (Smith Street)	U	C	2	3	1.0	Geom	-	5.00	0.00	Y	Arm 5 Left	18.50
4/2 (Smith Street)	U	C	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 6 Ahead	413.00
4/2 (Smith Street)	U	C	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 7 Right	12.50
5/1 ((N) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2 ((N) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 ((E) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 ((S) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2 ((S) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 ((W) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2024 Base AM'	08:00	09:00	01:00	
2: '2024 Base PM'	16:00	17:00	01:00	
3: '2024 Base SAT'	11:45	12:45	01:00	
4: '2025 'Uplifted' Base AM'	08:00	09:00	01:00	
5: '2025 'Uplifted' Base PM'	16:00	17:00	01:00	
6: '2025 'Uplifted' Base SAT'	11:45	12:45	01:00	
7: '2030 Base AM'	08:00	09:00	01:00	
8: '2030 Base PM'	16:00	17:00	01:00	
9: '2030 Base SAT'	11:45	12:45	01:00	
10: '2030 Base + Development AM'	08:00	09:00	01:00	
11: '2030 Base + Development PM'	16:00	17:00	01:00	
12: '2030 Base + Development SAT'	11:45	12:45	01:00	

Scenario 1: '2024 Base AM' (FG1: '2024 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	95	566	32	693
	B	52	0	376	26	454
	C	471	325	0	56	852
	D	23	23	39	0	85
	Tot.	546	443	981	114	2084

Traffic Lane Flows

Lane	Scenario 1: 2024 Base AM
Junction: Unnamed Junction	
1/1	326
1/2 (with short)	367(In) 335(Out)
1/3 (short)	32
2/1 (short)	376
2/2 (with short)	454(In) 78(Out)
3/1	412
3/2 (with short)	440(In) 115(Out)
3/3 (short)	325
4/1 (short)	23
4/2 (with short)	85(In) 62(Out)
5/1	405
5/2	141
6/1	443
7/1	627
7/2	354
8/1	114

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	29.1 %	1884	1884
				Arm 7 Ahead	400.00	70.9 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	66.7 %	1827	1827
				Arm 8 Ahead	400.00	33.3 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	86.4 %	1927	1927
				Arm 8 Left	14.90	13.6 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	37.1 %	1881	1881
				Arm 7 Right	12.50	62.9 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2024 Base PM' (FG2: '2024 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	151	684	38	873
	B	82	0	376	33	491
	C	536	496	0	58	1090
	D	38	46	61	0	145
	Tot.	656	693	1121	129	2599

Traffic Lane Flows

Lane	Scenario 2: 2024 Base PM
Junction: Unnamed Junction	
1/1	413
1/2 (with short)	460(In) 422(Out)
1/3 (short)	38
2/1 (short)	376
2/2 (with short)	491(In) 115(Out)
3/1	584
3/2 (with short)	506(In) 10(Out)
3/3 (short)	496
4/1 (short)	38
4/2 (with short)	145(In) 107(Out)
5/1	605
5/2	51
6/1	693
7/1	669
7/2	452
8/1	129

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	36.6 %	1861	1861
				Arm 7 Ahead	400.00	63.4 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	71.3 %	1816	1816
				Arm 8 Ahead	400.00	28.7 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	90.1 %	1934	1934
				Arm 8 Left	14.90	9.9 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	43.0 %	1893	1893
				Arm 7 Right	12.50	57.0 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2024 Base SAT' (FG3: '2024 Base SAT', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	97	632	45	774
	B	84	0	346	30	460
	C	571	299	0	56	926
	D	26	25	54	0	105
	Tot.	681	421	1032	131	2265

Traffic Lane Flows

Lane	Scenario 3: 2024 Base SAT
Junction: Unnamed Junction	
1/1	366
1/2 (with short)	408(In) 363(Out)
1/3 (short)	45
2/1 (short)	346
2/2 (with short)	460(In) 114(Out)
3/1	439
3/2 (with short)	487(In) 188(Out)
3/3 (short)	299
4/1 (short)	26
4/2 (with short)	105(In) 79(Out)
5/1	451
5/2	230
6/1	421
7/1	642
7/2	390
8/1	131

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	26.5 %	1892	1892
				Arm 7 Ahead	400.00	73.5 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	73.7 %	1811	1811
				Arm 8 Ahead	400.00	26.3 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	87.2 %	1929	1929
				Arm 8 Left	14.90	12.8 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	31.6 %	1870	1870
				Arm 7 Right	12.50	68.4 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2025 'Uplifted' Base AM' (FG4: '2025 'Uplifted' Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	96	570	32	698
	B	52	0	378	27	457
	C	474	327	0	57	858
	D	23	23	39	0	85
	Tot.	549	446	987	116	2098

Traffic Lane Flows

Lane	Scenario 4: 2025 'Uplifted' Base AM
Junction: Unnamed Junction	
1/1	328
1/2 (with short)	370(In) 338(Out)
1/3 (short)	32
2/1 (short)	378
2/2 (with short)	457(In) 79(Out)
3/1	415
3/2 (with short)	443(In) 116(Out)
3/3 (short)	327
4/1 (short)	23
4/2 (with short)	85(In) 62(Out)
5/1	407
5/2	142
6/1	446
7/1	630
7/2	357
8/1	116

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	29.3 %	1883	1883
				Arm 7 Ahead	400.00	70.7 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	65.8 %	1829	1829
				Arm 8 Ahead	400.00	34.2 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	86.3 %	1927	1927
				Arm 8 Left	14.90	13.7 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	37.1 %	1881	1881
				Arm 7 Right	12.50	62.9 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2025 'Uplifted' Base PM' (FG5: '2025 'Uplifted' Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	152	689	39	880
	B	82	0	378	34	494
	C	540	499	0	58	1097
	D	38	46	61	0	145
	Tot.	660	697	1128	131	2616

Traffic Lane Flows

Lane	Scenario 5: 2025 'Uplifted' Base PM
Junction: Unnamed Junction	
1/1	417
1/2 (with short)	463(In) 424(Out)
1/3 (short)	39
2/1 (short)	378
2/2 (with short)	494(In) 116(Out)
3/1	588
3/2 (with short)	509(In) 10(Out)
3/3 (short)	499
4/1 (short)	38
4/2 (with short)	145(In) 107(Out)
5/1	609
5/2	51
6/1	697
7/1	674
7/2	454
8/1	131

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	36.5 %	1862	1862
				Arm 7 Ahead	400.00	63.5 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	70.7 %	1818	1818
				Arm 8 Ahead	400.00	29.3 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	90.1 %	1934	1934
				Arm 8 Left	14.90	9.9 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	43.0 %	1893	1893
				Arm 7 Right	12.50	57.0 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2025 'Uplifted' Base SAT' (FG6: '2025 'Uplifted' Base SAT', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	98	636	46	780
	B	85	0	348	30	463
	C	575	301	0	57	933
	D	26	25	55	0	106
	Tot.	686	424	1039	133	2282

Traffic Lane Flows

Lane	Scenario 6: 2025 'Uplifted' Base SAT
Junction: Unnamed Junction	
1/1	367
1/2 (with short)	413(In) 367(Out)
1/3 (short)	46
2/1 (short)	348
2/2 (with short)	463(In) 115(Out)
3/1	427
3/2 (with short)	506(In) 205(Out)
3/3 (short)	301
4/1 (short)	26
4/2 (with short)	106(In) 80(Out)
5/1	439
5/2	247
6/1	424
7/1	645
7/2	394
8/1	133

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	26.7 %	1891	1891
				Arm 7 Ahead	400.00	73.3 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	73.9 %	1811	1811
				Arm 8 Ahead	400.00	26.1 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	86.7 %	1928	1928
				Arm 8 Left	14.90	13.3 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	31.3 %	1869	1869
				Arm 7 Right	12.50	68.8 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2030 Base AM' (FG7: '2030 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	102	603	34	739
	B	55	0	401	28	484
	C	502	347	0	60	909
	D	25	25	42	0	92
	Tot.	582	474	1046	122	2224

Traffic Lane Flows

Lane	Scenario 7: 2030 Base AM
Junction: Unnamed Junction	
1/1	349
1/2 (with short)	390(In) 356(Out)
1/3 (short)	34
2/1 (short)	401
2/2 (with short)	484(In) 83(Out)
3/1	448
3/2 (with short)	461(In) 114(Out)
3/3 (short)	347
4/1 (short)	25
4/2 (with short)	92(In) 67(Out)
5/1	441
5/2	141
6/1	474
7/1	669
7/2	377
8/1	122

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	29.2 %	1883	1883
				Arm 7 Ahead	400.00	70.8 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	66.3 %	1828	1828
				Arm 8 Ahead	400.00	33.7 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	86.6 %	1928	1928
				Arm 8 Left	14.90	13.4 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	37.3 %	1881	1881
				Arm 7 Right	12.50	62.7 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2030 Base PM' (FG8: '2030 Base PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	0	161	728	41	930
	B	87	0	400	36	523
	C	570	528	0	62	1160
	D	40	49	65	0	154
	Tot.	697	738	1193	139	2767

Traffic Lane Flows

Lane	Scenario 8: 2030 Base PM
Junction: Unnamed Junction	
1/1	442
1/2 (with short)	488(In) 447(Out)
1/3 (short)	41
2/1 (short)	400
2/2 (with short)	523(In) 123(Out)
3/1	617
3/2 (with short)	543(In) 15(Out)
3/3 (short)	528
4/1 (short)	40
4/2 (with short)	154(In) 114(Out)
5/1	639
5/2	58
6/1	738
7/1	714
7/2	479
8/1	139

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	36.4 %	1862	1862
				Arm 7 Ahead	400.00	63.6 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	70.7 %	1818	1818
				Arm 8 Ahead	400.00	29.3 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	90.0 %	1934	1934
				Arm 8 Left	14.90	10.0 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	43.0 %	1893	1893
				Arm 7 Right	12.50	57.0 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2030 Base SAT' (FG9: '2030 Base SAT', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	103	672	48	823
	B	89	0	368	32	489
	C	607	318	0	60	985
	D	28	27	58	0	113
	Tot.	724	448	1098	140	2410

Traffic Lane Flows

Lane	Scenario 9: 2030 Base SAT
Junction: Unnamed Junction	
1/1	389
1/2 (with short)	434(In) 386(Out)
1/3 (short)	48
2/1 (short)	368
2/2 (with short)	489(In) 121(Out)
3/1	460
3/2 (with short)	525(In) 207(Out)
3/3 (short)	318
4/1 (short)	28
4/2 (with short)	113(In) 85(Out)
5/1	473
5/2	251
6/1	448
7/1	683
7/2	415
8/1	140

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	26.5 %	1892	1892
				Arm 7 Ahead	400.00	73.5 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	73.6 %	1812	1812
				Arm 8 Ahead	400.00	26.4 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	87.0 %	1928	1928
				Arm 8 Left	14.90	13.0 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	31.8 %	1870	1870
				Arm 7 Right	12.50	68.2 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2030 Base + Dev AM' (FG10: '2030 Base + Development AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	102	605	34	741
	B	55	0	402	28	485
	C	504	348	0	61	913
	D	25	25	43	0	93
	Tot.	584	475	1050	123	2232

Traffic Lane Flows

Lane	Scenario 10: 2030 Base + Dev AM
Junction: Unnamed Junction	
1/1	350
1/2 (with short)	391(In) 357(Out)
1/3 (short)	34
2/1 (short)	402
2/2 (with short)	485(In) 83(Out)
3/1	450
3/2 (with short)	463(In) 115(Out)
3/3 (short)	348
4/1 (short)	25
4/2 (with short)	93(In) 68(Out)
5/1	442
5/2	142
6/1	475
7/1	672
7/2	378
8/1	123

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	29.1 %	1884	1884
				Arm 7 Ahead	400.00	70.9 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	66.3 %	1828	1828
				Arm 8 Ahead	400.00	33.7 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	86.4 %	1927	1927
				Arm 8 Left	14.90	13.6 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	36.8 %	1880	1880
				Arm 7 Right	12.50	63.2 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 11: '2030 Base + Dev PM' (FG11: '2030 Base + Development PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	0	161	731	41	933
	B	87	0	402	36	525
	C	573	530	0	64	1167
	D	40	49	67	0	156
	Tot.	700	740	1200	141	2781

Traffic Lane Flows

Lane	Scenario 11: 2030 Base + Dev PM
Junction: Unnamed Junction	
1/1	443
1/2 (with short)	490(In) 449(Out)
1/3 (short)	41
2/1 (short)	402
2/2 (with short)	525(In) 123(Out)
3/1	622
3/2 (with short)	545(In) 15(Out)
3/3 (short)	530
4/1 (short)	40
4/2 (with short)	156(In) 116(Out)
5/1	642
5/2	58
6/1	740
7/1	718
7/2	482
8/1	141

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	36.3 %	1862	1862
				Arm 7 Ahead	400.00	63.7 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	70.7 %	1818	1818
				Arm 8 Ahead	400.00	29.3 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	89.7 %	1933	1933
				Arm 8 Left	14.90	10.3 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	42.2 %	1891	1891
				Arm 7 Right	12.50	57.8 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 12: '2030 Base + Dev SAT' (FG12: '2030 Base + Development SAT', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	0	103	676	48	827
	B	89	0	371	32	492
	C	611	321	0	62	994
	D	28	27	60	0	115
	Tot.	728	451	1107	142	2428

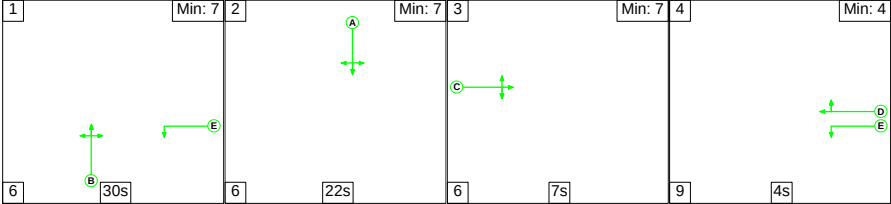
Traffic Lane Flows

Lane	Scenario 12: 2030 Base + Dev SAT
Junction: Unnamed Junction	
1/1	391
1/2 (with short)	436(In) 388(Out)
1/3 (short)	48
2/1 (short)	371
2/2 (with short)	492(In) 121(Out)
3/1	465
3/2 (with short)	529(In) 208(Out)
3/3 (short)	321
4/1 (short)	28
4/2 (with short)	115(In) 87(Out)
5/1	476
5/2	252
6/1	451
7/1	689
7/2	418
8/1	142

Lane Saturation Flows

Junction: Unnamed 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 (John Street (N))	3.70	0.00	Y	Arm 6 Left	8.55	26.3 %	1892	1892
				Arm 7 Ahead	400.00	73.7 %		
1/2 (John Street (N))	3.70	0.00	Y	Arm 7 Ahead	400.00	100.0 %	1978	1978
1/3 (John Street (N))	3.70	0.00	Y	Arm 8 Right	7.60	100.0 %	1658	1658
2/1 (Entwisle Road)	4.70	0.00	Y	Arm 7 Left	15.50	100.0 %	1901	1901
2/2 (Entwisle Road)	3.80	0.00	Y	Arm 5 Right	11.00	73.6 %	1812	1812
				Arm 8 Ahead	400.00	26.4 %		
3/1 (Molesworth Street (S))	3.45	0.00	Y	Arm 5 Ahead	400.00	86.7 %	1928	1928
				Arm 8 Left	14.90	13.3 %		
3/2 (Molesworth Street (S))	3.60	0.00	Y	Arm 5 Ahead	400.00	100.0 %	1968	1968
3/3 (Molesworth Street (S))	3.60	0.00	Y	Arm 6 Right	6.80	100.0 %	1618	1618
4/1 (Smith Street)	5.00	0.00	Y	Arm 5 Left	18.50	100.0 %	1956	1956
4/2 (Smith Street)	4.10	0.00	Y	Arm 6 Ahead	413.00	31.0 %	1868	1868
				Arm 7 Right	12.50	69.0 %		
5/1 ((N) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 ((N) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 ((E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 ((S) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 ((S) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 ((W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

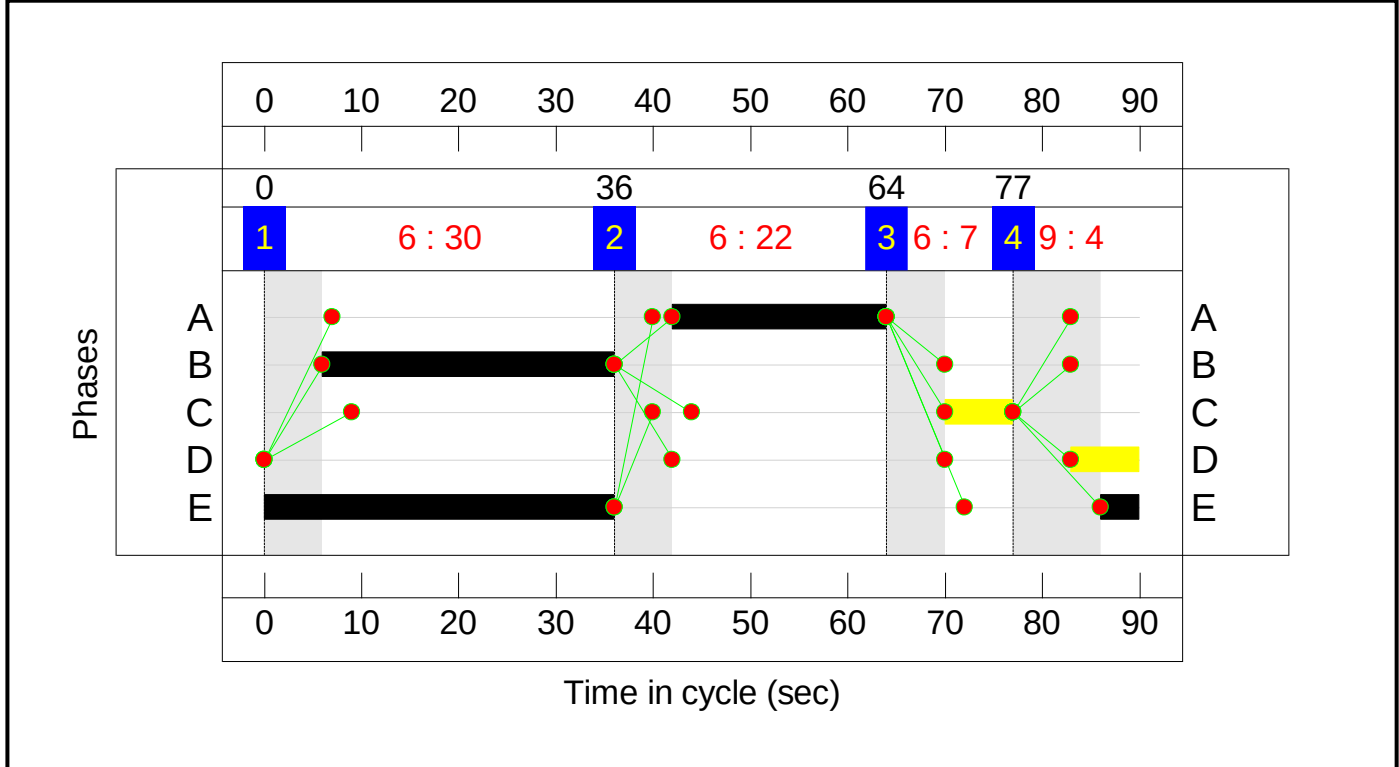
Scenario 1: '2024 Base AM' (FG1: '2024 Base AM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

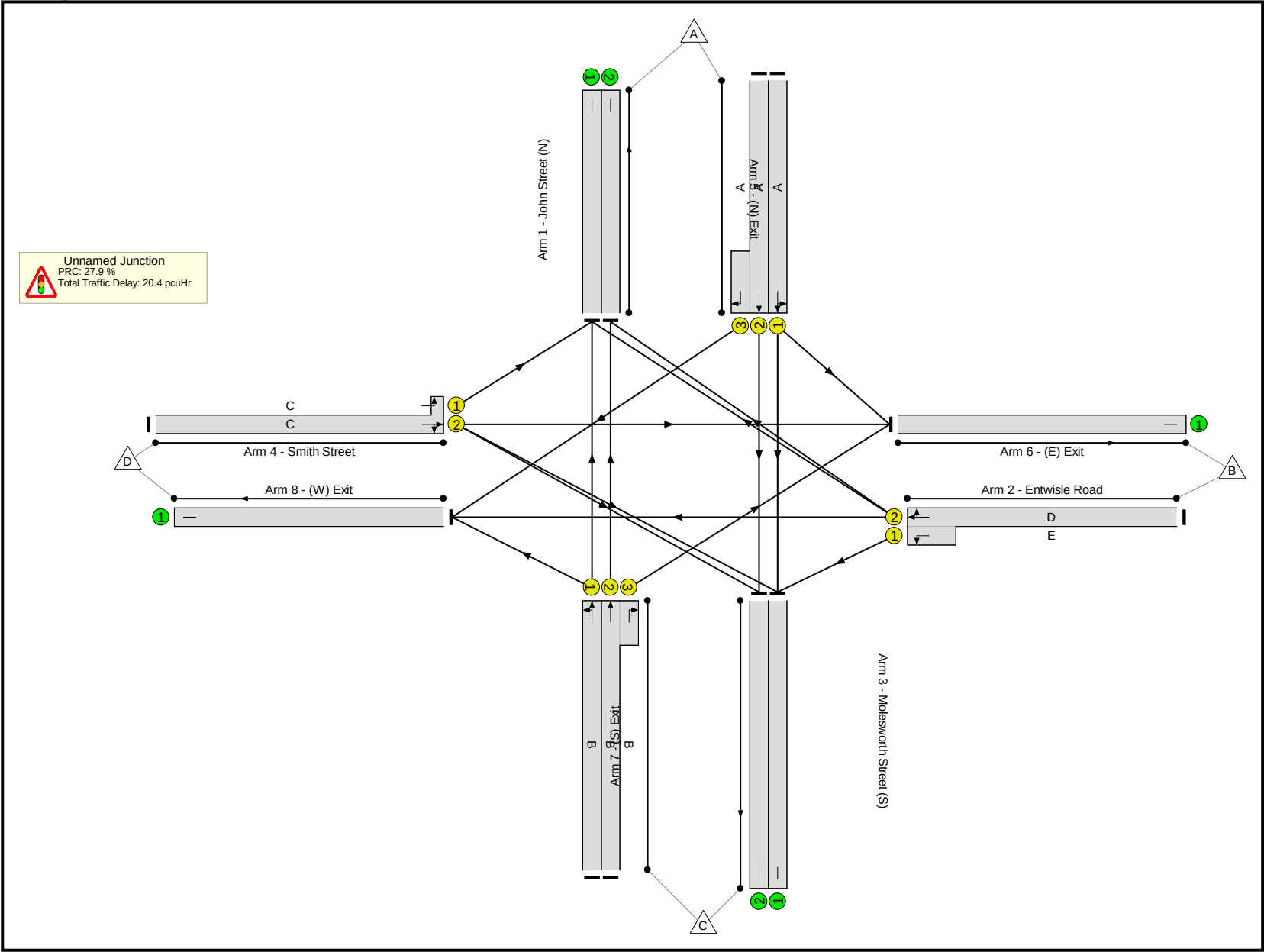
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	70.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	70.3%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	326	1884	481	67.7%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	367	1978:1658	476+45	70.3 : 70.3%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	454	1827:1901	156+749	49.9 : 50.2%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	412	1927	664	62.1%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	440	1968:1618	167+471	69.0 : 69.0%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	85	1881:1956	132+49	46.8 : 46.8%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	405	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	141	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	443	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	627	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	114	Inf	Inf	0.0%

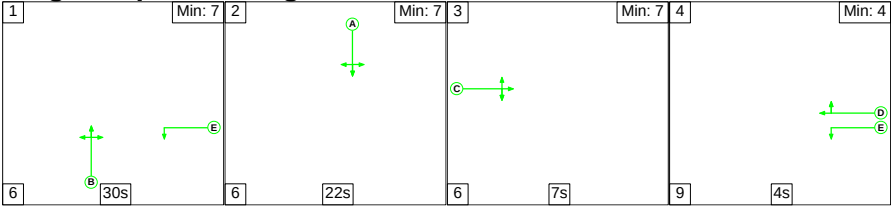
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.4	5.1	0.0	20.4	-	-	-	-
Unnamed Junction	-	-	0	0	0	15.4	5.1	0.0	20.4	-	-	-	-
1/1	326	326	-	-	-	2.7	1.0	-	3.8	41.6	7.3	1.0	8.4
1/2+1/3	367	367	-	-	-	3.0	1.2	-	4.2	41.4	7.8	1.2	8.9
2/2+2/1	454	454	-	-	-	2.9	0.5	-	3.4	27.3	6.9	0.5	7.4
3/1	412	412	-	-	-	2.8	0.8	-	3.6	31.7	8.6	0.8	9.4
3/2+3/3	440	440	-	-	-	2.9	1.1	-	4.0	33.0	7.9	1.1	9.0
4/2+4/1	85	85	-	-	-	0.9	0.4	-	1.3	57.1	1.6	0.4	2.1
5/1	405	405	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	141	141	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	443	443	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	627	627	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	354	354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	114	114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 27.9 Total Delay for Signalled Lanes (pcuHr): 20.44 Cycle Time (s): 90 PRC Over All Lanes (%): 27.9 Total Delay Over All Lanes(pcuHr): 20.44													

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	-	-	0	0	0	15.4	5.1	0.0	20.4	-	-	-	-
Unnamed Junction	-	-	0	0	0	15.4	5.1	0.0	20.4	-	-	-	-
1/1	326	326	-	-	-	2.7	1.0	-	3.8	41.6	7.3	1.0	8.4
1/2+1/3	367	367	-	-	-	3.0	1.2	-	4.2	41.4	7.8	1.2	8.9
2/2+2/1	454	454	-	-	-	2.9	0.5	-	3.4	27.3	6.9	0.5	7.4
3/1	412	412	-	-	-	2.8	0.8	-	3.6	31.7	8.6	0.8	9.4
3/2+3/3	440	440	-	-	-	2.9	1.1	-	4.0	33.0	7.9	1.1	9.0
4/2+4/1	85	85	-	-	-	0.9	0.4	-	1.3	57.1	1.6	0.4	2.1
5/1	405	405	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	141	141	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	443	443	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	627	627	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	354	354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	114	114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 27.9 Total Delay for Signalled Lanes (pcuHr): 20.44 Cycle Time (s): 90 PRC Over All Lanes (%): 27.9 Total Delay Over All Lanes(pcuHr): 20.44													

Full Input Data And Results

Scenario 2: '2024 Base PM' (FG2: '2024 Base PM', Plan 1: 'Network Control Plan 1')

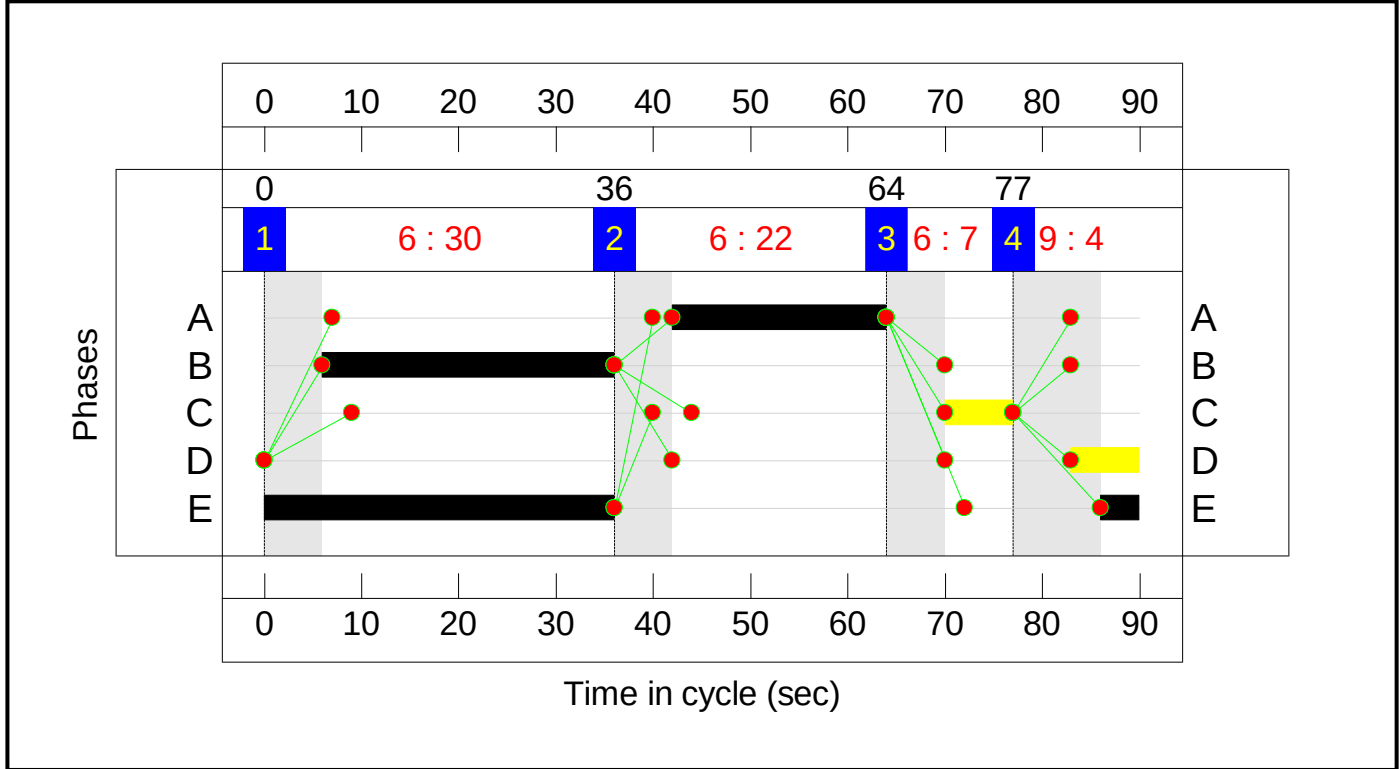
Stage Sequence Diagram



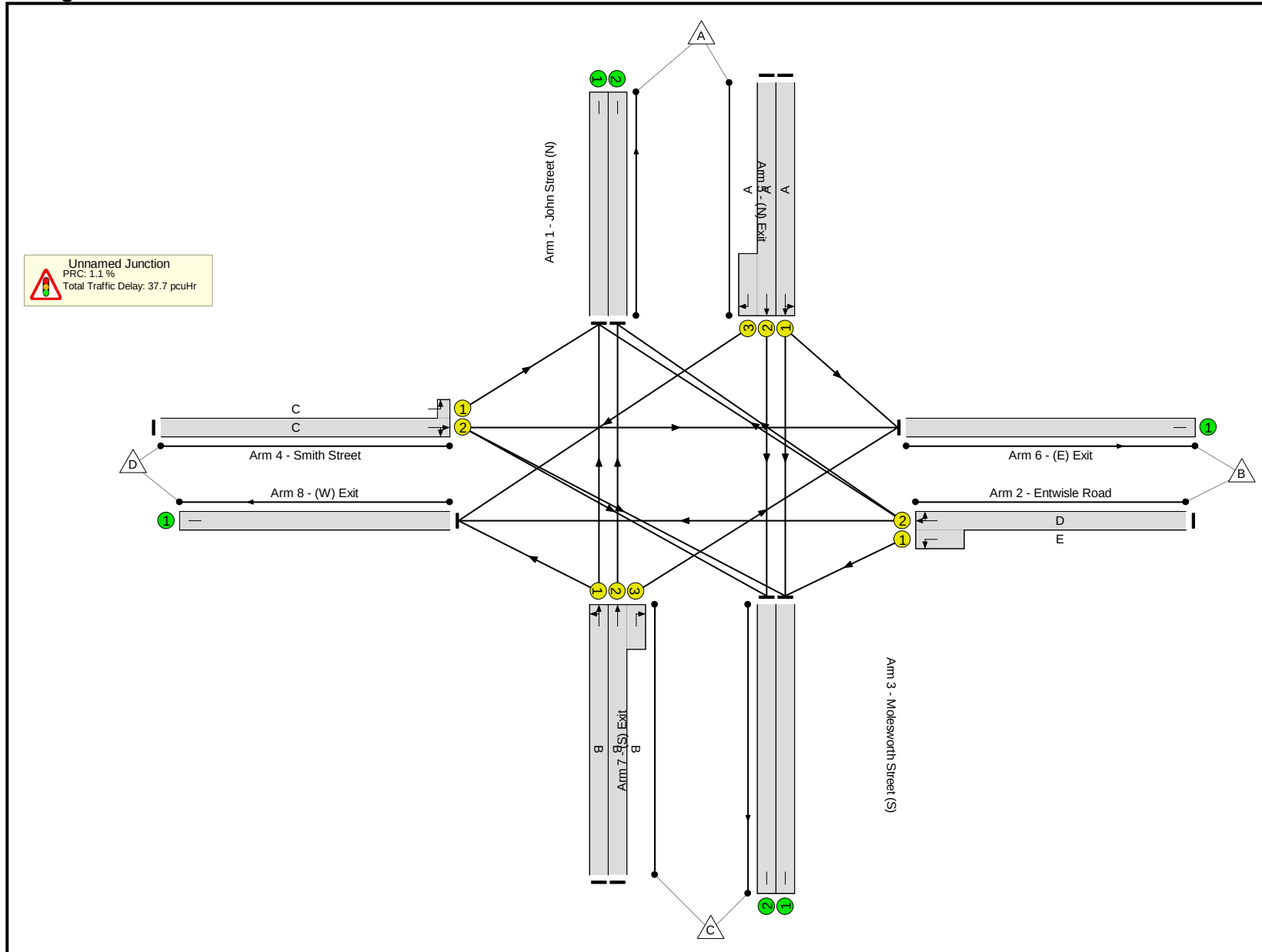
Stage Timings

Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

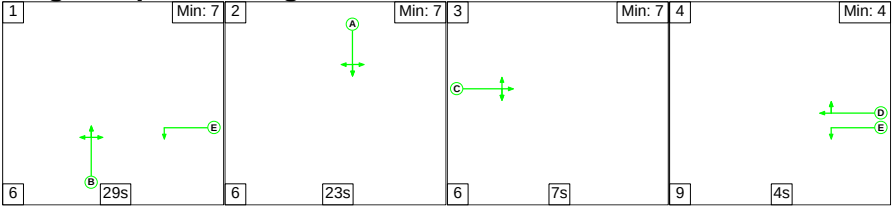
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	89.0%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	413	1861	476	86.8%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	460	1978:1658	478+43	88.3 : 88.3%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	491	1816:1901	161+528	71.2 : 71.2%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	584	1934	666	87.7%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	506	1968:1618	11+557	89.0 : 89.0%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	145	1893:1956	134+48	79.9 : 79.9%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	605	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	51	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	693	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	669	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	452	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	129	Inf	Inf	0.0%

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Full Input Data And Results

Scenario 3: '2024 Base SAT' (FG3: '2024 Base SAT', Plan 1: 'Network Control Plan 1')

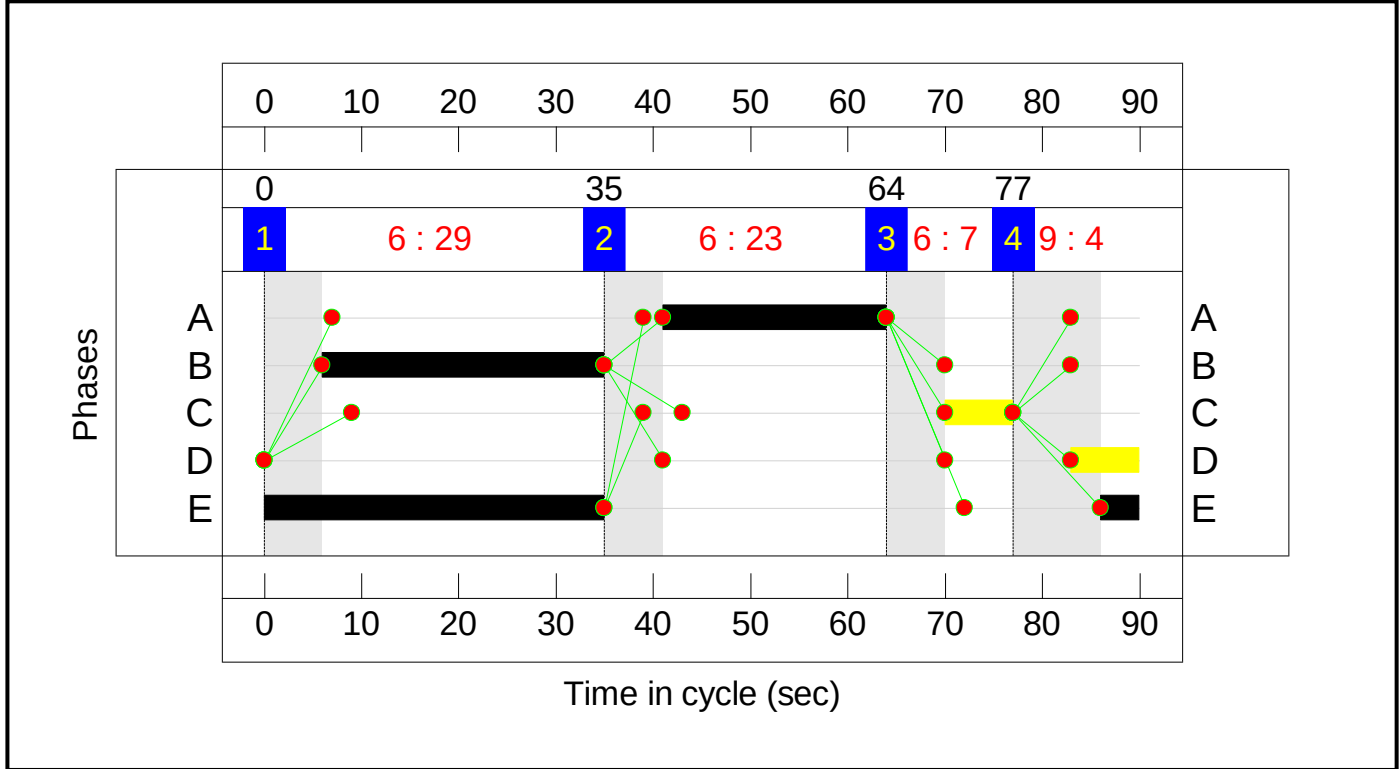
Stage Sequence Diagram



Stage Timings

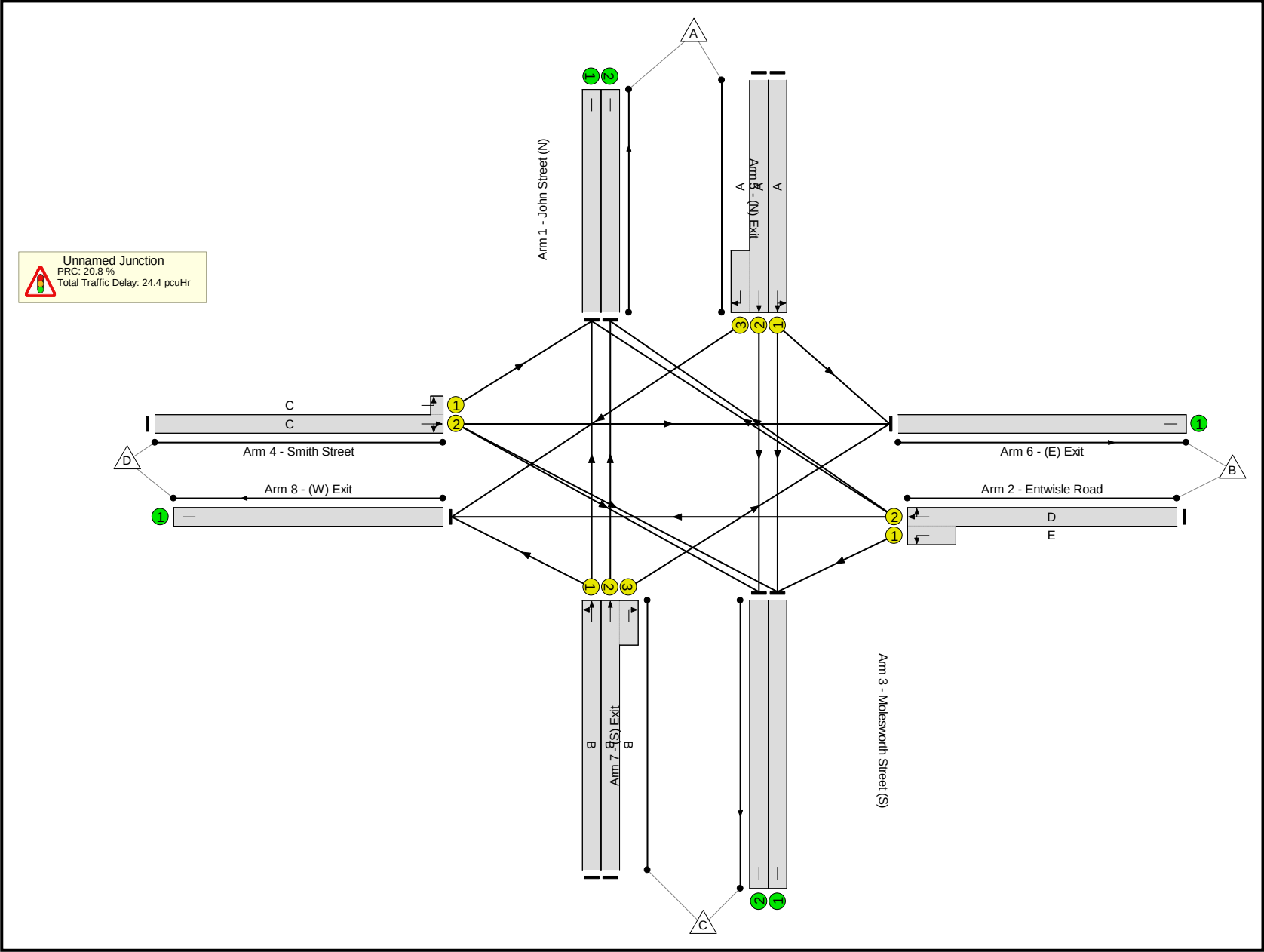
Stage	1	2	3	4
Duration	29	23	7	4
Change Point	0	35	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	74.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	74.5%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	23	-	366	1892	505	72.5%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	23	-	408	1978:1658	487+60	74.5 : 74.5%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:39	-	460	1811:1901	161+489	70.8 : 70.8%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	29	-	439	1929	643	68.3%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	29	-	487	1968:1618	258+411	72.8 : 72.8%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	105	1870:1956	135+44	58.6 : 58.6%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	451	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	230	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	642	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	390	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	131	Inf	Inf	0.0%

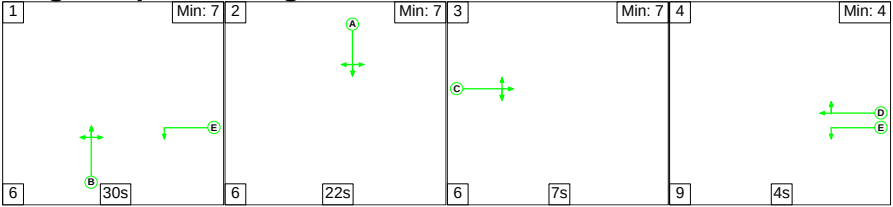
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Avg. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.4	7.0	0.0	24.4	-	-	-	-
Unnamed Junction	-	-	0	0	0	17.4	7.0	0.0	24.4	-	-	-	-
1/1	366	366	-	-	-	3.1	1.3	-	4.3	42.8	8.2	1.3	9.5
1/2+1/3	408	408	-	-	-	3.4	1.4	-	4.8	42.2	8.6	1.4	10.0
2/2+2/1	460	460	-	-	-	3.4	1.2	-	4.6	35.6	6.6	1.2	7.8
3/1	439	439	-	-	-	3.2	1.1	-	4.2	34.6	9.4	1.1	10.5
3/2+3/3	487	487	-	-	-	3.3	1.3	-	4.6	34.1	8.0	1.3	9.3
4/2+4/1	105	105	-	-	-	1.1	0.7	-	1.8	62.9	2.2	0.7	2.9
5/1	451	451	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	390	390	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	131	131	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 20.8 Total Delay for Signalled Lanes (pcuHr): 24.36 Cycle Time (s): 90 PRC Over All Lanes (%): 20.8 Total Delay Over All Lanes(pcuHr): 24.36													

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	-	-	0	0	0	17.4	7.0	0.0	24.4	-	-	-	-
Unnamed Junction	-	-	0	0	0	17.4	7.0	0.0	24.4	-	-	-	-
1/1	366	366	-	-	-	3.1	1.3	-	4.3	42.8	8.2	1.3	9.5
1/2+1/3	408	408	-	-	-	3.4	1.4	-	4.8	42.2	8.6	1.4	10.0
2/2+2/1	460	460	-	-	-	3.4	1.2	-	4.6	35.6	6.6	1.2	7.8
3/1	439	439	-	-	-	3.2	1.1	-	4.2	34.6	9.4	1.1	10.5
3/2+3/3	487	487	-	-	-	3.3	1.3	-	4.6	34.1	8.0	1.3	9.3
4/2+4/1	105	105	-	-	-	1.1	0.7	-	1.8	62.9	2.2	0.7	2.9
5/1	451	451	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	390	390	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	131	131	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 20.8 Total Delay for Signalled Lanes (pcuHr): 24.36 Cycle Time (s): 90 PRC Over All Lanes (%): 20.8 Total Delay Over All Lanes(pcuHr): 24.36													

Full Input Data And Results

Scenario 4: '2025 'Uplifted' Base AM' (FG4: '2025 'Uplifted' Base AM', Plan 1: 'Network Control Plan 1')

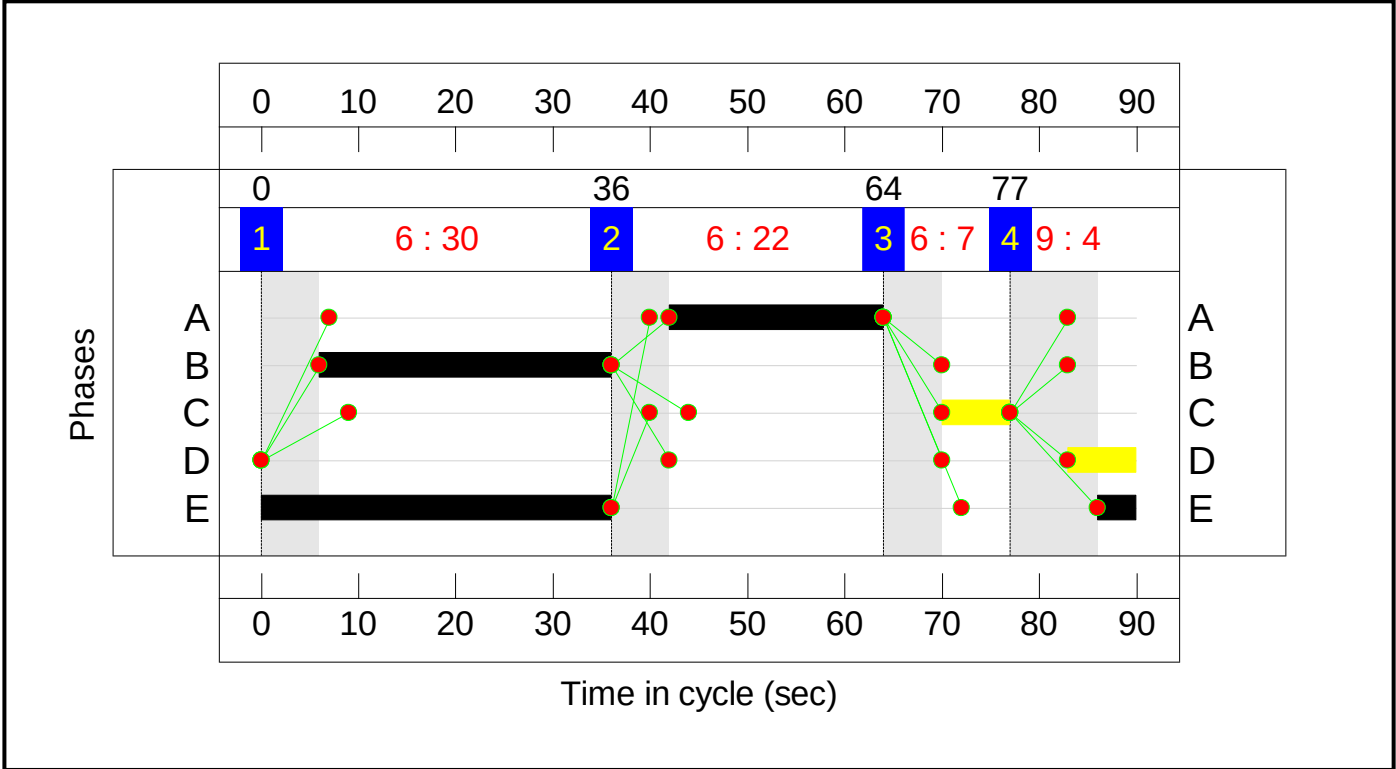
Stage Sequence Diagram



Stage Timings

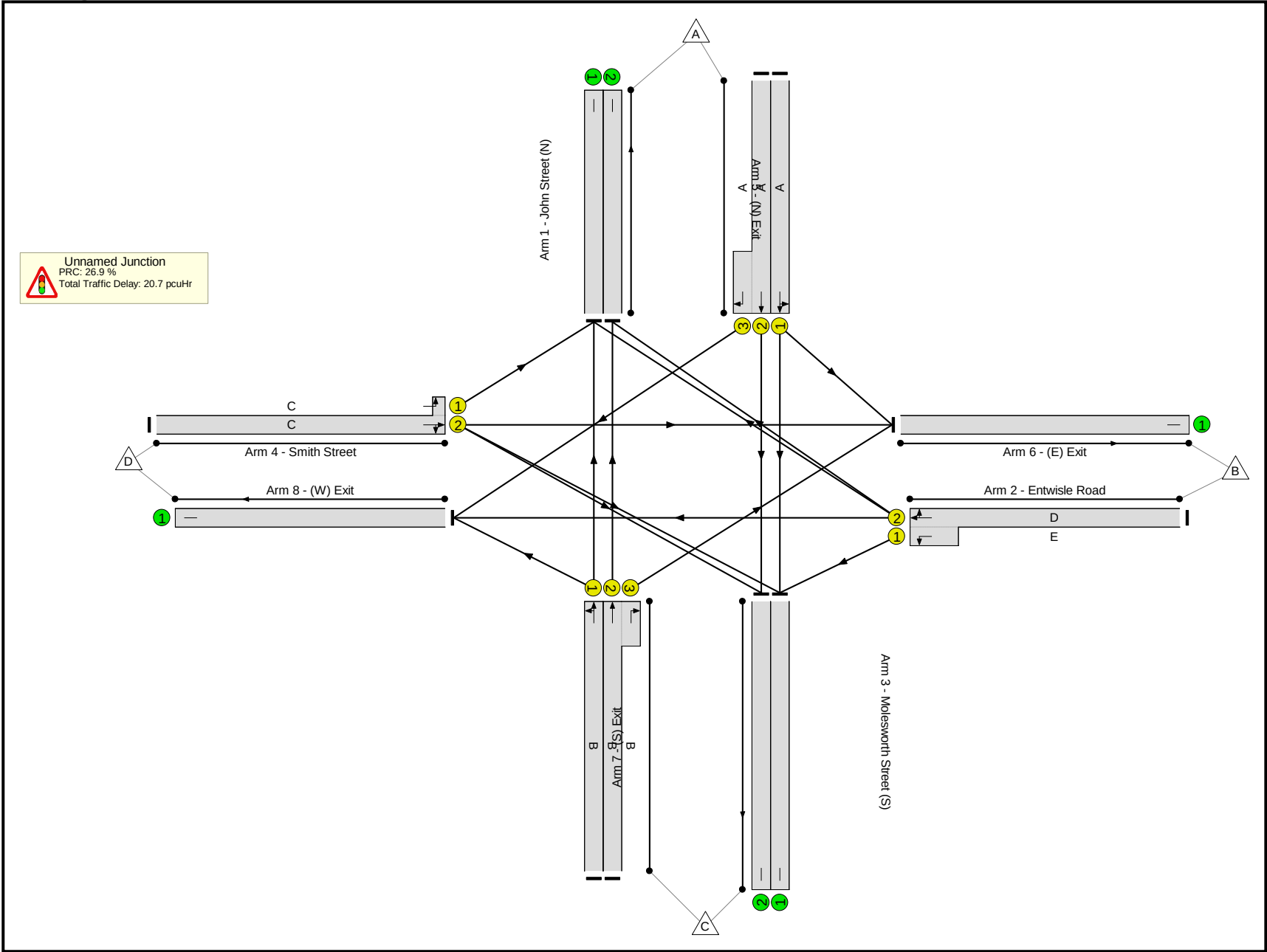
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	70.9%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	70.9%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	328	1883	481	68.2%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	370	1978:1658	476+45	70.9 : 70.9%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	457	1829:1901	158+748	49.8 : 50.5%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	415	1927	664	62.5%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	443	1968:1618	167+471	69.5 : 69.5%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	85	1881:1956	132+49	46.8 : 46.8%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	407	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	142	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	630	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	357	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	116	Inf	Inf	0.0%

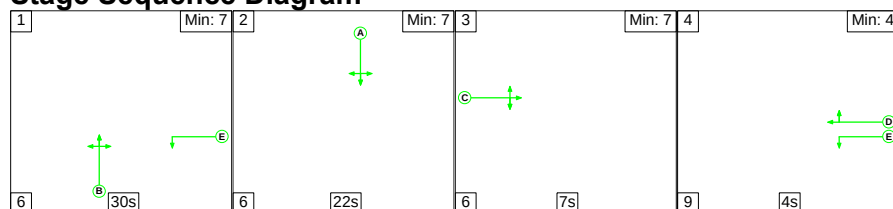
Full Input Data And Results

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	-	-	0	0	0	15.5	5.2	0.0	20.7	-	-	-	-
Unnamed Junction	-	-	0	0	0	15.5	5.2	0.0	20.7	-	-	-	-
1/1	328	328	-	-	-	2.8	1.1	-	3.8	41.8	7.4	1.1	8.4
1/2+1/3	370	370	-	-	-	3.1	1.2	-	4.3	41.7	7.9	1.2	9.1
2/2+2/1	457	457	-	-	-	3.0	0.5	-	3.5	27.4	6.9	0.5	7.4
3/1	415	415	-	-	-	2.8	0.8	-	3.7	31.8	8.6	0.8	9.5
3/2+3/3	443	443	-	-	-	3.0	1.1	-	4.1	33.2	8.1	1.1	9.2
4/2+4/1	85	85	-	-	-	0.9	0.4	-	1.3	57.1	1.6	0.4	2.1
5/1	407	407	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	630	630	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	116	116	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 26.9 Total Delay for Signalled Lanes (pcuHr): 20.67 Cycle Time (s): 90 PRC Over All Lanes (%): 26.9 Total Delay Over All Lanes(pcuHr): 20.67													

Full Input Data And Results

Scenario 5: '2025 'Uplifted' Base PM' (FG5: '2025 'Uplifted' Base PM', Plan 1: 'Network Control Plan 1')

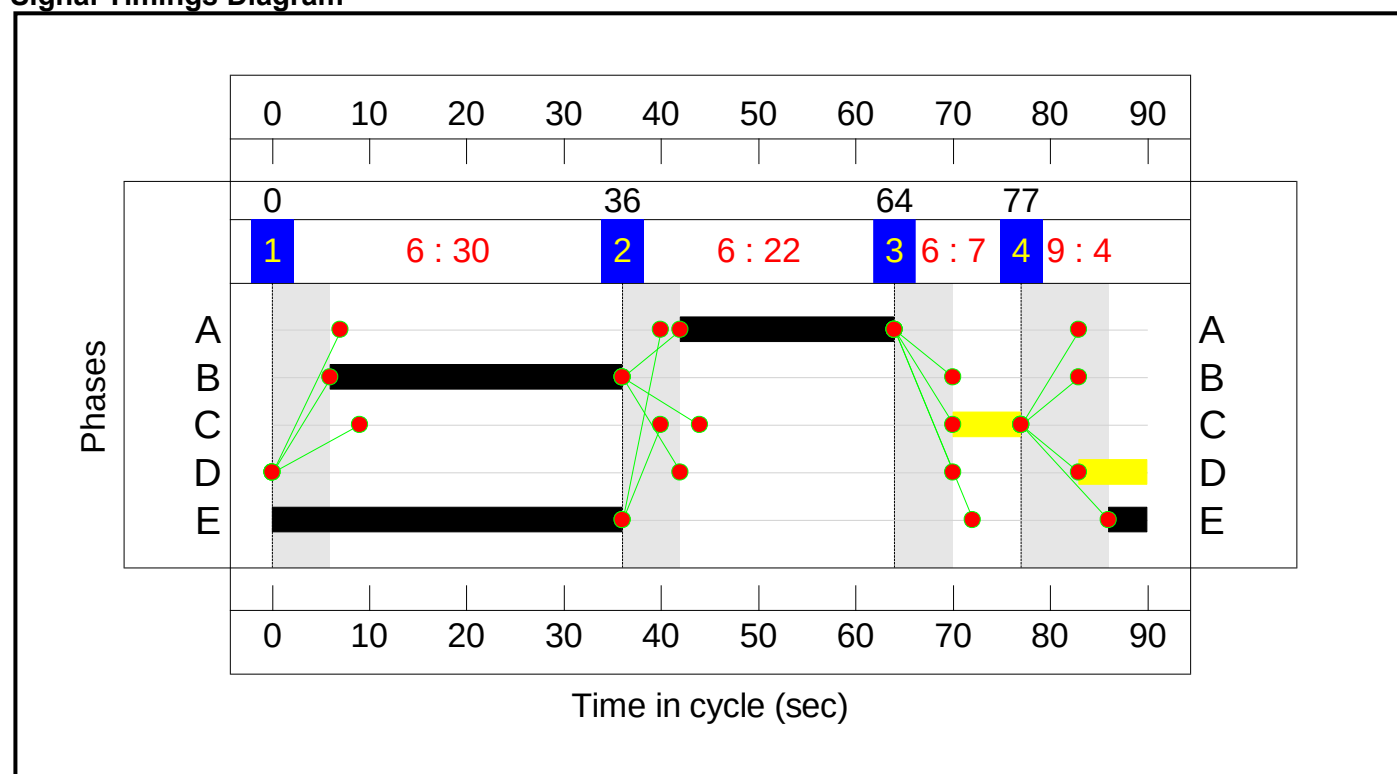
Stage Sequence Diagram



Stage Timings

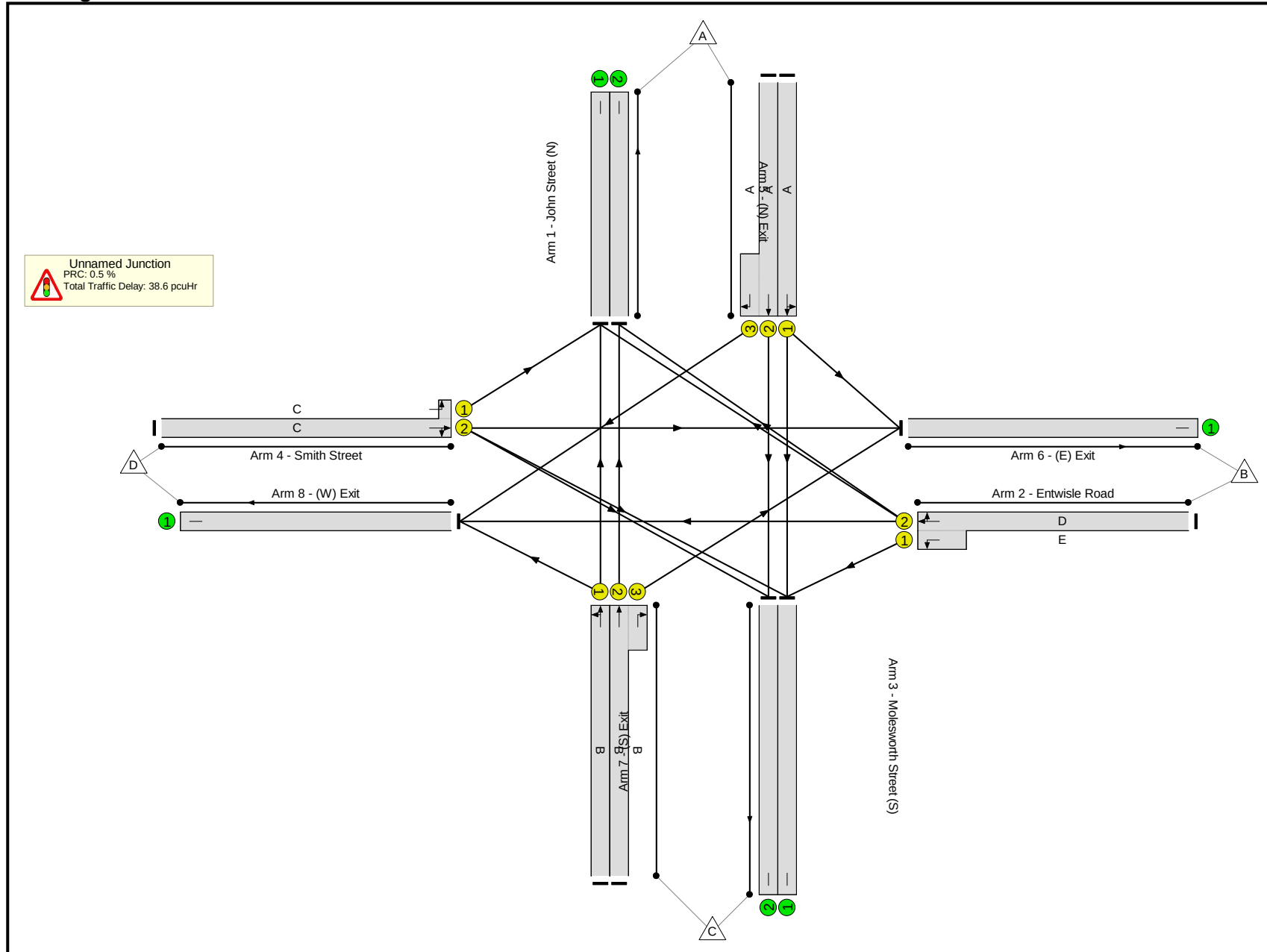
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Network Layout Diagram

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	89.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	89.5%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	417	1862	476	87.6%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	463	1978:1658	477+44	88.8 : 88.8%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	494	1818:1901	162+527	71.8 : 71.8%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	588	1934	666	88.3%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	509	1968:1618	11+557	89.5 : 89.5%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	145	1893:1956	134+48	79.9 : 79.9%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	609	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	51	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	697	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	674	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	454	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	131	Inf	Inf	0.0%

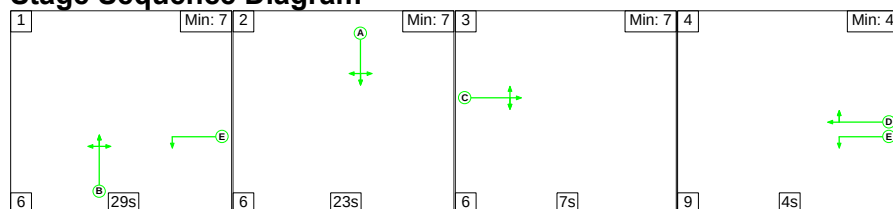
Full Input Data And Results

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	-	-	0	0	0	21.5	17.1	0.0	38.6	-	-	-	-
Unnamed Junction	-	-	0	0	0	21.5	17.1	0.0	38.6	-	-	-	-
1/1	417	417	-	-	-	3.7	3.2	-	6.9	59.7	10.0	3.2	13.2
1/2+1/3	463	463	-	-	-	4.1	3.5	-	7.6	59.4	10.6	3.5	14.1
2/2+2/1	494	494	-	-	-	3.6	1.3	-	4.8	35.3	7.3	1.3	8.6
3/1	588	588	-	-	-	4.5	3.5	-	8.0	48.9	13.7	3.5	17.2
3/2+3/3	509	509	-	-	-	3.9	3.8	-	7.7	54.8	11.9	3.8	15.7
4/2+4/1	145	145	-	-	-	1.6	1.8	-	3.4	84.8	3.2	1.8	5.0
5/1	609	609	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	51	51	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	697	697	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	674	674	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	454	454	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	131	131	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 0.5 Total Delay for Signalled Lanes (pcuHr): 38.56 Cycle Time (s): 90 PRC Over All Lanes (%): 0.5 Total Delay Over All Lanes(pcuHr): 38.56													

Full Input Data And Results

Scenario 6: '2025 'Uplifted' Base SAT' (FG6: '2025 'Uplifted' Base SAT', Plan 1: 'Network Control Plan 1')

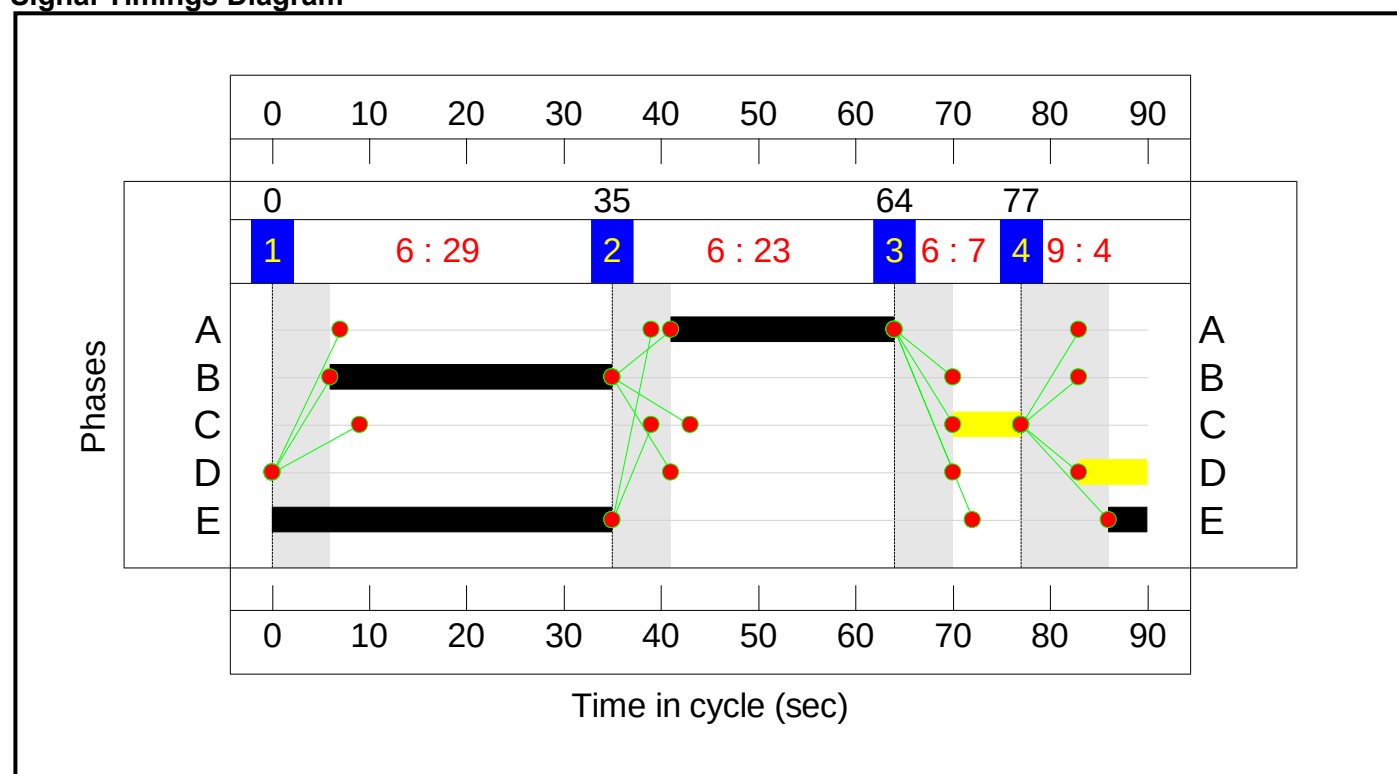
Stage Sequence Diagram



Stage Timings

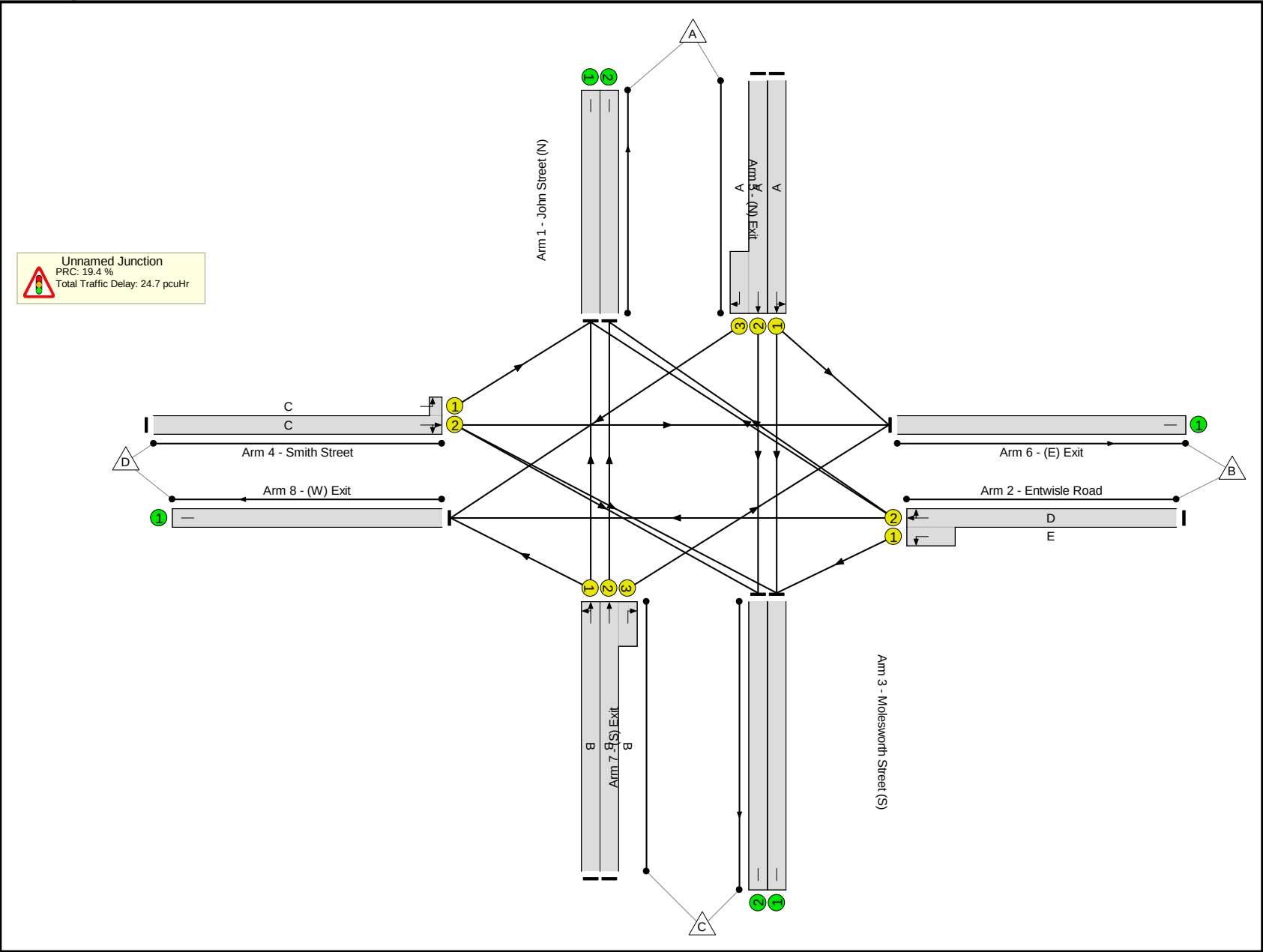
Stage	1	2	3	4
Duration	29	23	7	4
Change Point	0	35	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	75.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	75.4%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	23	-	367	1891	504	72.8%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	23	-	413	1978:1658	487+61	75.4 : 75.4%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:39	-	463	1811:1901	161+487	71.4 : 71.4%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	29	-	427	1928	643	66.4%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	29	-	506	1968:1618	275+403	74.6 : 74.6%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	106	1869:1956	135+44	59.2 : 59.2%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	645	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	394	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	133	Inf	Inf	0.0%

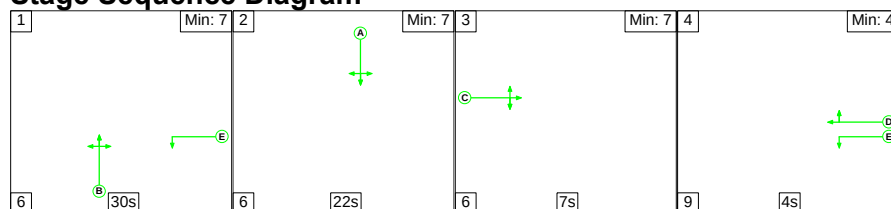
Full Input Data And Results

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	-	-	0	0	0	17.5	7.2	0.0	24.7	-	-	-	-
Unnamed Junction	-	-	0	0	0	17.5	7.2	0.0	24.7	-	-	-	-
1/1	367	367	-	-	-	3.1	1.3	-	4.4	42.9	8.3	1.3	9.6
1/2+1/3	413	413	-	-	-	3.4	1.5	-	4.9	42.7	8.8	1.5	10.3
2/2+2/1	463	463	-	-	-	3.4	1.2	-	4.6	36.0	6.7	1.2	7.9
3/1	427	427	-	-	-	3.0	1.0	-	4.0	34.0	9.1	1.0	10.1
3/2+3/3	506	506	-	-	-	3.4	1.4	-	4.9	34.7	8.4	1.4	9.8
4/2+4/1	106	106	-	-	-	1.2	0.7	-	1.9	63.3	2.2	0.7	2.9
5/1	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	247	247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	645	645	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	133	133	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 19.4 Total Delay for Signalled Lanes (pcuHr): 24.68 Cycle Time (s): 90 PRC Over All Lanes (%): 19.4 Total Delay Over All Lanes(pcuHr): 24.68													

Full Input Data And Results

Scenario 7: '2030 Base AM' (FG7: '2030 Base AM', Plan 1: 'Network Control Plan 1')

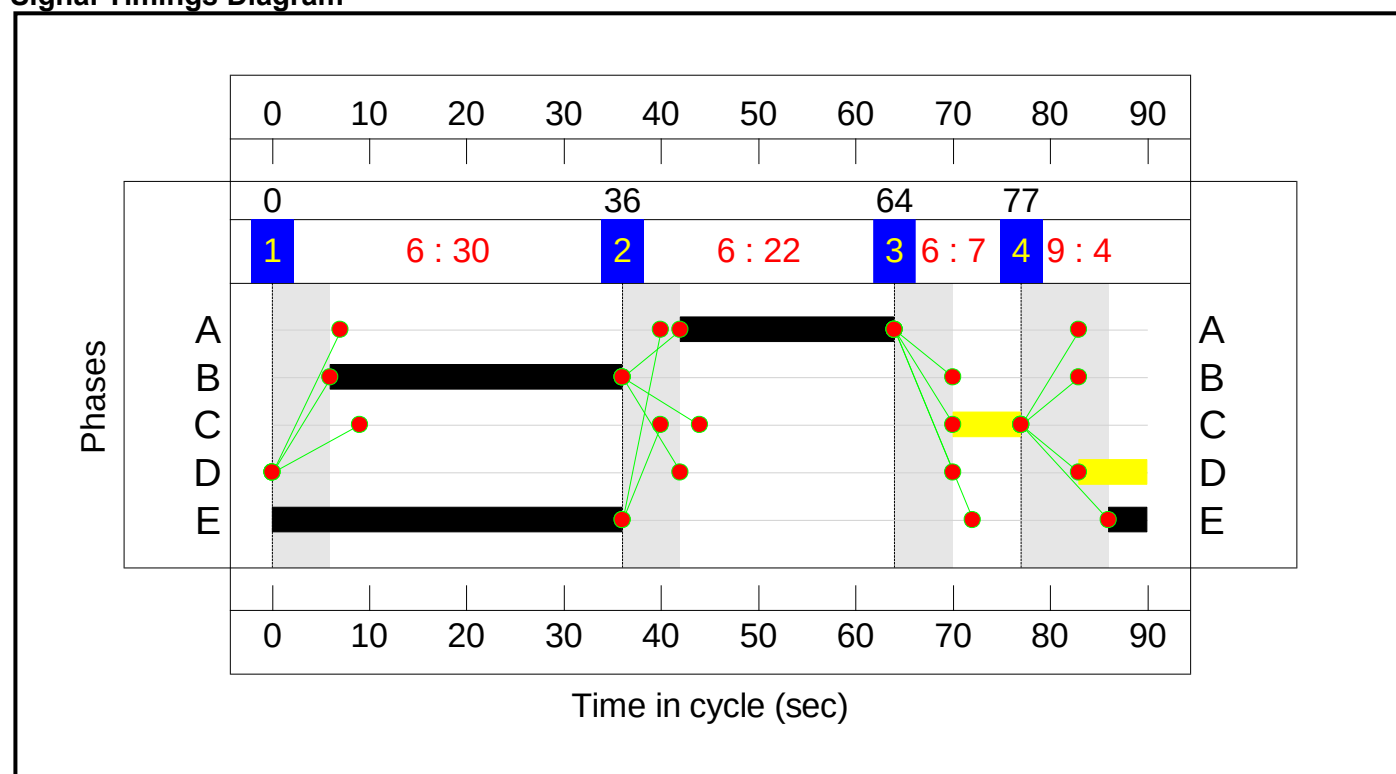
Stage Sequence Diagram



Stage Timings

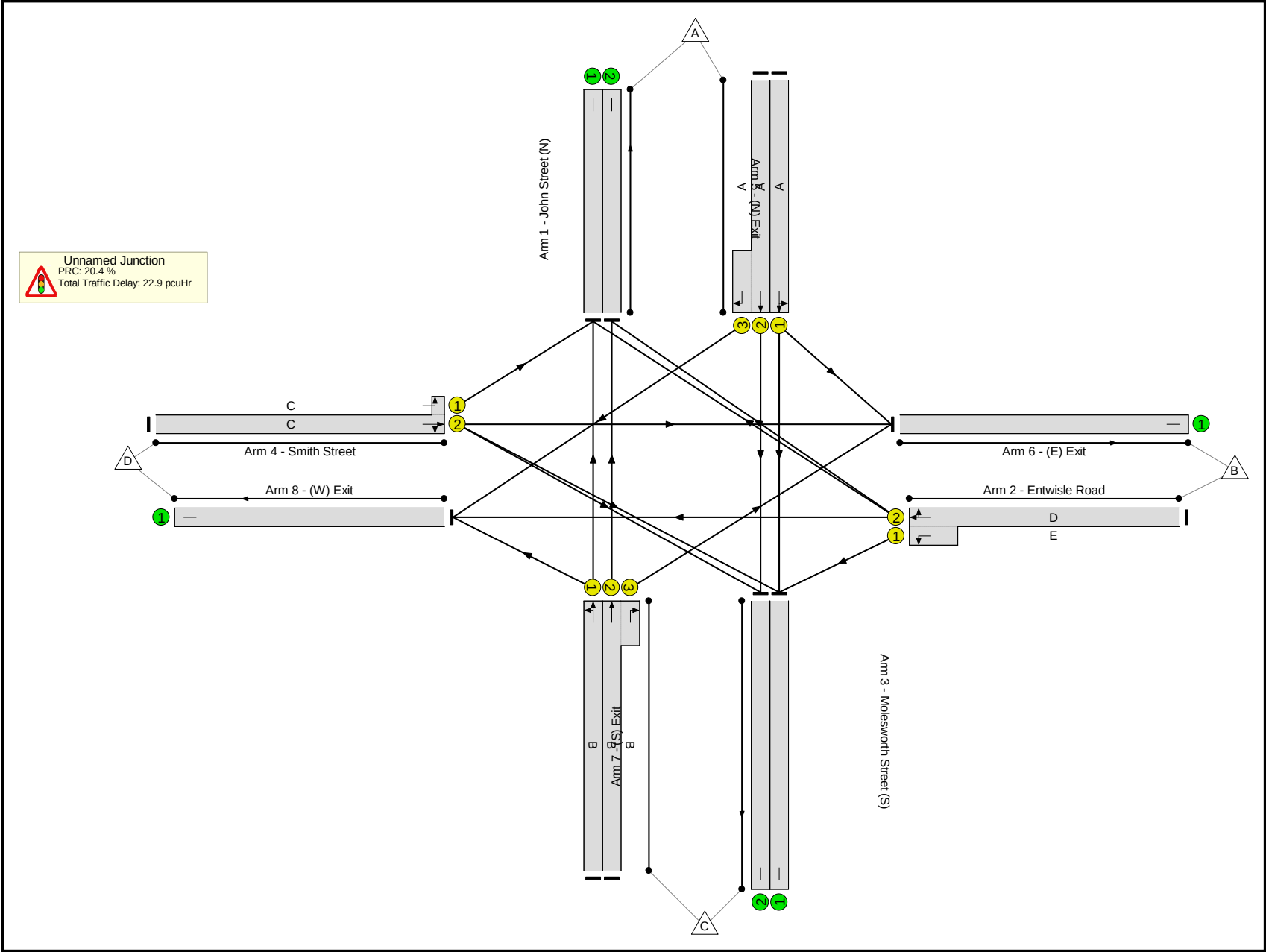
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	74.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	74.8%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	349	1883	481	72.5%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	390	1978:1658	476+45	74.8 : 74.8%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	484	1828:1901	156+749	53.3 : 53.5%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	448	1928	664	67.5%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	461	1968:1618	156+476	72.9 : 72.9%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	92	1881:1956	132+49	50.6 : 50.6%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	441	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	141	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	474	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	669	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	377	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	122	Inf	Inf	0.0%

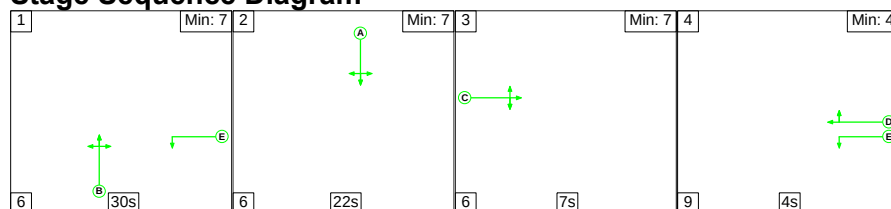
[illegible]

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	-	-	0	0	0	16.7	6.2	0.0	22.9	-	-	-	-
Unnamed Junction	-	-	0	0	0	16.7	6.2	0.0	22.9	-	-	-	-
1/1	349	349	-	-	-	3.0	1.3	-	4.3	44.0	7.9	1.3	9.2
1/2+1/3	390	390	-	-	-	3.3	1.4	-	4.7	43.7	8.4	1.4	9.9
2/2+2/1	484	484	-	-	-	3.2	0.6	-	3.8	28.3	7.7	0.6	8.2
3/1	448	448	-	-	-	3.1	1.0	-	4.2	33.4	9.5	1.0	10.5
3/2+3/3	461	461	-	-	-	3.1	1.3	-	4.5	34.8	8.7	1.3	10.0
4/2+4/1	92	92	-	-	-	1.0	0.5	-	1.5	58.7	1.8	0.5	2.3
5/1	441	441	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	141	141	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	474	474	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	377	377	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	122	122	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 20.4 Total Delay for Signalled Lanes (pcuHr): 22.92 Cycle Time (s): 90 PRC Over All Lanes (%): 20.4 Total Delay Over All Lanes(pcuHr): 22.92													

Full Input Data And Results

Scenario 8: '2030 Base PM' (FG8: '2030 Base PM', Plan 1: 'Network Control Plan 1')

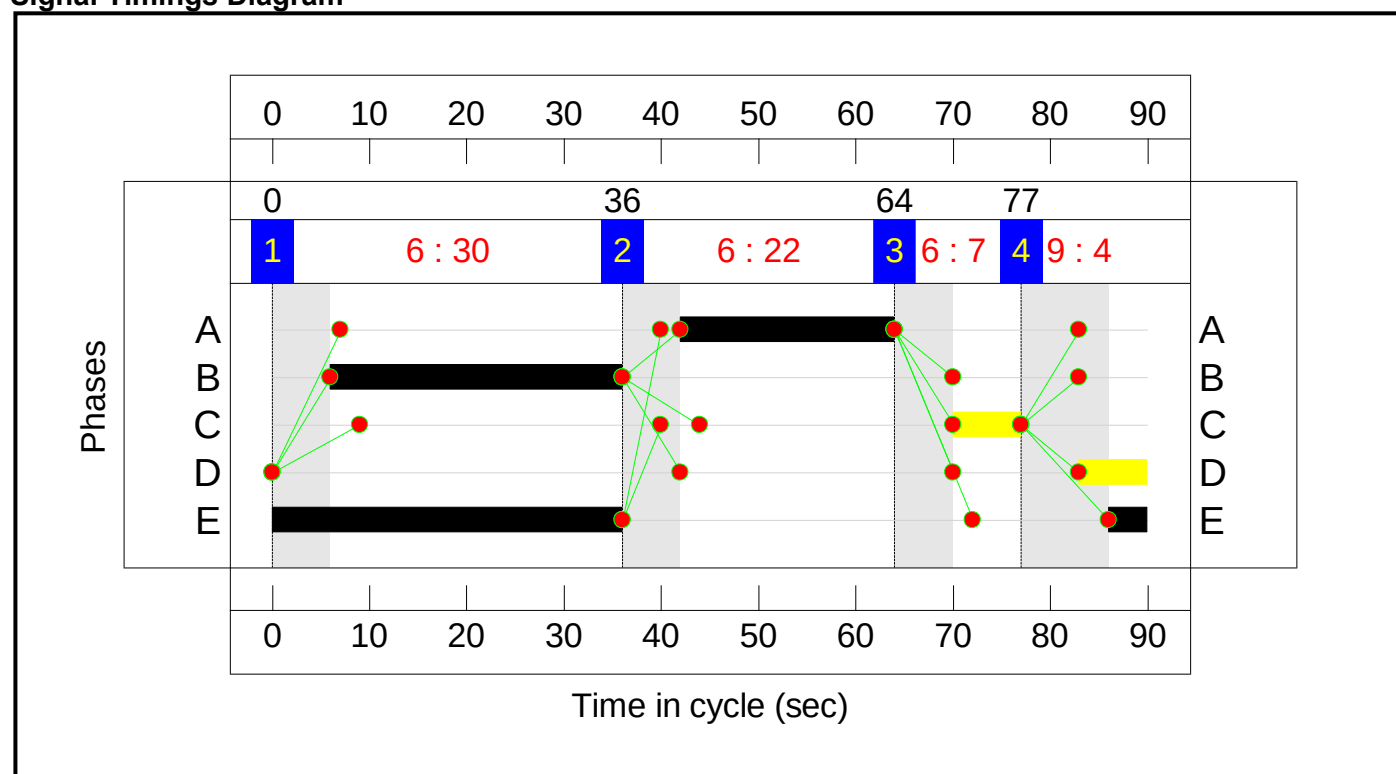
Stage Sequence Diagram



Stage Timings

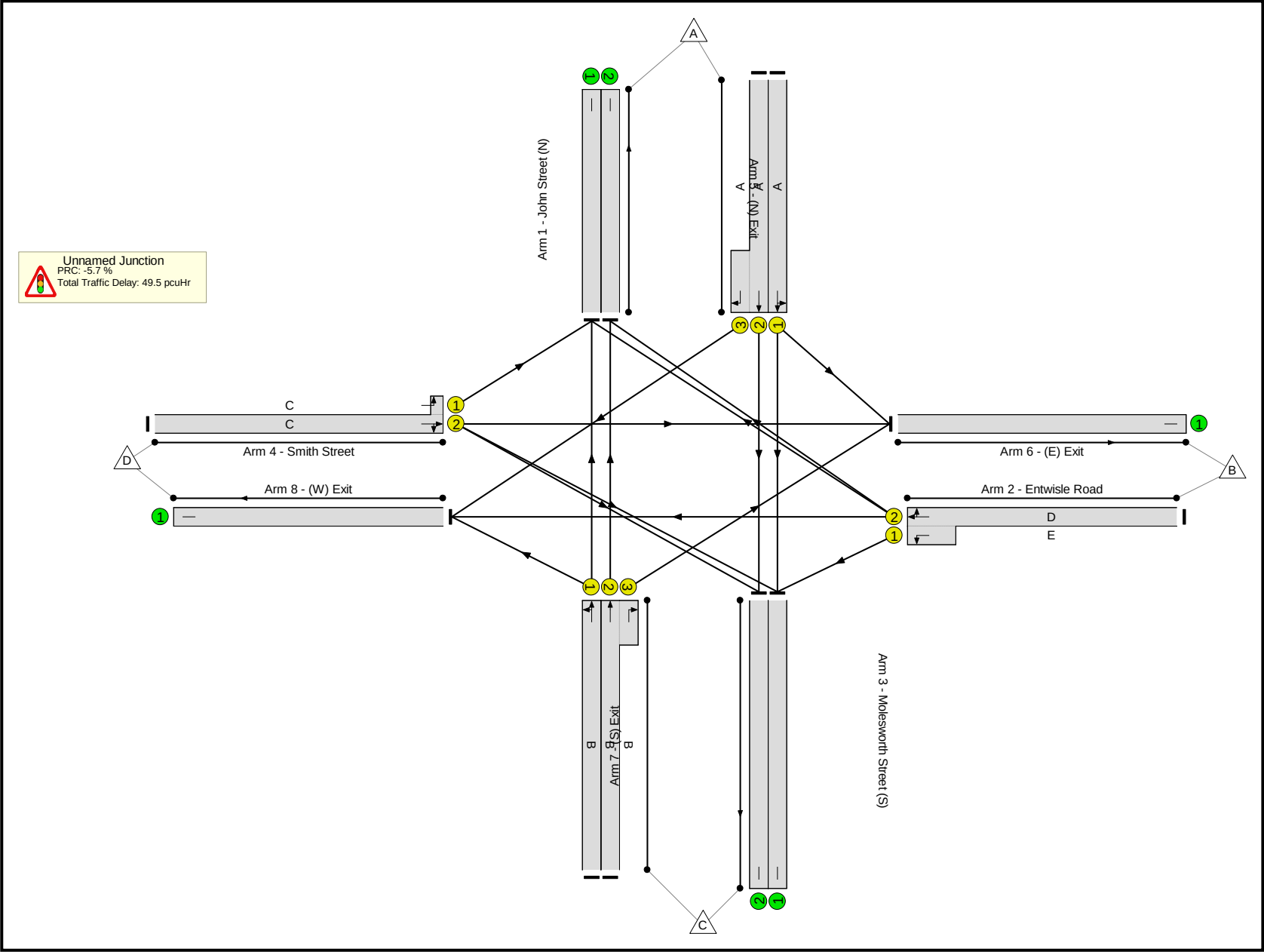
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	95.1%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	95.1%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	442	1862	476	92.9%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	488	1978:1658	477+44	93.6 : 93.6%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	523	1818:1901	162+526	76.1 : 76.1%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	617	1934	666	92.6%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	543	1968:1618	16+555	95.1 : 95.1%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	154	1893:1956	134+47	84.9 : 84.9%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	639	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	58	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	738	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	714	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	139	Inf	Inf	0.0%

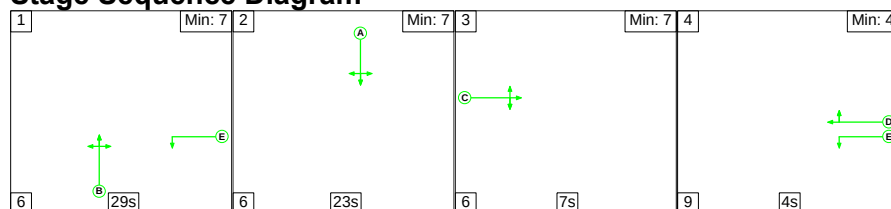
[illegible]

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	-	-	0	0	0	23.2	26.3	0.0	49.5	-	-	-	-
Unnamed Junction	-	-	0	0	0	23.2	26.3	0.0	49.5	-	-	-	-
1/1	442	442	-	-	-	4.0	5.0	-	9.0	73.7	10.7	5.0	15.7
1/2+1/3	488	488	-	-	-	4.4	5.5	-	9.9	73.1	11.3	5.5	16.9
2/2+2/1	523	523	-	-	-	3.9	1.6	-	5.5	37.7	8.0	1.6	9.5
3/1	617	617	-	-	-	4.9	5.2	-	10.1	58.6	14.7	5.2	19.9
3/2+3/3	543	543	-	-	-	4.3	6.6	-	10.9	72.4	13.0	6.6	19.6
4/2+4/1	154	154	-	-	-	1.7	2.4	-	4.1	96.2	3.4	2.4	5.8
5/1	639	639	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	738	738	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	714	714	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	139	139	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -5.7 Total Delay for Signalled Lanes (pcuHr): 49.52 Cycle Time (s): 90 PRC Over All Lanes (%): -5.7 Total Delay Over All Lanes(pcuHr): 49.52													

Full Input Data And Results

Scenario 9: '2030 Base SAT' (FG9: '2030 Base SAT', Plan 1: 'Network Control Plan 1')

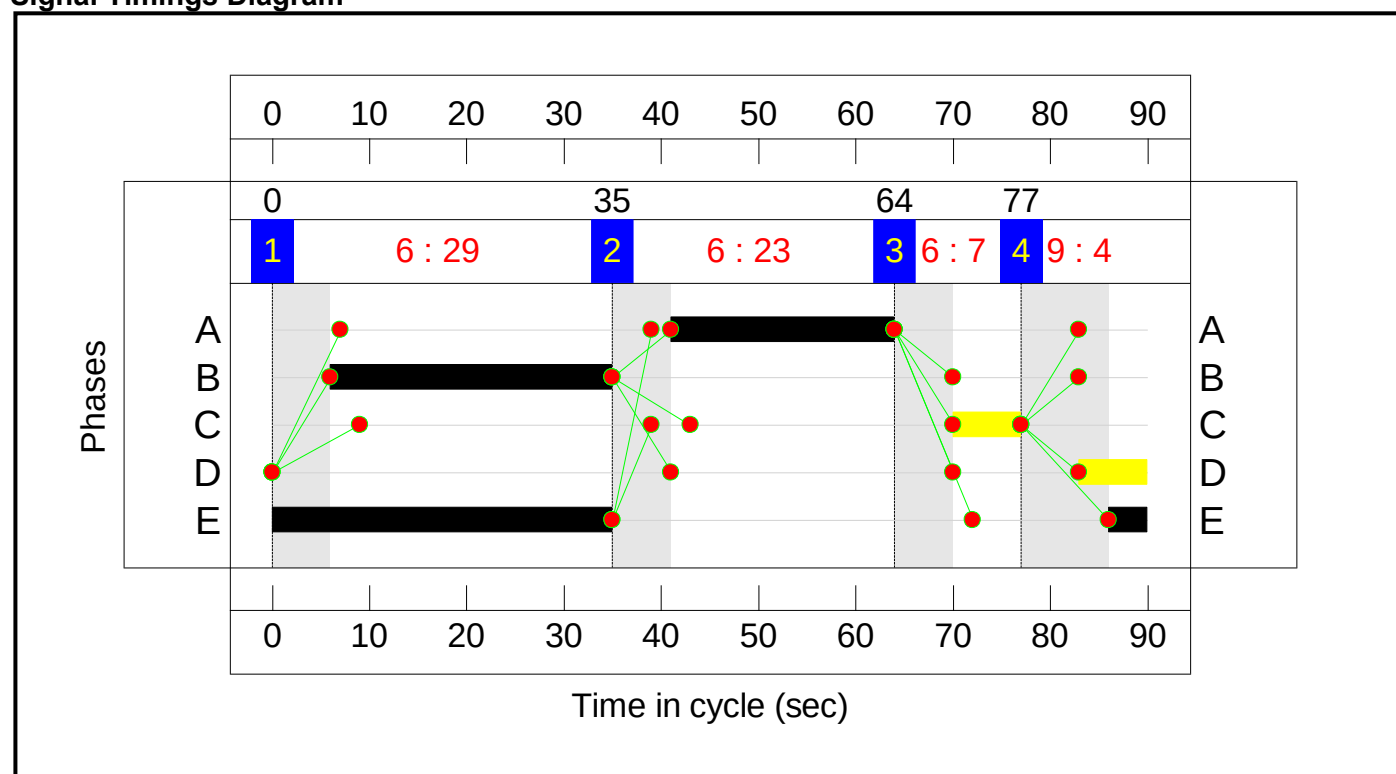
Stage Sequence Diagram



Stage Timings

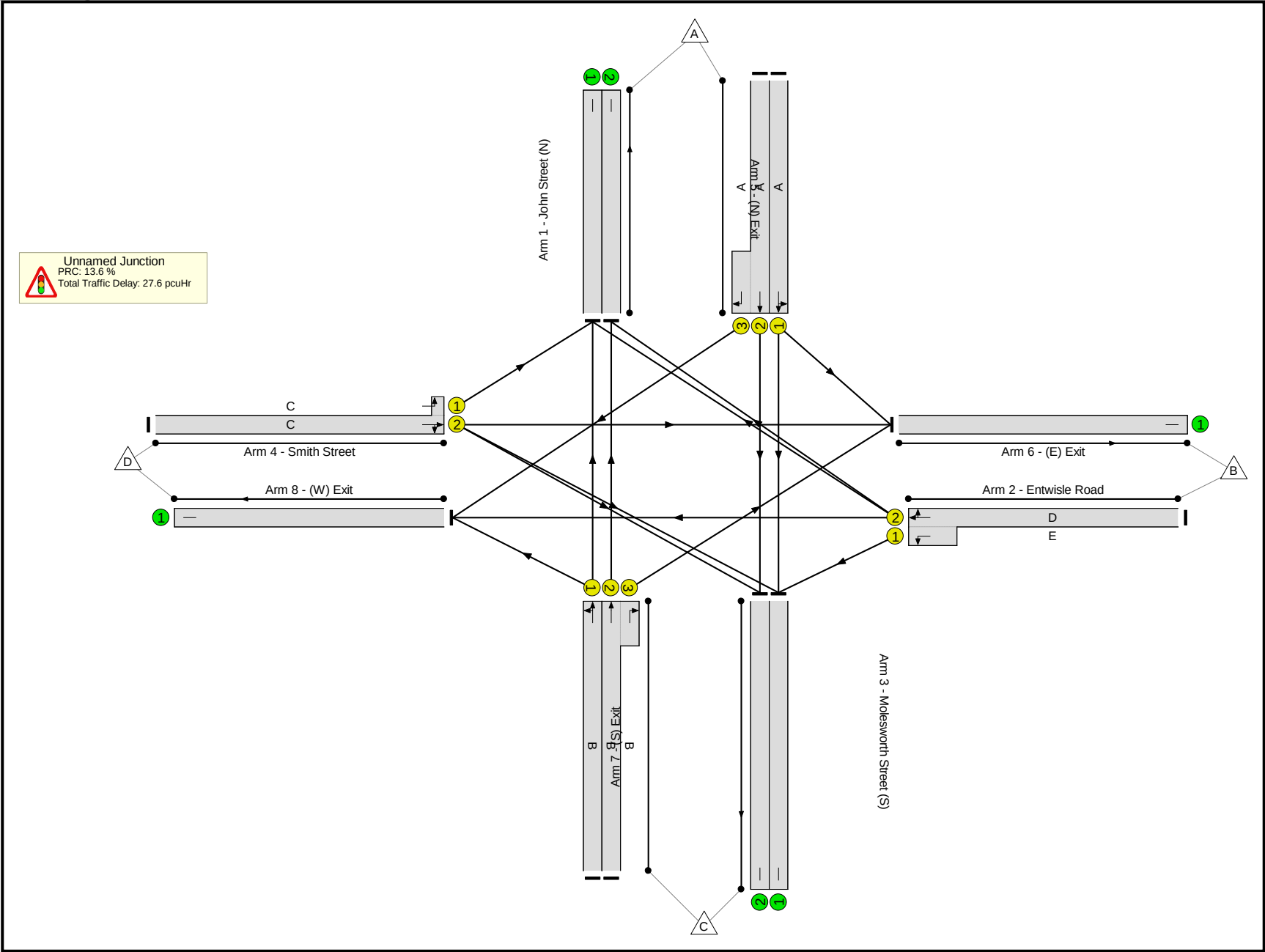
Stage	1	2	3	4
Duration	29	23	7	4
Change Point	0	35	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

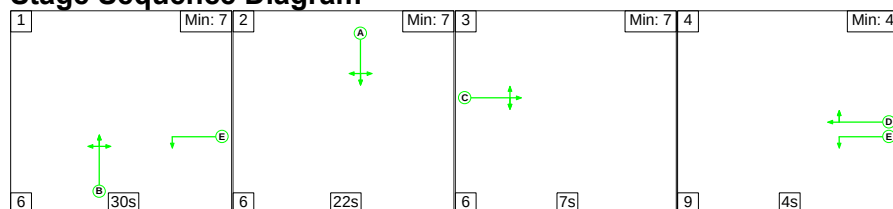
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	79.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	79.2%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	23	-	389	1892	505	77.1%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	23	-	434	1978:1658	487+61	79.2 : 79.2%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:39	-	489	1812:1901	161+490	75.1 : 75.1%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	29	-	460	1928	643	71.6%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	29	-	525	1968:1618	265+408	78.0 : 78.0%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	113	1870:1956	135+44	63.1 : 63.1%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	448	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	683	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	140	Inf	Inf	0.0%

[illegible][illegible]

Full Input Data And Results

Scenario 10: '2030 Base + Dev AM' (FG10: '2030 Base + Development AM', Plan 1: 'Network Control Plan 1')

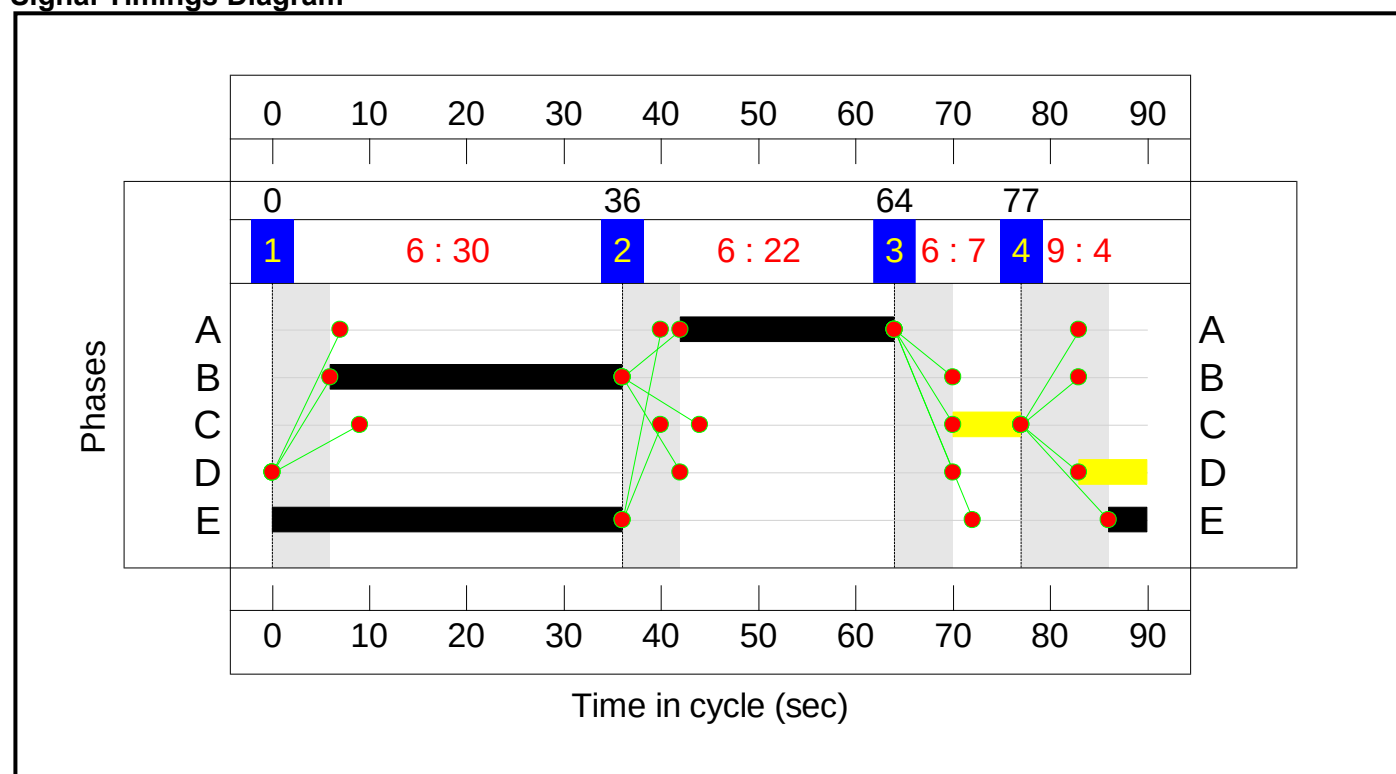
Stage Sequence Diagram



Stage Timings

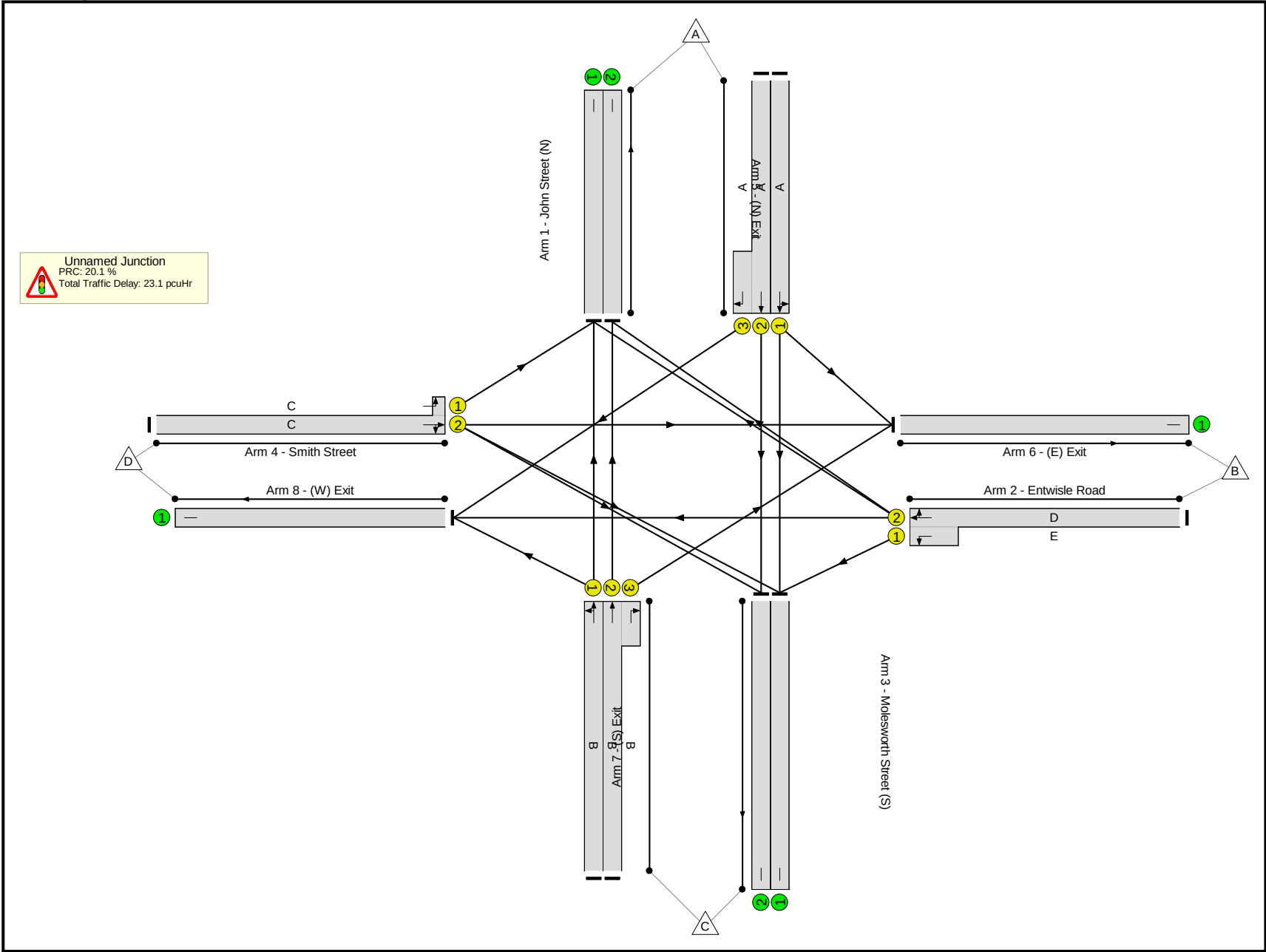
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	75.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	75.0%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	350	1884	481	72.7%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	391	1978:1658	476+45	75.0 : 75.0%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	485	1828:1901	155+749	53.4 : 53.7%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	450	1927	664	67.8%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	463	1968:1618	157+476	73.2 : 73.2%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	93	1880:1956	133+49	51.3 : 51.3%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	442	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	142	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	475	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	672	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	378	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	123	Inf	Inf	0.0%

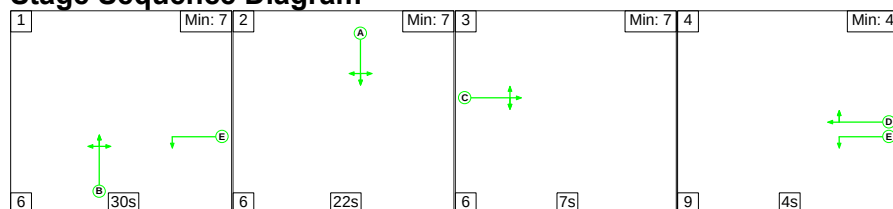
[illegible]

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	-	-	0	0	0	16.8	6.2	0.0	23.1	-	-	-	-
Unnamed Junction	-	-	0	0	0	16.8	6.2	0.0	23.1	-	-	-	-
1/1	350	350	-	-	-	3.0	1.3	-	4.3	44.1	8.0	1.3	9.3
1/2+1/3	391	391	-	-	-	3.3	1.5	-	4.8	43.8	8.4	1.5	9.9
2/2+2/1	485	485	-	-	-	3.2	0.6	-	3.8	28.3	7.7	0.6	8.3
3/1	450	450	-	-	-	3.2	1.0	-	4.2	33.6	9.5	1.0	10.5
3/2+3/3	463	463	-	-	-	3.2	1.3	-	4.5	34.9	8.7	1.3	10.1
4/2+4/1	93	93	-	-	-	1.0	0.5	-	1.5	59.0	1.8	0.5	2.3
5/1	442	442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	475	475	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	672	672	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	378	378	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	123	123	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 20.1 Total Delay for Signalled Lanes (pcuHr): 23.07 Cycle Time (s): 90 PRC Over All Lanes (%): 20.1 Total Delay Over All Lanes(pcuHr): 23.07													

Full Input Data And Results

Scenario 11: '2030 Base + Dev PM' (FG11: '2030 Base + Development PM', Plan 1: 'Network Control Plan 1')

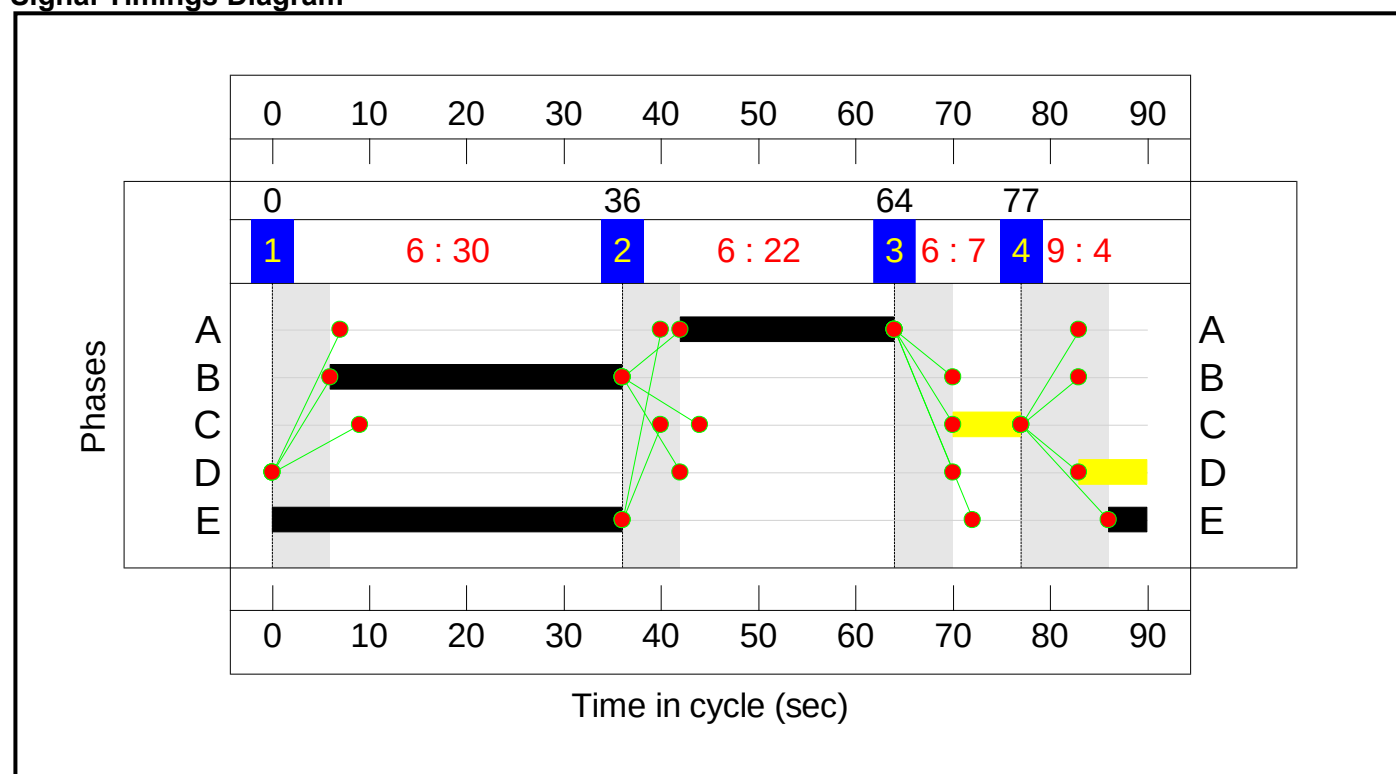
Stage Sequence Diagram



Stage Timings

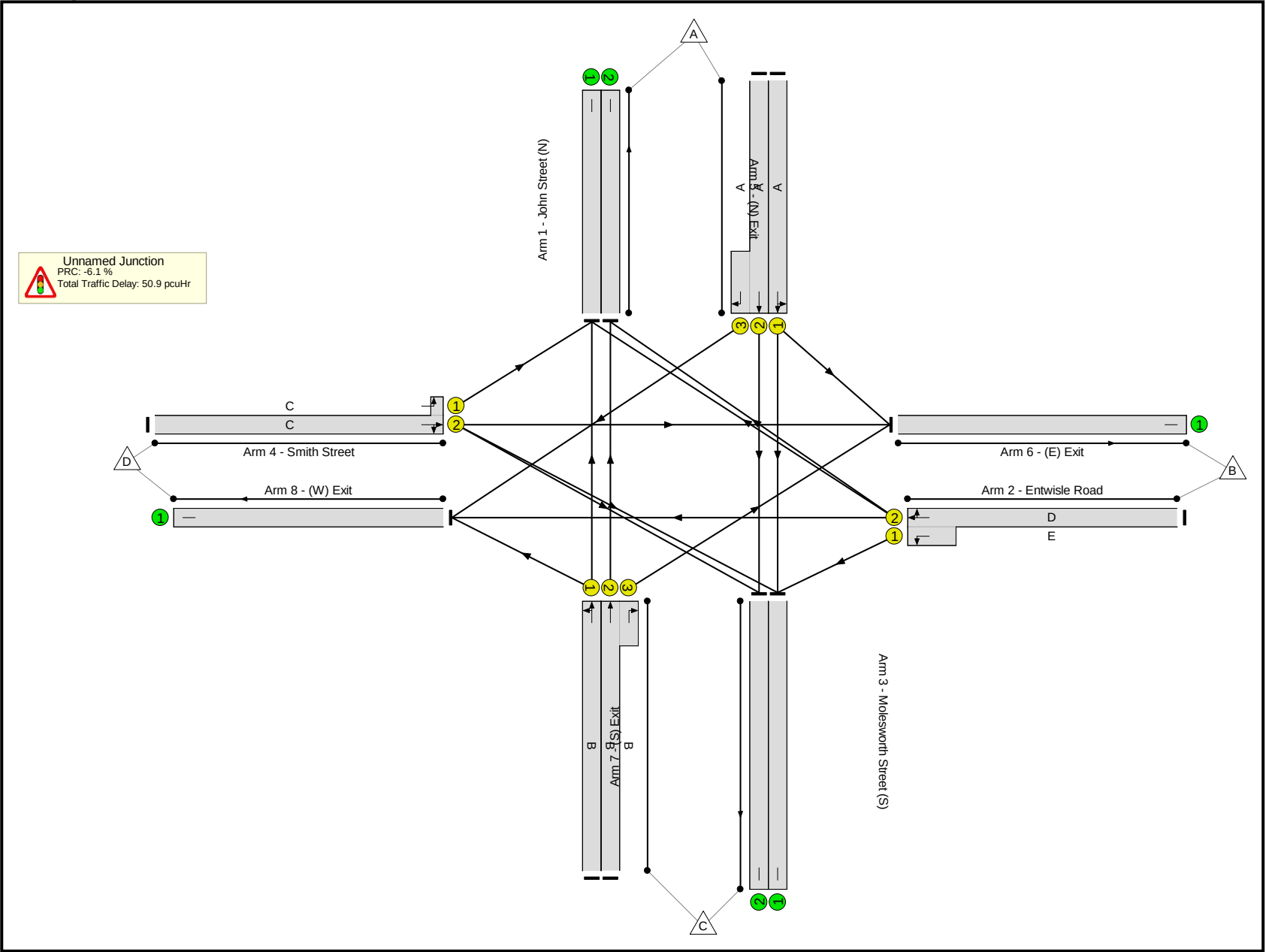
Stage	1	2	3	4
Duration	30	22	7	4
Change Point	0	36	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	95.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	95.5%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	22	-	443	1862	476	93.1%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	22	-	490	1978:1658	477+44	94.0 : 94.0%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:40	-	525	1818:1901	162+528	76.1 : 76.1%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	30	-	622	1933	666	93.4%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	30	-	545	1968:1618	16+555	95.5 : 95.5%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	156	1891:1956	135+46	86.2 : 86.2%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	642	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	58	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	740	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	718	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	141	Inf	Inf	0.0%

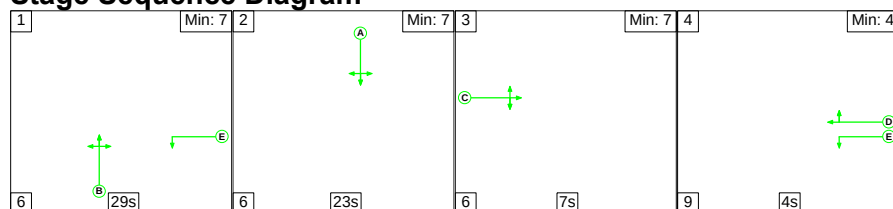
Full Input Data And Results

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	-	-	0	0	0	23.4	27.6	0.0	50.9	-	-	-	-
Unnamed Junction	-	-	0	0	0	23.4	27.6	0.0	50.9	-	-	-	-
1/1	443	443	-	-	-	4.0	5.1	-	9.2	74.5	10.7	5.1	15.8
1/2+1/3	490	490	-	-	-	4.4	5.8	-	10.2	74.7	11.5	5.8	17.3
2/2+2/1	525	525	-	-	-	3.9	1.6	-	5.5	37.6	8.0	1.6	9.6
3/1	622	622	-	-	-	4.9	5.6	-	10.6	61.2	14.9	5.6	20.5
3/2+3/3	545	545	-	-	-	4.3	6.9	-	11.2	74.1	13.1	6.9	19.9
4/2+4/1	156	156	-	-	-	1.7	2.6	-	4.3	100.0	3.5	2.6	6.1
5/1	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	740	740	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	718	718	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	141	141	-	-	-	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): 50.94 Cycle Time (s): 90 PRC Over All Lanes (%): -6.1 Total Delay Over All Lanes(pcuHr): 50.94													

Full Input Data And Results

Scenario 12: '2030 Base + Dev SAT' (FG12: '2030 Base + Development SAT', Plan 1: 'Network Control Plan 1')

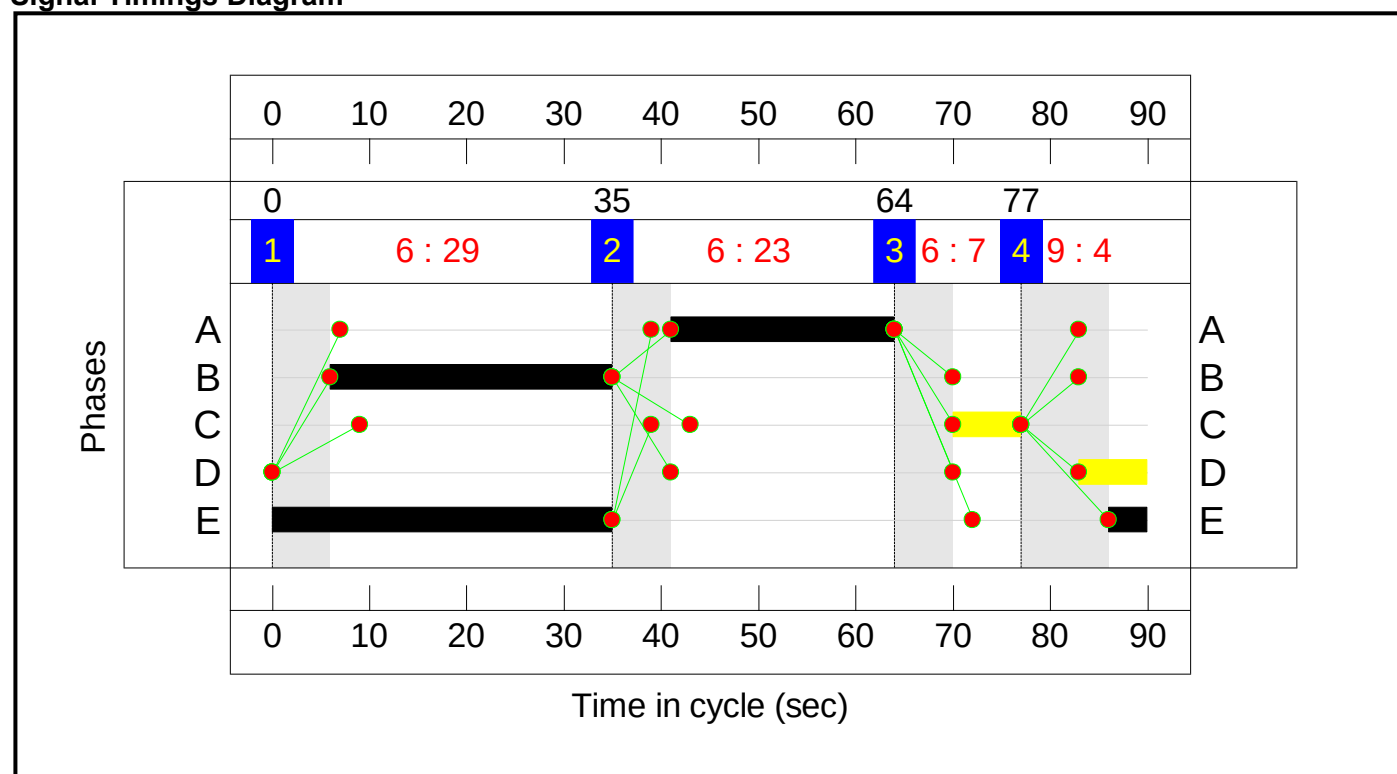
Stage Sequence Diagram



Stage Timings

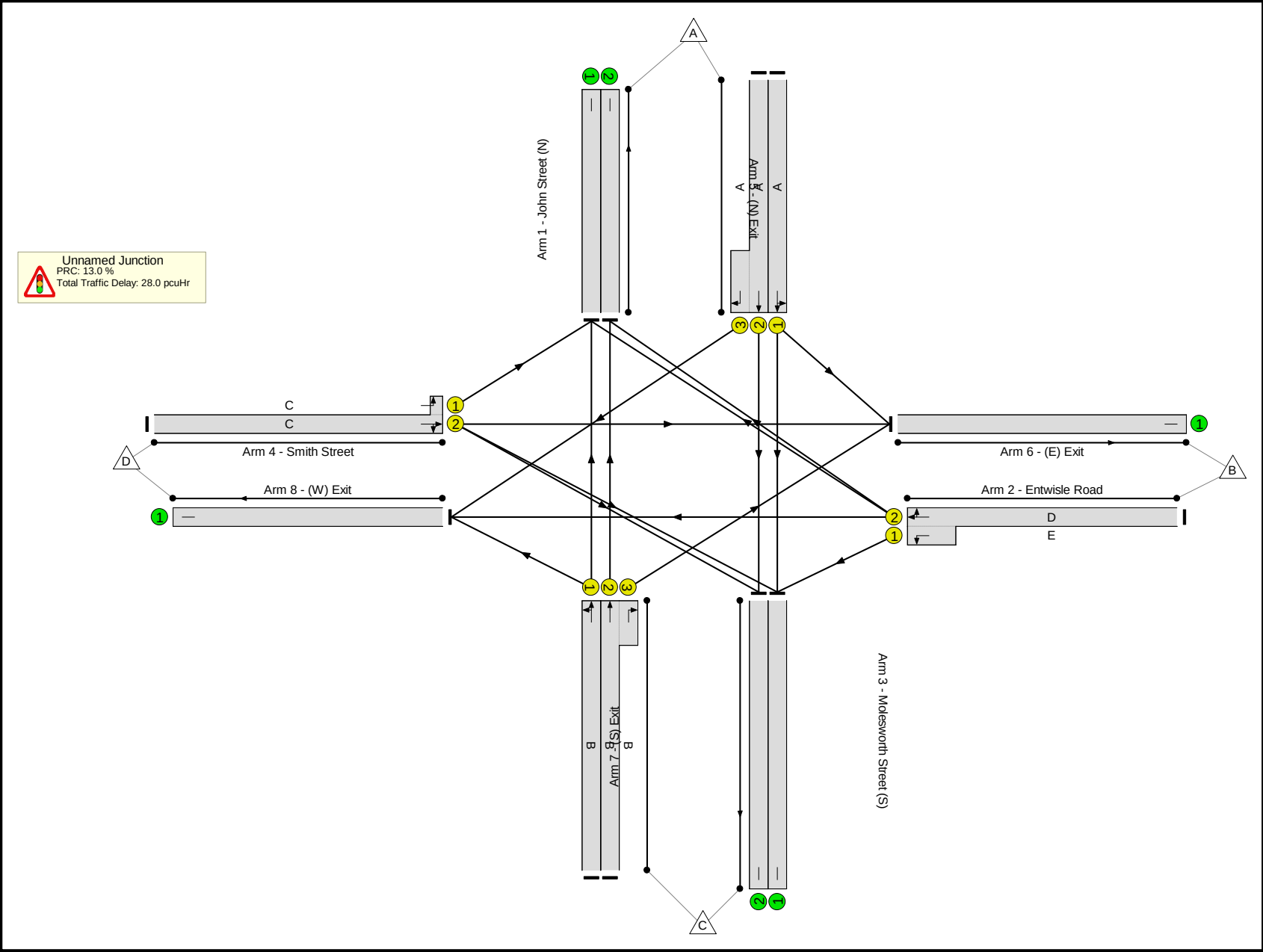
Stage	1	2	3	4
Duration	29	23	7	4
Change Point	0	35	64	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-	N/A	-	-		-	-	-	-	-	-	79.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	79.6%
1/1	John Street (N) Left Ahead	U	N/A	N/A	A		1	23	-	391	1892	505	77.5%
1/2+1/3	John Street (N) Ahead Right	U	N/A	N/A	A		1	23	-	436	1978:1658	487+60	79.6 : 79.6%
2/2+2/1	Entwisle Road Right Left Ahead	U	N/A	N/A	D E		1	7:39	-	492	1812:1901	161+494	75.1 : 75.1%
3/1	Molesworth Street (S) Ahead Left	U	N/A	N/A	B		1	29	-	465	1928	643	72.4%
3/2+3/3	Molesworth Street (S) Ahead Right	U	N/A	N/A	B		1	29	-	529	1968:1618	264+408	78.7 : 78.7%
4/2+4/1	Smith Street Left Ahead Right	U	N/A	N/A	C		1	7	-	115	1868:1956	135+44	64.3 : 64.3%
5/1	(N) Exit	U	N/A	N/A	-		-	-	-	476	Inf	Inf	0.0%
5/2	(N) Exit	U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%
6/1	(E) Exit	U	N/A	N/A	-		-	-	-	451	Inf	Inf	0.0%
7/1	(S) Exit	U	N/A	N/A	-		-	-	-	689	Inf	Inf	0.0%
7/2	(S) Exit	U	N/A	N/A	-		-	-	-	418	Inf	Inf	0.0%
8/1	(W) Exit	U	N/A	N/A	-		-	-	-	142	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	-	-	0	0	0	19.0	9.0	0.0	28.0	-	-	-	-
Unnamed Junction	-	-	0	0	0	19.0	9.0	0.0	28.0	-	-	-	-
1/1	391	391	-	-	-	3.3	1.7	-	5.0	45.9	9.0	1.7	10.7
1/2+1/3	436	436	-	-	-	3.6	1.9	-	5.5	45.7	9.4	1.9	11.3
2/2+2/1	492	492	-	-	-	3.7	1.5	-	5.2	38.0	7.3	1.5	8.8
3/1	465	465	-	-	-	3.4	1.3	-	4.7	36.3	10.2	1.3	11.5
3/2+3/3	529	529	-	-	-	3.7	1.8	-	5.5	37.2	9.3	1.8	11.1
4/2+4/1	115	115	-	-	-	1.3	0.9	-	2.1	66.8	2.4	0.9	3.3
5/1	476	476	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	252	252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	451	451	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	689	689	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	418	418	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 13.0 Total Delay for Signalled Lanes (pcuHr): 28.02 Cycle Time (s): 90 PRC Over All Lanes (%): 13.0 Total Delay Over All Lanes(pcuHr): 28.02													



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Andrew Moseley Associates, 15 St Paul's Street, Leeds, LS1 2JG

www.amatp.co.uk

info@amatp.co.uk