

TRANSPORTATION

Project

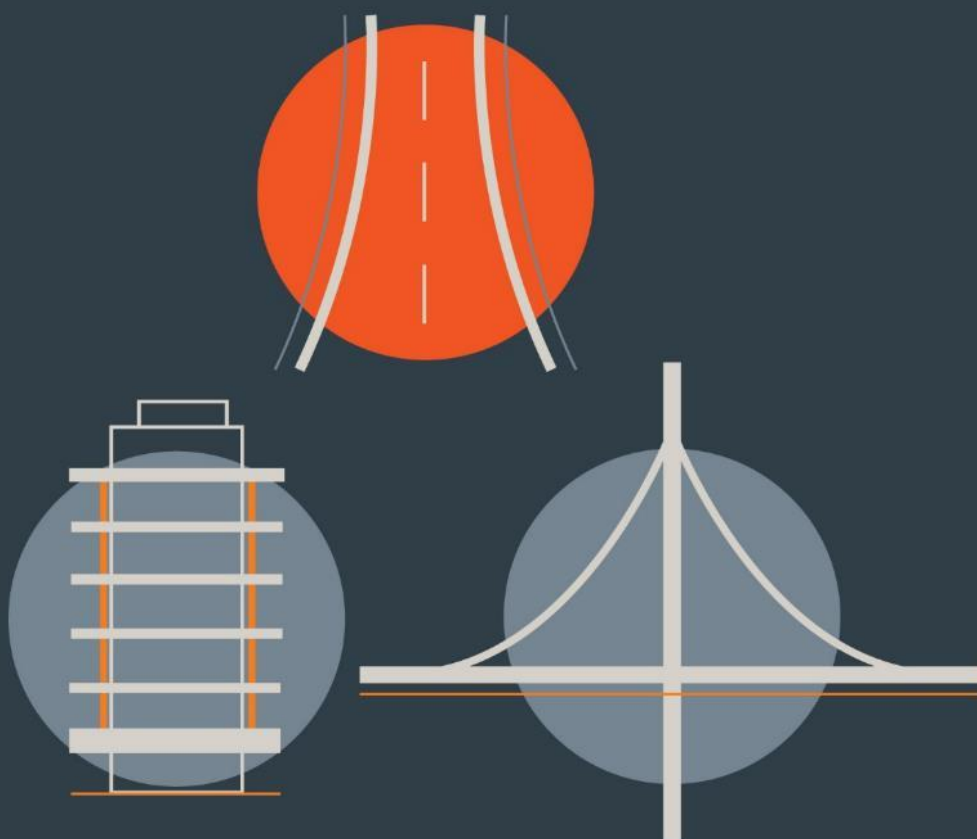
Ashbourne SHD

Report Title

TRAFFIC AND TRANSPORT ASSESSMENT

Client

Arnub Ltd. & Aspect Homes (ADC) Ltd



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1.0 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 DBFL Consulting Engineers (DBFL) has been commissioned by Davey Smith Architects, on behalf of Arnub Ltd. & Aspect Homes (ADC) Ltd., to prepare a Traffic and Transport Assessment (TTA) for a proposed residential development at Cherry Lane, Ashbourne, Co. Meath.
- 1.1.2 Arnub Ltd. & Aspect Homes (ADC) Ltd. seek permission for a strategic housing development, located in the townlands of Baltrasna and Milltown, Ashbourne, Co. Meath. The proposed development site is located to the west of the R135 Dublin Road, south of existing housing at Alderbrook Rise, Alderbrook Downs & Alderbrook Heath, east of existing housing at Tara Close & Tara Court, south of Cherry Lane and west of Hickey's Lane.
- 1.1.3 The development will consist of 702 no. dwellings, comprised of 420 no. 2 & 3 storey, 2, 3, 4 & 5 bed houses, 39 no. 2 & 3 bed duplex units in 19 no. blocks, and 243 no. 1, 2 & 3 bed apartments in 20 no. buildings, which range in height from 3, 3-4, 4-5, & 4-6 storeys. The proposed development also provides for the following uses: (i) 2 no. creches (c.288.56m² & 383.68m²) accommodated in Blocks A and A1 respectively, (ii) 4 no. retail/commercial units (c. 105.58 m² & 173.83m² in Block A, c.190.6m² in Block A1 & c.469m² in Block B1) and (iii) GP practice / medical use unit (c.186m²) in Block A1.
- 1.1.4 Access to the development will be via (i) Cherry Lane to the north-east, off the R135 Dublin Road, via a new proposed internal access road and (ii) via Hickey's Lane to the east, off the R135 Dublin Road, including pedestrian and cycle paths.
- 1.1.5 The proposed development provides for (i) all ancillary / associated site development works above and below ground, (ii) public open spaces, including hard & soft landscaping, play equipment & boundary treatments, (iii) communal open spaces, (iv) undercroft, basement & surface car parking (v) bicycle parking (vi) bin storage, (vii) public lighting, (viii) plant (M&E), utility services & ESB sub-stations, all on an overall application site area of 20.04Ha.
- 1.1.6 The proposed development also includes for an area of c. 1Ha reserved for a school site and playing pitch in the western part of the site. Permission is also sought to demolish all existing structures on site, i.e. 3 no. single storey dwellings & associated out-buildings (659m² in total).

- 1.1.7 The report has been produced to address any potential concerns that the planning authority, An Bord Pleanála, may have pertaining to the level of influence of the proposed development upon the local transportation system.

1.2 SCOPE

- 1.2.1 The purpose of this TTA is to quantify the existing transport environment and to detail the results of the assessment work undertaken to identify the potential level of transport impact generated as a result of the proposed residential development.
- 1.2.2 The scope of the assessment covers transport and sustainability issues including access, pedestrian, cyclist, and public transport connections. Recommendations contained within this report are based on existing and proposed road layout plans, site visits, on site traffic observations and junction survey data.

1.3 METHODOLOGY

- 1.3.1 Our approach to the study accords with policy and guidance both at a national and local level. The adopted approach has also been influenced by direction received during preplanning meetings with the local planning authority.
- 1.3.2 Accordingly, the adopted methodology responds to best practices, current and emerging guidance, exemplified by a series of publications, all of which advocate this method of analysis. Key publications consulted include:
- '*Traffic and Transport Assessment Guidelines*' (May 2014) National Road Authority;
 - '*Traffic Management Guidelines*' Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
 - '*Guidelines for Traffic Impact Assessments*' The Institution of Highways and Transportation (1994);
 - '*Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities*' Department of Housing, Planning and Local Government (2020); and
 - '*Meath County Council Development Plan 2021 - 2027*'.

1.3.3 The process has also included a review of the most relevant policy documentation with the objective of establishing the sites transportation planning framework as activity influenced by the following:

- Smarter Travel – A Sustainable Transport Future (2009)
- Design Manual for Urban Roads and Streets (DMURS) (2019)
- Transport Strategy for the Greater Dublin Area 2016-2035
- Draft Transport Strategy for the Greater Dublin Area 2022-2042
- Greater Dublin Area (GDA) Cycle Network Plan (2013)
- Draft Greater Dublin Area Cycle Network Plan (2021)

1.3.4 Our methodology incorporated a number of key inter-related stages, including;

- **Development Policy Context:** Review of the most relevant policy documentation with the objective of establishing local development management standards and the Ashbourne SHD sites existing and emerging transportation planning framework.
- **Existing Infrastructures Context:** Review of the current pedestrian and cycle facilities serving the subject site, as well as the existing public transport infrastructure.
- **Proposed Infrastructures Context:** Review of proposed pedestrian and cycle facilities and public transport enhancements that will serve the subject site.
- **Traffic Counts review:** Traffic data was extracted from previous traffic counts and adapted to the assessed scenarios in order to analyse the impact of the proposed development on the traffic network performance.
- **Trip Generation:** A trip generation exercise has been carried out to establish the potential level of vehicle trips generated by the proposed residential development.
- **Trip Distribution:** Based upon both the existing traffic characteristics and the network layout in addition to the spatial / land use configuration and density of the urban structure across the catchments area of the

development, a distribution exercise has been undertaken to assign site generated vehicle trips across the local road network.

- **Network Analysis:** Further to quantifying the predicted impact of vehicle movements across the local road network for the adopted site access strategy, more detailed computer simulations have been undertaken to assess the operational performance of key junctions in the post development 2023, 2028 and 2038 development scenarios.

1.4 REPORT STRUCTURE

- 1.4.1 **Section 2** of this report describes the existing conditions at the proposed development location and surrounding area. The relevant transportation policies that influence the design and appraisal of the subject development proposals are highlighted within **Section 3**.
- 1.4.2 **Section 4** provides a summary of the proposed development itself.
- 1.4.3 **Section 5** outlines the trip generation exercise carried out and the adopted methodology for applying growth factors to establish a baseline for the design year network traffic flows.
- 1.4.4 The potential traffic impact of the proposals assessed for the 2023 Opening Year and the 2028 and 2038 Horizon Years are summarised within **Section 6**.
- 1.4.5 The main conclusions and recommendations derived from the analysis are summarised in **Section 7**.

2.0 RECEIVING ENVIRONMENT

2.1 LOCATION

- 2.1.1 The general location of the subject site in relation to the surrounding road network is illustrated in **Figure 2.1** below whilst **Figure 2.2** shows the extent of the subject site lands and adjoining properties. The subject site is on the suburban edge of Ashbourne town off the Dublin Road. It is currently in use as agriculture land.
- 2.1.2 The subject site is approx. 1.3km from Ashbourne Town Centre (15 mins walk or 5 minute cycle) and 22km from Dublin City Centre. The subject will be connected to the current road network through Cherry Lane and Hickey's Lane to Dublin Rd (R135).

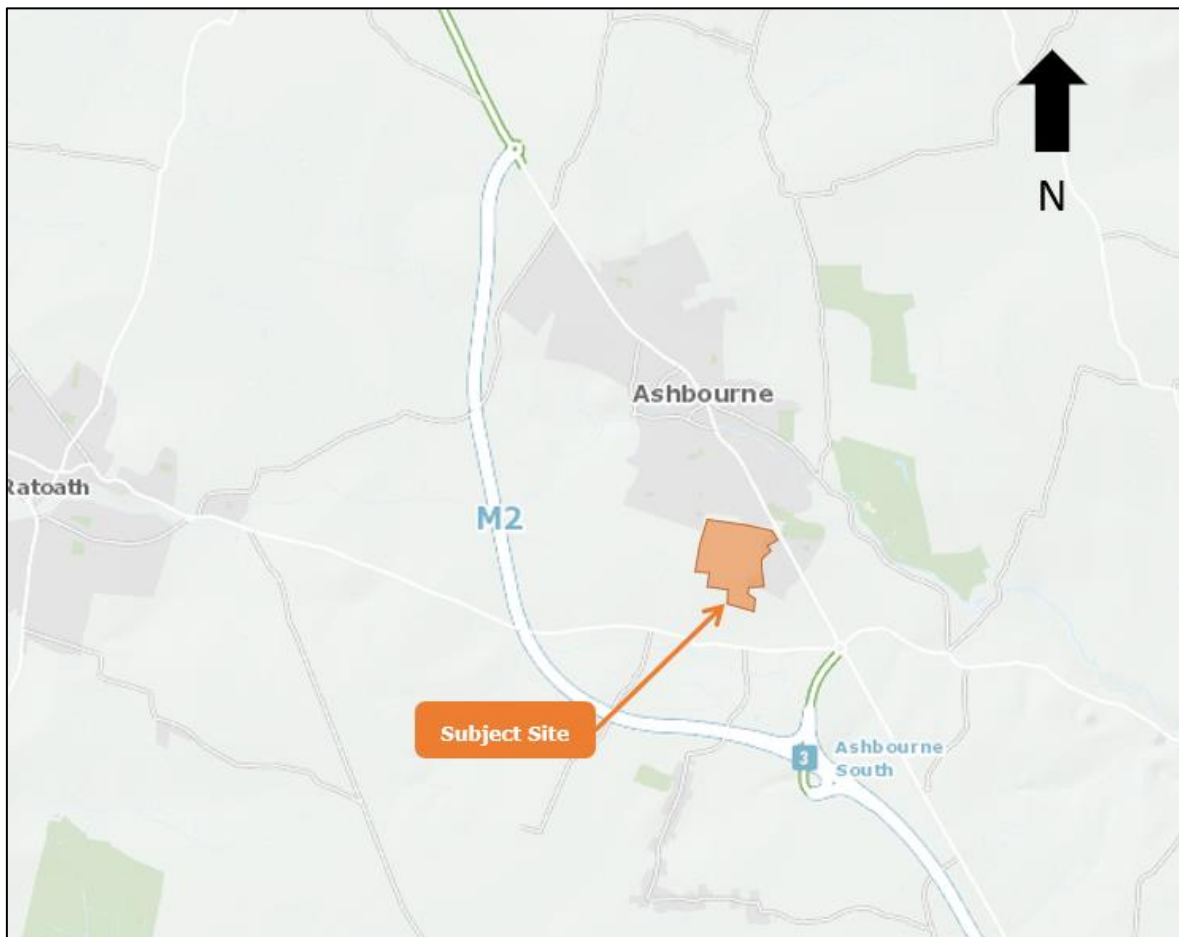


Figure 2.1: Site Location

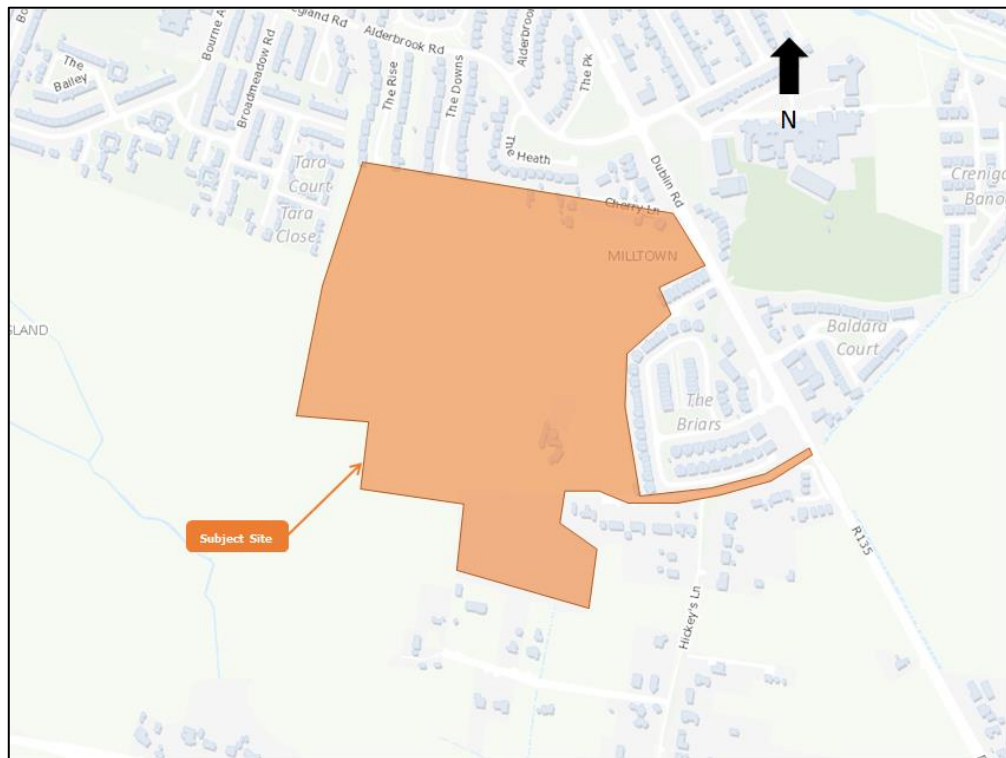


Figure 2.2: Subject Site Indicative Boundary

2.2 LAND USE

- 2.2.1 The proposed development site currently comprises agricultural land.
- 2.2.2 The Meath County Development Plan 2021-2027 allocates this land as being zoned "A2 – New Residential", which objective is *"To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy"*. It includes a small area zoned "G1 – Community Infrastructure", which objective is *"To Provide for necessary community, social, and educational facilities"*.
- 2.2.3 The immediate surrounding areas are mainly dedicated to residential use to the north and east, with a zoning objective *"To protect and enhance the amenity and character of existing residential communities"*. There are lands east of the site dedicated to *"To provide for necessary community, social, and educational facilities"*. The site borders to the southwest with rural lands.

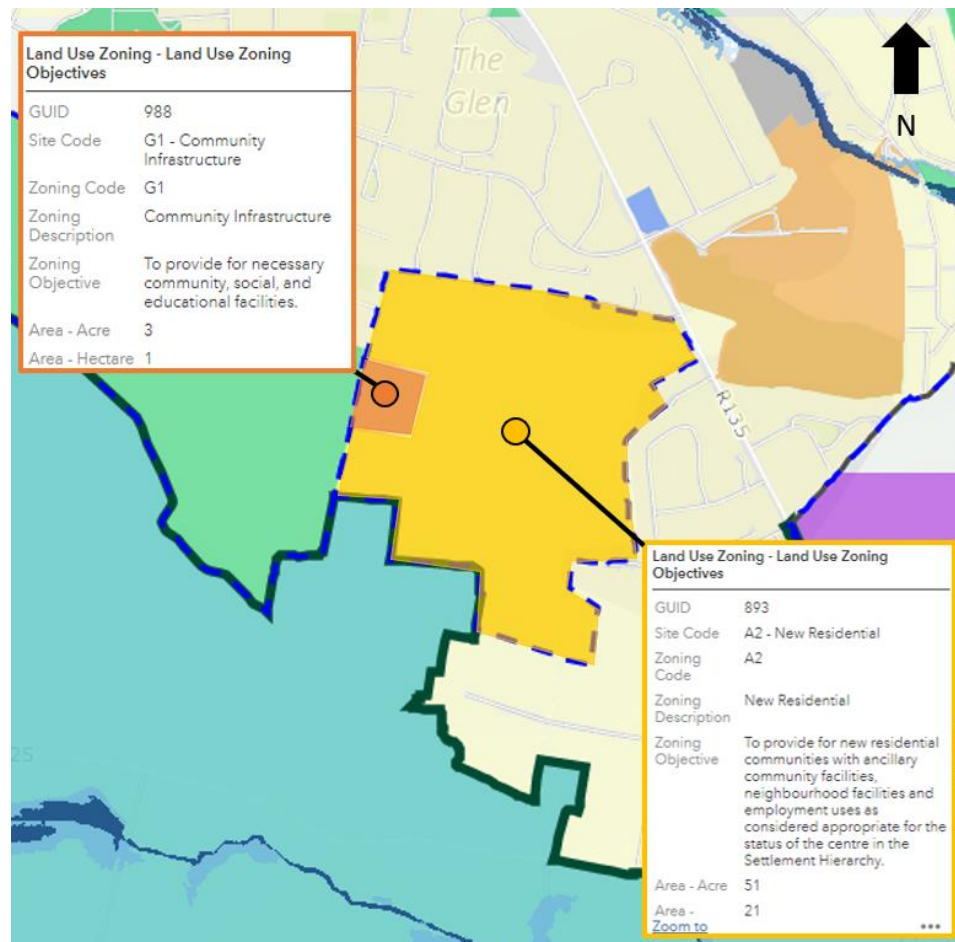


Figure 2.3: Land Zoning (source: Meath County Development Plan 2021-2027)

- 2.2.4 The subject site lands are currently in use as agriculture land, as shown in **Figure 2.4** below.



Figure 2.4: Subject Site Indicative Boundary

2.3 EXISTING TRANSPORTATION INFRASTRUCTURE

Road Network

- 2.3.1 The subject development site is located west of the Dublin Road (R135) which is aligned north-south through Ashbourne with onwards connections to the M2 (to the south) and the N2 (to the north). **Figure 2.5** below illustrates the general location of the subject site within the context of the existing road network.



Figure 2.5: Road Network

2.3.2 The Dublin Road (R135) is a two-way single carriageway regional road. It connects Ashbourne to Dublin City Centre in addition to providing links to N2/M2 motorway northbound and southbound respectively. The speed limit is 60kph from Nine Mile Roundabout, and it reduces to 50kph on approach to Hickey's Lane and the subject development.



Figure 2.6: R135 Dublin Rd

- 2.3.3 The primary access to the subject site will be via Cherry Lane, which is currently a local road that caters for less than 10 houses (cul-de-sac), as shown in **Figure 2.7** below. This road will be upgraded and act as the primary access to the proposed development, with pedestrian and cycle facilities on either side of the carriageway.



Figure 2.7: Cherry Lane/Dublin Road R135 Junction

- 2.3.4 The proposed secondary access to the development will be via Hickey's Lane. This is rural local road which provides access to residential properties and farms, there are currently no pedestrian or cycle facilities along Hickey's Lane (60kph), as shown in **Figure 2.8**. Hickey's Lane provides access to the Dublin Road R135 to the east and Ratoath Road R125 to the south.



Figure 2.8: Hickey's Lane/Dublin Road R135 Junction

- 2.3.5 Ratoath Road (R125) is located approximately 500m south of the subject site. Ratoath Road is a busy two-way single carriageway regional road (60kph), see **Figure 2.9**. Travelling westbound along Ratoath Road will connect the subject site to Ratoath, Dunshaughlin and other destinations along the route. Whereas travelling eastbound from Nine Mile Stone roundabout, it will connect the site to The Sycamor, Swords and other destinations along the route.



Figure 2.9: R125 Ratoath Rd

- 2.3.6 The R135 and R125 roads described above converge at the Nine Mile Stone roundabout, which provides access to the M2 Motorway towards Dublin.
- 2.3.7 The M2 motorway is located approximately 1.5km west of the subject site and can be accessed via interchange 3 from the Nine Mile Stone roundabout. Travelling southbound, the N2/M2 motorway provides connection to the M50 motorway, Dublin Airport and Dublin City Centre. Whereas travelling northbound, Slane, Ardee and several other destinations along the route. The M2 motorway becomes N2 south of the Tyrellstown.

Existing Cycling and Pedestrian Facilities

- 2.3.8 Dublin Road (R135) offers pedestrian footpaths on both sides of the carriageway from Nine Mile Stone Roundabout to Asbourne Town Centre, although there is a limited number of pedestrian crossing facilities available, particularly controlled pedestrian crossings.



Figure 2.10: Pedestrian facilities on R135 Dublin Road

- 2.3.9 Cherry Lane is a local road providing access to less than 10 houses (cul-de-sac), a pedestrian footpath is provided on the northern side of the carriageway for a section of the road. While Hickey's Lane is rural local road which provides access to residential properties and farms, there are no pedestrian facilities along Hickey's Lane (60kph).
- 2.3.10 The scheme proposals for the subject site will ensure pedestrians are given priority within the internal site layout to ensure desire lines within the site are accommodated, providing a good level of service, ensuring the risk of pedestrian conflict with vehicles is minimised and providing attractive convenient connections to external key walking desire lines.
- 2.3.11 The proposed new access arrangements to the site will include the provision of dedicated pedestrian crossing facilities along key desire lines.
- 2.3.12 In terms of cycle infrastructure, the subject site is located within the GDA Cycle Network sector designated as the "Dunshaughlin, Ratoath & Ashbourne". **Figure 2.11** below illustrates the existing cycle network in the vicinity of the subject site.

2.3.13 There are existing cycle lanes along the following roads within proximity of the subject site:

- Dublin Rd – Frederick St (R135). Off road cycle tracks immediately adjacent to each traffic lane in a North-South direction, starting at Dublin Rd/Alderbrook Rd/Deerpark junction up to Dunnes Stores, through Ashbourne Town.
- Broadmeadow Greenway – Castle St – Killegland. Cycle lanes in a East-West direction from Broadmeadow Greenway up to Ashbourne Education Campus in Killegland.
- Churchfields – Castle St – Killegland St. off road cycle tracks linking the Churchfields to Ashbourne Town Centre.

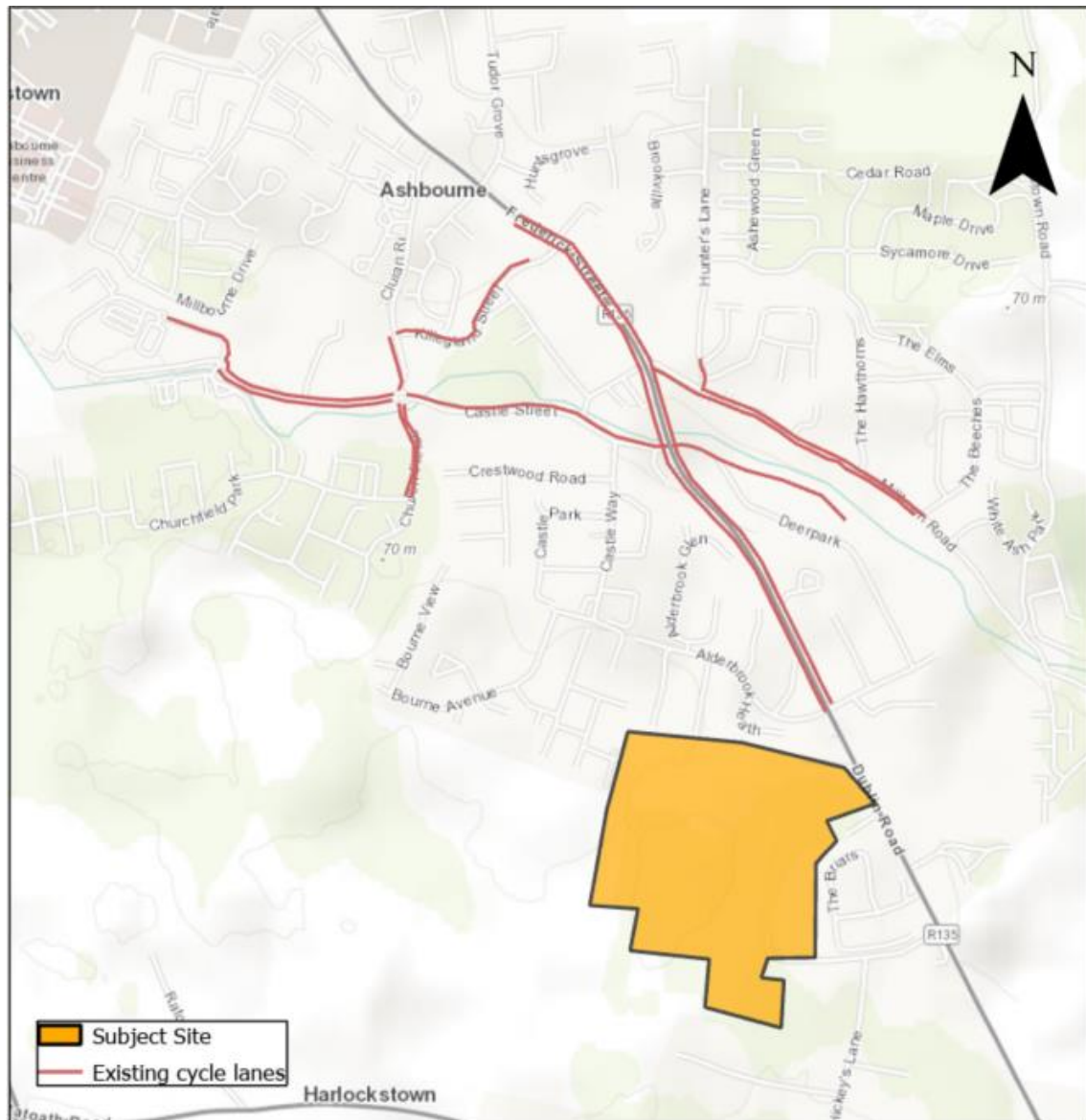


Figure 2.11: Existing Cycle Facilities

2.3.14 A separate **Drawing No. 200059-DBFL-TR-SP-DR-C-1101** is submitted with the Application Package which illustrates existing transportation linkages.

Public Transport - Bus

2.3.15 The subject site is well served in terms of public transport provision. Several bus routes connect the area with Dublin City Centre, Dublin Airport, Blanchardstown, Ratoath, Swords or Balbriggan. These routes are outlined below.

- **103 (Dublin – Ashbourne – Ratoath – Tayto Park).** Operated by Bus Eireann, it is the service offering the highest frequency, with over 50 services per direction on a weekday and 40 on weekend days. It links Dublin with Ashbourne in 40 minutes, with a frequency of 20 minutes at peak hour.
- **103x (Dublin – Ashbourne – Navan).** Operated by Bus Eireann, this route is similar to the 103, with a more direct itinerary non-stop from Ashbourne to Dublin City Centre. There are only 3 services per direction at peak hour.
- **105 (Drogheda – Ashbourne – Ratoath – Blanchardstown).** Operated by Bus Eireann, it offers a link with Blanchardstown Shopping Centre, as well as other services to Dublin City Centre and Dunboyne Train Station. In the other direction, users can access to Drogheda and its Train Station. The route offers 30 service from Monday to Saturday in each direction.
- **109a (Kells – Navan – Dunshaughlin – Ratoath – Ashbourne – Dublin City Centre).** Operated by Bus Eireann, it offers a link to Dublin Airport in 30 min, with some services to City Centre and DCU. There are 26-27 services running every day in each direction.
- **193/194 (Ashbourne/Ratoath – Dublin).** Operated by Ashbourne Connect, it is a express Ashbourne-Dublin service running only at peak times. There are 5 services on weekdays only, at AM peak towards Dublin, and at PM Peak towards Ashbourne/Ratoath.
- **197 (Swords – Ashbourne).** Operated by Go Ahead Ireland, it links Ashbourne with Swords, Pavilions Shopping Centre, Airside, and services to other areas in Fingal.

- **Local Link 195 (Ashbourne – Balbriggan).** This is a TFI Local Link service running from Monday to Saturday linking Ashbourne with Balbriggan Train Station and small towns in between.

2.3.16 **Figure 2.12** below shows the connectivity offered by these routes from Ashbourne with the wider area. **Figure 2.13** illustrate the bus services in the Ashbourne area. Most routes go through Dublin Rd R135.

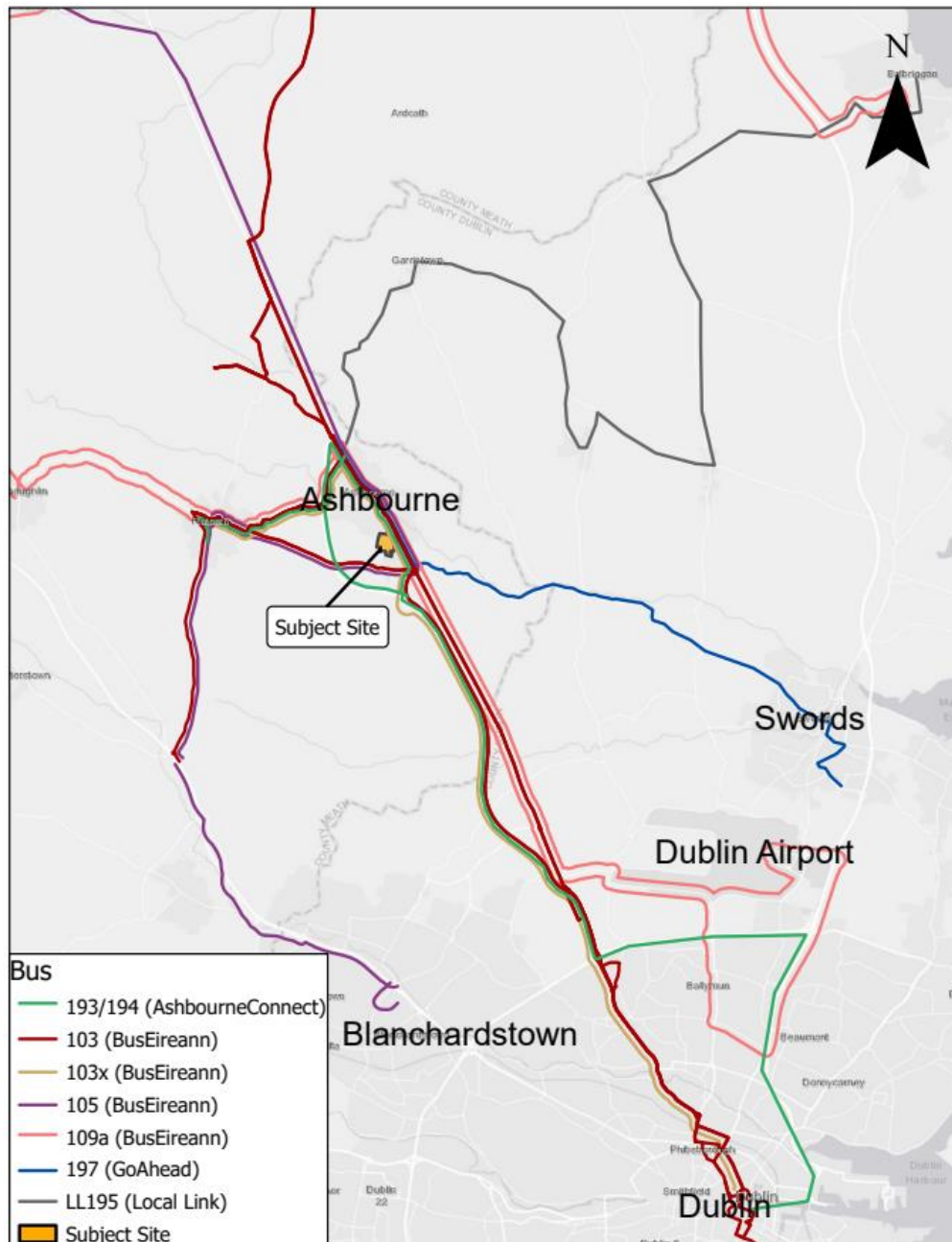


Figure 2.12: Bus Routes serving Ashbourne

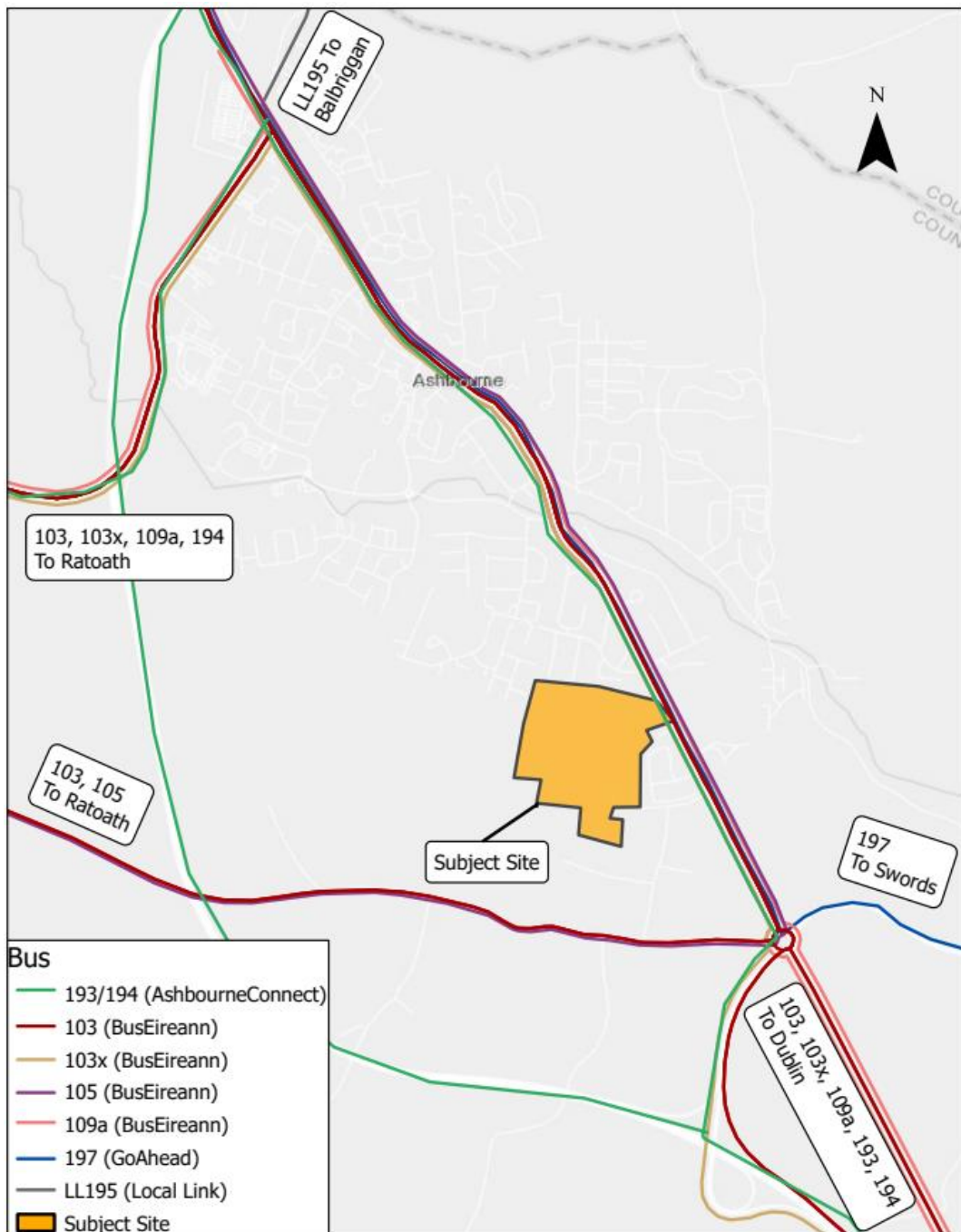


Figure 2.13: Bus Routes serving Ashbourne

2.3.17 It can be seen in **Figure 2.14** below 4no. bus stops are highly accessible from the subject site. These are served by bus routes no. 103, 103x, 105, 109a, 193 & 194. Most routes link with Dublin City Centre, except for most services of 109a heading to Dublin Airport, and services of 105 heading to Blanchardstown. All bus stops are located within 300-400m from the subject site.

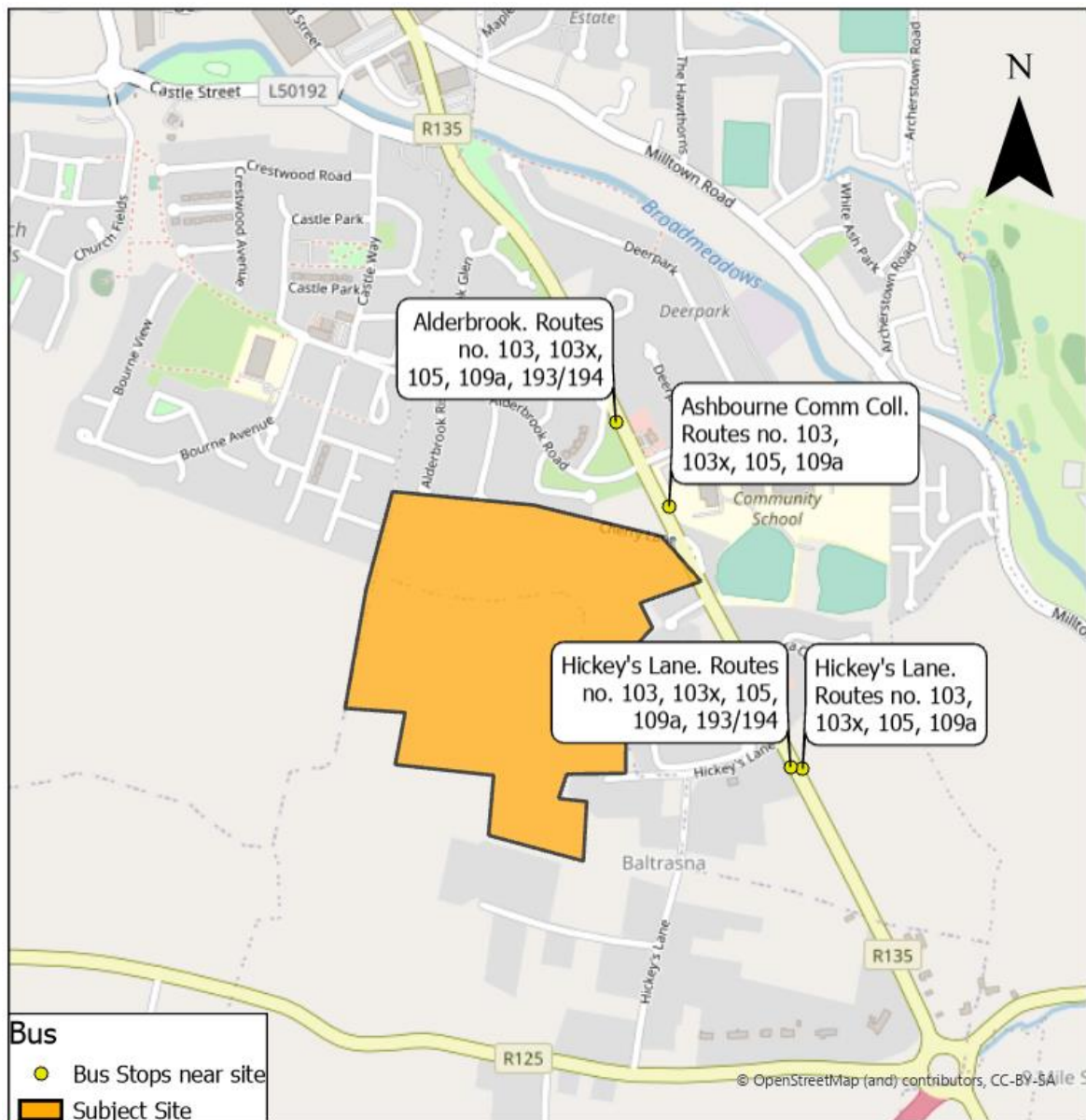


Figure 2.14: Bus Routes serving the subject site

2.3.18 All the above introduced bus services operate mostly on a daily basis and offer relatively frequent schedules as summarised in **Table 2.1** below.

Route	Route	Mon – Fri	Sat	Sun
103	From Dublin to Ashbourne, Ratoath & Tayto Park	52	41	24
103	From Tayto Park, Ratoath & Ashbourne to Dublin	53	42	24
103x	From Dublin to Ashbourne & Navan	3	-	-
103x	From Navan & Ashbourne to Dublin	3	-	-
105	From Drogheda to Ashbourne, Ratoath & Blanchardstown	30	30	12
105	From Blanchardstown, Ratoath & Ashbourne to Drogheda	30	30	12
109a	From Dublin Airport/City Centre to Ashbourne, Ratoath, Dunshaughlin, Navan & Kells	27	27	27
109a	From Kells, Navan, Dunshaughlin, Ratoath & Ashbourne to Dublin Airport/City Centre	27	26	26
193/194	From Ashbourne/Ratoath to Dublin City Centre	5	0	0
193/194	From Dublin City Centre to Ashbourne/Ratoath	5	0	0
197	From Swords to Ashbourne	18	18	15
197	From Ashbourne to Swords	17	17	15
LL195	From Ashbourne to Balbriggan	6	6	0
LL195	From Balbriggan to Ashbourne	5	6	0

Table 2.1: Bus Services – (source: Bus Eireann, Ashbourne Connect, Go Ahead Ireland, TFI Local Link)

- 2.3.19 Detailed transport linkages for the existing scenarios detailing distances to surrounding Public Transport is presented in a separate **Drawing No. 200059-DBFL-TR-SP-DR-C-1101** submitted with the pre-planning application package.
- 2.3.20 In conclusion, the site is already strategically located to avail of excellent sustainable travel options in the form of public transport as well as walking links. A number of current schemes being developed by the National Transport Authority will see further improvements to infrastructure and services thereby increasing the attractiveness of the use of sustainable modes as means for accessing the development.

Transport Sharing Schemes – Car sharing

- 2.3.21 GoCar is car sharing membership-based scheme founded in May 2008. it is headquartered in Dublin and has expanded its services to Galway, Cork, Dundalk, Limerick, Wexford, Waterford and many other areas. After joining the scheme, a member can rent a car or van from €8/hour for a time period of as little as half an

hour or 24/7, 365 days a year. The cost of insurance, fuel and parking are covered by the scheme as part of the GoCar membership.

- 2.3.22 GoCar is a successful on demand mobility initiative and reducing the need for owning private cars, therefore residential developments are now seeking car sharing facilities as part of their development to offset the need for dedicated car parking.
- 2.3.23 The subject development proposes to provide car club (2 no. GoCar) to be used by the future residents of the development. Additional GoCar bases are also available in the vicinity of the subject site with the closest GoCar base being at the car park of Tesco in Ashbourne Town Centre. This is located within approximately 1.1Km or 13 minutes walking distance of the subject site as illustrated in **Figure 2.15** below.

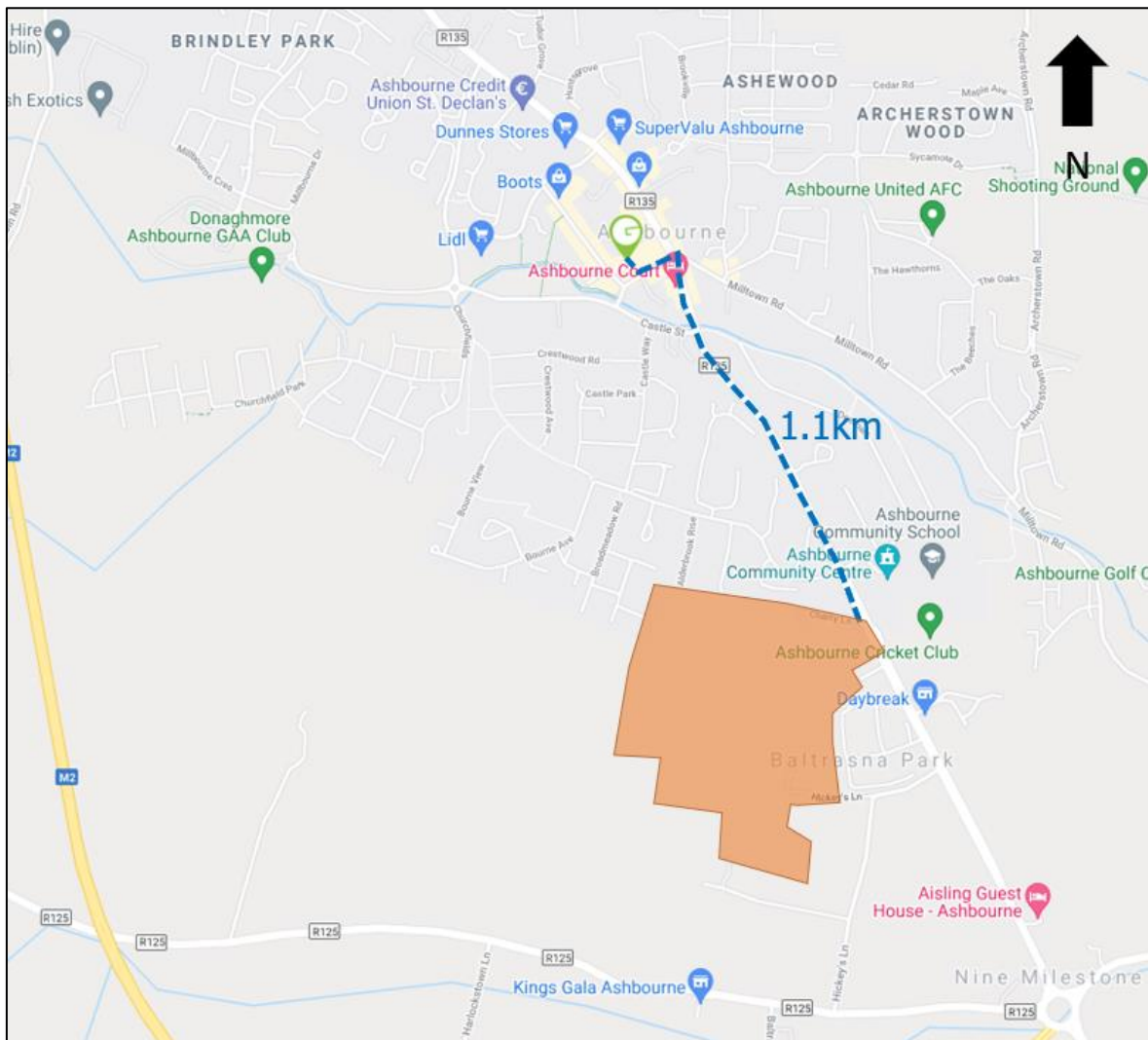


Figure 2.15: GoCar Bases (Source: GoCar)

2.4 EXISTING PUBLIC TRANSPORT CAPACITY

- 2.4.1 It is widely accepted in the industry that the periods of maximum demand generated upon the public transport networks on a typical weekday are focused upon the AM (06:00-10:00) and PM (16:00-20:00) periods as predominantly influenced by travel to work, school, and college patterns at any given location.
- 2.4.2 The existing capacity on the local public transport network has been determined based on (i) frequency of services (i.e. timetabled services) and (ii) type / size of vehicle. The existing public transport services accessible from the Proposed Development are outlined in **Section 2.3** above. The site is located within a 5 minutes walking distance to the Bus Eireann routes no. 103, 103x, 105 & 109a, and Ashbourne Connect routes no. 193/194.
- 2.4.3 **Table 2.3** below provides a summary of the bus capacity during the peak public transport patronage times (i.e. AM 06:00-10:00 & PM 16:00-20:00 in the PM). It assumes that the capacity for routes no. 103 & 103x equals to 66 passengers, with double decker buses, whilst routes no. 105 & 109a would have a lower capacity of 46 passengers, corresponding to single decker buses. Ashbourne Connect Routes no. 193/194 has been assumed to have a capacity of 56 passenger on each service.
- 2.4.4 The existing bus capacity analysis reveals, during peak travel periods, the existing bus services have the capacity to accommodate up to 3,166 passengers in the AM peak period (06:00-10:00) and 3,268 passengers in the PM period (1600-20:00).

Bus Service	Route No.	Route	AM (06:00-10:00)		PM (1600-20:00)	
			Services	Capacity	Services	Capacity
Bus Eireann	103	From Dublin	12	792	12	792
		To Dublin	12	792	13	858
	103x	From Dublin	0	0	3	198
		To Dublin	3	198	0	0
	105	To Blanchardstown	8	368	8	368
		From Blanchardstown	6	276	8	368
	109a	To Dublin/Airport	5	230	4	184
		From Dublin/Airport	5	230	6	276
Ashbourne Connect	193/194	To Dublin	5	280	0	0
		From Dublin	0	0	4	224
Total Bus Capacity			56	3,166	58	3,268

Table 2.2: Existing Bus Capacity

2.5 LOCAL AMENITIES

- 2.5.1 The proposed development site is well placed in terms of amenities. There are a comprehensive number of schools located within 2km of the subject site including Ashbourne Community School, Gaelscoil na Cille, St Mary's NS, Ashbourne Educate Together NS, St Declan's National Catholic School, Colaiste de Lacy, and Bumble Bee Daycare.
- 2.5.2 Furthermore, the subject site benefits from good access to leisure facilities such as Sports centres, playgrounds, and GAA clubs, as well as health centres. In addition, the site is located in close proximity to Ashbourne Town Centre, where there are several supermarkets and retail centres, such as Aldi, Tesco or Dunnes Stores. **Figure 2.16** shows indicatively the proximity of the subject site's location in relation to the aforementioned local amenities.

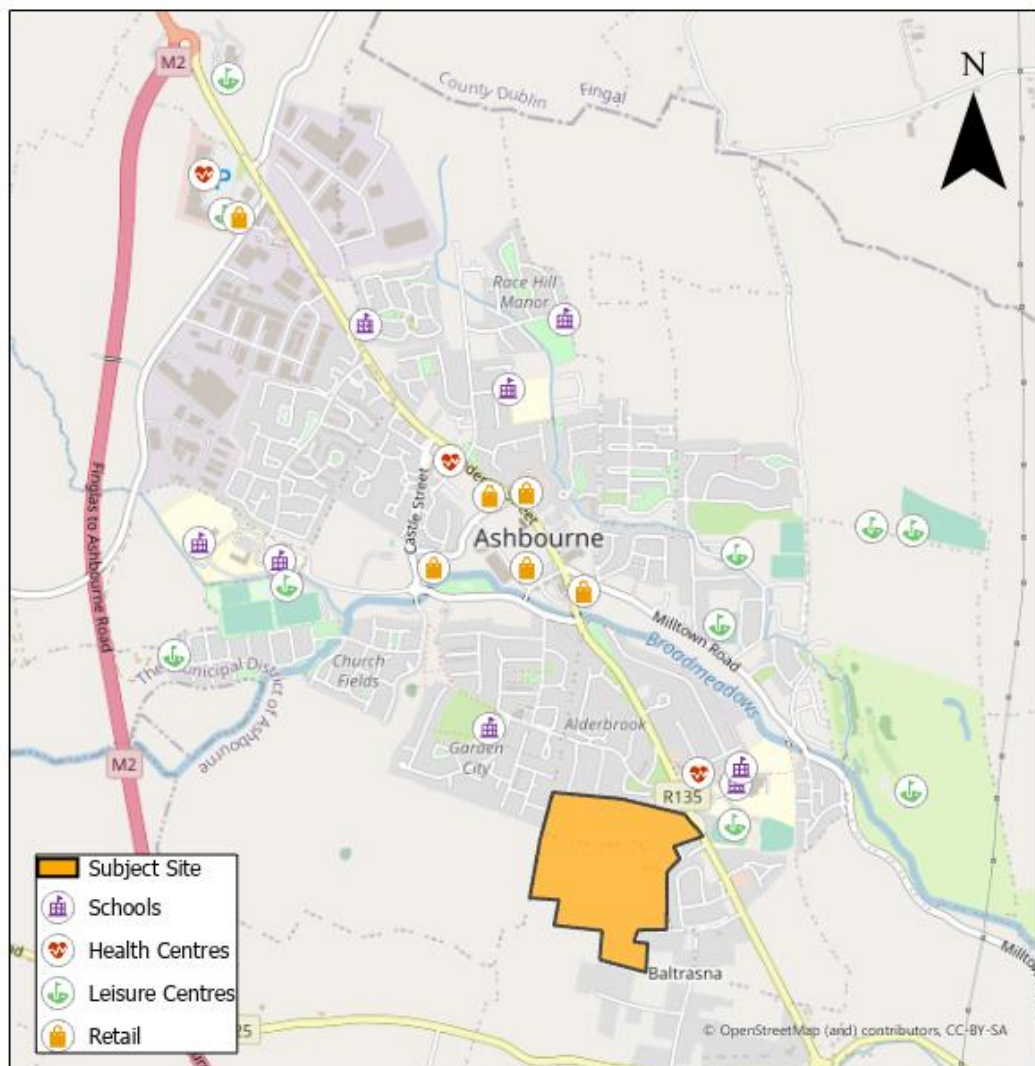


Figure 2.16: Local Amenities and Proximity to Proposed Development

2.6 SITE ACCESSIBILITY

Walking

- 2.6.1 The pedestrian catchments accessible from the subject site are shown in **Figure 2.17** below for different walking times, from 10 minutes to 30 minutes. In 10-minutes walking time, several nearby bus interchanges are reachable, with access to all routes bound for Dublin City Centre; educational facilities Ashbourne Community School and Gaelscoil na Cille, Deerpark Medical Centre, and Ashbourne Cricket Club. In 20-minutes walking time, Ashbourne Town Centre and several amenities can be accessed, including Tesco, Aldi, St Declan's NCS, Ashbourne United pitches, and Ashbourne Golf Club. In 30-minutes walking time, more amenities can be reached, including Ashbourne Educate Together, St Mary's National School, and Ashbourne Health Centre.

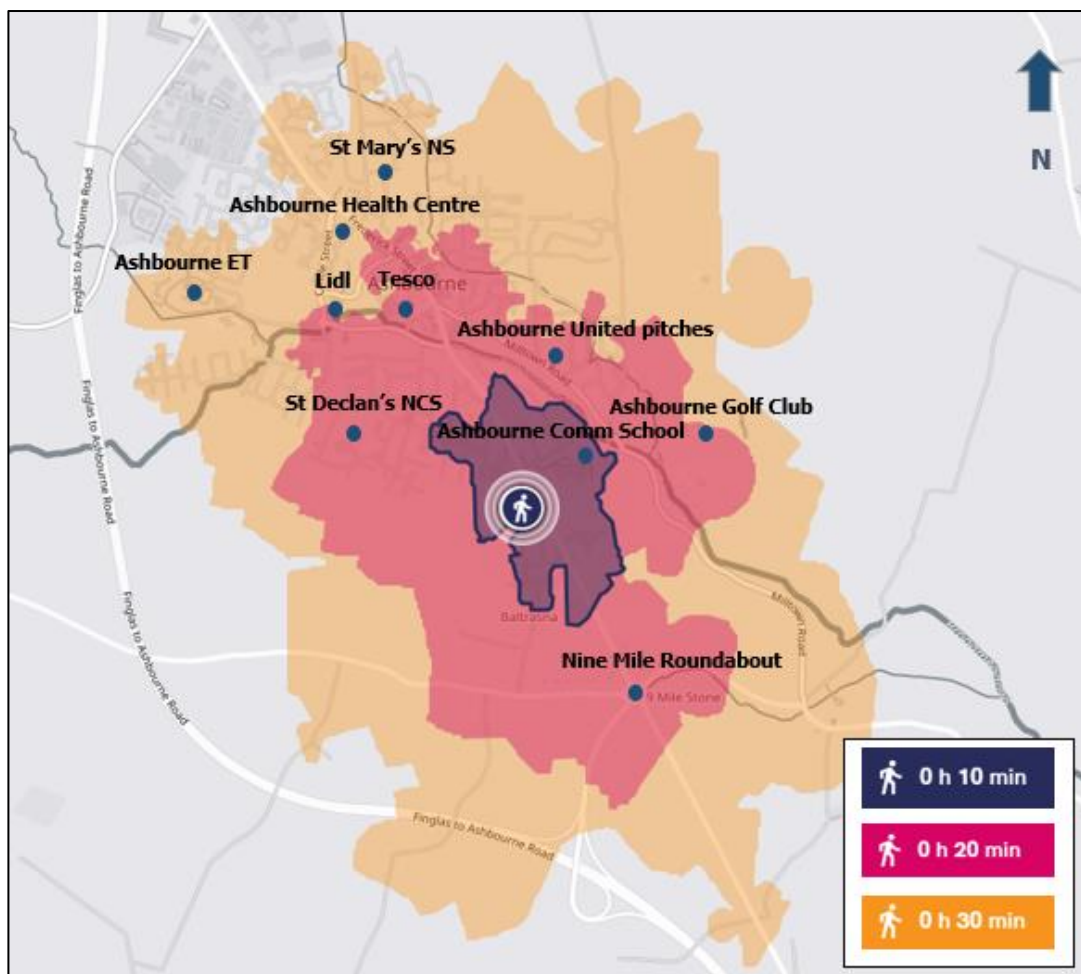


Figure 2.17: Pedestrian Accessibility (Walking Time from Site) (Source: TravelTime platform)

Cycling

2.6.2 **Figure 2.18** below illustrates cycle travel time catchment areas from the subject site.

2.6.3 In 10 minutes of cycling, Ashbourne Town Centre is accessible, as well as most amenities of Ashbourne, including several schools, leisure centres, health centres and retail. In 20 minutes of cycling, areas such as Ashbourne Industrial Estate, Ashbourne Retail Park, and Ratoath are accessible. In 30 minutes of cycling, Curragha, Rolestown, and Kilbridge are reachable, as well as Tayto Park.

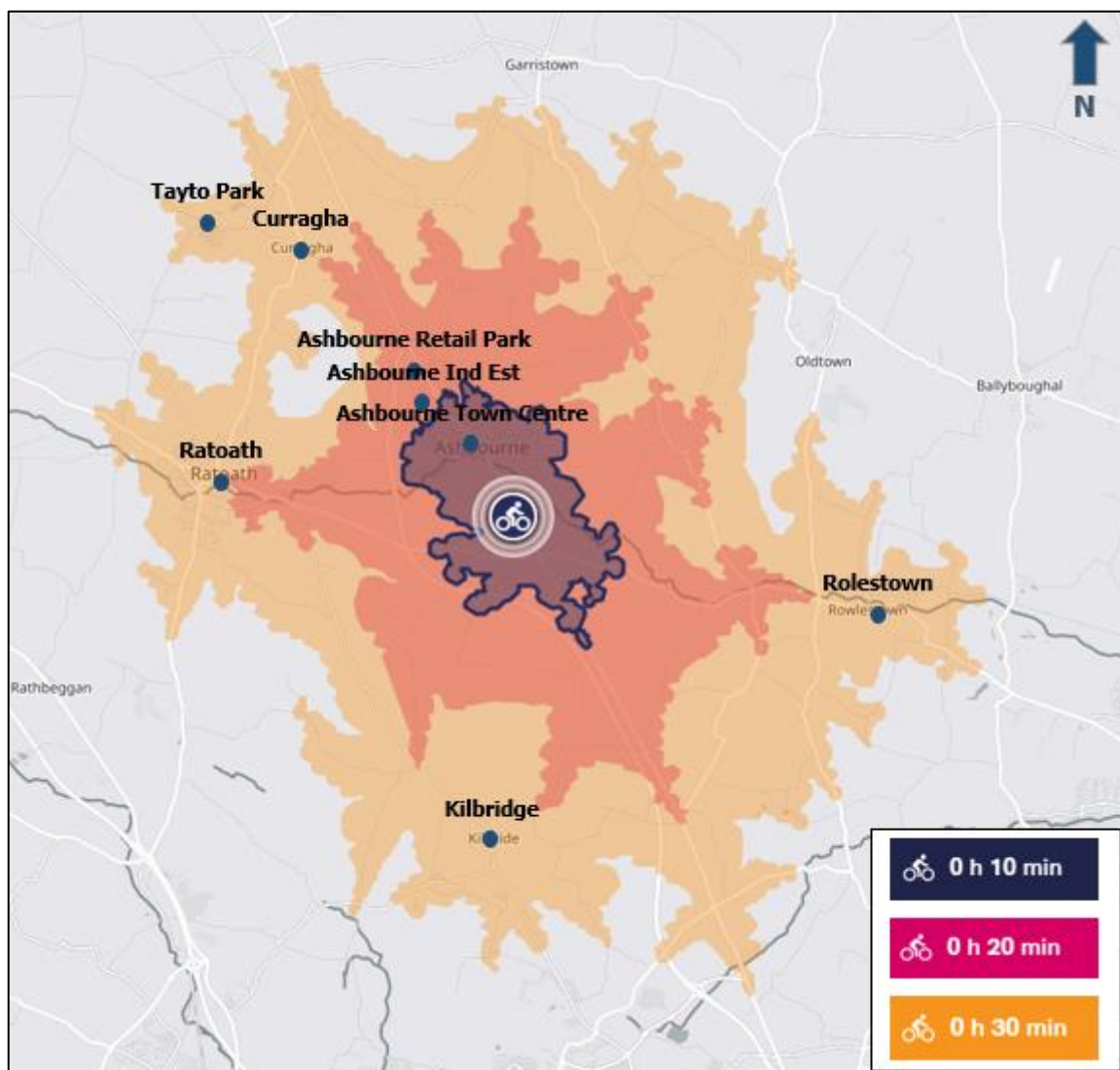


Figure 2.18: Bicycle Accessibility (Cycle Time from Site) (Source: TravelTime platform)

Public Transport & Walking

- 2.6.4 In terms of public transport accessibility, the subject site currently benefits from a significant range of bus routes bound for Dublin City Centre and Dublin Airport, as well as frequent services to other parts in the surrounding area, including Ratoath, Tayto Park, Rolestown and Swords.
- 2.6.5 Ratoath, Tayto Park, Money Hill and other settlements along the N2 route can be reached in 30 minutes using public transport. The accessibility of 45 minutes increases to Swords, Dunboyne, M3 Parkway Train Station, Finglas and neighbourhoods of Dublin City Centre including Phibsborough and Cabra. In 1h using public transport, users can reach Blanchardstown, Dublin Airport, Dunshaughlin, several suburbs in North Dublin City, and Dublin City Centre.

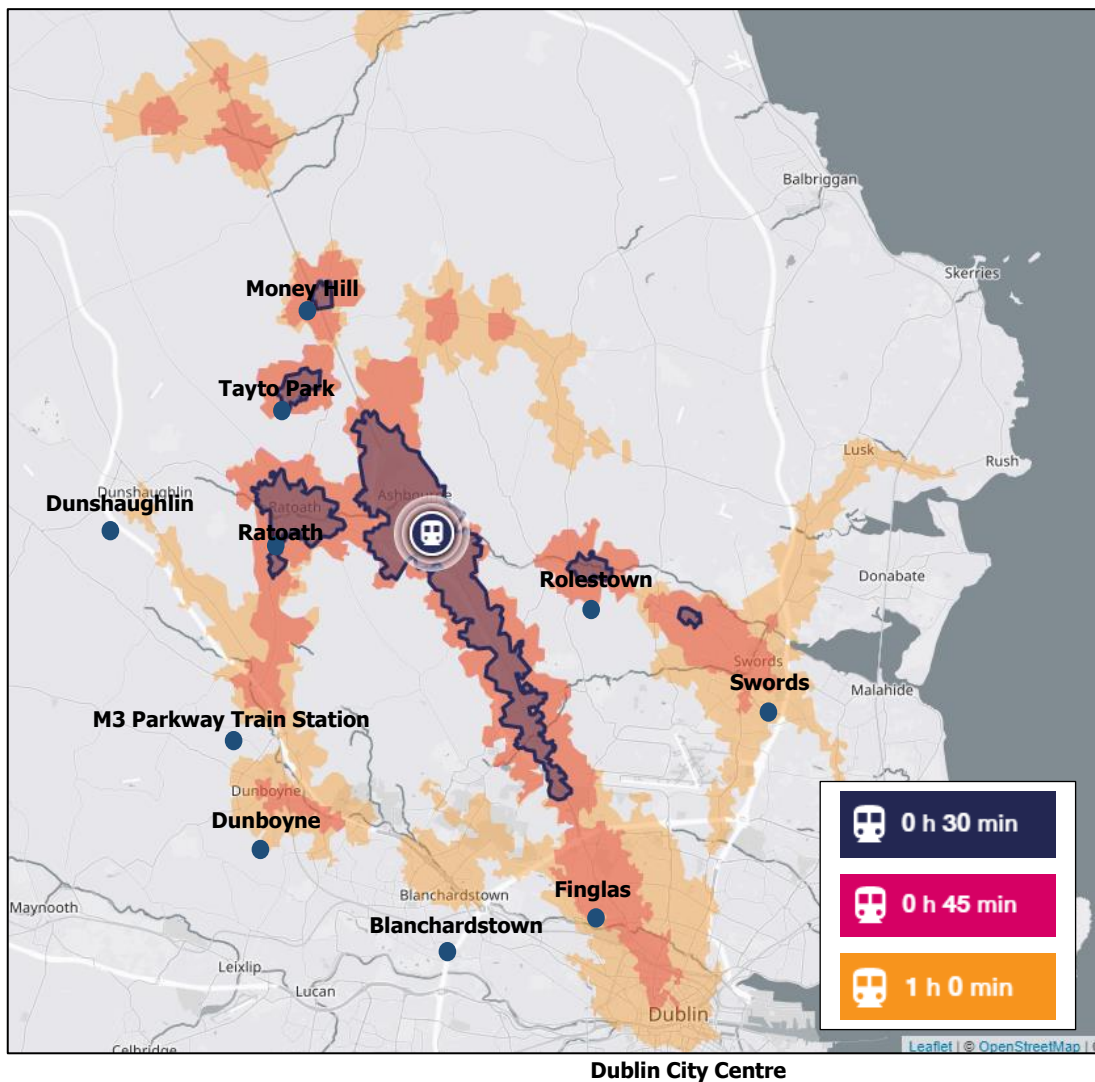


Figure 2.19: Public Transport & Walking Accessibility (Source: TravelTime platform)

2.7 ROAD SAFETY REVIEW

2.7.1 With the objective of ascertaining the road safety record of the immediate routes leading to/from the subject site, the collision statistics as detailed on the Road Safety Authority's (RSA) website (www.rsa.ie) have been examined. The RSA website includes basic information relating to reported collisions over the most recent twelve-year period from 2005 to 2016 inclusive. The RSA database records detail where collision events have been officially recorded such as when the Garda being present to formally record details of the incident.

2.7.2 **Table 2.3** and **Figure 2.20** below outline the recorded collisions which have occurred in the immediate vicinity of the site on Dublin Rd (R135) during the study period (2005-2016 inclusive). A cluster of 4no. minor accidents can be noticed at the Dublin Rd/Alderbrook Rd/Deerpark junction. All collisions in the area are minor, and mostly affecting cars.

Road Collision Location	No.	Year	Severity	Vehicle / Pedestrian	Circumstances	Day of Week	Time	Speed Limit	No. Casualties
Dublin Rd (R135)	1	2005	Minor	Goods Vehicles	Rear end, straight	Wed	1600-1900	40 KPH	
	2	2013	Minor	Car	Single vehicle only	Sat	2300-0300	50 KPH	1
	3	2010	Minor	Car	Rear end, straight	Sun	1900-2300	50 KPH	1
	4	2009	Minor	Car	Angle, right turn	Sat	0700-1000	50 KPH	1
	5	2015	Minor	Car	Head-on conflict	Sun	1600-1900	60 KPH	3
	6	2015	Minor	Car	Rear end, straight	Thu	1600-1900	80 KPH	3

Table 2.3: Road Collisions in the vicinity of the subject site (Source: RSA)

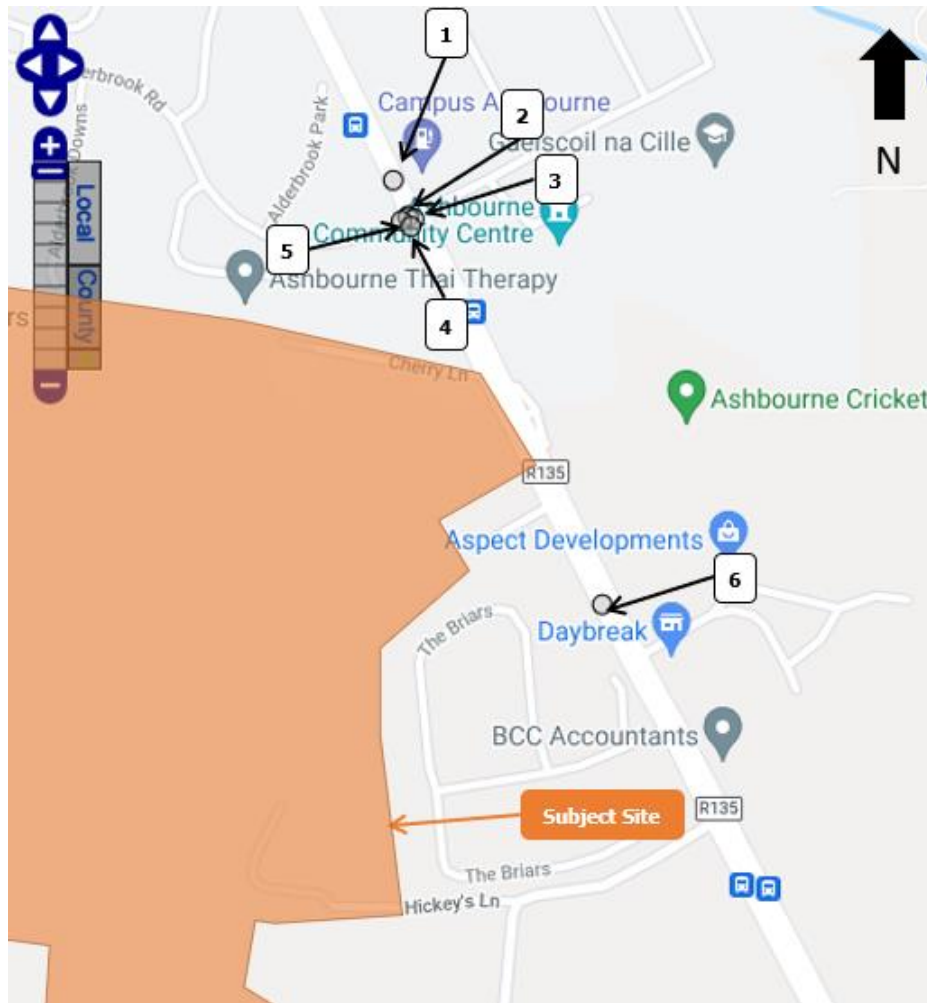


Figure 2.20: Road Collisions in the vicinity of the subject site (Source: RSA)

2.7.3 The review of the RSA data reveals that the local road network exhibits a low number of incidents in the surroundings of the subject site.

2.8 PROPOSED TRANSPORT INFRASTRUCTURE

Cycle infrastructure proposals

- 2.8.1 The subject site lies within the Greater Dublin Area Cycle Network Plan Zone 15 under “Dunshaughlin, Ratoath & Ashbourne” as outlined within the Greater Dublin Area Cycle Network Plan (2013).
- 2.8.2 **Figure 2.21** below indicates the proposed cycle routes in the vicinity of the site in accordance with the National Transport Authority’s “Greater Dublin Area Cycle Network Plan”. The subject site will benefit from the following cycle routes.
- **Primary Route AS1** follows Dublin Rd/Frederick St R135 Regional Road through Ashbourne.
 - **Primary Route AS2** is the Ballybin Loop on west side of Ashbourne to business park.
 - **Inter-urban Route M15** goes from Dunshaughlin to Ashbourne via Ratoath along quiet back roads, avoiding the busy R125.
 - **Inter-urban Route M17** is the Ashbourne to Dublin route along the R125 (old N2) on hard shoulders.
- 2.8.3 Additionally, other feeder routes are projected within Ashbourne, to complement the main ones outlined above.
- 2.8.4 These proposals have remained for the “Draft 2021 Greater Dublin Area Cycle Network Plan”.

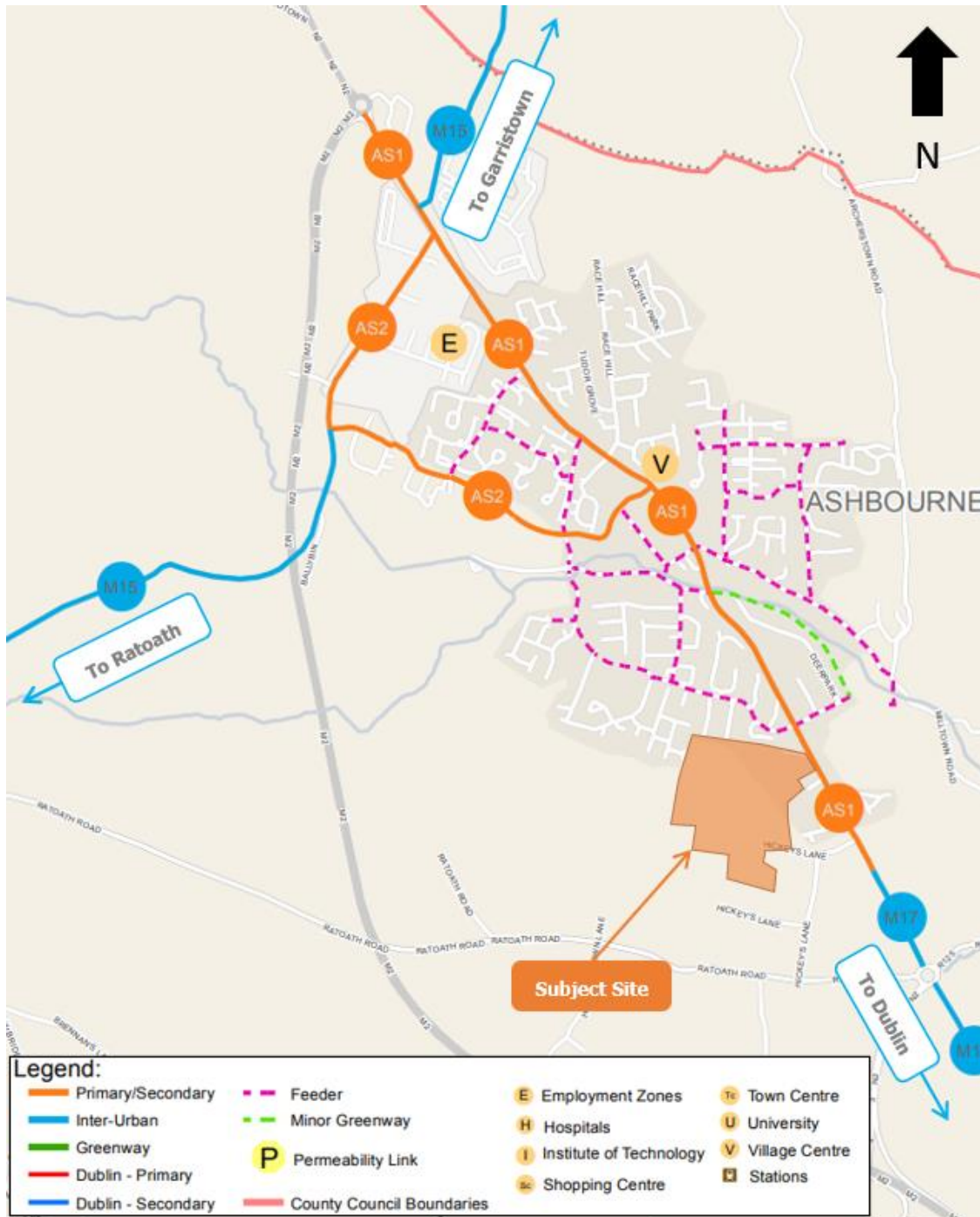


Figure 2.21: Proposed Cycle Facilities (Source: GDA Cycle Network Plan (2013))

2.8.5 The Draft Cycle Network Plan for the Greater Dublin Area (2021) has also been reviewed. In this version, the “Dunshaughlin, Ratoath & Ashbourne” sheet shows similar routes across Ashbourne. In this document, these are classified as secondary routes, as shown in **Figure 2.22**.

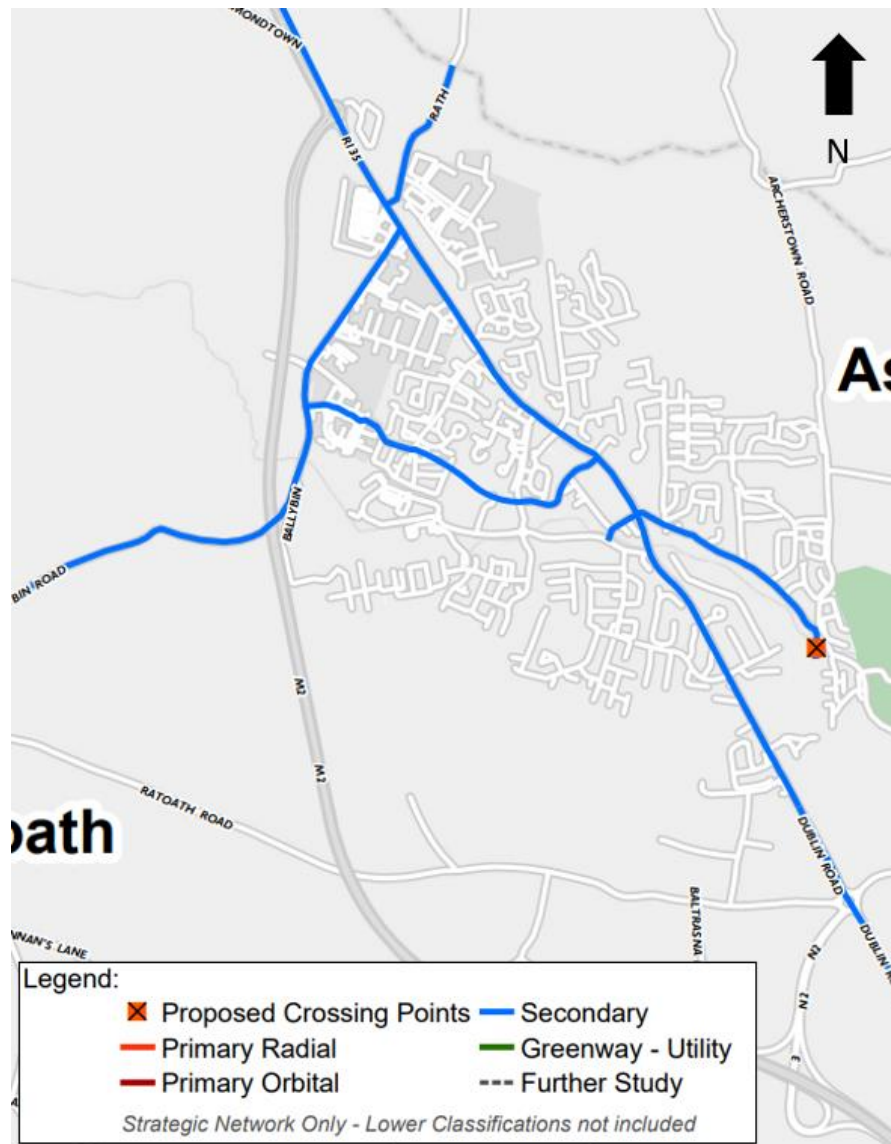


Figure 2.21: Proposed Cycle Facilities (Source: Draft GDA Cycle Network Plan (2021))

2.8.6 Some of these proposals are already in place, such as the cycle lanes along the R135 between Dunnes Stores and Alderbrook Rd as part of the Primary Route AS1, or the cycle lanes along Castle St and Killegland as part of the Primary Route AS2. Moreover, Meath County Council are carrying out "Ashbourne Main Street Refurbishment Scheme Phase 2", which includes road safety improvements on the R135. The works will commence and tie into Phase I of the Scheme, to the north of Dunnes Stores and extend northwards to the Pillo Hotel roundabout on the N2 and to the south of the Castle Street and Bridge Street junction extending southwards to the Nine Mile Stone roundabout on the R125. Other items part of Phase 2 of this project are outlined below.

- Provision of new cycle track/lanes on both sides of the R135 from the Ratoath roundabout on the N2 to the Nine Mile Stone roundabout at the Ratoath Road (R125).
- Enhanced pedestrian and cyclist facilities will be provided at each junction along the route, including additional traffic signals and pedestrian crossings to allow integration with the wider network.
- The construction of new footpaths.
- The reduction in width of the existing road carriageway in order to facilitate the new cycle tracks.
- The provision of improved signage, road markings, surfacing and public lighting necessary to provide the above.



Figure 2.22: Ashbourne Main Street Refurbishment Scheme (Source: Meath County Council)

Public Transport - Bus

- 2.8.7 In 2021 the National Transport Authority (NTA) developed Connecting Ireland Rural Mobility Plan. This is a major initiative designed with the aim of increasing connectivity, particularly for people living outside major cities and towns. Currently this project is under public consultation.
- 2.8.8 The proposed bus network for the wider site area is shown below in **Figure 2.22**.

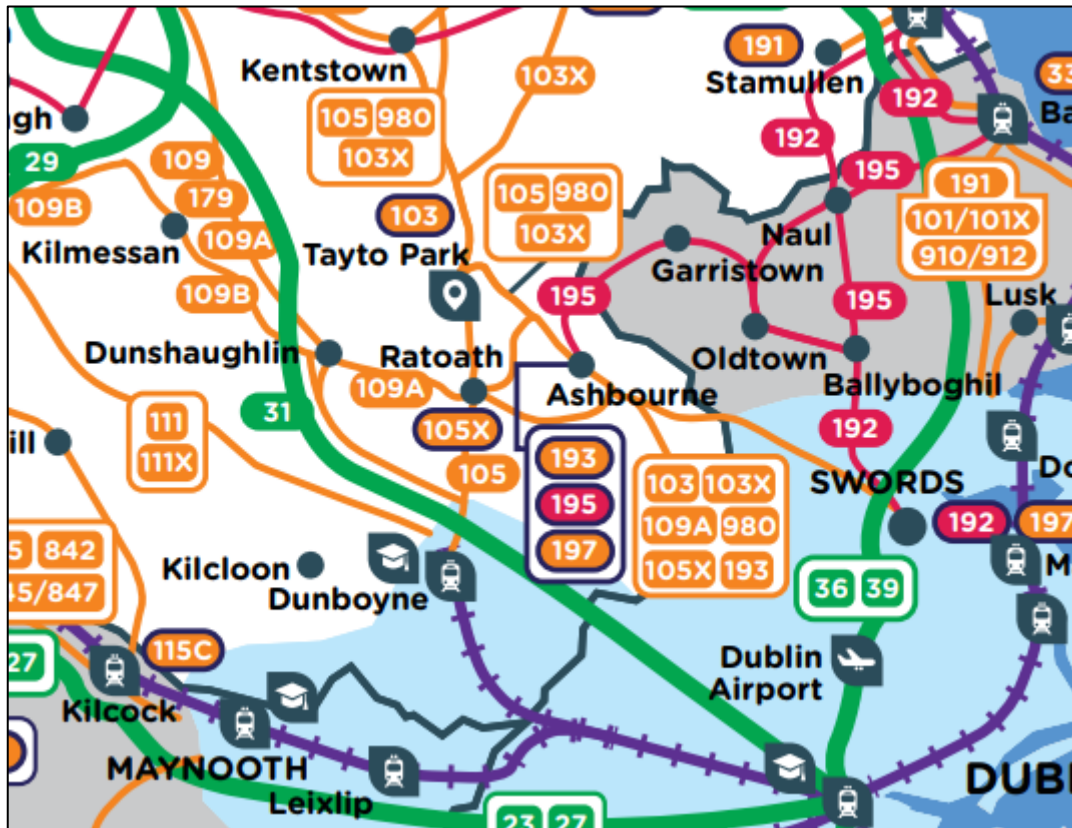


Figure 2.23: Proposed Public Transport Routes in the Vicinity of the Subject Site
(Source: Extract of Meath County Map Connecting Ireland Plan)

- 2.8.9 The bus routes and numbering will mostly remain the same. The main enhancements affecting the area are summarised below.
- **Regional Corridor Proposal no. 31:** From Donegal Town to Dublin. It is proposed to increase services between Navan and Dublin, so the minimum frequency is 30 minutes. This could also serve the site as routes no. 105 and 190A will link to this corridor.

- **Route 195 (Local Link):** From Ashbourne to Balbriggan. It is proposed to alter the route to also serve Ballymadun. The proposed minimum service is 6 return trips from Monday to Saturday and 3 return trips on Sunday.

2.8.10 BusConnects Scheme includes enhancing route 197 from Swords to Ashbourne, with a bus every hour.

Ashbourne Park and Ride

2.8.11 The Transport Strategy for the Greater Dublin Area 2022 – 2042 includes a Park and Ride Strategy. This is an analysis of each corridor in Dublin which considers the existing facilities and proposes new Park and Ride sites. These are illustrated in **Figure 2.24**.

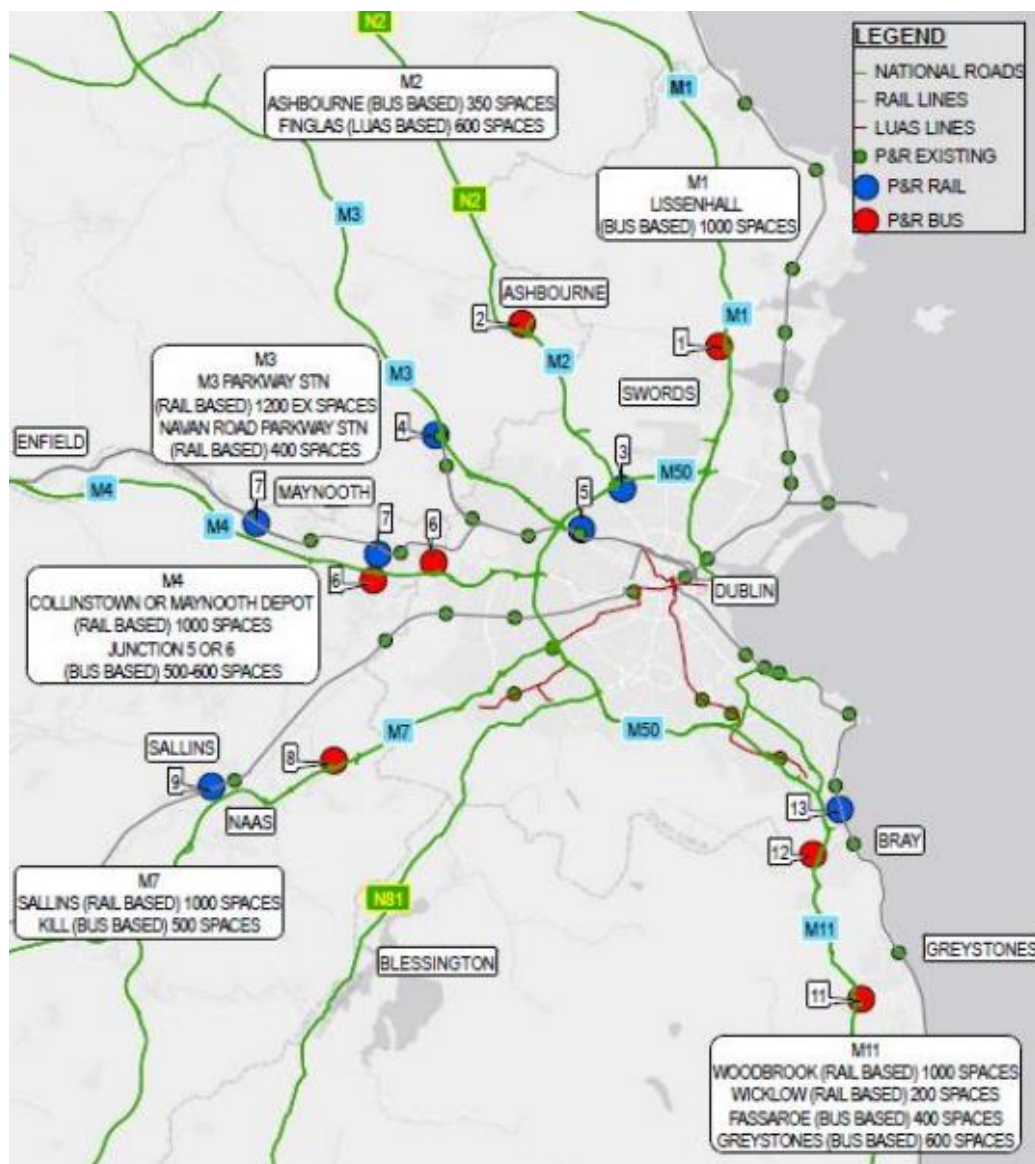


Figure 2.24: Proposed Park and Ride Facilities (Source: Park and Ride Strategy Map)

- 2.8.12 For the N2/M2 corridor, two sites are proposed: Ashbourne Park and Ride and Finglas Park and Ride.
- 2.8.13 Ashbourne Park and Ride (P& R no. 2 from **Figure 2.24**) is a bus-based facility with capacity of 350no. spaces. It is located just off Junction 3 of the M2, 1.2km from the Subject Site, or 2 minutes driving. This will be mainly served by Bus Eireann route no. 103.
- 2.8.14 Finglas Park and Ride (P& R no. 3 from **Figure 2.24**) is a Luas-based facility of 600no. space and is part of the Luas Finglas Extension Plan. The Finglas Park and Ride will be approx. 14km from the Subject Site, which could be driven in 10-14 minutes. Additionally, a new bus terminus is planned in the vicinity as part of the implementation of BusConnects. Further details of this project are outlined below.

Luas extension to Finglas

- 2.8.15 Luas Finglas is the proposed extension of the Luas Green Line from its terminus in Broombridge to the north of Finglas in Charlestown, beside the M50/N2 junction. This is a proposal from the Transport Strategy for the Greater Dublin Area 2022 – 2042.
- 2.8.16 Since work was completed on the Luas Green Line connection to Broombridge in 2017, the potential to extend the line to Finglas has been explored by Transport Infrastructure Ireland (TII) and the National Transport Authority (NTA). The process to identify potential routes to extend the Green Line to Finglas began in 2018, and an Emerging Preferred Route was published in 2021 for public consultation.
- 2.8.17 The proposed route will include four new stops along its 3.9-kilometre length. These are at St Helena's, Finglas Village, Mellowes Park and Charlestown, as illustrated in **Figure 2.25**.
- 2.8.18 Near the Luas stop St Margaret's Road, and close to the M50, a 600-vehicle park and ride facility is proposed. It is proposed a multi-storey Park and Ride and extended supermarket at a currently commercial site, subject to further design and traffic analysis. This will help reduce traffic driving through the area and adjacent villages of Cabra and Phibsborough.

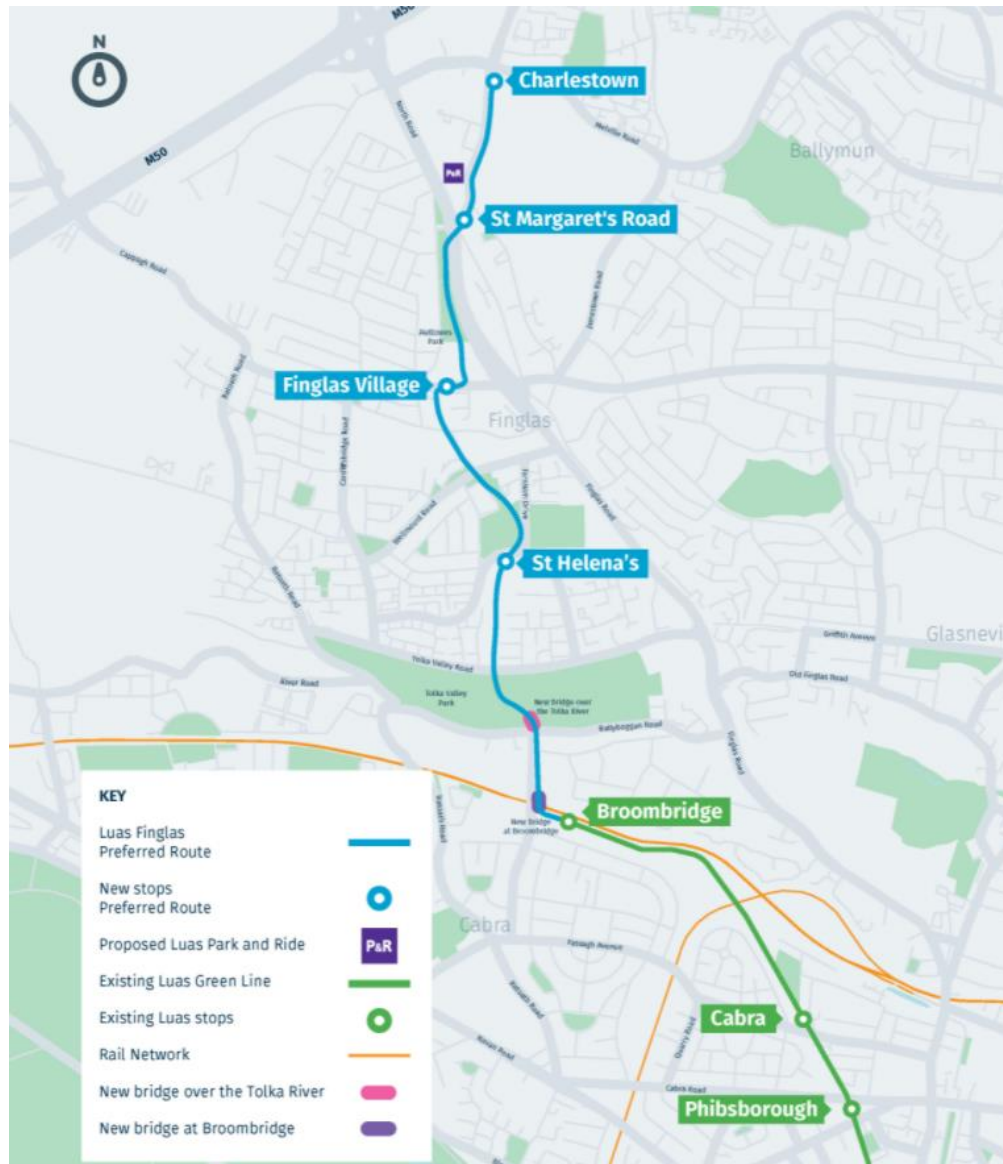


Figure 2.25: Luas Finglas Emerging Preferred Route (Source: Luas Finglas)

2.8.19 Residents from the subject site will benefit from a Park and Ride facility of 600 spaces 14km from the Subject Site, which could be driven in 10-14 minutes. Luas services would take 30 minutes from this point up to Trinity College, in Dublin City Centre, and also, passengers can change to rail services at Broombridge. Moreover, as part of the BusConnects rollout, users of the Park and Ride can continue their journey on several bus routes with the public transport terminus at this point. Furthermore, once BusConnects has been implemented, several high-frequency bus routes will serve the area.

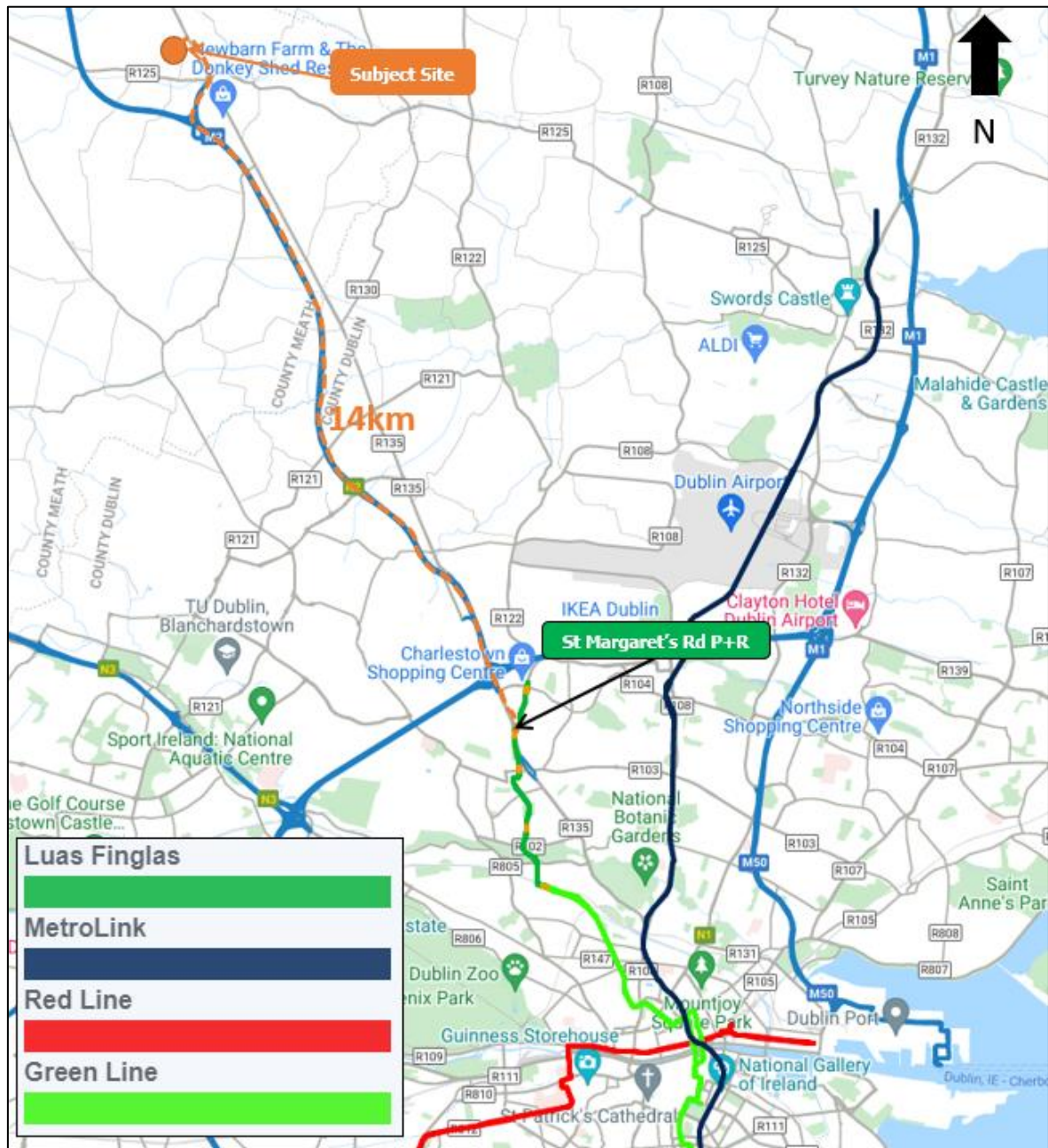


Figure 2.26: Subject site with Luas Finolas.

2.8.20 Detailed transport linkages for the proposed scenarios detailing distances to surrounding Public Transport is presented in a separate **Drawing No. 200059-DBFL-TR-SP-DR-C-1102** submitted with the pre-planning application package.

3.0 POLICY FRAMEWORK

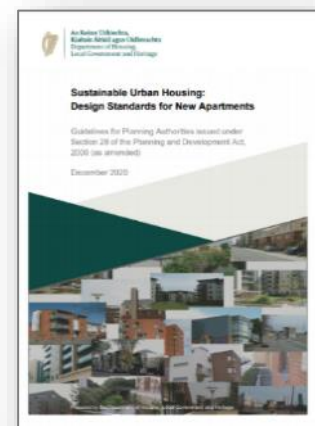
3.1 DEVELOPMENT POLICY

3.1.1 In the context of transportation, the subject site policy framework is influenced by the following key documentations. A common theme through each of these key documents is the emphasis placed upon the importance of travel demand management, with many identifying the need to implement mobility management plans with the objective of promoting sustainable travel patterns.

- Sustainable Urban Housing: Design Standards for New Apartments (December 2020)
- Smarter Travel – A Sustainable Transport Future (2009)
- Design Manual for Urban Roads and Streets (DMURS) (2019)
- Transport Strategy for the Greater Dublin Area 2016-2035
- Draft Transport Strategy for the Greater Dublin Area 2022-2042
- Greater Dublin Area (GDA) Cycle Network Plan (2013)
- Draft Greater Dublin Area Cycle Network Plan (2021)
- Meath County Development Plan 2021 – 2027

Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, December 2020

3.1.2 This guideline document was produced by the Department of Housing, Planning and Local Government and was recently updated in December 2020. The purpose of this document is to set out standards for apartment development, mainly in response to circumstances that had arisen whereby some local authority standards were at odds with national guidance.



3.1.3 With the demand for housing increasing, this means that there is a need for an absolute minimum of 275,000 new homes in Ireland's cities by 2040. It is therefore critical to ensure that apartment

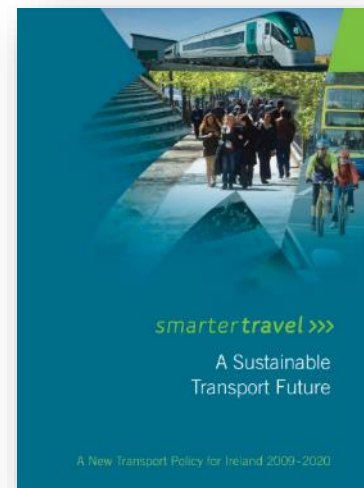
living is an increasingly attractive and desirable housing option for a range of household types and tenures.

- 3.1.4 These Guidelines apply to all housing developments that include apartments that may be made available for sale, whether for owner occupation or for individual lease. They also apply to housing developments that include apartments that are built specifically for rental purposes, whether as 'Build To Rent' or as 'shared accommodation'.
- 3.1.5 Cycling provides a flexible, efficient and attractive transport option for urban living and these guidelines require that this transport mode is fully integrated into the design and operation of all new apartment development schemes.
- 3.1.6 The quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria.

Smarter Travel – A Sustainable Transport Future

- 3.1.7 Smarter Travel was published in 2009 by the Department of Transport which represents the national policy documentation outlining a broad vision for the future and establishes objectives and targets for transport. The document examines past trends in population and economic growth and transport concluding that these trends are unsustainable into the future.
- 3.1.8 In order to address the unsustainable nature of current travel behaviour, Smarter Travel sets down a number of key goals and targets for 2020 - including:

- Total vehicle km travelled by car will not significantly increase;
- Work-related commuting by car will be reduced from 65% to 45%;
- 10% of all trips will be by cycling;
- The efficiency of the transport system will be significantly improved.

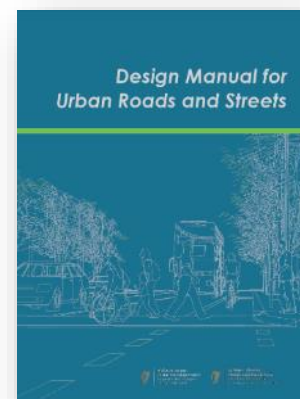


3.1.9 The document recognises that these are ambitious targets, and outlines a suite of 49 actions required to achieve these targets – summarised under the following four main headings:

- Actions aimed at reducing distances travelled by car and the use of fiscal measures to discourage use of the car;
- Actions aimed at ensuring that alternatives to the car are more widely available;
- Actions aimed at improving fuel efficiency of motorised travel; and
- Actions aimed at strengthening institutional arrangements to deliver the targets.

Design Manual for Urban Roads and Streets (DMURS) - 2019

3.1.10 DMURS guidance document was produced by the Department of Transport, Tourism and Sports and the Department of Environment, Community and Local Government in March 2013 and updated in May 2019. It provides guidance relating to the design of urban roads and streets. It presents a series of principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes with regard to street networks and individual streets.



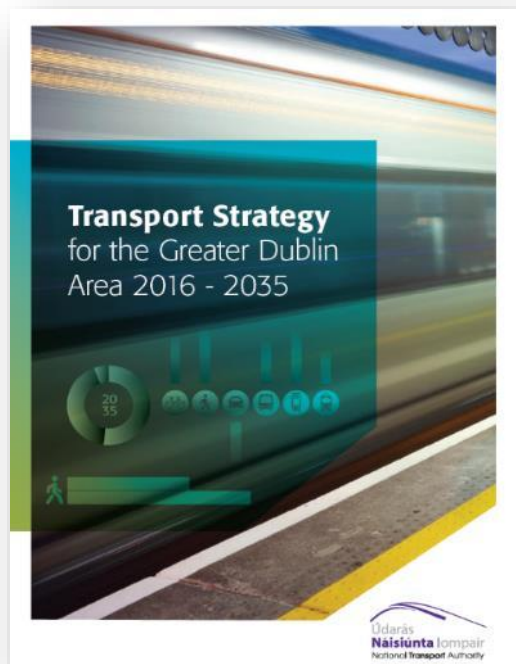
3.1.11 The manual places a significant emphasis on car dominance in Ireland and the implications this has had regarding the pedestrian and cycle environment. The document encourages more sustainable travel patterns and safer streets by proposing a hierarchy for user priorities. This hierarchy places pedestrians at the top, indicating that walking is the most sustainable form of transport and that by prioritizing pedestrians first, the number of short car journeys can be reduced, and public transport made more accessible.

3.1.12 Second in the hierarchy are cyclists with public transport third in the hierarchy and private motor vehicles at the bottom. By placing private vehicles at the bottom of the hierarchy, the document indicates that there should be a balance on street networks and cars should no longer take priority over the needs of other users.

- 3.1.13 The manual emphasizes that narrow carriageways are one of the most effective design measures that calm traffic. Standard width of an arterial and link street is 3.25m, however, this may be reduced to 3m where lower design speeds are being applied. Desirable footpath widths are between 2m – 4m. The 2m width should be implemented to allow for low to moderate pedestrian activity. A 3m – 4m footpath should be implemented to allow for moderate to high pedestrian activity.
- 3.1.14 The focus of the manual is to create a place – based sustainable street network that balances the pedestrian and vehicle movements. The manual references the different types of street networks, including arterial streets, link streets, local streets, and highlights the importance of movement.

Transport Strategy for the Greater Dublin Area 2016-2035

- 3.1.15 The *Transport Strategy for the Greater Dublin Area 2016-2035* is a document compiled by the National Transport Authority (NTA) which sets out the Strategic Transport Plan for the Greater Dublin Area for the period up to 2035.
- 3.1.16 This document will influence transport planning across the region until 2035 and replaces 'A Platform for Change – An Integrated Transportation Strategy for the Greater Dublin Area 2000 to 2016'. It thereby underpins all transportation strategies, traffic management schemes and development plans prepared by Dublin City Council during this timeframe.
- 3.1.17 The Strategy sets out a clear hierarchy of transport users, commencing with the sustainable modes of travel such as walking, cycling and public transport users at the very top of the hierarchy. The Strategy adopts the general principle that these users should have their safety and convenience needs considered first and that the



hierarchy is applied where a large share of travel is (or could be) made by walking, cycling and public transport.

- 3.1.18 In addition to guiding the development of specific Strategy measures, the NTA encourages that the *"transport user hierarchy should guide engineers, planners and urban designers on the order in which the needs of transport users should be considered in designing new developments or traffic schemes in the Greater Dublin Area."*

Draft Transport Strategy for the Greater Dublin Area 2022-2042

- 3.1.19 The Draft Greater Dublin Area Transport Strategy 2022-2028 has arisen from a review of the original 2016 strategy. The updated document *"sets out the framework for investment in transport infrastructure and services over the next two years"*.



- 3.1.20 The overall aim of the Transport Strategy is *"To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth"*.
- 3.1.21 Four primary objectives have been identified as part of the Draft Greater Dublin Area Transport Strategy 2022-2028. These are:
- **An Enhanced Natural and Built Environment** - To Create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use.
 - **Connected Communities and a Better Quality of Life** – To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.
 - **A Strong Sustainable Economy** – To support economic activity and growth by improving the opportunity for people to travel for work or

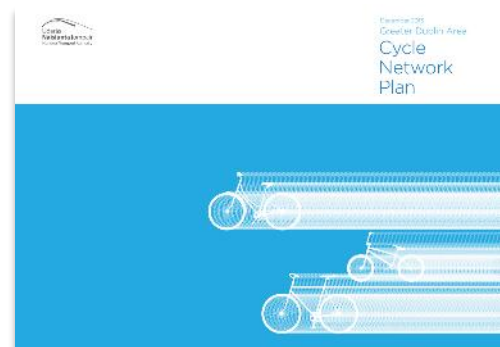
business where and when they need to, and facilitating the efficient movement of goods.

- **An Inclusive Transport System** – To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

3.1.22 The current draft of the Transport Strategy is currently out for public consultation until 17th December 2021.

Greater Dublin Area (GDA) Cycle Network Plan (2013)

3.1.23 Based upon the National Cycle Policy Framework (NCPF), the GDA Cycle Network Plan outlines the present situation of the existing cycle route network and its relatively low usage in parts. In Fingal, the report documents how the cycling provision within the country is poor, with limited cycling facilities in urban and rural areas.



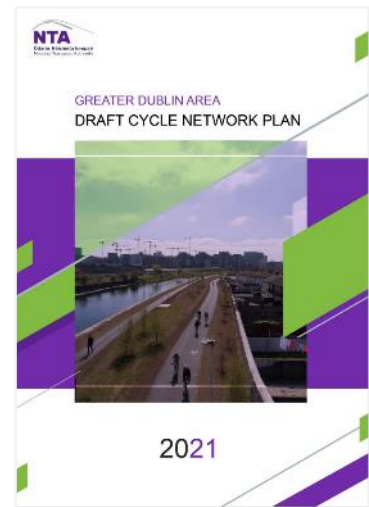
3.1.24 As part of a planned 2,340km expansion of cycle routes in the GDA, some of the proposed routes in Ashbourne include:

- **Primary Route AS1** follows Dublin Rd/Frederick St R135 Regional Road through Ashbourne.
- **Primary Route AS2** is the Ballybin Loop on west side of Ashbourne to business park.
- **Inter-urban Route M15** goes from Dunshaughlin to Ashbourne via Ratoath along quiet back roads, avoiding the busy R125.
- **Inter-urban Route M17** is the Ashbourne to Dublin route along the R125 (old N2) on hard shoulders.

3.1.25 These proposals are further described in **Chapter 2**.

Draft Greater Dublin Area Cycle Network Plan (2021)

- 3.1.26 The Draft Greater Dublin Area Cycle Network Plan 2021 has arisen as an update to the original 2013 plan, with input from local authorities within the GDA.
- 3.1.27 While the original 2013 GDA Cycle Network Plan focuses on identifying the routes required to provide an adequate network for cyclists, the updated 2021 plan seeks to enhance and strengthen local accessibility and permeability.
- 3.1.28 The proposals from the plan relating to the subject site are shown in **Chapter 2**.



Meath County Development Plan 2021 – 2027

- 3.1.29 The Meath County Development Plan 2021-2027 sets out the policies for sustainable development within the council area up to 2027.



- 3.1.30 The Meath County Development Plan 2021 – 2027 intends to promote and facilitate the provision of the necessary infrastructure to fully accommodate the demand for development and future population increases in an environmentally sustainable manner. The following policies are considered relevant to the proposed development.

Integration of Land Use and Transportation Planning

- 3.1.31 MOV POL 1. To support and facilitate the integration of land use with transportation infrastructure, through the development of sustainable compact settlements which are well served by public transport, in line with the guiding principles outlined in RPO 8.1 of the EMRA RSES 2019-2031.

- 3.1.32 MOV POL 2. To carry out strategic studies to identify and set out the delivery mechanisms for the necessary transport infrastructure to implement the Economic Development Strategy for County Meath.
- 3.1.33 MOV POL 3. To carry out strategic studies to identify and set out the delivery mechanisms for the necessary transport infrastructure to implement the Economic Development Strategy for County Meath.
- 3.1.34 MOV POL 4. To promote higher residential development densities in settlement centres along public transport corridors, subject to compliance with normal planning criteria.
- 3.1.35 MOV OBJ 1. To prepare and commence implementation of Local Transport Plans (LTP), in conjunction with the NTA and relevant stakeholders, for Drogheda (in conjunction with Louth County Council as part of the Joint Urban Plan), Ashbourne, Navan, Ratoath, and other settlements where Local Area Plans are undertaken, having regard to the Area Based Transport Assessment Guidance Notes (2019).
- 3.1.36 MOV OBJ 2. To seek regular engagement between Transport Infrastructure Ireland (TII) and the relevant Municipal District regarding road safety issues communities located on Meath's national roads.

Sustainable Transport

- 3.1.37 MOV OBJ 3. To ensure that design for cycle infrastructure for all relevant developments shall be carried out in accordance with the Greater Dublin Area Cycle Network Plan, other relevant design standards or any successors to these documents.

Cycling & Walking

- 3.1.38 MOV POL 5. To promote higher residential development densities in settlement centres along public transport corridors, subject to compliance with normal planning criteria.

Bus

- 3.1.39 MOV POL 8. To cooperate with the NTA and other relevant agencies to have ongoing reviews of the network of bus routes in Meath, and to support and encourage public transport operators to provide improved bus services in, and through the County.

- 3.1.40 MOV POL 9. To ensure that the design and planning of transport infrastructure and services accords with the principles of sustainable safety, in order that the widest spectrum of needs, including pedestrians, cyclists, the ageing population and those with mobility impairments are taken into account.
- 3.1.41 MOV POL 10. To ensure that new developments in Regional Growth Centres, Key Towns, Self-Sustaining Growth Towns and Self-Sustaining Towns are laid out so as to facilitate the provision of local bus services and the provision of Park and Ride facilities as appropriate.
- 3.1.42 MOV POL 11. To facilitate in conjunction with relevant statutory agencies alternative transport modes to the private car, including enhanced delivery of public transport services along regional corridors (as defined in the NTA's Transport Strategy for the Greater Dublin Area 2016-2035); frequent local bus services linking residential areas to District Centres and Town Centres, and which also serve shopping areas, employment areas and other activity centres, and connecting to key transport interchange points.
- 3.1.43 MOV POL 12. To support the implementation of recommendations presented in the NTA's Transport Strategy for the Greater Dublin Area 2016-2035 and any subsequent reviews thereof. To ensure that design for cycle infrastructure for all relevant developments shall be carried out in accordance with the Greater Dublin Area Cycle Network Plan, other relevant design standards or any successors to these documents.
- 3.1.44 MOV OBJ 11. To provide bus priority measures on existing and planned road infrastructure, where appropriate, in collaboration with the NTA, Bus Éireann and TII (where relevant).
- 3.1.45 MOV OBJ 12. To identify deficits in bus infrastructure and develop a priority list as a basis to secure funding for improvement works, including the provision of bus shelters, bus stops and travel information at stops.
- 3.1.46 MOV OBJ 15. To work with the NTA and all transport operators to make all existing public transport services throughout the county accessible for people with disabilities, reduced mobility and older people and require that proposals for new transport infrastructure are subject to an Accessibility Audit.

Park and Ride Facilities

- 3.1.47 MOV POL 13. To promote and support the provision of Park-and-Ride facilities which improve public transport accessibility without exacerbating road congestion at appropriate locations within the County. NTA funded Park & Ride Schemes will be carried in accordance with the recommendations of the Park & Ride Development Office of the NTA.
- 3.1.48 MOV OBJ 17. To assess and determine the potential for bus-based Park and Ride facilities, in particular, close to high quality road corridors leading from settlements in the Core Area, with good bus priority to commuter destinations in the Dublin Metropolitan area.
- 3.1.49 MOV OBJ 18. To identify and develop suitable lands to provide for Park and Ride facilities at appropriate locations in the County.

Electric Vehicles (EV) Charging Points

- 3.1.50 The Climate Action Plan, 2019 acknowledges that the pricing structure for EV vehicles is a major factor in consumers decision making. However, the Plan also acknowledges the importance of 'ensuring the EV Charging network underpins public confidence.' The Council will encourage the provision of EV charging points in all developments for future proofing.

DM OBJ 94: All car parks shall include the provision of necessary wiring and ducting to be capable of accommodating future Electric Vehicle charging points, at a rate of 20% of total space numbers.

DM OBJ 95: In any car park in excess of 20 spaces where public access is available, four fully functional charging points for Electric Vehicles shall be provided in accordance with IEC 61851 Standard for Electric Vehicle Conductive Charging Systems.

3.2 DEVELOPMENT STANDARDS

Car Parking

- 3.2.1 Two documents were reviewed for the car parking standards: Meath County Development Plan 2021-2027 and Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, December 2020.
- 3.2.2 Reference has been made to Table 11.2 of the Meath County Council Development Plan (2021-2027) which outlines the car parking standards for the county.
- 3.2.3 Furthermore, reference is made to Chapter 4 of Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities, as published by the Department of Housing, Planning and Local Government (DHPLG), March 2018. The development site can be classified as a *Peripheral and/or Less Accessible Urban Location*.
- 3.2.4 In relation to car parking, within 'Peripheral and/or Less Accessible Urban Locations', the DHPLG document states:
- 'As a benchmark guideline for apartments in relatively peripheral or less accessible urban locations, one car parking space per unit, together with an element of visitor parking, such as one space for every 3-4 apartments, should generally be required.'*
- 3.2.5 With regard to the proposed development schedule and the location of the subject site, the associated car parking requirements are outlined in **Table 3.1** below.

Unit Type		No. Units / sqm	MCC Development Plan Requirements		DHPLG Parking Requirement	
			Resident	Visitor	Resident	Visitor
Residential						
House	2-4 Beds	420	2 spaces / unit	-	-	-
Apartment/Duplex	1-3 Beds	282	2 spaces / unit	1 space / 4 units	1 space / unit	1 space / 3-4 units
Non Residential						
Block A						
Creche		288.56 m2	-	1 spaces / employee + set down area & 1 / 4 children + set down area	-	-
Retail		105.58 m2	-	1 space per 20sqm (if greater than 1000sqm, 1 space per 14sqm)	-	-
Retail		173.83 m2 (dining area 96 m2)	-	1 space per 5 sqm dining area	-	-
Block A1						
Creche		383.68 m2	-	1 spaces / employee + set down area & 1 / 4 children + set down area	-	-
Retail		190.6 m2	-	1 space per 20sqm (if greater than 1000sqm, 1 space per 14sqm)	-	-
GP Surgery		185.95 m2 (3 consultancy rooms)	-	2 spaces / consulting room	-	-
Block B1						
Retail		468.92 m ²	-	1 space per 20sqm (if greater than 1000sqm, 1 space per 14sqm)	-	-

Table 3.1: Car parking requirements

Accessible Car Parking

- 3.2.6 Table 11.2 of the Meath County Council Development Plan (2021-2027) specifies that "Accessible car parking spaces shall be provided at a minimum rate of 5% of the total number of spaces, for developments requiring more than 10 car parking spaces, with the minimum provision being one space".

Electrical Vehicle Parking

- 3.2.7 The Meath Development Plan state that "All car parks shall include the provision of necessary wiring and ducting to be capable of accommodating future Electric Vehicle charging points, at a rate of 20% of total space numbers". Also, "In any car park in excess of 20 spaces where public access is available, four fully functional charging points for Electric Vehicles shall be provided in accordance with IEC 61851 Standard for Electric Vehicle Conductive Charging Systems".

Cycle Parking

3.2.8 Reference has been made to Table 11.4 of the Meath County Development Plan 2021-2027 which outlines the cycle parking provision sought for new developments within the area governed by MCC. The DHPLG guidelines have also been illustrated in **Table 3.2**.

Unit Type		No. Units / sqm	MCC Development Plan Requirements		DHPLG Parking Requirement	
			Resident	Visitor	Resident	Visitor
Residential						
House	2-4 Beds	420	-	-	-	-
Apartment/Duplex	1-3 Beds	282	1 space / bed (minimum 2 spaces / unit)	1 space / 2 units	1 cycle storage / bed	1 space / 2 units
Non Residential						
Block A						
Creche		288.56 m ²	-	1 space / car space & 10% employee numbers	-	-
Retail		105.58 m ²	-	1 space per 10 car spaces or 1 space per till	-	-
Retail		173.83 m ²	-	1 bike space per car space, or 10% of employee numbers in general	-	-
Block A1						
Creche		383.68m ²	-	1 space / car space & 10% employee numbers	-	-
Retail		190.6 m ²	-	1 space per 10 car spaces or 1 space per till	-	-
GP Surgery		185.95 m ²	-	1 bike space per car space, or 10% of employee numbers in general	-	-
Block B1						
Retail		468.92 m ²	-	1 space per 10 car spaces or 1 space per till	-	-

Table 3.2: Cycle Parking requirements

4.0 CHARACTERISTICS OF PROPOSALS

4.1 OVERVIEW

- 4.1.1 Arnub Ltd. & Aspect Homes (ADC) Ltd. intend to apply to An Bord Pleanála for permission for a strategic housing development on a site at Baltrasna and Milltown, Ashbourne, Co. Meath. The proposed development site is to the west of the R135 Dublin Road, south of existing housing at Alderbrook Rise, Alderbrook Downs & Alderbrook Heath, east of existing housing at Tara Close and Tara Court, south-west of Cherry Lane and west of Hickey's Lane.
- 4.1.2 The development will consist of 702 no. dwellings, comprised of 420 no. 2 & 3 storey, 2, 3, 4 & 5 bed houses, 39 no. 2 & 3 bed duplex units in 19 no. blocks, and 243 no. 1, 2 & 3 bed apartments in 20 no. buildings, which range in height from 3, 3-4, 4-5, & 4-6 storeys. The proposed development also provides for the following uses: (i) 2 no. creches (c.288.56m² & 383.68m²) accommodated in Blocks A and A1 respectively, (ii) 4 no. retail/commercial units (c. 105.58 m² & 173.83m² in Block A, c.190.6m² in Block A1 & c.469m² in Block B1) and (iii) GP practice / medical use unit (c.186m²) in Block A1.
- 4.1.3 Access to the development will be via (i) Cherry Lane to the north-east, off the R135 Dublin Road, via a new proposed internal access road and (ii) via Hickey's Lane to the east, off the R135 Dublin Road, including pedestrian and cycle paths.



Figure 4.1: Proposed Development Site Layout

4.1.4 With reference to the scheme drawings, the proposed development schedule is summarised in **Table 4.1** below. A total of 702 no. residential units are proposed. Additionally, there are two commercial aspects of the development, as illustrated in **Table 4.2**: 2no. creches, 4no. retail units, and 1no. GP Surgery.

Unit Type			Units	
Residential	Houses		420	
	Duplex		39	
	Apartments	1 Bed Apt.	47	243
		2 Bed Apt.	169	
		3 Bed Apt.	27	
Total			702	

Table 4.1: Development Schedule. Residential use summary

Unit Type		Units	GFA (m2)
Commercial	Creche	2	288.56
			383.68
	Retail	4	105.58
			173.83
			190.60
			468.92
	GP Surgery	1	185.95
Total		7	1797.12

Table 4.2: Development Schedule. Non-Residential use summary

4.1.5 Further details of the scheme proposals can be found within the Architects' drawings and also in DBFL Drawings **200059-DBFL-RD-SP-DR-C-1201** to **200059-DBFL-RD-SP-DR-C-1205**.

4.2 SITE ACCESS ARRANGEMENTS

Pedestrians and Cyclists

- 4.2.1 The Design Manual for Urban Roads and Streets (DMURS) identifies the importance of connectivity for pedestrians within residential areas. The document states '*The creation of vibrant and active places requires pedestrian activity. This in turn requires walkable street networks that can be easily navigated and are well connected.*'
- 4.2.2 DMURS references that 'Sustainable neighbourhoods are areas where an efficient use of land, high quality urban design and effective integration in the provision of physical and social infrastructure such as public transport, schools, amenities and other facilities combine to create places people want to live in'.
- 4.2.3 The document highlights that residential locations that have been constructed in accordance with the principles of segregation, and that increased walking and cycling distances for residents, have a significant influence on mode choice as a lack of connectivity is one of the key factors that discourage people from walking.
- 4.2.4 The proposed development site will have excellent connectivity for pedestrians and cyclists to access the residential units, with a number of connecting paths that route through the scheme, in particular the proposed greenway route, providing safe segregated access to the potential future school. This aforementioned infrastructure would enable pedestrians and cyclists to route easily through the site with no barriers or segregated area to hinder movement.
- 4.2.5 In addition to the demarcated routes through the development site, pedestrian and cycle priority will be emphasized through different material finishes on shared surface streets to lower vehicle speeds throughout the development.
- 4.2.6 Pedestrians and cyclists will be able to access or egress the site from a number of proposed/future pedestrian/cyclist access locations (**Figure 4.2**): -
- 4.2.7 The development will provide cycle facilities along either side of the main Link Street which will be segregated from vehicular traffic by a 1.5m verge. Wide footpaths of 2.5m will also be provided along the main Link Street. A 4m wide shared greenway will also be provided through the site, providing an additional safe pedestrian/cycle access through the site. Pedestrians and cyclists can access the site from three location along the R135. Potential pedestrian/cycle connections

could be provided into the existing Alderbrook and Tara Close housing developments to the North and West respectively, if required in the future to connect to neighbouring lands. The pedestrian and cyclist access points are shown in **Figure 4.2** below.

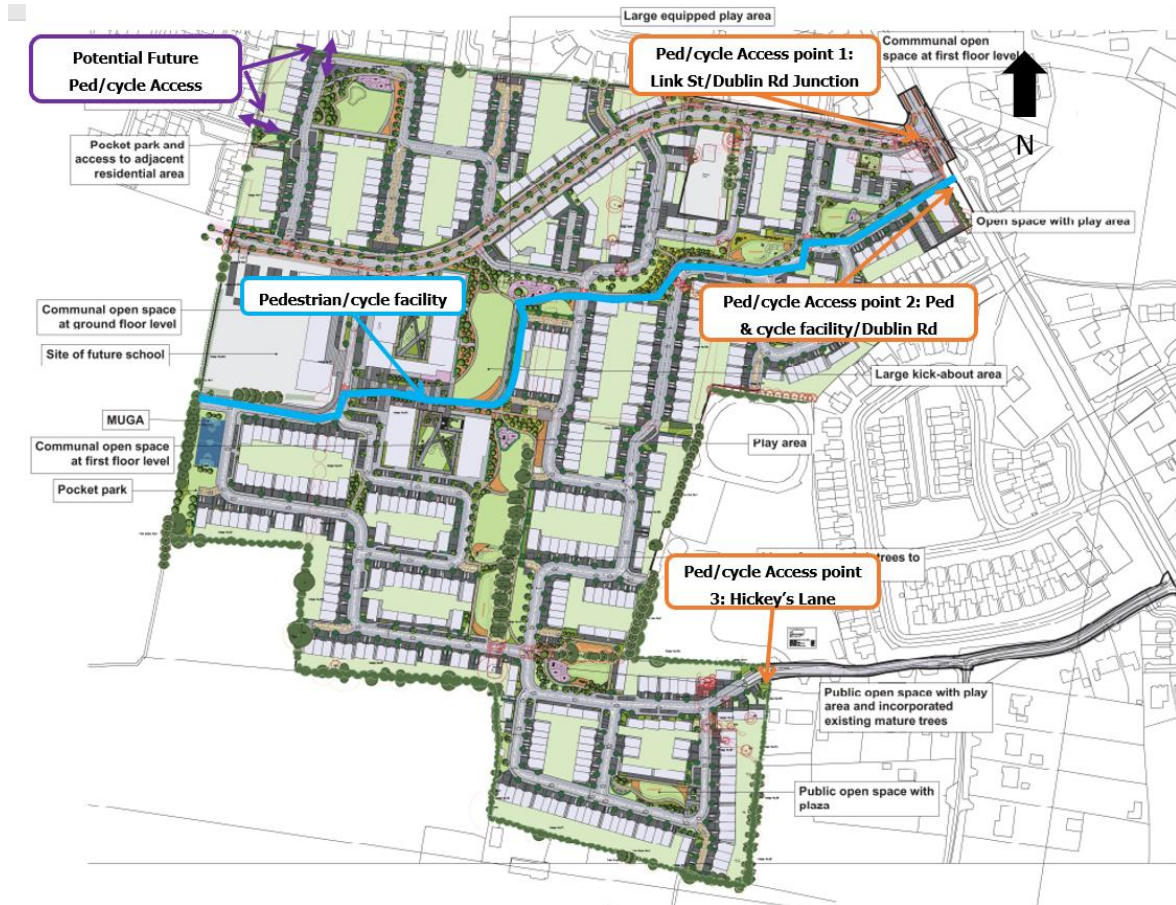


Figure 4.2: Pedestrian & Cycle access points

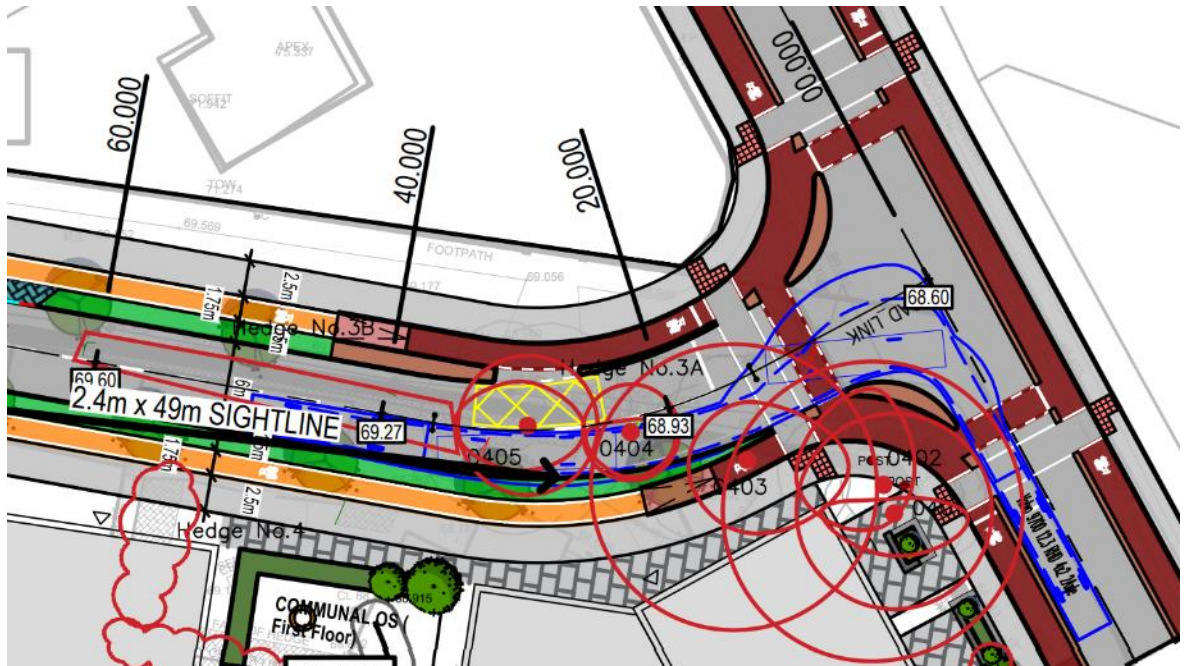
- 4.2.8 The internal road layout has been designed with pedestrians and cyclists as a priority; many courtesy crossings are provided following pedestrian desire lines in addition to the low vehicle speeds throughout the development indicated through different surface finishes.
- 4.2.9 Accordingly, the subject site will be highly accessible to both pedestrians and cyclists with permeable connections provided to the neighbouring lands via these access / egress junctions.

Vehicular Access

- 4.2.10 The subject site will benefit from one principal vehicle access via (i) Cherry Lane to the north-east, off the R135 Dublin Road, via a new proposed Link Street and a secondary access via (ii) Hickey's Lane to the south-east, off the R135 Dublin Road.
- 4.2.11 The two site access junctions have been designed in accordance with DMURS as well as the TII DN-GEO-03060 'Geometric Design of Junctions' 2017. These guidelines and standards, in particular DMURS, were reviewed in order to provide a junction design for this development that adequately caters for the residents within the development. DMURS promotes a more permeable road network approach with more frequent minor junctions. Therefore, considering the large scale of this residential development, it was considered appropriate to provide two vehicular access junctions. These two access junctions will increase permeability for pedestrians and cyclists as well as reducing traffic issues of queuing and delay within the development.

Cherry Lane Site Access

- 4.2.12 The Cherry Lane access (**Figure 4.3**) will act as the primary vehicular access to the proposed development. This site access will accommodate general vehicular traffic, cyclists and pedestrian accessing and egressing from the subject site.



- 4.2.13 The existing priority junction at Cherry Lane will be upgraded to a 3-arm signalled junction with cycle protected lanes, as shown in **Figure 4.3** Signalised pedestrian crossing are proposed on all the junction arms. The junction design will tie in with the proposed upgrades to the R135, as part of the "Ashbourne Main Street Refurbishment Scheme".

Hickeys Lane Site Access

- 4.2.14 The Hickeys Lane access is a secondary access in terms of vehicular movements. The junction will remain a priority junction, however, protected cycle facilities will be provided through the junction to tie the proposed upgrades to the R135, as part of the "Ashbourne Main Street Refurbishment Scheme".
- 4.2.15 Pedestrian footpaths will be provided on hickeys lane along with traffic calming measures, such as narrowing of the street carriageway width, to reduce vehicle speed and discourage vehicular overuse of the secondary access, see **Figure 4.4** below.

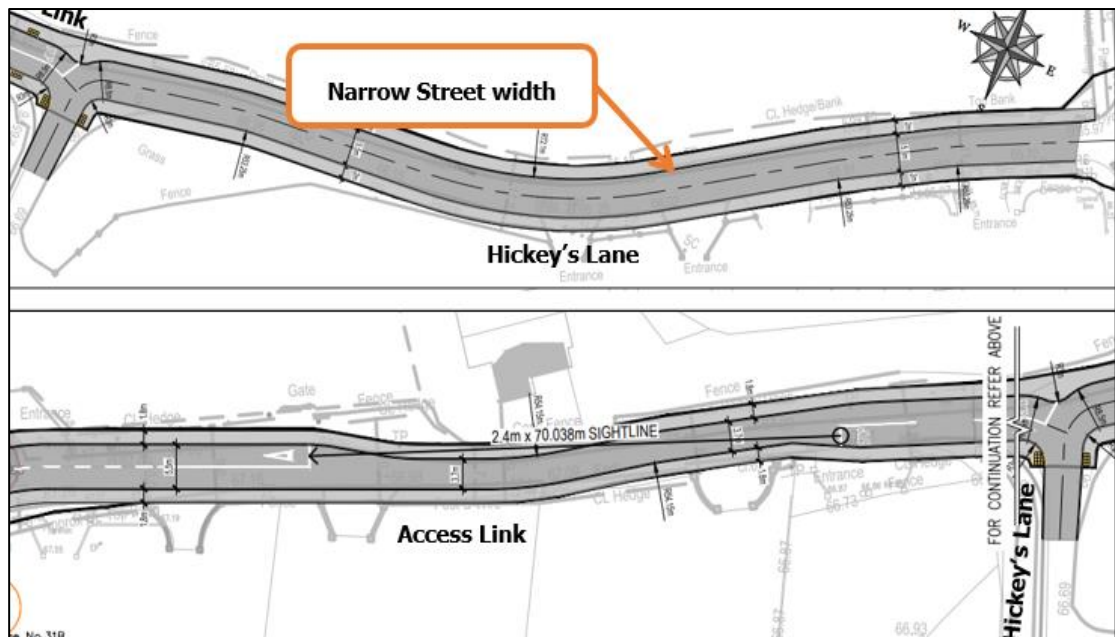


Figure 4.4: Secondary Vehicular Access (Hickey's Lane)

- 4.2.16 Detailed site access junction drawings for both site accesses are presented within this planning application package within the proposed roads layout. Refer to **DBFL drawings nos. 200059-DBFL-RD-SP-DR-C-1201 to 200059-DBFL-RD-SP-DR-C-1204.**

4.3 CAR PARKING PROVISION

Introduction

4.3.1 Meath County Council has published car parking guidelines contained within the Meath County Development Plan (2021-2027). Section 11.9 within the development plan provides parking guidance for residential developments stating the following requirement:

- Apartments & Duplexes - 2 Spaces per Unit (plus 1 visitor per 4 spaces).
- Houses - 2 per Dwelling Unit.

4.3.2 Additionally, Meath County Development Plan (2021-2027) sets a requirement for spaces for mobility impaired users and electric vehicles, as outlined below.

- Mobility impaired users – 5% of total numbers of spaces, with the minimum of 1no. space.
- Electric Vehicles – 20% of total number of spaces should include wiring and ducting to accommodate future Electric Vehicles charging points.

4.3.3 It is considered that the subject development site is located within an “**Peripheral Urban Location**” as designated within the DHPLG standards.

4.3.4 For such residential developments located within an “**Peripheral Urban Location**” the DHPLG design standards state in reference to local authority development management requirements that;

- “*As a benchmark guideline for apartments in relatively peripheral or less accessible urban locations, one car parking space per unit, together with an element of visitor parking, such as one space for every 3-4 apartments, should generally be required.*”

4.3.5 It is an objective for this development to reduce the need for residents to travel by car and instead to avail of more sustainable modes of travel in line with current and future travel requirements as set out in recent policy documents within Ireland.

4.3.6 As indicated in Table 4.3 below, 1,473 no. car parking spaces are required by the MCC Development Plan for the proposed quantum of residential development, and 1,593 including the commercial aspects of the development. However, the MCC Development Plan also outlines “*Refer to the Design Standards for New Apartments in relation to reduced car parking requirements for development*”

adjacent to existing and future rail stations and minimum requirements in peripheral/or less accessible urban locations”.

- 4.3.7 By comparison, for the apartment element of the scheme the DHPLG standards states that *"one car parking space per unit, together with an element of visitor parking, such as one space for every 3-4 apartments, should generally be required”.*

Unit Type		No. Units / sqm	MCC Development Plan Requirements		DHPLG Parking Requirement	
			Long Term	Short Term	Long Term	Short Term
Residential						
House	2-4 Beds	420	840	N/A	-	-
Apartment/Duplex	1-3 Beds	282	564	69	282	71 - 94
Sub-Total			1404	69	282	71 - 94
Total Residential			1404	69	282	71 - 94
			1473		353 - 376	
Non Residential						
Block A						
Creche		288.56 m2	-	34	-	-
Retail		105.58 m2	-	5	-	-
Retail		173.83 m2	-	9	-	-
Sub-Total			0	47	0	0
Block A1						
Creche		383.68 m2	-	34	-	-
Retail		190.60 m2	-	10	-	-
GP Surgery		185.95 m2 (3 consultancy rooms)	-	6	-	-
Sub-Total			0	49	0	0
Block B1						
Retail		468.92 m²	-	23	-	-
Sub-Total			0	23	0	0
Total Non-Residential			0	120	0	0
			120		0	
Total			1404	189	282	71 - 94
			1593		353 - 376	

Table 4.3: MCC Development Plan and DHPLG Car Parking Requirements

- 4.3.8 A summary of the subject developments proposed car parking provision is summarised in **Table 4.4** below.

Unit Type		No. Units / sqm	Proposed Car Parking Ratio		Proposed Car Parking Provision	
			Long Term	Short Term	Long Term	Short Term
Residential						
House	2-4 Beds	420	2 spaces / unit	-	840	-
Apartment/Duplex	1-3 Beds	282	1 spaces / unit	0.34 spaces / unit	282	101
Sub-Total					1122	101
Total Residential					1122	101
					1223	
Non Residential						
Block A						
Creche		288.56 m²	-	-	-	6
Retail		105.58 m²	-	-	-	1
Retail		173.83 m²	-	-	-	1
Sub-Total					-	8
Block A1						
Creche		383.68 m²	-	-	-	14
Retail		190.60 m2	-	-	-	4
GP Surgery		185.95 m2 (3 consultancy rooms)	-	-	-	3
Sub-Total					-	21
Block B1						
Retail		468.92 m²	-	-	-	10
Sub-Total					-	10
Total Non-Residential					-	39
					39	
Total					1122	140
					1262	

Table 4.4: Proposed Development Car Parking Provision

- 4.3.9 A total of 1,262 no. car parking spaces are proposed as part of the development.
- 4.3.10 In terms of the 420 no. houses, a total of 840 no. car park spaces are proposed. These will be located in curtilage or on street in close proximity to the individual dwellings. This quantity is in accordance with the MCC Development Plan.
- 4.3.11 In terms of the Apartments/Duplexes, a total of 383 no. spaces are proposed, comprising 282 no. resident and 101 visitor spaces. The residential car parking is provided at a ratio of 1.36 spaces per apartment unit (1 space for residents, 0.36 spaces for visitors), a reduced quantum from the MCC requirements of 2 spaces per unit. This reduced provision is in accordance with the DHPLG requirement, *"one car parking space per unit, together with an element of visitor parking, such as one space for every 3-4 apartments, should generally be required"*.
- 4.3.12 For commercial aspects of the development, 39 no. car park spaces are allocated, lower than MCC standards (120 no.). It is to be noted that the car parking standards in MCC Development Plan for non-residential land uses are maximum

standards and should not be seen as a target quantum upon which to provided particularly for mixed use commercial development where the potential for “dual” trips can manifest. A Mobility Management Plan will be produced in order to minimise both staff and visitor car trips to / from the commercial facilities.

- 4.3.13 The development also proposes to provide 2no. of GoCar parking spaces within the development. GoCar have provided letter of intent to provide 2no. cars which will be available and easily accessible to the future residents of the development. GoCar letter of intent can be seen within **Appendix E** of this report.

Mobility Impaired Parking

- 4.3.14 For Mobility Impaired users, a quantum of 5% of the total spaces should be allocated, according to Meath County Development Plan (2021-2027) (excluding car parking for houses). To meet this requirement, 22 no. of spaces will be dedicated for mobility impaired users.
- 4.3.15 Of the total 22 no. mobility impaired car parking spaces, 3 will be assigned for non-residential aspects of the development, with 1 space for Block A, 1 for Block A1 and 1 for Block B1.

Electric Vehicle Parking

- 4.3.16 A total of 20% of the development’s car parking provision will be provided with the necessary wiring and ducting to be capable of accommodating future Electric Vehicle charging points. This is equivalent to 84 No. spaces and is compliant with Meath County Development Plan (2021-2027) Standards. Also, 10 fully functional charging points for Electric Vehicles will be provided which exceeds the minimum requirement of MCC.
- 4.3.17 Further detail on the proposed car parking facilities and management regime is provided in the Parking Management Strategy in **Section 5** of this report.

4.4 CYCLE PARKING

Introduction

- 4.4.1 Reference has been made to Section 11.9.3 of the Meath County Development Plan (2017-2021) for the cycle parking standards which may be provided for the residential units, as well as the Design Standards for New Apartments Planning Guidelines (2020), which provides guidance for design of parking provision for apartment units.
- 4.4.2 The Meath County Development Plan (2021-2027) outlines, "Cycle parking facilities shall be conveniently located, secure, easy to use, adequately lit and well sign posted. All long-term (more than three hours) cycle racks shall be protected from the weather" and "in residential developments without private gardens or wholly dependent on balconies for private open space, covered secure bicycle stands should be provided in private communal areas".
- 4.4.3 In the recently adopted Meath County Development Plan (2021-2027), the cycle parking provision for apartment units has been increased significantly. The cycle parking requirements for apartment units according to Table 11.4 of the MCC development are:
- 1 private secure bicycle space per bed unit (minimum 2 spaces); and
 - 1 visitor bicycle parking space per two housing units.
- 4.4.4 Cycle parking for the housing units with private gardens are not required.
- 4.4.5 The Design Standards for New Apartments Planning Guidelines (2020) for residential developments have outlined the following:
- "A general minimum standard of 1 cycle storage space per bedroom shall be applied. For studio units, at least 1 cycle storage space shall be provided. Visitor cycle parking shall also be provided at a standard of 1 space per 2 residential units. Any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/enlargement, etc."*
- 4.4.6 **Table 4.5** below provides a summary of the quantum of cycle parking required under both the MCC Development Plan and DHPLG requirements.

Unit Type		No. Units / sqm	MCC Development Plan Requirements		DHPLG Parking Requirement	
			Long Term	Short Term	Long Term	Short Term
Residential						
House	2-4 Beds	420	-	-	-	-
Apartment/Duplex	1-3 Beds	282	610	141	563	141
Sub-Total			610	141	563	141
Total Residential			610	141	563	141
			751		704	
Non Residential						
Block A						
Creche		288.56 m2	-	6	-	-
Retail		105.58 m2	-	0	-	-
Retail		173.83 m2	-	0	-	-
Sub-Total			0	6		
Block A1						
Creche		383.68 m2	-	14	-	-
Retail		190.6m2	-	0	-	-
GP Surgery		186 m2 (3 consultancy rooms)	-	3	-	-
Sub-Total			0	17		
Block B1						
Retail		468.92 m2	-	1	-	-
Sub-Total			0	1	0	0
Total Non-Residential			0	25	0	0
			25		0	
Total			610	166	563	141
			776		704	

Table 4.5: MCC Development Plan & DHPLG Cycle Parking Requirements

4.4.7 **Table 4.6** below provides a summary of the quantum of cycle parking proposed.

Unit Type		No. Units / sqm	Proposed Cycle Parking Provision	
			Long Term	Short Term
Residential				
House	2-4 Beds	420	-	-
Apartment/Duplex	1-3 Beds	282	610	207
Sub-Total			610	207
Total Residential			610	207
			817	
Non Residential				
Block A				
Creche		288.56 m2	-	6
Retail		105.58 m2	-	4
Retail		173.83 m2	-	4
Sub-Total			0	14
Block A1				
Creche		383.68 m2	-	14
Retail		190.6 m2	-	4
GP Surgery		185.95 m2 (3 consultancy rooms)	-	4
Sub-Total			0	22
Block B1				
Retail		468.92 m2	-	16
Sub-Total			0	16
Total Non-Residential			0	52
			52	
Total			610	259
			869	

Table 4.6: Proposed Cycle Parking

4.4.8 In response to the above two design standards, 869 no. cycle parking spaces are being provided with this proposed development. 817no. spaces of the total quantum are dedicated to residents and visitors of the apartment and duplex units, exceeding MCC requirements (776 no.), and the Apartment Guidelines standard (704 no.). The non-residential uses will benefit from 52 no. spaces, exceeding MCC requirements (25 no.).

5.0 PARKING STRATEGY

5.1 OVERVIEW

- 5.1.1 This section outlines the proposed Parking Strategy for the proposed development. The Parking Strategy sets out the management measures that will be deployed to allocate the use and control of parking provided at the proposed development site. The principles of the parking management strategy set out in this section, should be read in conjunction with the Mobility Management Plan (MMP).

5.2 VEHICLE PARKING

Residential Car Parking Provision

- 5.2.1 The development's vehicle parking proposals include the provision of a total 1,262 no. parking spaces, of which 1,223 no. spaces will be allocated for residential use only. The proposed allocation of spaces is as follows: -
- 840 no. car parking spaces for the housing units;
 - 383 no. car parking spaces for the apartment/duplex units (282 no. resident spaces and 101 no. visitor spaces) including;
 - 22 no. Accessible spaces;
 - 2 no. GoCar spaces;
 - 10 no. EV spaces fully equipped with charging points and 84 no. EV spaces future proof equipped with ducting and wiring;
- 5.2.2 840 no. car parking spaces will be provided for houses in curtilage or on street in close proximity to the individual dwellings, whilst apartments will benefit from 383 no. spaces. These are distributed as shown below.

Unit Type		No. Units / sqm	Proposed Car Parking Ratio		Proposed Car Parking Provision	
			Long Term	Short Term	Long Term	Short Term
Small Apartment Building	2 Beds	48	1 spaces / unit	0.38 spaces / unit	48	18
Sub-Total					48	18
Duplex Apartment/maisonette		1	1 spaces / unit	1 spaces / unit	1	1
Sub-Total					1	1
Block A Apartments	1 Bed	6	1 spaces / unit	0.25 spaces / unit	6	2
	2 Beds	26	1 spaces / unit	0.25 spaces / unit	26	7
Sub-Total					32	8
Block B Apartment	2 Beds	4	1 spaces / unit	0.36 spaces / unit	4	1
	3 Beds	10	1 spaces / unit	0.36 spaces / unit	10	4
Sub-Total					14	5
Block A1 Apartment	1 Bed	27	1 spaces / unit	0.37 spaces / unit	27	10
	2 Beds	49	1 spaces / unit	0.37 spaces / unit	49	18
	3 Beds	16	1 spaces / unit	0.37 spaces / unit	16	6
Sub-Total					92	34
Block B1 Apartment	1 Bed	10	1 spaces / unit	0.28 spaces / unit	10	3
	2 Beds	36	1 spaces / unit	0.28 spaces / unit	36	10
	3 Beds	11	1 spaces / unit	0.28 spaces / unit	11	3
Sub-Total					57	16
Duplex	2 Beds	19	1 spaces / unit	0.5 spaces / unit	19	10
	3 Beds	19	1 spaces / unit	0.5 spaces / unit	19	10
Sub-Total					38	19
Total car parking for apartments/duplex					282	101
					383	

Table 5.1: Distribution of car parking spaces for apartment/duplex units

5.2.3 These spaces will be located both on surface and within basements/undercrofts within each of the blocks. Their location of the car parking spaces in the basements and undercrofts are shown in Architect's Drawings below, with EV and Mobility Impaired Spaces highlighted.

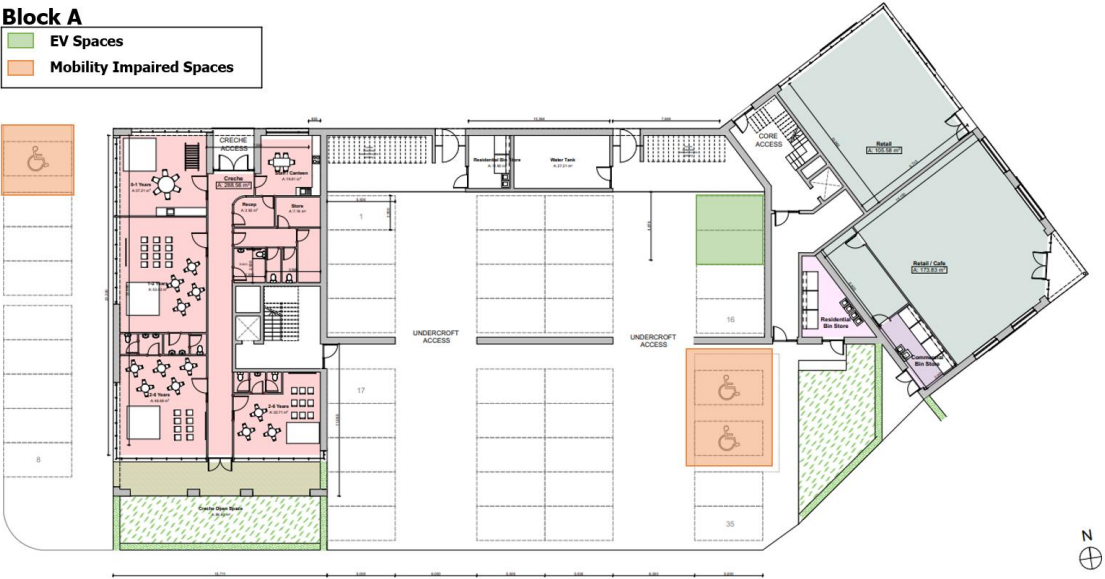


Figure 5.1: Car parking in Block A undercroft

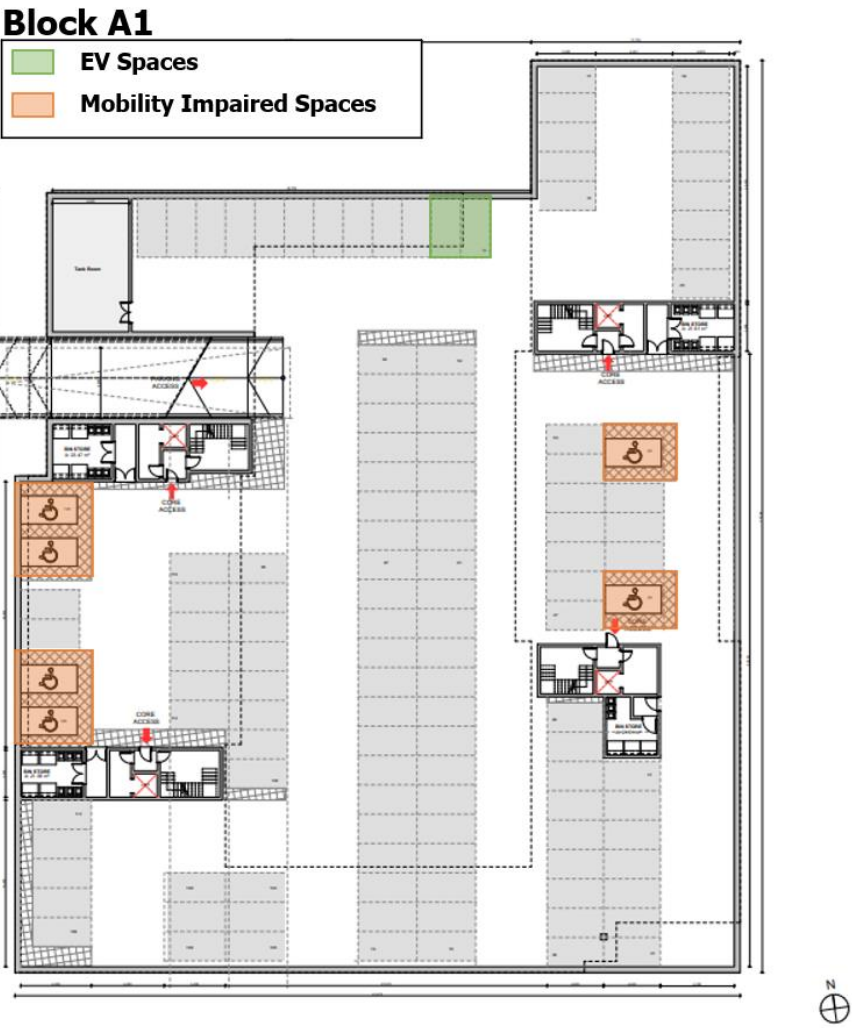


Figure 5.2: Car parking in Block A1 Basement

Block B1

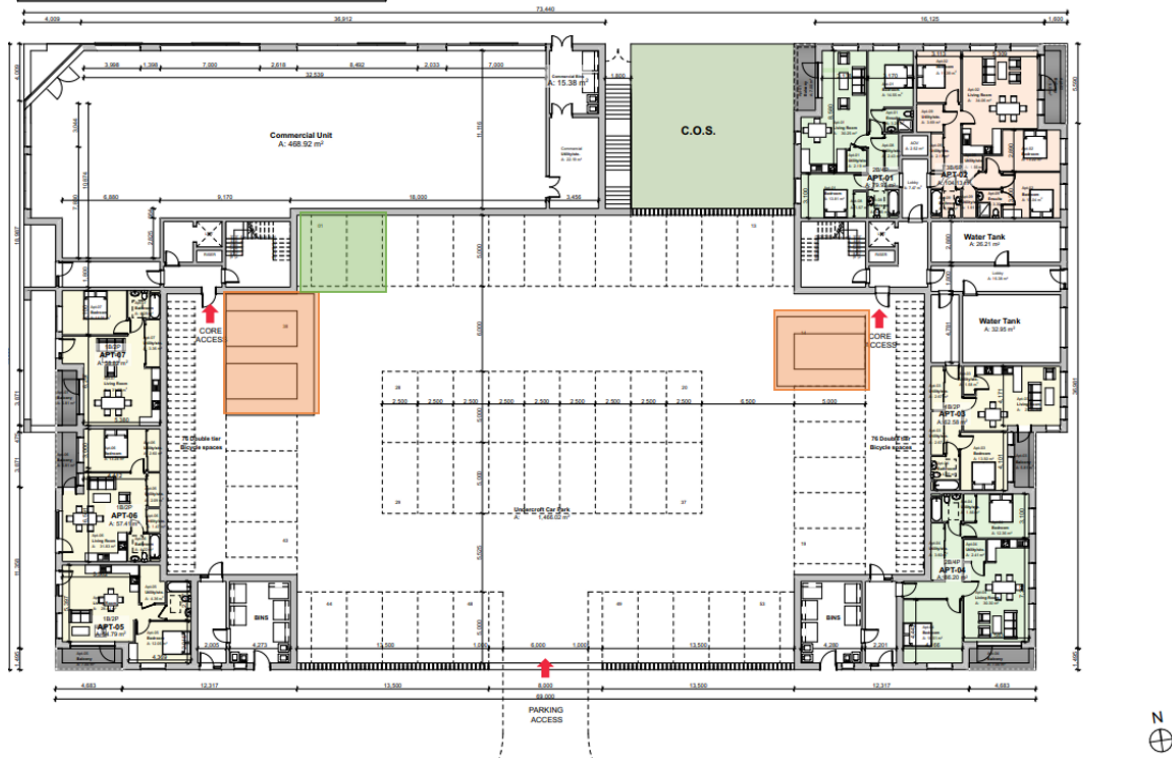


Figure 5.3: Car parking in Block B1 Basement

- 5.2.4 The proposed vehicle parking provision corresponds to an overall provision of 2 spaces per house unit, and 1.36 parking spaces per apartment/duplex unit, of which 1 space / unit is for residents, and 0.36 spaces / unit for visitors. This is considered appropriate based on existing and proposed accessibility levels and future public transport enhancements proposed for the area.
- 5.2.5 2 no. Go Car spaces are provided. These will be located close to the main access junction of the development on Cherry Lane/Link St to facilitate the entry/exit to the development.

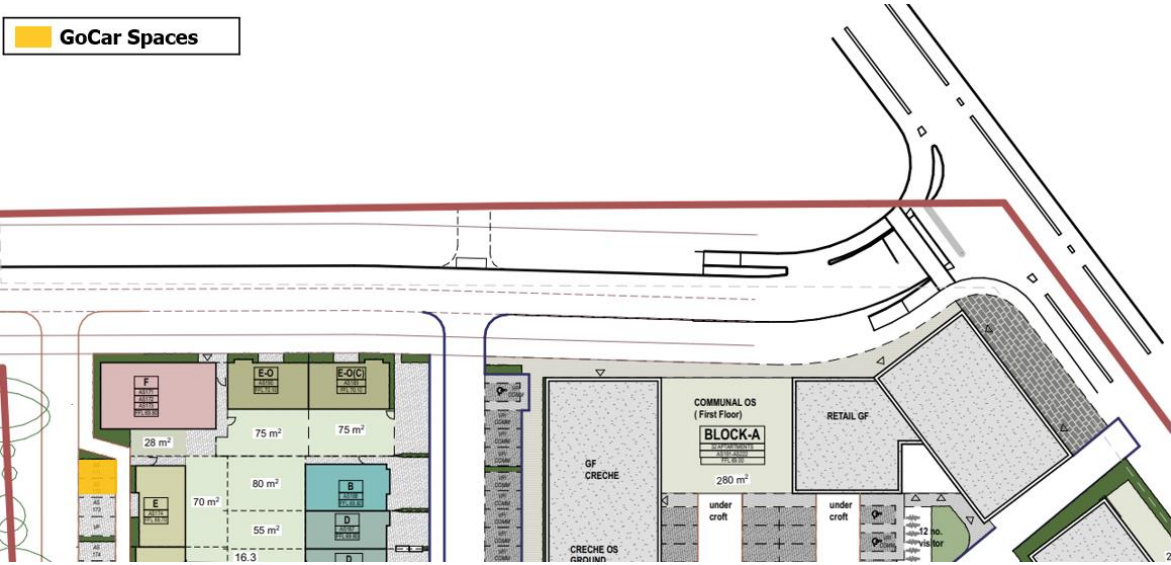


Figure 5.4: Go car Spaces Location

Non-Residential Car Parking Provision

- 5.2.6 In the case of mixed-use developments, the approach to parking provision is generally different as mixed-use developments themselves promote a reduction in the demand for trips and car parking. In the case of the proposed development it is important to consider a number of factors in determining the overall parking requirement for this development. These include:
- The Meath County Development Plan Cycle Parking Standards;
 - The mix and range of uses proposed; and
 - The cross visitation & dual usage of parking spaces.
- 5.2.7 The car parking standards determine the appropriate level of parking provision for specific developments. The parking standards applicable for each land use are considered in isolation. However, it is important to recognise the proposed development's proximity to the town centre and the likelihood of cross visitation when assessing the proposed development.
- 5.2.8 While primarily residential, the proposed development includes 4no. local retail uses, 2 no. creches and a GP practice / medical use unit. With this mix of uses, many of those visiting the development will use more than one of the facilities. This will generate what is known as multi-purpose trips, which in turn reduces the car parking demand that would be the case if the various facilities were isolated from one another.
- 5.2.9 With the mix of uses proposed, which are primarily envisaged to serve the new resident population within the scheme, those visiting the development are likely to use more than one of the proposed facilities. This will generate what is known as multi-purpose trips, which in turn reduces the car parking demand than would be the case if the various facilities were isolated from one another. This will give rise to the cross visitation of car parking spaces. The principle of cross visitation is recognised in the Retail Planning Guidelines, whereby the ability to provide parking facilities on the edge, that serve the centre as well as the new development, thus enabling one trip to serve several purposes is recommended.
- 5.2.10 The cycle parking provision following MCC Development Plan Parking Standards equals to 120 no. spaces. It is to be noted that the car parking standards in MCC Development Plan for non-residential land uses are maximum standards and

should not be seen as a target quantum upon which to provided particularly for mixed use commercial development where the potential for “dual” trips can manifest.

5.2.11 In total 39 spaces are proposed within the development to cater for the non-residential uses of the scheme. This will be distributed as follows.

Unit Type		No. Units / sqm	Proposed Car Parking Provision	
			Long Term	Short Term
Non Residential				
Block A				
Block A Commercial	Creche	288.56 m2	-	6
	Retail	105.58 m2		1
	Retail	173.83 m2		1
Sub-Total			-	8
Block A1 Commercial	Creche	383.68 m²	-	14
	Retail	190.60 m2		4
	GP Surgery	185.95 m2 (3 consultancy rooms)		3
Sub-Total			-	21
Block B1 Commercial	Retail	468.92 m²	-	10
Sub-Total			-	10
Total Non-Residential			-	39
			39	

Table 5.2: Distribution of car parking spaces for non-residential units

5.2.12 When dual usage and cross visitation taken into consideration, there is a shortfall of approximately 80 car parking spaces being provided by the proposed development for the non-residential uses proposed within the scheme. Although a shortfall of parking has been provided, owing to the nature of uses within the proposed development, it can be assumed that demand for car parking spaces at the development will vary throughout the day. An example of this would be in the morning time demand for the creches, would be high while demand for retail uses would be low. In the afternoon / evening time the opposite would be the case.

5.2.13 The range and mix of uses proposed in the development shows that the peak demand for car parking occurs at differing periods of the day for different uses and also varies between weekdays and at weekends. What is most notable is the inevitability of having large volumes of vacant parking present in the Development throughout the day and night if each element of the development has its own dedicated car parking provision. This is both a waste of resources and will undermine the attractiveness of the development by artificially reducing car parking availability

- 5.2.14 We consider that there is sufficient car parking provided to cater for the proposed development. There is also a high level of residential development in the surrounding locality. This when combined with this proposed development will result in a very sustainable and mutually supportive development.

5.3 MANAGEMENT OF ON-SITE CAR PARKING FACILITIES

- 5.3.1 A key component in the continued efficiency of on-site car parking is an active and enforced parking management strategy. This strategy will be managed by the management company who will be responsible for the control of the parking and access arrangements within the surface level and podium parking areas as well as the allocation of the parking spaces.
- 5.3.2 The Parking Management Strategy will be founded on the principle that none of the residential apartment units will be allocated a parking space as part of the initial contract for the property. A rental cost will be associated with the parking spaces which will be at a rate specified so as to discourage the use of the private vehicle unless necessary and to encourage the uptake of more sustainable modes such as walking, cycling and public transport for which there are excellent opportunities within and directly adjacent to the development site. The parking spaces will be allocated to those paying the prescribed fee.
- 5.3.3 The apartment parking spaces will be set aside for the use of residents who may rent a space for a defined period of time. None of the residential units will be automatically allocated a parking space as part of the initial contract for the property. In order to be allocated a parking space tenants will have to apply to the management company to gain a parking permit and an assigned dedicated parking space, i.e., a tenant is not automatically allocated a parking space when they take up residency at the site.
- 5.3.4 Residents of the proposed apartment units will have the opportunity to apply to the on-site management company for both a:
- (i) Residents' car parking permit (updated weekly, fortnightly, monthly, quarterly or annually) and subsequently access to a dedicated (assigned) on-site basement car park space or
 - (ii) A visitor's car parking permit for a short period of time.

- 5.3.5 The building management team will be responsible for the day-to-day management of car parking operations. Residents who request a private car parking space will be allocated on a 'first come, first served' basis.
- 5.3.6 A charge will be applied to obtain a permit with the objective of covering the associated management costs, discouraging long term usage of the car parking space and encouraging travel by sustainable modes of travels.
- 5.3.7 This relatively short monthly rental period (which can be continued as a rolling contract) and the limited number of spaces will ensure that residents are only assigned a space when one becomes available from time to time, thereby underpinning the sustainability of the development.

5.4 BICYCLE PARKING

Residential Bicycle Parking Provision

5.4.1 The development's cycle parking proposals include the provision of a total 869 no. parking spaces, of which 817 no. spaces will be allocated for residential use only. The proposed allocation of spaces is as follows: -

- 610 no. cycle parking spaces for residents;
- 207 no. cycle parking spaces for visitors.

5.4.2 The distribution of these in the different blocks is shown in **Table 5.3**.

Unit Type		No. Units / sqm	Proposed Cycle Parking Provision	
			Resident	Visitor
Small Apartment Building	2 Beds	48	96	35
Sub-Total			96	35
Duplex Apartment/maisonette		1	2	2
Sub-Total			2	2
Block A Apartments	1 Bed	6	12	4
	2 Beds	26	52	18
Sub-Total			64	22
Block B Apartment	2 Beds	4	8	3
	3 Beds	10	20	7
Sub-Total			28	10
Block A1 Apartment	1 Bed	27	54	22
	2 Beds	49	98	34
	3 Beds	16	48	12
Sub-Total			200	68
Block B1 Apartment	1 Bed	10	20	8
	2 Beds	36	72	26
	3 Beds	11	33	10
Sub-Total			125	44
Duplex	2 Beds	19	38	13
	3 Beds	19	57	13
Sub-Total			95	26
Total cycle parking for apartments/duplex			610	207
			817	

Table 5.3: Distribution of cycle parking spaces for residential units

5.4.3 The location of the residential cycle parking spaces is shown in the Architect's Drawings below.

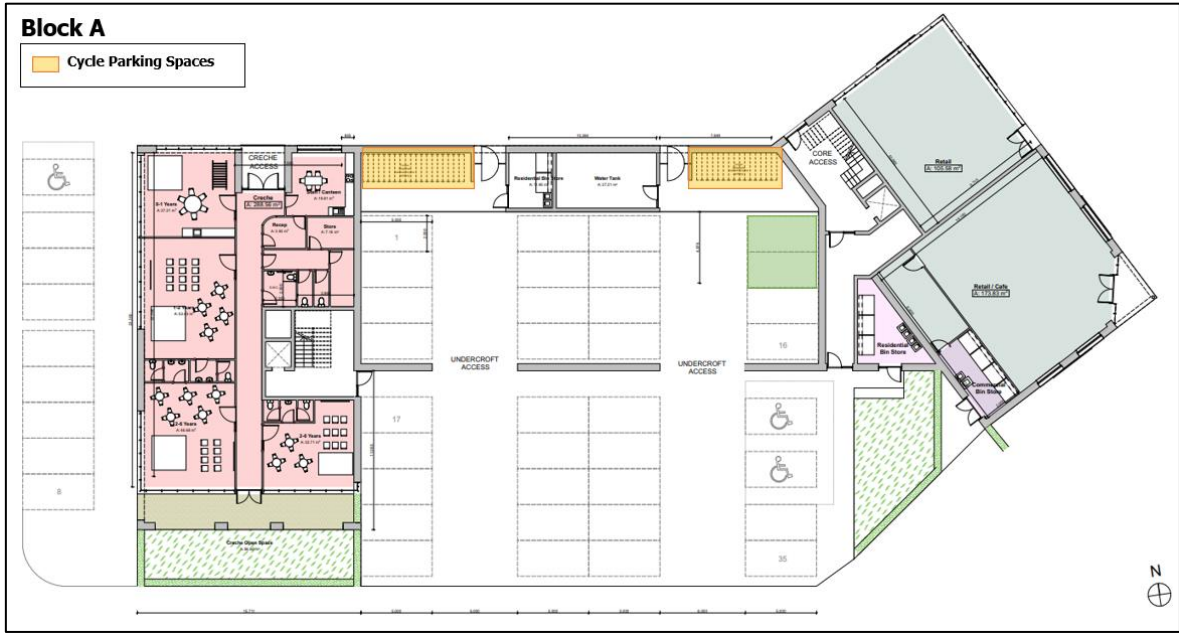


Figure 5.4: Cycle Parking in Block A Undercroft

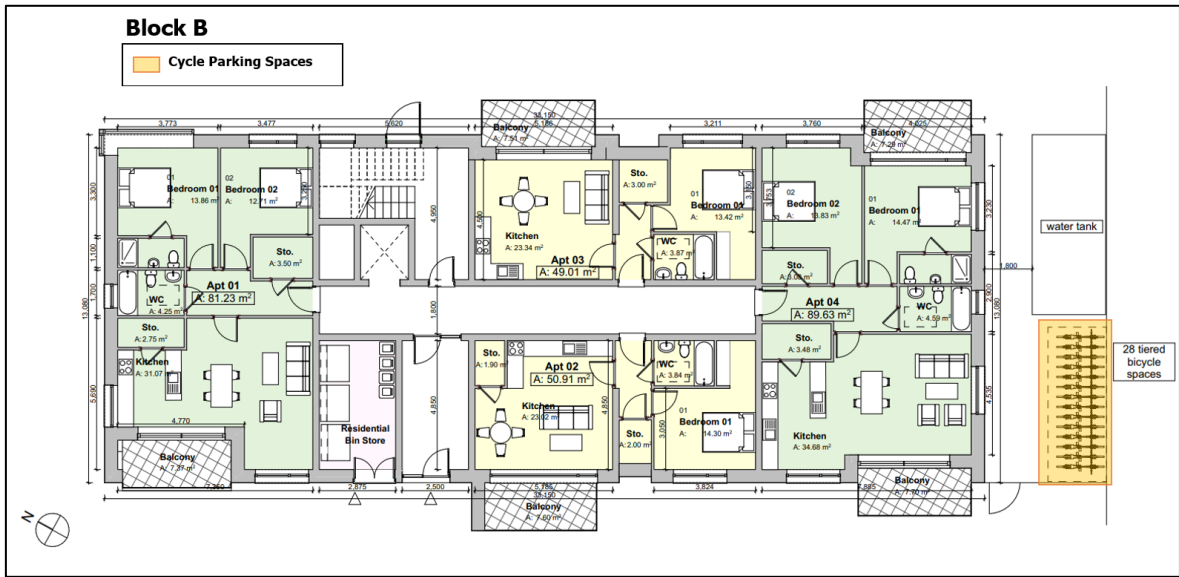


Figure 5.5: Cycle Parking in Block B

Unit Type		No. Units / sqm	Proposed CCycle Parking Provision	
			Long Term	Short Term
Non Residential				
Block A Commercial	Creche	288.56 m2	-	6
	Retail	105.58 m2		4
	Retail	173.83 m2		4
Sub-Total			-	14
Block A1 Commercial	Creche	383.68 m²	-	14
	Retail	190.60 m2		4
	GP Surgery	185.95 m2 (3 consultancy rooms)		4
Sub-Total			-	22
Block B1 Commercial	Retail	468.92 m²	-	16
Sub-Total			-	16
Total Non-Residential			-	52
			52	

Table 5.4: Distribution of cycle parking spaces for non-residential units

5.5 MANAGEMENT OF ON-SITE BICYCLE PARKING

- 5.5.1 All marketing material for the proposed Development, in addition to the MMP's 'Welcome Pack', will publicize the availability and access arrangements to the on-site bicycle parking facilities. A management regime will be implemented by the development's management company to control the access towards the internal residential bicycle parking spaces. The regime aims to actively manage the availability of bicycle parking for both residents and staff in order to sufficiently meet demand.
- 5.5.2 The management intends to promote the cycling facilities in order to raise awareness of the benefits of alternative active and more sustainable travel. A formal 'Sustainable Travel' induction package or a 'Welcome Travel Pack' will be compiled and provided to each dwelling unit detailing the access arrangements to/from the bicycle parking area.

5.6 BICYCLE PARKING ALLOCATION

- 5.6.1 The building management team will be responsible for the day-to-day management of bicycle parking operations. All residents of the permitted residential apartment scheme will have the opportunity to obtain a key code / electronic fob to access the on-site long-stay bicycle parking spaces.
- 5.6.2 These bicycle parking spaces will be allocated one on a 'first come, first served' basis. Cyclists who would be visiting the scheme will be able to utilize the dedicated Sheffield Stands at the surface level.

6.0 TRIP GENERATION AND DISTRIBUTION

6.1 INTRODUCTION

6.1.1 The following paragraphs present the process by which the potential level of vehicle trips, associated with the future residential development have been generated and subsequently assigned across the local road network.

6.1.2 In order to assess the operation of the proposed road network and its future capacity, a traffic model of the existing network and proposed links was created. Existing traffic levels were obtained from traffic counts carried out in September 2020 and November 2021.

6.2 CURRENT MODAL TRANSPORT SPLIT

6.2.1 The Central Statistics Office's SAPMAP (Small Areas Population Map) data has been investigated to determine the travel trends within the local vicinity of the subject residential development. This analysis is included above in **Section 5.2**. SAPMAP is an interactive mapping tool that allows users to pinpoint a location on the map and access 2016 census data related to that area.

6.2.2 A number of small areas close to the subject site with similar characteristics were analysed to establish current commuter trends in the local area. This analysis will form the basis of the initial travel characteristics that could be generated by the proposed development.

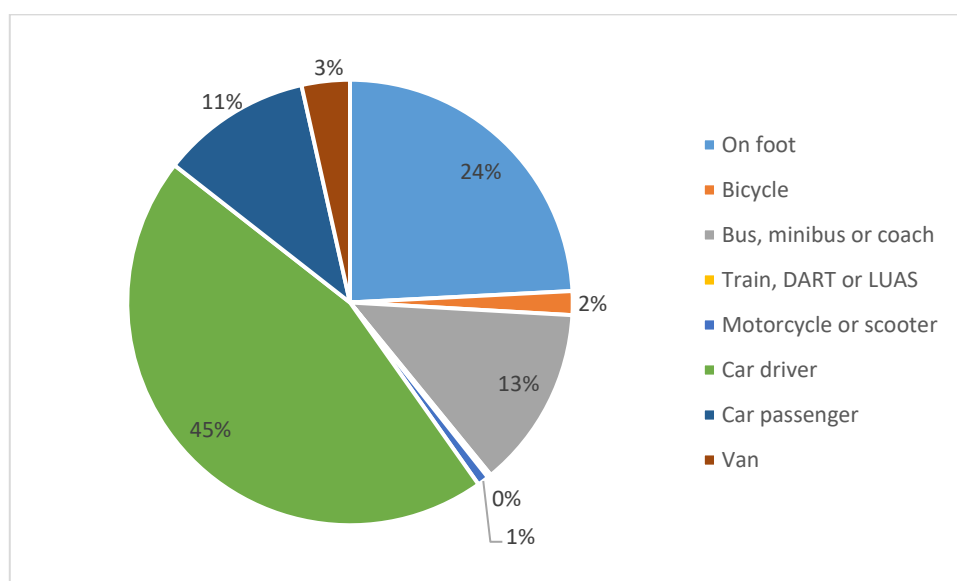


Figure 6.1: Modal Split in the subject site area (Source: CSO)

- 6.2.3 The assessment reveals that travel by car is the predominant mode of transport with 46% driving a private vehicle and 12% travelling as car passengers. Walking is the second most prominent mode of transport with a modal share of 22%. All Public transport journeys are made by bus, which suppose 13%. Bicycle trips are only 2% of total trips.
- 6.2.4 The existing modal split for the Census Small Areas reviewed shows a similar pattern with the Greater Dublin Area modal split. A lower user of the car can be seen, with 58% in the subject site area towards 63% in the GDA. Moreover, the number of trips by bus are higher, with 13% in the subject area towards 9% in the GDA, and cycling is slightly lower, with 2% in the subject site area towards 5% in the GDA. In summary, the subject site is ideally located to reduce demand for private vehicle use and encouraging the use of more sustainable transport modes, in particular cycling due to the proposed R135 cycle scheme.

6.3 TRAFFIC SURVEYS

- 6.3.1 With the objective of quantifying the existing baseline traffic movements travelling across the local road network, vehicle counts were undertaken in the proximity of the proposed development in September 2020 and November 2021.
- 6.3.2 A vehicle turning count survey (Junction Turning Count - JTC) was conducted over a 6-hour period from 07:00 to 10:00 and from 16:00 to 19:00 on Tuesday 22nd September 2020. Maximum Queue lengths were also recorded. The surveys undertaken by specialist survey firm NDC established that the local networks weekday AM and PM peak hours occur between 08:00 – 09:00 and 17:00 – 18:00 respectively. The location of the JTC 1 at R135/Alderbrook Road/Deerpark junction is illustrated in **Figure 6.2** below.



Figure 6.2: JTCs Location Surveyed (2020)

- 6.3.3 To ensure robust analysis updated traffic surveys were conducted in late November 2021 in order to present updated survey data as well as a wider range of surveyed junctions.
- 6.3.4 The updated traffic surveys were undertaken by the independent specialist survey firm Tracsis.
- 6.3.5 Four JTCs (junction turning count) were conducted over a 7-hour period - from 06:00 to 10:00 and from 16:00 to 19:00 on Tuesday 30th November 2021 at the following key junctions;
- **JTC 1:** Alderbrook Road / R135 / Deerpark (4 Arm Signalised Junction)
 - **JTC 2:** R135/ Hickeys Lane (3 Arm Priority Junction)
 - **JTC 3:** Nine Mile Roundabout (5 Arm Roundabout Junction)
 - **JTC 4:** R125/ Hickeys Lane (3 Arm Priority Junction)
- 6.3.6 This survey established that the local networks weekday AM and PM peak hours occur between 08:00 – 09:00 and 16:45 – 17:45 respectively.
- 6.3.7 The following JTC locations are illustrated in **Figure 6.3** below.



Figure 6.3: JTCs Location Surveyed (2021)

6.3.8 An Automatic Traffic Count (ATC) was also commissioned on the R135, in close proximity to the main site access, illustrated in **Figure 6.4**. This ATC survey was undertaken over a one-week period between Monday 29th November and Monday 6th December 2021.



Figure 6.4: ATC Location Surveyed

- 6.3.9 In order to analyse and assess the predicted traffic generation from the proposed residential development upon the site access junctions, a traffic model incorporating local junctions within the proximity of the subject site was created by DBFL. Base traffic flows and the Flow Diagrams for all scenarios are illustrated within **Appendix A**

6.4 TRAFFIC GROWTH

- 6.4.1 In response to the applicant's proposed construction schedule, this TTA adopts an Opening Design Year of 2023, an Interim Future Design Year of 2028 (+5 years) and a long-term Future Design Year of 2038 (+15 years) as per TII guidelines. Although traffic growth may not increase at the rates once predicted, to ensure a robust analysis of the impact of traffic upon the local road network we have adopted growth rates using the Transport Infrastructure Ireland (TII) "Travel Demand Projections".
- 6.4.2 Table 6.2 within the TII Project Appraisal Guidelines Units 5.3 – Travel Demand Projections (October 2021) provides Link-Based Annual Traffic Growth Factors for the different metropolitan areas within Ireland. The subject site lies within 'Meath' with the growth factors as outlined within **Table 6.1** below:

Meath	2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV
Low Sensitivity Growth	1.0156	1.0349	1.0052	1.0164	1.0043	1.0189
Central Growth	1.0173	1.0365	1.0070	1.0186	1.0059	1.0207
High Sensitivity Growth	1.0205	1.0400	1.0108	1.0226	1.0116	1.0304

Table 6.1: Link-Based Growth Rates: Annual Growth Factors (Source: TII)

- 6.4.3 Additionally, as part of the traffic assessment undertaken for this Technical Note, the baseline traffic survey data has been adjusted to account for potential lower than normal traffic flows in December 2021 due to Covid 19. The adjustment has been undertaken in reference to Central Statistics Office (CSO) report entitled [Transport Bulletin January 2022](#). An uplift of 10% was applied to convert baseline (Dec 2021) traffic data to corresponding 2021 data with no Covid 19 (according to the CSO data). This results in a robust and conservative assessment, as providing this uplift of 10% to the base traffic does not take into consideration potential mode shifts to active travel, WFH or a Hybrid option as the new norm etc.
- 6.4.4 Applying the annual factors (central growth) as outlined in **Table 6.5** above for the adopted Opening Year of 2023, the Interim Year of 2028 and Future Design Year of 2038 (+15 years), and the uplift regarding the low traffic flows due to Covid-19, the following growth rates have been adopted to establish corresponding 2023, 2028 and 2038 baseline network flows: -

- 2021 to 2023 – 1.1364 (or 13.64%);

- 2021 to 2028 – 1.2291 (or 22.91%); and
- 2021 to 2038 – 1.3229 (or 32.29%).

6.5 TRIP GENERATION

Proposed Development vehicular trips

- 6.5.1 A review of trip generation factors contained within the TRICS database was carried out. TRICS data is primarily UK based, although the number of Irish sites included continues to expand. Nevertheless, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.
- 6.5.2 Notwithstanding the above, internal research undertaken by TRICS has shown that there is no direct evidence of trip rate variation by country or region. The use of English, Scottish or Welsh data can be equally applicable to Ireland if users take into account important site selection filtering factors such as levels of population, location type, local public transport provision, and development size and car ownership level, amongst others.
- 6.5.3 Data supplied for inclusion in TRICS undergoes a procedure of validation testing, and there is no evidence from this procedure suggesting that data from Ireland bears any significant fundamental differences to that from the other countries included. Consequently, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.
- 6.5.4 **Table 6.2** below includes the predicted vehicle trip rates of the potential traffic flows in and out of the proposed development during the morning and evening peak hour periods using data from TRICS.

Units	Units / GFA	AM Peak Hour (08:00-09:00)			PM Peak Hour (16:45-17:45)		
		Arr	Dep	Total	Arr	Dep	Total
Houses	Per Unit	0.139	0.393	0.532	0.335	0.210	0.545
Apartments/duplex	Per Unit	0.061	0.185	0.246	0.207	0.114	0.321

Table 6.2: Proposed Development Trip Rates (TRICS)

- 6.5.5 The non-residential uses within the development, including the 2 no. creches, 4no. retail units and 1 no. GP Surgery, are not anticipated to generate external vehicle

trips as they will be catering towards the residents of the subject site and the local catchment within the community.

- 6.5.6 The majority of the children attending the crèche will already be residing in the proposed development and these trips will more than likely be made on foot. It is also anticipated that those employed in the crèche will be living in the locality and will be encouraged to travel to and from work by sustainable modes of transport.
- 6.5.7 Therefore, all trips for these non-residential aspects have been assumed internal movements which will not affect the road network, and have not been included in the traffic model.
- 6.5.8 **Table 6.3** summarises the predicted peak hour AM and PM vehicle trips generated by the proposed development.

Units	Units/GFA	AM Peak Hour (08:00-09:00)			PM Peak Hour (16:45-17:45)		
		Arr	Dep	Total	Arr	Dep	Total
Houses	420 units	58	165	223	141	88	229
Apartments / duplex	282 units	17	52	69	58	32	91

Table 6.3: Proposed Development Vehicle Trips

- 6.5.9 It is expected that in 2023, 94no. houses and a block of 6no. apartments will be in service, whilst the full Proposed Development will be in place from 2028 onwards. Therefore, the vehicular trips according to the assessed year is outlined below.

Years	Units	AM Peak Hour (08:00-09:00)			PM Peak Hour (16:45-17:45)		
		Arr	Dep	Total	Arr	Dep	Total
2023	94 houses + 6 apts	13	38	52	33	20	53
2028	Entire development	76	217	293	199	120	319
2038	Entire development	76	217	293	199	120	319

Table 6.4: Proposed Development Construction Schedule

- 6.5.10 The TRIC's output files are included in **Appendix B** of this report.

Committed developments

- 6.5.11 With the objective of providing a robust appraisal for the potential impact on the access junction, this Traffic and Transport Assessment has incorporated a future development proposal for a primary school located to the west of the proposed

development (Zoned “G1 – Community Infrastructure” in the Meath County Development Plan (2021-2027)), as illustrated in **Figure 6.5**. It is assumed that this proposed school will cater for approx. 500 no. students, with 30 no. staff members, and 16 no. classrooms. It is expected that the school will be constructed and at full occupancy in 2028.



Figure 6.5: Committed Development Primary School

6.5.12 **Table 6.1** below includes the predicted vehicle trip rates of the potential traffic flows in and out of the committed development during the morning and evening peak hour periods using data from TRICS.

Units	Units / GFA	AM Peak Hour (08:00-09:00)			PM Peak Hour (16:45-17:45)		
		Arr	Dep	Total	Arr	Dep	Total
Primary School	Per student	0.242	0.106	0.348	0.008	0.022	0.029
Discounted trip rate (50%)		0.121	0.053	0.174	0.004	0.011	0.015

Table 6.3: Committed Development Trip Rates (TRICS)

6.5.13 It is anticipated that the majority of students that will attend the school will live in the proposed development. Therefore, it has been assumed that 50% of the trips will be external, and 50% internal.

6.5.14 **Table 6.4** summarises the predicted peak hour AM and PM vehicle trips generated by the committed development Primary School. The TRICS output files are included in **Appendix B** of this report.

Units	Units / GFA	AM Peak Hour (08:00-09:00)			PM Peak Hour (16:45-17:45)		
		Arr	Dep	Total	Arr	Dep	Total
Primary School *Discounted trips by 50%	Total number of trips	36	16	52	1	3	4

Table 6.4: Committed Development Vehicle Trips

Proposed Development all modes trips

6.5.15 The total number of trips with the different modes has been extrapolated from the Modal Split, extracted from the CSO Census 2016 data, and the TRICS trip rates for cars. It has been assumed that the trips obtained with the TRICS data equals to 45% of total trips generated and attracted, corresponding to the Car Driver share.

6.5.16 Trips for all modes in 2023 in AM and PM peaks are shown in **Table 6.5**. Likewise, it is possible to predict the total trips generated in the peak periods i.e. (0600-1000 in the AM and 1600-2000 in the PM) by the Proposed Development, using trip rates from TRICS for these 4-hour periods. These are shown in **Table 6.6** below.

Mode of Travel	Average Mode Share (%)	AM Peak Hour (08:00 - 09:00)		PM Peak Hour (16:45 - 17:45)	
		Arr	Dep	Arr	Dep
On Foot	24%	7	20	18	11
Bicycle	2%	1	1	1	1
Bus, minibus or coach	13%	4	11	10	6
Train	0%	0	0	0	0
Motorcycle or scooter	1%	0	1	1	0
Car driver	45%	13	38	33	20
Car Passenger	11%	3	9	8	5
Van	3%	1	3	3	2
Total Trips		30	84	72	45

Table 6.5: Trip Generation at Peak Hours– All Modes 2023

Mode of Travel	Average Mode Share (%)	AM Peak Period (06:00 - 10:00)		PM Peak Period (16:00 - 20:00)	
		Arr	Dep	Arr	Dep
On Foot	24%	19	41	47	32
Bicycle	2%	1	3	3	2
Bus, minibus or coach	13%	11	23	26	17
Train	0%	0	0	1	0
Motorcycle or scooter	1%	1	1	2	1
Car driver	45%	36	78	89	60
Car Passenger	11%	9	19	21	14
Van	3%	3	6	7	5
Total Trips		80	171	196	132

Table 6.6: Trip Generation at Peak Periods – All Modes 2023

6.5.17 The same trip generation has been calculated for years 2028 and 2038, as the development will be fully ready. The trip generation figures for 2028/2038 in the peak periods are shown in **Tables 6.7 & 6.8**, respectively.

Mode of Travel	Average Mode Share (%)	AM Peak Period (06:00 - 10:00)		PM Peak Period (16:00 - 20:00)	
		Arr	Dep	Arr	Dep
On Foot	24%	112	241	278	189
Bicycle	2%	8	17	20	14
Bus, minibus or coach	13%	61	131	151	103
Train	0%	1	3	3	2
Motorcycle or scooter	1%	4	8	10	7
Car driver	45%	209	451	521	354
Car Passenger	11%	51	109	126	86
Van	3%	16	35	40	27
Total Trips		462	995	1,148	782

Table 6.7: Trip Generation at Peak Periods – All Modes 2028

Mode of Travel	Average Mode Share (%)	AM Peak Period (06:00 - 10:00)		PM Peak Period (16:00 - 20:00)	
		Arr	Dep	Arr	Dep
On Foot	24%	112	241	278	189
Bicycle	2%	8	17	20	14
Bus, minibus or coach	13%	61	131	151	103
Train	0%	1	3	3	2
Motorcycle or scooter	1%	4	8	10	7
Car driver	45%	209	451	521	354
Car Passenger	11%	51	109	126	86
Van	3%	16	35	40	27
Total Trips		462	995	1,148	782

Table 6.8: Trip Generation at Peak Periods – All Modes 2038

6.5.18 With these trip generation values it is possible to calculate the impact on the road network and on the public transport.

6.6 TRIP DISTRIBUTION & ASSIGNMENT

6.6.1 The proposed development vehicular trips will benefit from the 2no. vehicular access points, i.e. Primary Vehicular Access via Cherry Lane and Secondary Vehicular Access via on Hickey's Lane. It has been assumed that the Primary Access on Cherry Lane would cater for 80% of the proposed development traffic, whilst the remaining 20% will use the Secondary Access via Hickey's lane (15%

via R135, 5% via Ratoath Road), which is a local road and will be updated with footpaths and traffic calming such as road narrowing outlined in **Section 4**.

- 6.6.2 The proposed development trips have been distributed and subsequently assigned across the local road network. In order to establish the origin-destination (O-D) of future development trips to / from the subject lands, 12 no. O-D zones have been applied to the assumed geographical catchment areas of the subject development lands. **Figure 6.5** below presents these 12 no. O-D zones relative to the subject development and surrounding lands.

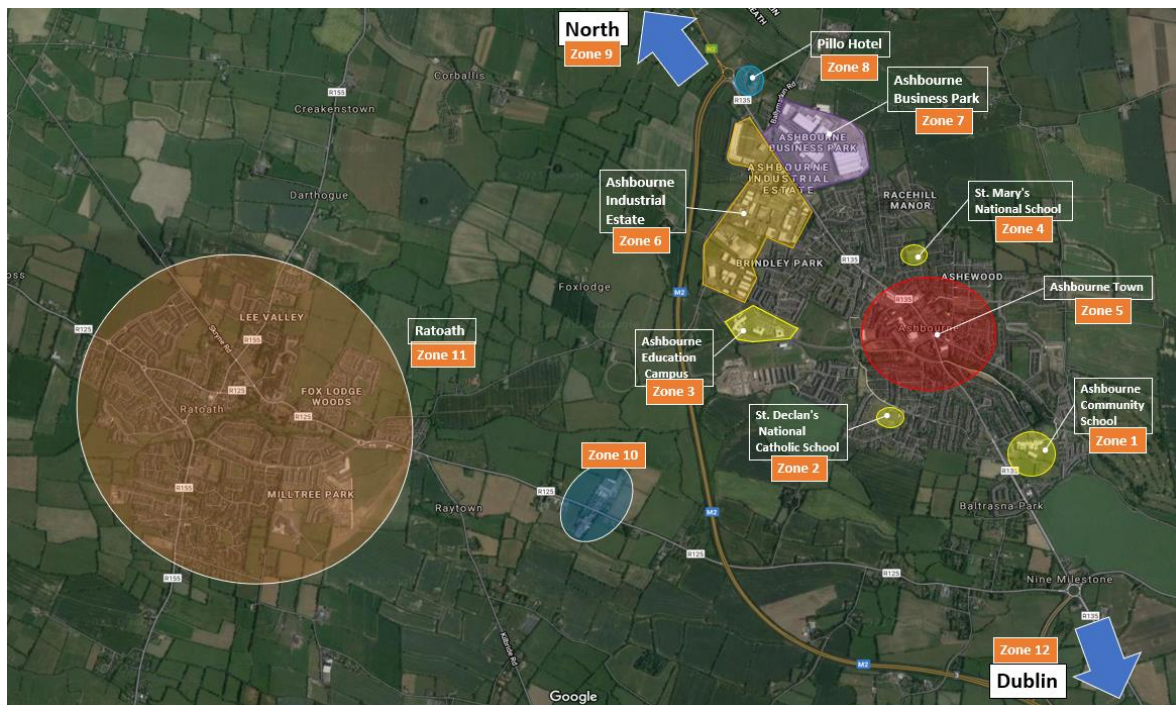


Figure 6.5: Adopted O-D Zones

- 6.6.3 Based on the aforementioned O-D zones, a proportion of the predicted development trips have been distributed to each O-D zone. These trips have been assigned to the surrounding road network based on the likely route between the subject site and each O-D zone. The quantum of trips assumed to be generated by each O-D zone has been estimated based on the existing / future population characteristics and employment opportunities within each zone.
- 6.6.4 The distribution of trips as per Base Traffic Flows is shown in Figure 3 of **Appendix A**. The distribution of the subject residential development traffic as proposed by DBFL is presented in Figure 4.

7.0 NETWORK IMPACT

7.1 ASSESSMENT SCOPE

Assessment Scenarios

- 7.1.1 Two different traffic scenarios have been assessed, namely (A) the Do-Minimum traffic characteristics and (B) the Do-Something traffic characteristics.
- 7.1.2 The Do-Minimum traffic scenario takes into account the base traffic flows and all Committed Developments, i.e. the Primary School located to the west, which is assumed to be constructed and at full occupancy in 2028.
- 7.1.3 The Proposed Development, including the traffic from residential aspects (houses, apartments, and duplex units), and commercial aspects (creches, shops and GP Surgery) are then added to the Do-Minimum scenario to obtain the Do-Something scenario.
- 7.1.4 In summary, the following network modelling scenarios are considered: -

Do Minimum

- A1 – 2021 Base Traffic Flows growthed to 2023
- A2 – 2021 Base Traffic Flows growthed to 2028 + Committed Primary School
- A3 – 2021 Base Traffic Flows growthed to 2038 + Committed Primary School

Do Something

- B1 - 2023 Do Minimum (A1) + Proposed Development (100no. residential units)
- B2 - 2028 Do Minimum (A2) + Proposed Development (Whole Development)
- B3 - 2038 Do Minimum (A3) + Proposed Development (Whole Development)

Assessment Periods

- 7.1.5 The local road network's area wide AM and PM peak hour flows have been identified as occurring between 08:00 to 09:00 and 16:45 to 17:45 respectively.
- 7.1.6 The following figures as included in **Appendix A** present the vehicle flows across the local road network for each of the adopted development scenarios: -
- Figure 7a – Do Minimum 2023 (A1)
 - Figure 7b – Do Minimum 2028 (A2)

- Figure 7c – Do Minimum 2038 (A3)
- Figure 8a – Do Something 2023 (B1)
- Figure 8b – Do Something 2028 (B2)
- Figure 8c – Do Something 2038 (B3)

7.2 ROAD NETWORK IMPACT

7.2.1 The NRA/TII document entitled *Traffic and Transport Assessment Guidelines* (2014) provides thresholds in relation to the impact of a proposed development on the local road network. It is considered material when the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively. When such levels of impact are generated a more detailed assessment should be undertaken to ascertain the specific impact upon the network's operational performance.

7.2.2 For the junction assessed, it can be seen in **Table 7.1**, that the proposed development upon full completion (2038) would have a considerable impact at the Primary Vehicular Access (Dublin Rd/Cherry Ln), and at the secondary access (Dublin Rd/Hickey's Ln). Moreover, the impact is above 5% at Junction no. 3 (Dublin Rd/Alderbrook Rd), and Junction no. 5 (Nine Mile Stone Rbt). The traffic impact at Junction no. 4 (Ratoath Rd/Hickey's Ln) is minimal.

Junction ID	Junction/ Location	2023		2028		2038	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Dublin Rd/Cherry Ln	4.36%	4.26%	18.92%	20.33%	17.62%	18.89%
2	Dublin Rd/Hickey's Ln	2.93%	2.88%	15.69%	16.73%	14.60%	15.55%
3	Dublin Rd/Alderbrook Rd	1.46%	1.34%	7.31%	7.24%	6.80%	6.72%
4	Ratoath Rd/Hickey's Ln	0.24%	0.35%	3.40%	4.18%	3.16%	3.89%
5	Nine Mile Stone Roundabout	1.50%	1.45%	8.16%	8.16%	7.59%	7.58%

Table 7.1: Network Impact Through Key Junctions

7.2.3 **Figure 6.1** below details the total amount of two-way vehicle trips that will pass through the key off-site junctions in the 2038 Future Design Year and the resulting percentage increase in traffic flows as a result of the traffic generated by the proposed development.

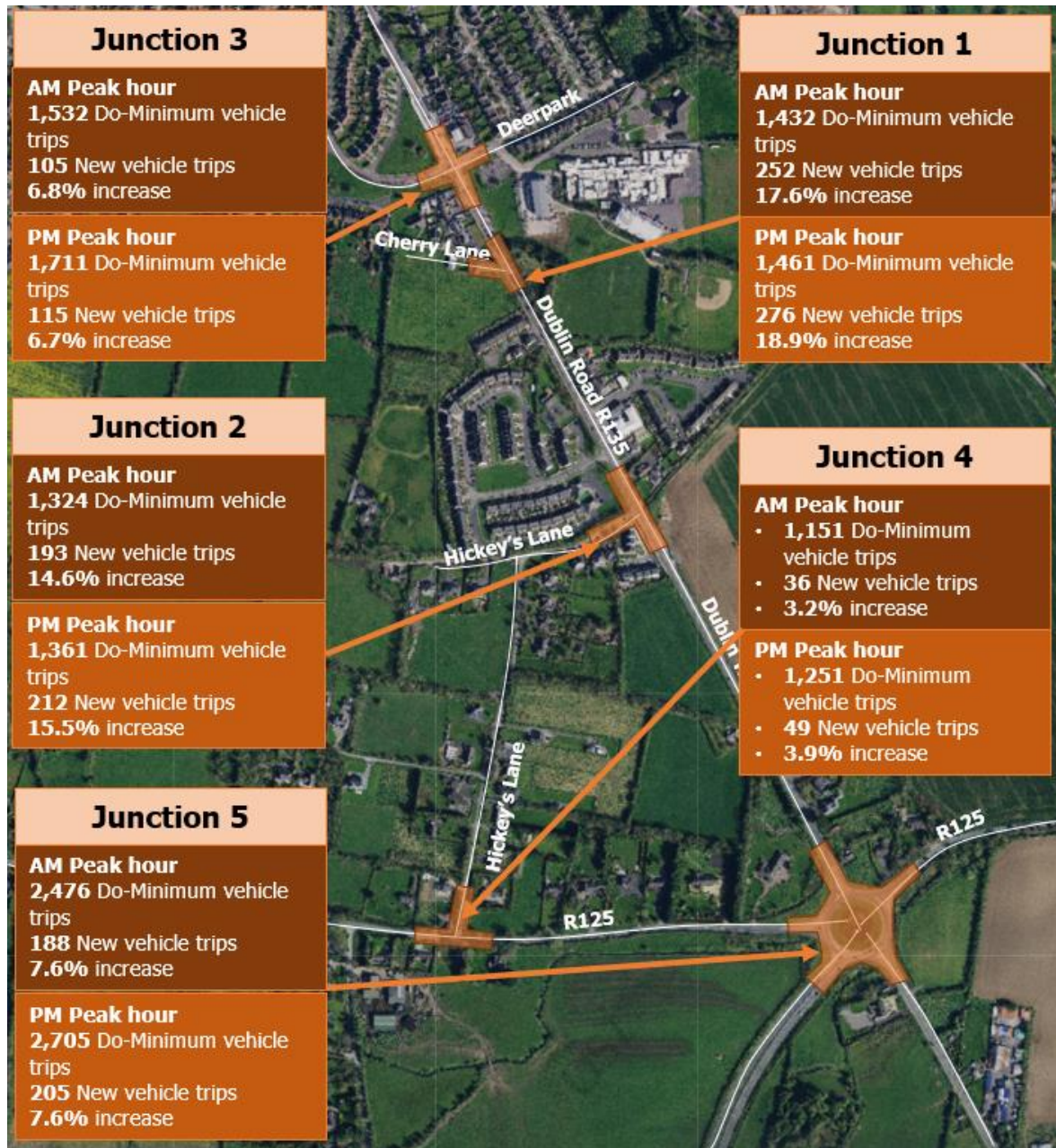


Figure 7.1: Network Impact (2038 Future Design Year)

7.2.4 As shown in **Table 7.1** and **Figure 7.1** above, the impact on the surrounding road network will be over threshold for some junctions in the 2038 scenarios:

- **Junction 1:** Dublin Road R135 / Cherry Lane experiences an 17.6% increase in the AM peak, with 252 new vehicle trips, and 18.9% in the PM peak hour, with 276 new vehicle trips.

- **Junction 2:** Dublin Road R135 / Hickey's Lane experiences an increase of 14.6% with 193 new vehicle trips generated in the AM peak hour, and an increase of 15.5% in the PM peak, with 212 new vehicle trips.
- **Junction 3:** Dublin Road R135 / Alderbrook Rd / Deerpark, experiences an increase of 6.8% in the AM peak hour with 105 new vehicle trips, and 6.7% in the PM peak with 115 new vehicle trips.
- **Junction 5:** Nine Mile Stone Roundabout, experiences an increase of 7.6% in the AM peak hour with 188 new vehicle trips, and 7.6% in the PM peak with 205 new vehicle trips.

7.2.5 As noted previously, these are above the TII threshold for assessment for normal and congested networks (10% and 5% respectively). Therefore, a further junction analysis must include Junctions 1 (Dublin Road R135 / Cherry Lane) and Junction 2 (Dublin Road R135 / Hickey's Lane). Furthermore, Junction 3 (Dublin Road R135 / Alderbrook Rd / Deerpark) and Junction 5 (Nine Mile Stone Roundabout) will be included as the 5% threshold is overpassed, and the network could be considered as "congested".

7.2.6 The abovementioned junctions will be further assessed for all scenarios and assessed year in order to determine the performance of the junctions with and without the Proposed Development, using the modelling software TRANSYT, PICADY, and ARCADY.

7.3 PUBLIC TRANSPORT IMPACT

7.3.1 The capacity of the existing 2022 public transport network serving the Ashbourne Area has been quantified previously in **Section 2.3** whilst the demand that the proposed development is predicted to generate is presented in **Section 6.5**.

7.3.2 The following section establishes the scale of impact that the proposed development is predicted to generate upon the public transport networks and quantifies the capacity of the public transport network to accommodate the proposed development.

Scale of Public Transport Impact

7.3.3 In reference to **Tables 6.6 & 6.8**, **Table 7.2** below establishes that the additional bus trips that the proposed development is predicted to generate amounts to only

3% of the total bus transport network capacity available during the morning (0600-1000) and evening (1600-2000) peak periods for years 2028 and 2038, when the full development is built, whilst the impact is minimal in 2023.

Period	Year	Mode	Existing Two-Way Capacity	Additional Trips	Scale of Impact (%)
AM Peak Period (06:00-10:00)	2023	Bus	3,166	33	1%
	2028		3,166	192	6%
	2038		3,166	192	6%
PM Peak Period (16:00-20:00)	2023	Bus	3,268	43	1%
	2028		3,268	255	8%
	2038		3,268	255	8%

Table 7.2: Impact on Public Transport

8.0 NETWORK ANALYSIS

8.1 INTRODUCTION

- 8.1.1 The operational assessment of the local road network has been undertaken using the Transport Research Laboratory (TRL) computer package PICADY for priority junctions and TRANSYT for signal controlled junctions.
- 8.1.2 When considering signalised junctions, a Degree of Saturation (DoS) of greater than 90% (0.90) would indicate a junction to be approaching capacity, as operation above this DoS value is poor and deteriorates quickly. Similarly, for priority-controlled junctions, a Ratio of Flow to Capacity (RFC) of greater than 85% (0.85) would indicate a junction to be approaching capacity, as operation above this RFC value is poor and deteriorates quickly.
- 8.1.3 A 90-minute weekday AM and PM period has been simulated in all models, from 07:45 to 09:15 and 16:30 to 18:00. Traffic flows were entered using an Origin-Destination table for the peak hours.
- 8.1.4 In order to determine if the proposed site access junction will cater sufficiently for the predicted level of traffic generation, a traffic model of the junction was analysed for the scheme's:
- 2023 Opening Year;
 - 2028 Interim Design Year; and
 - 2038 Future Design Year; and

8.2 JUNCTION ANALYSIS

Junction 1: Dublin Road R135 / Cherry Lane

8.2.1 The proposed three-arm Signal Controlled junction shown in **Figure 8.1**, has been analysed for all design years Do Minimum and Do Something scenarios for the assessment years using the TRANSYT 16 software package. The results of the operational assessment of this junction for the 'Do Minimum' and 'Do Something' scenarios are summarised in **Tables 7.1**.

8.2.2 In the "Do Minimum" and "Do Something" scenarios the three arms were labelled as follows within the TRANSYT model:

- Arm A – Dublin Road R135 (S)
- Arm B – Cherry Lane (Link Street)
- Arm C – Dublin Road R135 (N)

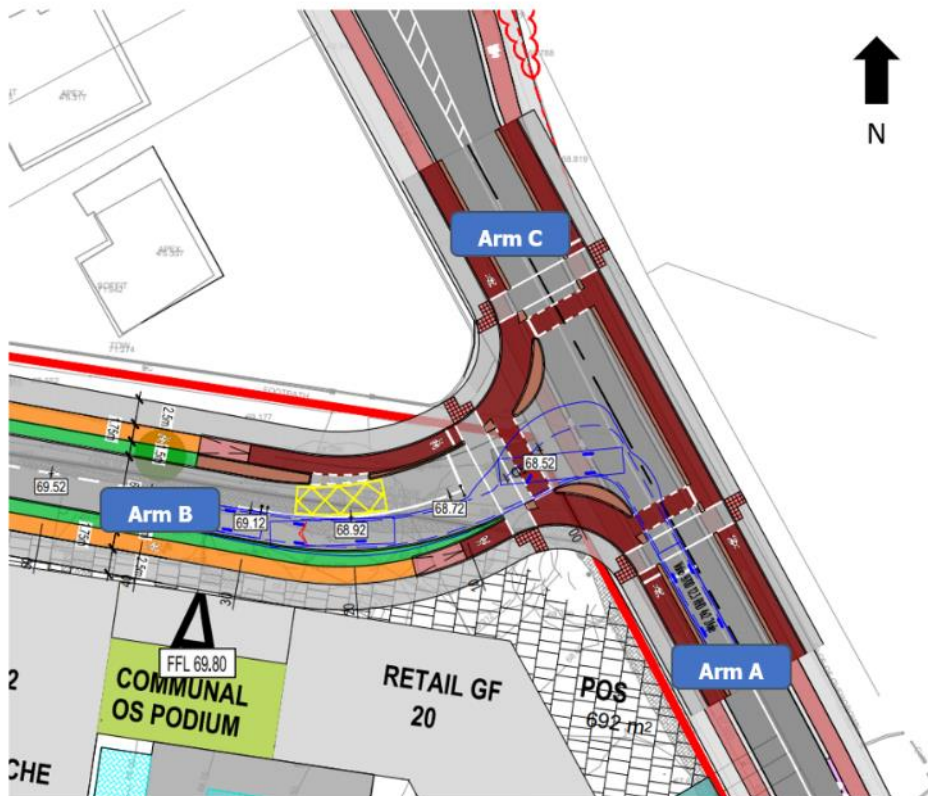


Figure 8.1: Junction 1 Signal Controlled Junction

8.2.3 The junction has been modelled assuming a cycle time of 120 seconds, with an all-green pedestrian stage and an advanced cycle stage of 8 seconds every cycle.

8.2.4 A copy of the TRANSYT Output file can be found in **Appendix C**.

Do Minimum Scenario

- 8.2.5 The Do Minimum of the operational assessment of this signal controlled junction are summarised in **Table 8.1** below.
- 8.2.6 In the 2038 scenario, maximum queues of 21.7 pcu's is experienced along Arm C – Dublin Rd (N), with the highest DoS of 79% and a delay of 28.69 seconds during the AM peak whilst during the PM peak Arm A – Dublin Rd (S) experiences a DoS of 88%, a queue of 28.74 pcu's and a delay of 34.69 seconds.
- 8.2.7 Therefore, the junction will operate within capacity in all Do Minimum Scenarios.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2023	AM Peak	A	Dublin Road (S)	Straight & Left Turn	55	20.10	11.85
		B	Cherry Lane (Link St)	Right Turn & Left Turn	2	40.51	0.14
		C	Dublin Road (N)	Straight & Right Turn	66	23.32	15.95
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	79	28.81	21.98
		B	Cherry Lane (Link St)	Right Turn & Left Turn	1	40.46	0.00
		C	Dublin Road (N)	Straight & Right Turn	49	18.93	10.06
2028	AM Peak	A	Dublin Road (S)	Straight & Left Turn	61	21.79	14.10
		B	Cherry Lane (Link St)	Right Turn & Left Turn	7	40.96	0.61
		C	Dublin Road (N)	Straight & Right Turn	73	25.88	19.04
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	86	33.92	26.05
		B	Cherry Lane (Link St)	Right Turn & Left Turn	2	40.51	0.14
		C	Dublin Road (N)	Straight & Right Turn	53	19.78	11.38
2038	AM Peak	A	Dublin Road (S)	Straight & Left Turn	66	23.13	15.79
		B	Cherry Lane (Link St)	Right Turn & Left Turn	7	41.01	0.64
		C	Dublin Road (N)	Straight & Right Turn	79	28.69	21.70
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	88	34.69	28.74
		B	Cherry Lane (Link St)	Right Turn & Left Turn	2	43.06	0.17
		C	Dublin Road (N)	Straight & Right Turn	55	18.43	11.93

Table 8.1: Do Minimum Scenario – Junction 1 Analysis

Do Something Scenario

- 8.2.8 The Do Something of the operational assessment of this signal-controlled junction are summarised in **Table 8.2** below.

8.2.9 In the 2038 scenario, maximum queues of 7.46 pcu's is experienced along Arm B – Cherry Lane, with the highest DoS of 77% and a delay of 25.08 seconds during the AM peak whilst during the PM peak Arm A experiences a DoS of 89%, a queue of 31.74 pcu's and a delay of 31.72 seconds.

8.2.10 Therefore, the junction will operate within capacity in all Do Something Scenarios.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2023	AM Peak	A	Dublin Road (S)	Straight & Left Turn	55	19.55	11.90
		B	Cherry Lane (Link St)	Right Turn & Left Turn	14	42.78	1.22
		C	Dublin Road (N)	Straight & Right Turn	66	22.56	15.87
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	80	28.74	22.64
		B	Cherry Lane (Link St)	Right Turn & Left Turn	7	41.88	0.64
		C	Dublin Road (N)	Straight & Right Turn	49	18.47	10.31
2028	AM Peak	A	Dublin Road (S)	Straight & Left Turn	66	22.44	15.76
		B	Cherry Lane (Link St)	Right Turn & Left Turn	62	55.07	6.55
		C	Dublin Road (N)	Straight & Right Turn	75	25.98	19.83
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	88	33.13	29.87
		B	Cherry Lane (Link St)	Right Turn & Left Turn	43	53.28	3.27
		C	Dublin Road (N)	Straight & Right Turn	55	16.97	12.14
2038	AM Peak	A	Dublin Road (S)	Straight & Left Turn	67	21.12	16.46
		B	Cherry Lane (Link St)	Right Turn & Left Turn	73	65.56	7.13
		C	Dublin Road (N)	Straight & Right Turn	77	25.08	21.35
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	89	31.72	31.74
		B	Cherry Lane (Link St)	Right Turn & Left Turn	57	64.31	3.59
		C	Dublin Road (N)	Straight & Right Turn	56	14.99	12.41

Table 8.2: Do Something Scenario Junction Analysis

Junction 2: Dublin Road R135 / Hickey's Lane

8.2.11 Junction Impact analysis results has shown that the priority controlled junction between Dublin Road R135 and Hickey's Lane surpasses the 10% threshold.

8.2.12 The existing three arm priority-controlled junction has been analysed for the 'Do Something' modelling scenario using the Junctions 9 PICADY software package. The results of the operational assessment of this junction during the weekday morning and evening peaks for the Do Nothing scenario is summarised in **Table 8.3** and **Table 7.4** summarises the Do Something scenario below.

8.2.13 In the "Do Minimum" & "Do Something" scenarios the three arms were labelled as follows within the ARCADY model:

- Arm A: Dublin Road R135 (S)
- Arm B: Hickey's Lane
- Arm C: Dublin Road R135 (N)

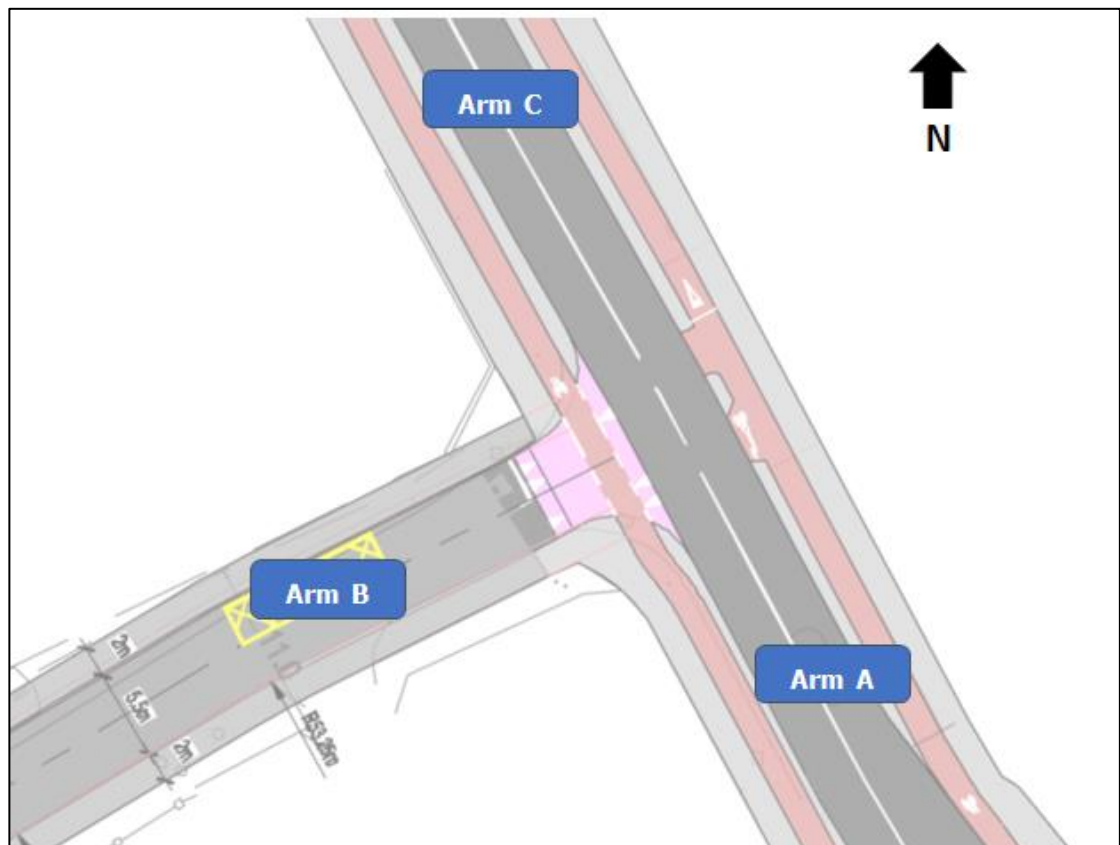


Figure 8.2: Junction 2 Priority Controlled Junction

8.2.14 A copy of the PICADY Output file can be found in **Appendix D**.

Do Minimum Scenario

8.2.15 The PICADY results (**Table 8.3**) indicate that the Dublin Road R135 / Hickey's Lane three-arm priority-controlled junction will operate within capacity for all design years for the Do Minimum Scenarios. The junction will operate within capacity in the 2038 AM peak hour with a maximum RFC value of 0.1 and a corresponding queue of 0.1 pcu's being recorded on the Hickey's Lane arm. For the 2038 PM peak hour, results show a maximum RFC value of 0.10 occurring on the same arm, with a corresponding queue of 0.1 pcu's.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2023	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	9.67	0.08
		C	Dublin Road R135 (N)	0.00	7.38	0.02
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	10.57	0.09
		C	Dublin Road R135 (N)	0.00	8.59	0.03
2028	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	9.34	0.09
		C	Dublin Road R135 (N)	0.00	6.91	0.02
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	9.61	0.09
		C	Dublin Road R135 (N)	0.00	7.81	0.03
2038	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	9.83	0.10
		C	Dublin Road R135 (N)	0.00	7.04	0.03
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	10.23	0.10
		C	Dublin Road R135 (N)	0.00	8.06	0.04

Table 8.3: Do Minimum Scenario Junction Analysis

Do Something Scenario

8.2.16 The PICADY results (**Table 8.4**) indicate that the Dublin Road R135 / Hickey's Lane three-arm priority-controlled junction will operate within capacity for all design years for the Do Something Scenarios. The junction will operate within capacity in the 2038 AM peak hour with a maximum RFC value of 0.22 and a corresponding queue of 0.3 pcu's being recorded on the Hickey's Lane arm. For the 2038 PM peak hour, results show a maximum RFC value of 0.19 occurring on the same arm, with a corresponding queue of 0.2 pcu's.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2023	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	8.88	0.08
		C	Dublin Road R135 (N)	0.00	6.74	0.02
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	9.38	0.08
		C	Dublin Road R135 (N)	0.00	7.65	0.03
2028	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.30	12.59	0.21
		C	Dublin Road R135 (N)	0.00	7.12	0.03
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.20	12.96	0.17
		C	Dublin Road R135 (N)	0.10	8.58	0.06
2038	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.30	13.40	0.22
		C	Dublin Road R135 (N)	0.00	7.26	0.03
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.20	13.80	0.19
		C	Dublin Road R135 (N)	0.10	8.88	0.07

Table 8.4: Do Something Scenario Junction Analysis

Junction 3: Dublin Road R135 / Alderbrook Rd / Deerpark

8.2.17 Junction Impact analysis results has shown that the signal-controlled junction Dublin Rd/Alderbrook Rd/Deerpark have a traffic impact over 5%. A further analysis has been carried out.

8.2.18 The existing three arm priority-controlled junction has been analysed for the 'Do Something' modelling scenario using the TRANSYT software package. The results of the operational assessment of this junction during the weekday morning and evening peaks for the Do Nothing scenario is summarised in **Table 8.3** and **Table 7.4** summarises the Do Something scenario below.

8.2.19 In the "Do Minimum" & "Do Something" scenarios the four arms were labelled as follows within the ARCADY model:

- Arm A: Dublin Road R135 (S)
- Arm B: Alderbrook Rd

- Arm C: Dublin Road R135 (N)
- Arm D: Deerpark

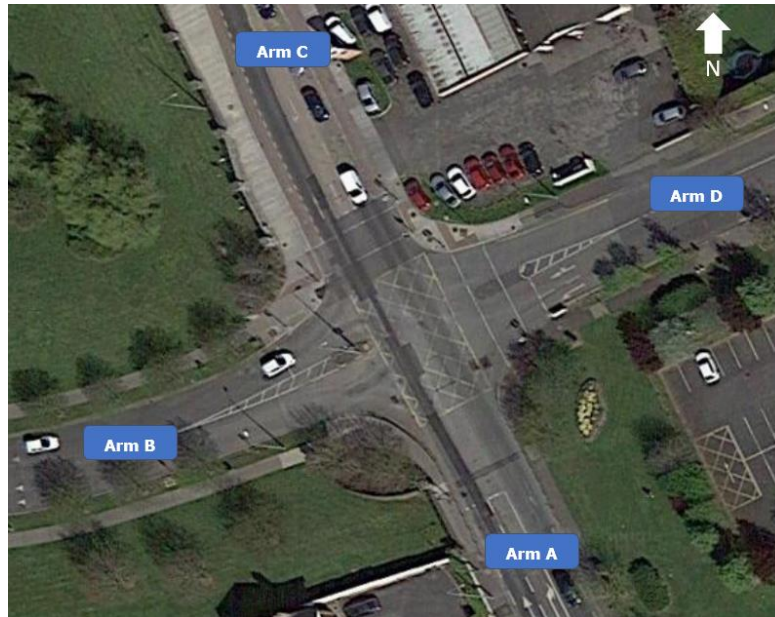


Figure 8.3: Junction 3 Signalised Junction

- 8.2.20 The junction has been modelled assuming a cycle time of 100 seconds, with an all-green pedestrian stage and an advanced cycle stage of 8 seconds every cycle.
- 8.2.21 A copy of the TRANSYT Output file can be found in **Appendix C**.

Do Minimum Scenario

- 8.2.22 The TRANSYT results (**Table 8.5**) indicate that the Dublin Rd / Alderbrook Rd / Deerpark 4-arm signal-controlled junction will operate within capacity for all design years in the Do Minimum Scenarios. In 2038 AM Peak, the maximum DoS occurs on Arm C Dublin Rd (N), with a value of 81%, a queue of 18 pcus and a delay of 31.80 seconds on the Straight & Left Turn stream. In the PM Peak, the maximum DoS equals to 83% on Arm A Dublin Rd (S) on the Straight and Left Turn stream, with a queue of 20.03 pcus and a delay of 30.24 seconds.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2023	AM Peak	A	Dublin Road (S)	Straight & Left Turn	45	19.58	7.29
				Right Turn	18	15.46	1.62
		B	Alderbrook Rd	Straight, Right & Left Turn	28	35.05	2.52
		C	Dublin Road (N)	Straight & Left Turn	69	25.44	13.39
				Right Turn	4	13.99	0.38
		D	Deerpark	Left Turn	17	33.34	1.46
				Straight & Right Turn	12	32.62	0.99
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	71	23.70	14.71
				Right Turn	7	12.17	0.57
		B	Alderbrook Rd	Straight, Right & Left Turn	30	38.84	2.29
		C	Dublin Road (N)	Straight & Left Turn	56	19.36	10.13
				Right Turn	8	12.26	0.68
		D	Deerpark	Left Turn	11	35.87	0.78
				Straight & Right Turn	26	38.08	1.93
2028	AM Peak	A	Dublin Road (S)	Straight & Left Turn	49	20.36	8.25
				Right Turn	19	15.68	1.81
		B	Alderbrook Rd	Straight, Right & Left Turn	31	35.47	2.77
		C	Dublin Road (N)	Straight & Left Turn	76	28.35	15.76
				Right Turn	5	14.04	0.41
		D	Deerpark	Left Turn	19	33.57	1.62
				Straight & Right Turn	13	32.78	1.09
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	77	26.39	17.07
				Right Turn	7	12.21	0.63
		B	Alderbrook Rd	Straight, Right & Left Turn	33	39.32	2.50
		C	Dublin Road (N)	Straight & Left Turn	61	20.48	11.52
				Right Turn	8	12.33	0.74
		D	Deerpark	Left Turn	12	35.98	0.85
				Straight & Right Turn	28	38.48	2.13
2038	AM Peak	A	Dublin Road (S)	Straight & Left Turn	53	21.11	9.03
				Right Turn	21	15.87	1.96
		B	Alderbrook Rd	Straight, Right & Left Turn	33	35.84	2.97
		C	Dublin Road (N)	Straight & Left Turn	81	31.80	18.00
				Right Turn	5	14.08	0.44
		D	Deerpark	Left Turn	20	33.77	1.73
				Straight & Right Turn	13	32.89	1.16
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	83	30.24	20.03
				Right Turn	8	12.26	0.68
		B	Alderbrook Rd	Straight, Right & Left Turn	35	39.79	2.71
		C	Dublin Road (N)	Straight & Left Turn	66	21.75	12.83
				Right Turn	9	12.40	0.80
		D	Deerpark	Left Turn	12	36.06	0.90
				Straight & Right Turn	30	38.90	2.31

Table 8.5: Do Minimum Scenario Junction Analysis

Do Something Scenario

- 8.2.23 The TRANSYT results (**Table 8.6**) indicate that the Dublin Rd / Alderbrook Rd / Deerpark 4-arm signal-controlled junction will operate within capacity for all design years in the Do Something Scenarios. In 2038 AM Peak, the maximum DoS occurs on Arm C Dublin Rd (N), with a value of 84%, a queue of 19.30 pcus and a delay of 33.95 seconds on the Straight & Left Turn stream. In the PM Peak, the maximum DoS equals to 88% on Arm A Dublin Rd (S) on the Straight and Left Turn stream, with a queue of 22.60 pcus and a delay of 34.81 seconds.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2023	AM Peak	A	Dublin Road (S)	Straight & Left Turn	46	19.81	7.52
				Right Turn	18	15.52	1.70
		B	Alderbrook Rd	Straight, Right & Left Turn	28	35.05	2.52
				Straight & Left Turn	69	25.61	13.50
		C	Dublin Road (N)	Right Turn	4	13.99	0.38
				Left Turn	17	33.34	1.46
		D	Deerpark	Straight & Right Turn	12	32.62	0.99
				Straight & Left Turn	78	29.77	16.67
	PM Peak	A	Dublin Road (S)	Right Turn	7	14.28	0.64
				Straight, Right & Left Turn	25	34.48	2.18
		B	Alderbrook Rd	Straight & Left Turn	62	23.38	11.37
				Right Turn	8	14.40	0.74
		C	Dublin Road (N)	Left Turn	9	32.34	0.76
				Straight & Right Turn	21	33.92	1.83
		D	Deerpark	Straight & Left Turn	78	29.77	16.67
				Right Turn	7	14.28	0.64
2028	AM Peak	A	Dublin Road (S)	Right Turn	7	14.28	0.64
				Straight, Right & Left Turn	25	34.48	2.18
		B	Alderbrook Rd	Straight & Left Turn	62	23.38	11.37
				Right Turn	8	14.40	0.74
		C	Dublin Road (N)	Left Turn	9	32.34	0.76
				Straight & Right Turn	21	33.92	1.83
		D	Deerpark	Straight & Left Turn	82	29.15	19.31
				Right Turn	8	12.24	0.66
	PM Peak	A	Dublin Road (S)	Straight, Right & Left Turn	34	39.65	2.66
				Straight & Left Turn	68	22.39	13.47
		B	Alderbrook Rd	Right Turn	8	12.33	0.74
				Left Turn	13	36.17	0.97
		C	Dublin Road (N)	Straight & Right Turn	28	38.48	2.13
				Straight & Left Turn	60	22.81	10.80
		D	Deerpark	Right Turn	24	16.24	2.26
				Straight, Right & Left Turn	34	35.98	3.05
2038	AM Peak	A	Dublin Road (S)	Straight & Left Turn	84	33.95	19.30
				Right Turn	5	14.08	0.44
		B	Alderbrook Rd	Left Turn	21	33.88	1.80
				Straight & Right Turn	13	32.89	1.16
		C	Dublin Road (N)	Straight & Left Turn	88	34.81	22.60
				Right Turn	8	12.31	0.73
		D	Deerpark	Straight, Right & Left Turn	37	40.13	2.84
				Straight & Left Turn	72	24.08	15.14
	PM Peak	A	Dublin Road (S)	Right Turn	9	12.40	0.80
				Left Turn	14	36.25	1.03
		B	Alderbrook Rd	Straight & Right Turn	30	38.90	2.31
				Straight & Left Turn	78	29.77	16.67
		C	Dublin Road (N)	Right Turn	7	14.28	0.64
				Straight, Right & Left Turn	25	34.48	2.18
		D	Deerpark	Straight & Left Turn	62	23.38	11.37
				Right Turn	8	14.40	0.74

Table 8.6: Do Something Scenario Junction Analysis

Junction 5: Nine Mile Stone Roundabout

- 8.2.24 Junction Impact analysis results has shown that the Nine Mile Stone Roundabout have a traffic impact over 5%. A further analysis has been carried out.
- 8.2.25 The existing three arm priority-controlled junction has been analysed for the 'Do Something' modelling scenario using the TRANSYT software package. The results of the operational assessment of this junction during the weekday morning and evening peaks for the Do Nothing scenario is summarised in **Table 8.3** and **Table 7.4** summarises the Do Something scenario below.
- 8.2.26 In the "Do Minimum" & "Do Something" scenarios the five arms were labelled as follows within the ARCADY model:
- Arm A: R135 (S)
 - Arm B: M2 access
 - Arm C: Ratoath Rd R125
 - Arm D: Dublin Rd R135
 - Arm E: R125



Figure 8.4: Junction 5 Nine Mile Stone Roundabout

- 8.2.27 A copy of the PICADY Output file can be found in **Appendix D**.

Do Minimum Scenario

- 8.2.28 The PICADY results (**Table 8.7**) indicate that the Nine Mile Stone Roundabout 5-arm roundabout will operate within capacity for all design years in the Do Minimum

Scenarios. The maximum RFC occurs in 2038 AM peak on Arm 3 Ratoath Rd, with a value of 55%, a queue of 1.20 pcus, and a delay of 4.95 seconds. In 2038 PM peak, the maximum RFC occurs on Arm 2 M2 access, and equals to 56%, with a queue of 1.30 pcus, and a delay of 4.08 seconds.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2023	AM Peak	1	R135 (S)	0.10	2.90	0.13
		2	M2 access	0.20	1.94	0.18
		3	Ratoath Rd R125	0.80	3.99	0.46
		4	R135 (N)	0.70	3.72	0.42
		5	R125 (E)	0.30	3.99	0.24
	PM Peak	1	R135 (S)	0.30	2.90	0.24
		2	M2 access	0.90	3.26	0.47
		3	Ratoath Rd R125	0.30	3.19	0.23
		4	R135 (N)	0.40	2.80	0.29
		5	R125 (E)	0.30	3.17	0.22
2028	AM Peak	1	R135 (S)	0.20	3.08	0.15
		2	M2 access	0.20	2.01	0.20
		3	Ratoath Rd R125	1.00	4.45	0.50
		4	R135 (N)	0.90	4.14	0.47
		5	R125 (E)	0.40	4.36	0.27
	PM Peak	1	R135 (S)	0.40	3.05	0.26
		2	M2 access	1.10	3.62	0.52
		3	Ratoath Rd R125	0.30	3.38	0.25
		4	R135 (N)	0.50	2.95	0.32
		5	R125 (E)	0.30	3.33	0.24
2038	AM Peak	1	R135 (S)	0.20	3.26	0.17
		2	M2 access	0.30	2.07	0.21
		3	Ratoath Rd R125	1.20	4.95	0.55
		4	R135 (N)	1.00	4.61	0.51
		5	R125 (E)	0.40	4.78	0.30
	PM Peak	1	R135 (S)	0.40	3.23	0.29
		2	M2 access	1.30	4.08	0.56
		3	Ratoath Rd R125	0.40	3.59	0.28
		4	R135 (N)	0.50	3.10	0.35
		5	R125 (E)	0.40	3.50	0.27

Table 8.7: Do Minimum Scenario Junction Analysis

Do Something Scenario

8.2.29 The PICADY results (**Table 8.8**) indicate that the Nine Mile Stone Roundabout 5-arm roundabout will operate within capacity for all design years in the Do Something Scenarios. The maximum RFC occurs in 2038 AM peak on Arm 4 R135 (N), with a value of 60%, a queue of 1.50 pcus, and a delay of 5.70 seconds. In 2038 PM peak, the maximum RFC occurs on Arm 2 M2 Access, and equals to 62%, with queue of 1.60 pcus, and a delay of 4.71 seconds.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2023	AM Peak	1	R135 (S)	0.20	2.93	0.13
		2	M2 access	0.20	1.95	0.18
		3	Ratoath Rd R125	0.80	4.01	0.46
		4	R135 (N)	0.80	3.83	0.43
		5	R125 (E)	0.30	4.05	0.24
	PM Peak	1	R135 (S)	0.30	2.92	0.24
		2	M2 access	0.90	3.31	0.48
		3	Ratoath Rd R125	0.30	3.23	0.23
		4	R135 (N)	0.40	2.83	0.30
		5	R125 (E)	0.30	3.19	0.22
2028	AM Peak	1	R135 (S)	0.20	3.28	0.17
		2	M2 access	0.30	2.06	0.21
		3	Ratoath Rd R125	1.10	4.68	0.52
		4	R135 (N)	1.30	5.00	0.56
		5	R125 (E)	0.40	4.80	0.30
	PM Peak	1	R135 (S)	0.40	3.23	0.29
		2	M2 access	1.30	4.11	0.57
		3	Ratoath Rd R125	0.40	3.64	0.28
		4	R135 (N)	0.60	3.16	0.36
		5	R125 (E)	0.40	3.48	0.26
2038	AM Peak	1	R135 (S)	0.20	3.49	0.19
		2	M2 access	0.30	2.12	0.23
		3	Ratoath Rd R125	1.30	5.24	0.57
		4	R135 (N)	1.50	5.70	0.60
		5	R125 (E)	0.50	5.32	0.33
	PM Peak	1	R135 (S)	0.50	3.43	0.32
		2	M2 access	1.60	4.71	0.62
		3	Ratoath Rd R125	0.40	3.88	0.31
		4	R135 (N)	0.60	3.35	0.39
		5	R125 (E)	0.40	3.67	0.28

Table 8.8: Do Something Scenario Junction Analysis

8.3 SENSITIVITY ANALYSIS

- 8.3.1 A sensitivity analysis has been carried out in response to MCC advising that the lands located west of the development (which are currently zoned as F1 – Open Space in the Meath County Development Plan (2021-2027)) could potential be developed in the future, with one of the developments access points via Cherry Lane. It has been advised that this development may cater for approximately 800 units, with two access points.
- 8.3.2 As a result, with the objective of providing a robust assessment, DBFL have undertaken a sensitivity test to assess the potential impact on the capacity of Junction no. 1, Junction no. 2, Junction no. 3 and Junction no. 5, due to the inclusion of the potential future development to the east of the subject site.
- 8.3.3 Therefore, it has been assumed that half the potential future development may use the Cherry Lane access i.e. 400 no. residential units (240 houses and 160 apartment/duplex units – using the same ratio as the subject development). To assess the worst case scenario, it is assumed that the Potential Future Development will be fully constructed and occupied by 2038.
- 8.3.4 **Table 8.9** summarises the predicted peak hour AM and PM vehicle trips generated by the Potential Future Development, using the same trip rates for residential units of the proposed development.

Units	Units/GFA	AM Peak Hour (08:00-09:00)			PM Peak Hour (16:45-17:45)		
		Arr	Dep	Total	Arr	Dep	Total
Houses	240	33	94	128	80	50	131
Apartments / duplex	160	10	30	39	33	18	51
Total	400	43	124	167	114	69	182

Table 8.9: Potential Future Development Vehicle Trips

Junction 1: Dublin Road R135 / Cherry Lane

- 8.3.5 The proposed three-arm Signal Controlled junction shown in **Figure 8.5**, has been analysed for the 2038 design year Do Minimum and Do Something scenarios including the Potential Future Development (PFD) using the TRANSYT 16 software package. The results of the operational assessment of this junction for the 'Do

Minimum' and 'Do Something' scenarios are summarised in **Tables 7.6 and 7.7** respectively.

8.3.6 In the "Do Nothing" and "Do Something" scenarios the four arms were labelled as follows within the ARCADY model:

- **Arm A – Dublin Road R135 (S)**
- **Arm B – Cherry Lane (Link Street)**
- **Arm C – Dublin Road R135 (N)**

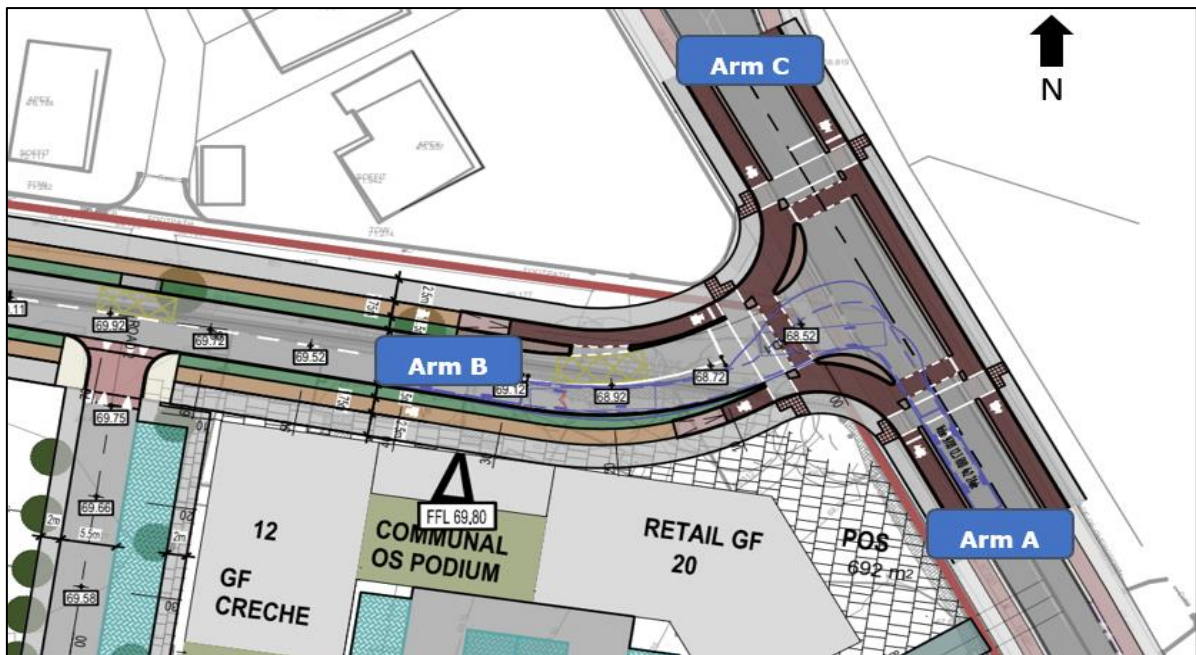


Figure 8.5: Junction 1 Signal Controlled Junction

8.3.7 The junction has been modelled assuming a cycle time of 120 seconds, with an all-green pedestrian stage and an advanced cycle stage of 8 seconds every cycle.

8.3.8 A copy of the TRANSYT Output file can be found in **Appendix C**.

Do Minimum Scenario

8.3.9 The Do-Minimum of the operational assessment of this signal controlled junction are summarised in **Table 8.10** below.

8.3.10 In the 2038 Do Minimum scenario with the Potential Future Development (PFD), maximum queues of 22.62 pcu's is experienced along Arm C – Dublin Rd (N), with the highest DoS of 80% and a delay of 28.52 seconds during the AM peak whilst during the PM peak, Arm A – Dublin Rd (N) experiences a DoS of 88%, a queue of 30.23 pcus and a delay of 32.41 seconds.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2038 + PFD	AM Peak	A	Dublin Road (S)	Straight & Left Turn	68	23.88	16.77
		B	Cherry Lane (Link St)	Right Turn & Left Turn	37	46.05	3.63
		C	Dublin Road (N)	Straight & Right Turn	80	29.52	22.62
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	88	32.41	30.23
		B	Cherry Lane (Link St)	Right Turn & Left Turn	27	50.54	1.88
		C	Dublin Road (N)	Straight & Right Turn	55	16.30	11.99

Table 8.10: "Do Minimum" Sensitivity Analysis

Do Something Scenario

8.3.11 In the 2038 Do Something scenario with the Potential Future Development (PFD), maximum queues of 26.28 pcus are experienced along Arm C – Dublin Rd (N), with the highest DoS of 87% and a delay of 37.54 seconds during the AM peak whilst during the PM peak Arm A experiences a DoS of 94%, a queue of 13.50 pcus and a delay of 42.71 seconds. Therefore, the junction might operate oversaturated on one arm in the 2038 PM Peak scenario with the Potential Future Development, although it will operate within capacity for 2023 and 2028 scenarios.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2038 + PFD	AM Peak	A	Dublin Road (S)	Straight & Left Turn	77	29.57	20.32
		B	Cherry Lane (Link St)	Right Turn & Left Turn	79	62.05	10.69
		C	Dublin Road (N)	Straight & Right Turn	87	37.54	26.28
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	94	42.71	38.71
		B	Cherry Lane (Link St)	Right Turn & Left Turn	87	106.69	7.48
		C	Dublin Road (N)	Straight & Right Turn	59	15.64	13.50

Table 8.11: "Do-Something" Sensitivity Analysis Junction 1

Junction 2: Dublin Road R135 / Hickey's Lane

8.3.12 Junction Impact analysis results has shown that the priority controlled junction between Dublin Road R135 and Hickey's Lane works within capacity for all scenarios. **Table 8.13** and **Table 8.14** summarise The Do Minimum & Do Something scenarios including the Potential Future Development.

8.3.13 In the “Do Minimum” & “Do Something” scenario the three arms were labelled as follows within the ARCADY model:

- Arm A: Dublin Road R135 (S)
- Arm B: Hickey’s Lane
- Arm C: Dublin Road R135 (N)

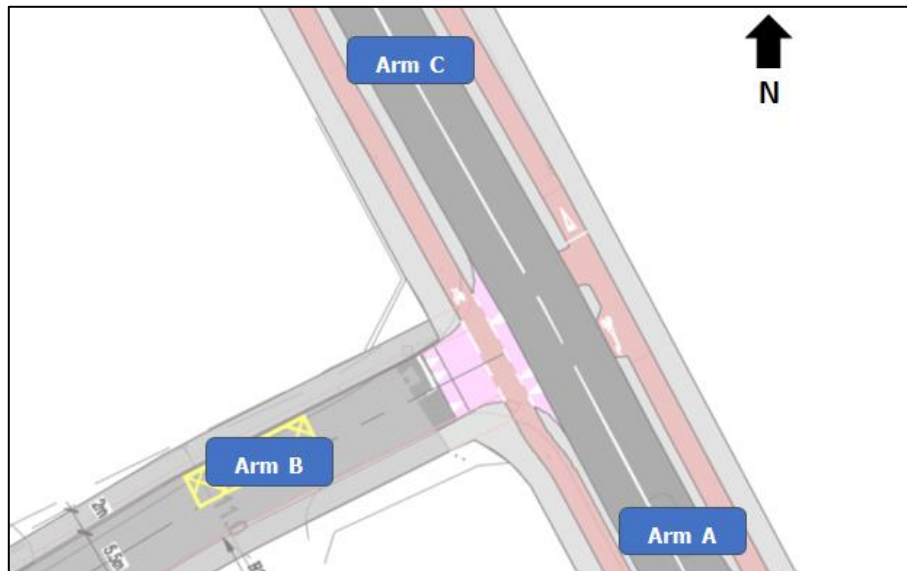


Figure 8.6: Junction 2 Priority Controlled Junction

8.3.14 A copy of the PICADY Output file can be found in **Appendix D**.

Do Minimum Scenario

8.3.15 The PICADY results (**Table 8.13**) indicate that the Dublin Road R135 / Hickey’s Lane three-arm priority-controlled junction will operate within capacity with the Potential Future Development. In the AM Peak, the junction will have a maximum RFC value of 10% and a corresponding queue of 0.1 pcu’s being recorded on the Hickey’s Lane arm and a delay of 10.14 seconds, and in the PM peak hour, with an RFC value of 11% occurring on the same arm, with a corresponding queue of 0.1 pcus and a delay of 10.74 seconds.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2038 + PFD	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	10.14	0.10
		C	Dublin Road R135 (N)	0.00	7.12	0.03
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.10	10.74	0.11
		C	Dublin Road R135 (N)	0.00	8.32	0.04

Table 8.12: "Do Minimum" Sensitivity Analysis

Do Something Scenario

8.3.16 In the 2038 AM Peak with the Potential Future Development, the junction will also operate within capacity in a maximum RFC value of 23% and a corresponding queue of 0.3 pcus being recorded on the Hickey's Lane arm, and delay of 14.08 seconds, and in the PM peak hour, with an RFC value of 20% occurring on the same arm, with a corresponding queue of 0.2 pcus, and a delay of 14.84 seconds.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2038 + PFD	AM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.30	14.08	0.23
		C	Dublin Road R135 (N)	0.00	7.34	0.03
	PM Peak	A	Dublin Road R135 (S)	-	-	-
		B	Hickey's Lane	0.20	14.84	0.20
		C	Dublin Road R135 (N)	0.10	9.20	0.07

Table 8.13: "Do-Something" Sensitivity Analysis

Junction 3: Dublin Road R135 / Alderbrook Rd / Deerpark

8.3.17 In the "Do Minimum" & "Do Something" scenarios the four arms were labelled as follows within the ARCADY model:

- **Arm A: Dublin Road R135 (S)**
- **Arm B: Alderbrook Rd**
- **Arm C: Dublin Road R135 (N)**
- **Arm D: Deerpark**



Figure 8.7: Junction 3 Signalised Junction

8.3.18 A copy of the TRANSYT Output file can be found in **Appendix C**.

Do Minimum Scenario

8.3.19 In the DM 2038 AM Peak, the highest DOS occurs on Arm C – Dublin Rd (N), on the Straight and Left Turn stream, with a value of 83%, and queue of 18.59 pcus, and a delay of 32.72 seconds. In the PM peak, the highest DOS occurs on Arm A – Dublin Rd (S), on the Straight and Left Turn, with a DOS of 85%, a queue of 21.07 pcus, and a delay of 32.11 seconds.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2038 + PFD	AM Peak	A	Dublin Road (S)	Straight & Left Turn	57	21.87	9.93
				Right Turn	22	16.04	2.11
		B	Alderbrook Rd	Straight, Right & Left Turn	33	35.89	3.00
		C	Dublin Road (N)	Straight & Left Turn	83	32.72	18.59
				Right Turn	5	14.08	0.44
		D	Deerpark	Left Turn	20	33.84	1.78
				Straight & Right Turn	13	32.89	1.16
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	85	32.11	21.07
				Right Turn	8	12.28	0.70
		B	Alderbrook Rd	Straight, Right & Left Turn	36	39.99	2.79
		C	Dublin Road (N)	Straight & Left Turn	69	22.76	13.89
				Right Turn	9	12.40	0.80
		D	Deerpark	Left Turn	13	36.17	0.97
				Straight & Right Turn	30	38.90	2.31

Table 8.14: "Do Minimum" Sensitivity Analysis

Do Something Scenario

8.3.20 In the DS 2038 AM Peak, the highest DOS occurs on Arm C – Dublin Rd (N), on the Straight and Left Turn stream, with a value of 85%, and queue of 19.96 pcus, and a delay of 35.11 seconds. In the PM peak, the highest DOS occurs on Arm A – Dublin Rd (S), on the Straight and Left Turn, with a DOS of 90%, a queue of 24.19 pcus, and a delay of 37.83 seconds.

Year	Scenario	Arm	Arm name	Description	DOS (%)	Mean Delay (s)	Mean Max Queue (pcus)
2038 + PFD	AM Peak	A	Dublin Road (S)	Straight & Left Turn	64	23.79	11.81
				Right Turn	25	16.41	2.42
		B	Alderbrook Rd	Straight, Right & Left Turn	34	36.08	3.13
		C	Dublin Road (N)	Straight & Left Turn	85	35.11	19.96
				Right Turn	5	14.08	0.44
		D	Deerpark	Left Turn	21	33.92	1.83
				Straight & Right Turn	13	32.89	1.16
	PM Peak	A	Dublin Road (S)	Straight & Left Turn	90	37.83	24.19
				Right Turn	8	12.33	0.74
		B	Alderbrook Rd	Straight, Right & Left Turn	38	40.34	2.92
		C	Dublin Road (N)	Straight & Left Turn	75	25.41	16.32
				Right Turn	9	12.40	0.80
		D	Deerpark	Left Turn	15	36.42	1.10
				Straight & Right Turn	30	38.90	2.31

Table 8.15: "Do Something" Sensitivity Analysis

Junction 5: Nine Mile Stone Roundabout

8.3.21 In the "Do Minimum" & "Do Something" scenarios the five arms were labelled as follows within the ARCADY model:

- Arm A: R135 (S)
- Arm B: M2 access
- Arm C: Ratoath Rd R125
- Arm D: Dublin Rd R135

- Arm E: R125



Figure 8.8: Junction 5 Nine Mile Stone Roundabout

Do Minimum Scenario

8.3.22 In the DM 2038 AM Peak, the highest RFC occurs on Arm 4 – R135 (N), with a value of 56%, and queue of 1.2 pcus, and a delay of 5.60 seconds. In the PM peak, the highest DOS occurs on Arm 2 –M2 Access, with a RFC of 59%, a queue of 1.40 pcus, and a delay of 4.34 seconds.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2038 + PFD	AM Peak	1	R135 (S)	0.20	3.35	0.18
		2	M2 access	0.30	2.09	0.22
		3	Ratoath Rd R125	1.20	5.04	0.55
		4	R135 (N)	1.20	5.06	0.56
		5	R125 (E)	0.50	4.98	0.31
	PM Peak	1	R135 (S)	0.40	3.31	0.30
		2	M2 access	1.40	4.34	0.59
		3	Ratoath Rd R125	0.40	3.71	0.29
		4	R135 (N)	0.60	3.21	0.37
		5	R125 (E)	0.40	3.57	0.28

Table 8.16: "Do Minimum" Sensitivity Analysis

Do Something Scenario

8.3.23 In the DS 2038 AM Peak, the highest RFC occurs on Arm 4 – R135 (N), with a value of 65%, and queue of 1.80 pcus, and a delay of 6.38 seconds. In the PM peak, the highest DOS occurs on Arm 2 –M2 Access, with an RFC of 64%, a queue of 1.80 pcus, and a delay of 5.07 seconds.

Year	Scenario	Arm	Description	Queue (PCU)	Delay (s)	RFC
2038 + PFD	AM Peak	1	R135 (S)	0.20	3.60	0.19
		2	M2 access	0.30	2.14	0.23
		3	Ratoath Rd R125	1.30	5.35	0.57
		4	R135 (N)	1.80	6.38	0.65
		5	R125 (E)	0.50	5.57	0.34
	PM Peak	1	R135 (S)	0.50	3.53	0.33
		2	M2 access	1.80	5.07	0.64
		3	Ratoath Rd R125	0.50	4.03	0.32
		4	R135 (N)	0.70	3.47	0.41
		5	R125 (E)	0.40	3.75	0.29

Table 8.17: “Do Something” Sensitivity Analysis

8.4 NETWORK ANALYSIS CONCLUSIONS

8.4.1 For **Junction 1** (Dublin Road/Cherry Lane), for the 2038 Do-Something scenario, the TRANSYT results (**Table 8.2**) indicate that the junction will operate within capacity with a maximum queues of 7.46 pcu’s is experienced along Arm B – Cherry Lane, with the highest DoS of 77% and a delay of 25.08 seconds during the AM peak whilst during the PM peak Arm A experiences a DoS of 89%, a queue of 31.74 pcu’s and a delay of 31.72 seconds. To conclude, the Dublin Road/Cherry Lane signalised junction will operate within capacity for all the peak hour scenarios for all the design years assessed. The highest DoS values recorded across the assessment are lower than 90% (0.90) threshold, which would indicate the junction is within capacity. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.

8.4.2 For **Junction 2**, the PICADY results (**Table 8.4**) indicate that the Dublin Road R135 / Hickey’s Lane three-arm priority-controlled junction will operate within

capacity for all design years for the Do Something Scenarios. There is a maximum RFC value of 0.22 and a corresponding queue of 0.3 pcu's being recorded on the Hickey's Lane arm. For the 2038 PM peak hour, results show a maximum RFC value of 0.19 occurring on the same arm, with a corresponding queue of 0.2 pcu's. To conclude, the Dublin Road/Hickey's Lane priority-controlled junction will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest RFC recorded across the assessment is significantly lower than the 0.85 (85%) RFC threshold indicating a poorly performing junction. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.

- 8.4.3 For **Junction 3**, the TRANSYT results (**Table 8.6**) indicate that the Dublin Rd/Alderbrook Rd/Deerpark four-arm signal-controlled junction will operate within capacity for all design years for the Do Something Scenarios. There is a maximum DoS occurring on Arm C Dublin Rd (N), with a value of 84%, a queue of 19.30 pcus and a delay of 33.95 seconds on the Straight & Left Turn stream. In the PM Peak, the maximum DoS equals to 88% on Arm A Dublin Rd (S) on the Straight and Left Turn stream, with a queue of 22.60 pcus and a delay of 34.81 seconds. To conclude, the Dublin Rd/Alderbrook Rd/Deerpark will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest DOS recorded across the assessment is lower than the 90% DOS threshold indicating junction approaching capacity. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.
- 8.4.4 For **Junction 5**, the PICADY results (**Table 8.8**) indicate that the Nine Mile Stone Roundabout will operate within capacity for all design years for the Do Something Scenarios. The maximum RFC occurs in 2038 AM peak on Arm 4 R135 (N), with a value of 60%, a queue of 1.50 pcus, and a delay of 5.70 seconds. In 2038 PM peak, the maximum RFC occurs on Arm 2 M2 Access, and equals to 62%, with queue of 1.60 pcus, and a delay of 4.71 seconds. To conclude, the Nine Mile Stone Roundabout will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest RFC recorded across the assessment is lower than the 0.85 (85%) RFC threshold indicating a poorly performing junction. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.

Sensitivity Analysis

- 8.4.5 This Sensitivity Analysis takes into account the routing of trips from a Potential Future Development (400 residential unit trips) to the west of the Proposed Development via Cherry Lane/R135 junction. These Lands west of the proposed development are currently zoned as "Open Space" in the MCC Development Plan (2021-2027), therefore, this assessment is a worst-case scenario sensitivity test, the lands may not be developed in the future, this potential future development is not a committed development.
- 8.4.6 **Junction 1** (Dublin Road/Cherry Lane) operates within capacity (DoS < 90%) for the 2038 Do-Something scenario. The TRANSYT results (**Table 8.11**) indicate that maximum queues of 26.28 pcus are experienced along Arm C – Dublin Rd (N), with the highest DoS of 87% and a delay of 37.54 seconds during the AM peak whilst during the PM peak Arm A experiences a DoS of 94%, a queue of 13.50 pcus and a delay of 42.71 seconds.
- 8.4.7 The Dublin Road/Cherry Lane signalised junction will operate within capacity for the AM peak scenarios, whilst the PM peak shows an oversaturated performance on one arm. The highest DoS recorded across the AM Peak assessment occurred for the 2038 Do Something is lower than the 90% threshold, which means that the operation is within capacity. However, the DOS in the PM is slightly over 90%, which indicates that the junction would be approaching capacity. This assessment analyses junction operation during the AM and PM peak hours, so it represents a worst case scenario. Also, following implementation of the cycle scheme along the R135, it is expected that a significant uptake in cycling will occur resulting in lower traffic volumes than those predicted in this worst case assessment. Also, the junction has been modelled with an all-green pedestrian stage every cycle, which would unlikely occur.
- 8.4.8 For **Junction 2**, the PICADY results (**Table 8.13**) indicate that the Dublin Road R135 / Hickey's Lane three-arm priority-controlled junction will operate within capacity for all design years for the Do Something Scenarios. The junction will operate within capacity in the 2038 AM peak hour with a maximum RFC value of 23% and a corresponding queue of 0.3 pcus being recorded on the Hickey's Lane arm, and delay of 14.08 seconds, and in the PM peak hour, with an RFC value of

20% occurring on the same arm, with a corresponding queue of 0.2 pcus, and a delay of 14.84 seconds.

- 8.4.9 To conclude, the Dublin Road/Hickey's Lane priority-controlled junction will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest RFC recorded across the assessment occurred for the 2038 Do Something PM peak hour with an RFC significantly lower than the 0.85 (85%) RFC threshold indicating a poorly performing junction. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.
- 8.4.10 For Junction 3, the TRANSYT results (**Table 8.15**) indicate that the Dublin Rd/Alderbrook Rd/Deerpark four-arm signal-controlled junction will operate within capacity for all design years for the DS 2038 + Potential Future Development. The highest DOS occurs on Arm C – Dublin Rd (N), on the Straight and Left Turn stream, with a value of 85%, and queue of 19.96 pcus, and a delay of 35.11 seconds. In the PM peak, the highest DOS occurs on Arm A – Dublin Rd (S), on the Straight and Left Turn, with a DOS of 90%, a queue of 24.19 pcus, and a delay of 37.83 seconds.
- 8.4.11 To conclude, the Dublin Rd/Alderbrook Rd/Deerpark will operate well within capacity for the peak hours in 2038 with the Potential Future Development. The highest DOS recorded across the assessment is lower than the 90% DOS threshold indicating junction approaching capacity. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.
- 8.4.12 For Junction 5, the PICADY results (**Table 8.8**) indicate that the Nine Mile Stone Roundabout will operate within capacity for 2038 with the Potential Future Development for the Do Something Scenarios. The highest RFC occurs on Arm 4 – R135 (N), with a value of 65%, and queue of 1.80 pcus, and a delay of 6.38 seconds. In the PM peak, the highest DOS occurs on Arm 2 – M2 Access, with an RFC of 64%, a queue of 1.80 pcus, and a delay of 5.07 seconds.
- 8.4.13 To conclude, the Nine Mile Stone Roundabout will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest RFC recorded across the assessment is lower than the 0.85 (85%) RFC threshold

indicating a poorly performing junction. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.

9.0 RESPONSE TO MCC COMMENTS

9.1 OVERVIEW

- 9.1.1 This section provides responses to the items raised by the MCC Transportation Department during Stage 2 of this SHD application. The items raised were in Notice of Pre-Application Consultation Opinion and are discussed in detail in the following sections.

9.2 MCC TRAFFIC OBSERVATIONS

- 9.2.1 Within the Transportation Planning Divisions pre-application consultation note the officers raise a number of key queries including the following;

Masterplan

*1) **Masterplan:** "The Applicant is requested to submit a comprehensive Master Plan, detailing how the masterplan lands will be developed in line with the Meath County Development Plan 2021 - 2027. This masterplan should sent out coherent phasing strategy for the various stages of the development, aligned with that of infrastructural phasing of the main link street, the main Dublin Road signalised access junction and the upgrade works to Hickeys Lane. The upgrade of Hickey's Lane to facilitate pedestrian and cycle access southwards to link with the R-125 Harlockstown Footpath Scheme should be included with the application."*

- 9.2.2 A Masterplan has been prepared and has been submitted to Meath County Council.

Accessibility and Integration

*2) **Third Party Lands:** The Applicant is requested to ensure that the road geometry, in terms of width, radius and turning head facilities are provided appropriately to ensure that the third-party lands located adjacent to the main link street can be fully accessed."*

- 9.2.3 The road geometry, in terms of width, radius and turning head facilities has been provided appropriately to ensure that the third-party lands located adjacent to the main link street can be fully accessed. Please refer to
- 9.2.4 The road layout for the Proposed Development is included in DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1201 to 200059-DBFL-RD-SP-DR-C-1204.**

3) Third Party Lands: "The Applicant is clarify the access proposals to the northern access point to the third-party lands located to the south east of the proposed development. Access to these lands via homezones should be avoided."

4) The development will fundamentally change Hickey's Lane. The Applicant should submit proposals for the control and management of traffic on the lane generated as a result of the development. Traffic should be encourage to use the main signalised access junction to the site.

9.2.5 Pedestrian footpaths will be provided on hickys lane along with traffic calming measures. The carriageway has been narrowed locally (3.7m) and vehicles have to yield to oncoming road users, therefore reducing vehicle speeds and discouraging vehicular overuse of the secondary access. Refer to DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1201** for further information.

5) The applicant should provide an additional pedestrian and cycle access point on the western boundary, by extending the homezone or otherwise, at the south western corner of the site to link with the Open Space zoned lands.

Access Junction

6) The applicant is requested to provide traffic signal layout detailing the signal arrangement at the Cherry Lane access signalised junction. The Applicant should also address the discrepancies regarding the tie in of the proposed cycle lanes with the proposed Phase 2 Ashbourne Refurbishment Scheme.

9.2.6 A traffic signal layout drawing has been prepared for the Cherry Lane signalised junction. Please refer to DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1206**. The discrepancies regarding the tie in of the proposed cycle lanes with the proposed Phase 2 Ashbourne Refurbishment Scheme have been addressed.

7) The Applicant is requested to provide a junction layout for Hickey's Lane at the intersection with the R-135 (Dublin Road) and the R-125 (Ratoath Road).

9.2.7 The junction layout for Hickey's Lane at the intersection with the R-135 (Dublin Road) is illustrated in DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1201**.

Traffic Assessment

8) Growth Rates: *"It appears that low growth rates were applied instead of the stated central growth rates. The Applicant is requested to clarify what growth rates are applied and to provide further details regarding the method of applying the growth rate".*

9.2.8 To clarify, in the TTA issued for the Stage 2 SHD Submission, Central Growth rates were applied to Base Traffic Survey data which was used to obtain the Do-Minimum and Do-something scenarios, following TII's Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections (October 2021).

9.2.9 Additionally, as part of the traffic assessment undertaken for this Stage 3 SHD Submission, the baseline traffic survey data has been adjusted to account for potential lower than normal traffic flows in December 2021 due to Covid 19. The adjustment has been undertaken in reference to Central Statistics Office (CSO) report entitled [Transport Bulletin January 2022](#). An uplift of 10% was applied to convert baseline (Dec 2021) traffic data to corresponding 2021 data with no Covid 19 (according to the CSO data). This results in a robust and conservative assessment, as providing this uplift of 10% to the base traffic does not take into consideration potential mode shifts to active travel, WFH or a Hybrid option as the new norm etc.

9) Trip Rates: *"Whilst acknowledging that the AM background traffic network peak may occur during the 07:00-08:00 hour, the applicant is requested to use the peak AM period trip rates from the TRICS output file, which in this case is during the 08:00-09:00 hour, to ensure a robust AM peak hour assessment".*

9.2.10 The peak AM period trip rates from TRICS output file (08:00-09:00) has been used for the Traffic Assessment undertaken as part of this planning application.

10) Junction Capacity: *"The Applicant is requested to revise the layout of the Cherry Lane / R135 Dublin Road Junction to ensure that it will have the required residual capacity to accommodate both the proposed development and any future development within the lands to the west."*

9.2.11 The traffic analysis for Junction 1 (Dublin Rd/Cherry Ln) is included in **Chapter 8** of this report. It shows that the operation of the junction with the Proposed Development is within capacity for all design years. Likewise, the operation of the

junction with a Potential Future Development of 800 units west to the Proposed Development is within capacity. Results are summarised below.

- 9.2.12 TRANSYT results for 2038 with the Proposed Development in Table 8.2 indicate that the junction will operate within capacity with a maximum queues of 7.46 pcu's is experienced along Arm B – Cherry Lane, with the highest DoS of 77% and a delay of 25.08 seconds during the AM peak whilst during the PM peak Arm A experiences a DoS of 89%, a queue of 31.74 pcu's and a delay of 31.72 seconds. To conclude, the Dublin Road/Cherry Lane signalised junction will operate within capacity for all the peak hour scenarios for all the design years assessed. The highest DoS values recorded across the assessment are lower than 90% (0.90) threshold, which would indicate the junction is within capacity. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.

Sensitivity Analysis

- 9.2.13 With the Potential Future Development, Junction 1 (Dublin Road/Cherry Lane) operates within capacity (DoS < 90%) for the 2038 Do-Something scenario. The TRANSYT results (Table 8.11) indicate that maximum queues of 26.28 pcus are experienced along Arm C – Dublin Rd (N), with the highest DoS of 87% and a delay of 37.54 seconds during the AM peak whilst during the PM peak Arm A experiences a DoS of 94%, a queue of 13.50 pcus and a delay of 42.71 seconds.
- 9.2.14 The Dublin Road/Cherry Lane signalised junction will operate within capacity for the AM peak scenarios, whilst the PM peak shows an oversaturated performance on one arm. The highest DoS recorded across the AM Peak assessment occurred for the 2038 Do Something is lower than the 90% threshold, which means that the operation is within capacity. However, the DOS in the PM is slightly over 90%, which indicates that the junction would be approaching capacity. This assessment analyses junction operation during the AM and PM peak hours, so it represents a worst case scenario. Also, following implementation of the cycle scheme along the R135, it is expected that a significant uptake in cycling will occur resulting in lower traffic volumes than those predicted in this worst case assessment. Also, the junction has been modelled with an all-green pedestrian stage every cycle, which would unlikely occur.

11) Traffic Management Plan: *"The Applicant is requested to develop a Design Stage Traffic Management Plan the details of which are to be agreed with Meath County Council."*

9.2.15 A Design Stage Traffic Management Plan will be prepared at Detailed Design stage.

Road Safety

12) Road Safety Audit: *"The Applicant is requested to submit a Stage 1 Road Safety Audit-."*

9.2.16 A **Quality Audit** has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019.

9.2.17 The Stage 1 Quality Audit includes a Stage 1 road safety audit, an access audit, a walking audit, a cycle audit and a non- motorised user audit.

13) Quality Audit: *"The applicant should submit a Quality Audit that consists of an audit of walking facilities, cycling facilities and visual / mobility impaired accessibility facilities."*

9.2.18 A **Quality Audit** has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019.

9.2.19 The Stage 1 Quality Audit includes a Stage 1 road safety audit, an access audit, a walking audit, a cycle audit and a non- motorised user audit.

Site Layout

14) *"The Applicant is requested to address the following;*

a. A long Cul-de-sac is being formed along the Road 24 north-west to the development with no provision of turning heads which could lead to extensive reversing movements in particular by refuse vehicles."

9.2.20 This road is no longer a Cul-de-sac and has been extended to the new Link Street.

b. As per the overall road layout drawing (Drawing no. 200059-DBFL-RD-SPDR-C-12XX) the footpath along the Road 22 north west of the development should be extended.

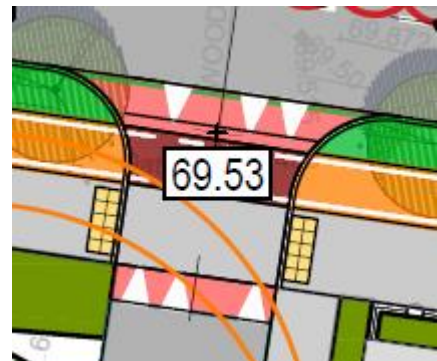
9.2.21 This footpath has now been extended to the site boundary.

15) *"The Applicant should cater for all desire lines by facilitating proposer crossing and tactile paving within the development."*

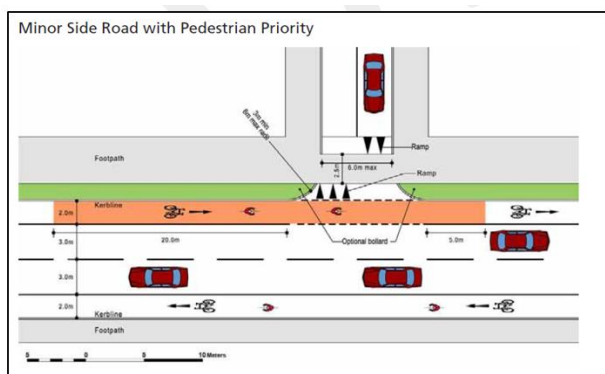
9.2.22 Appropriate dropped kerbs with tactile paving have been provided for the pedestrian crossing throughout the subject development to ensure sufficient accessibility for all users, in particular, wheelchair users and visually impaired pedestrians. Please refer to DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1200** to **200059-DBFL-RD-SP-DR-C-1204**.

16) *Priority at side road crossing: "The Applicant should provide details, in line with the National Cycle Manual, regarding which users have priority at the side road crossing adjacent to the main link street."*

9.2.23 Pedestrians and cyclists will have priority across the side roads adjacent to the main Link Street. The traffic calming ramp on the side roads should reduce vehicular speeds entering/exiting the minor road, while also heightening driver's awareness of pedestrian's and cyclists.



9.2.24 A raised continuous footpath is proposed across the side road junctions. The NCM provides a similar option for pedestrian priority through minor side roads through the use of a continuous footpath across the side road junction. See figure and photomontage below



(Source: National Cycle Manual, Section 4.9)

9.2.25 Cyclists will also have priority through the side road junction adjacent to the main Link Street. The ramped entry treatment will keep the cycle route high across the

junction, resulting in cyclists being more conspicuous to vehicles entering/exiting the side road. This is of particular importance for younger/more vulnerable cyclists.

- 9.2.26 This raised table treatment across the side roads with pedestrian and cycle priority mirrors the design proposed for the "Ashbourne Main Street Refurbishment Scheme Phase 2" along the R135.
- 9.2.27 See DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1203** to **200059-DBFL-RD-SP-DR-C-1204** for further details.

17) Internal Junctions: *"The Applicant should provide details on the movement priority between different users at the internal street intersections and provide traffic calming features like raised tables at the appropriate locations throughout the proposed development."*

- 9.2.28 Movement priority between different users at the internal street intersections and traffic calming are illustrated in DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1200** to **200059-DBFL-RD-SP-DR-C-1204**.

18) Greenway Crossing Details: *"The Applicant is requested to provide consistent crossing facilities and tactile paving along the entire green link where it crosses the internal streets."*

- 9.2.29 As per the National Cycle Manual (2011), uncontrolled pedestrian crossings have been provided where the greenway crosses the internal local streets. A toucan crossing is proposed crossing the busier local road to the proposed future school.

19) Refuse Vehicle Accessibility: *"The applicant should included swept path analysis for all areas in the development to demonstrate that refuse vehicles can negotiate the full internal street network and where, as a result of this swept path, it is determined that difficulties may be encountered that appropriately sized turning heads are provided."*

- 9.2.30 Swept path analysis drawings for waste management vehicles have been prepared and are shown in DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1200** to **200059-DBFL-RD-SP-DR-C-1204** .

20) Bicycle Parking: *"The Applicant is requested to clarify the bicycle parking standards being applied for the non-residential uses and in any case to ensure that these comply with the Meath County Development Plan standards"*.

- 9.2.31 The bicycle parking provision for the non-residential uses is in excess of the MCC Development Plan (2021-2027). See table below and refer to **Section 4.4** of this TTA for further information.

21) Sight Lines: *"The Applicant should provide sight line analysis of all access junctions and internal junctions and ensure that these are coordinated with any landscaping proposals."*

- 9.2.32 In accordance with the Design Manual for Urban Roads and Streets (DMURS), all internal junctions benefit from the provision of clear unobstructed sightly lines to opposing vehicles in respect of the adopted internal 30kph design speed.
- 9.2.33 The junctions to the new Link Street benefit from the provision of clear unobstructed sight lines in respect to the adopted internal 50kph design speed.
- 9.2.34 Sightlines have been shown in shown in DBFL drawings no. **200059-DBFL-RD-SP-DR-C-1200 to 200059-DBFL-RD-SP-DR-C-1204.**

22) Taking in Charge: *"The Applicant is requested to ensure that the materials specified within areas to be taking in Charge are in accordance with MCC Taking in Charge Policy document. The Applicant should liaise with the Local Authority in this regard."*

- 9.2.35 The materials specified within areas to be taking in Charge are in accordance with MCC Taking in Charge Policy document. The Applicant has liaised with the Local Authority in this regard. Please refer to the Taking In Charge drawing prepared by Davey-Smith Architects "Overall Site Layout - Taking in Charge Map" DWG no. **D2101.S.09**

23) MMP: *The applicant should be requested to agree the contents of the MMP with the Local Authority at compliance stage.*

- 9.2.36 The applicant should be requested to agree the contents of the MMP with the Local Authority at compliance stage.

10.0 SUMMARY AND CONCLUSION

10.1 OVERVIEW

- 10.1.1 DBFL Consulting Engineers (DBFL) has been commissioned by Davey Smith Architects, on behalf of Arnub Ltd. & Aspect Homes (ADC) Ltd., to prepare a Traffic and Transport Assessment (TTA) for a proposed residential development at Cherry Lane, Ashbourne, Co. Meath.
- 10.1.2 Arnub Ltd. & Aspect Homes (ADC) Ltd. seek permission for a strategic housing development, located in the townlands of Baltrasna and Milltown, Ashbourne, Co. Meath. The proposed development site is located to the west of the R135 Dublin Road, south of existing housing at Alderbrook Rise, Alderbrook Downs & Alderbrook Heath, east of existing housing at Tara Close & Tara Court, south of Cherry Lane and west of Hickey's Lane.
- 10.1.3 The development will consist of 702 no. dwellings, comprised of 420 no. 2 & 3 storey, 2, 3, 4 & 5 bed houses, 39 no. 2 & 3 bed duplex units in 19 no. blocks, and 243 no. 1, 2 & 3 bed apartments in 20 no. buildings, which range in height from 3, 3-4, 4-5, & 4-6 storeys. The proposed development also provides for the following uses: (i) 2 no. creches (c.288.56m² & 383.68m²) accommodated in Blocks A and A1 respectively, (ii) 4 no. retail/commercial units (c. 105.58 m² & 173.83m² in Block A, c.190.6m² in Block A1 & c.469m² in Block B1) and (iii) GP practice / medical use unit (c.186m²) in Block A1.
- 10.1.4 Access to the development will be via (i) Cherry Lane to the north-east, off the R135 Dublin Road, via a new proposed internal access road and (ii) via Hickey's Lane to the east, off the R135 Dublin Road, including pedestrian and cycle paths.
- 10.1.5 The proposed development provides for (i) all ancillary / associated site development works above and below ground, (ii) public open spaces, including hard & soft landscaping, play equipment & boundary treatments, (iii) communal open spaces, (iv) undercroft, basement & surface car parking (v) bicycle parking (vi) bin storage, (vii) public lighting, (viii) plant (M&E), utility services & ESB sub-stations, all on an overall application site area of 20.04Ha.
- 10.1.6 The proposed development also includes for an area of c. 1Ha reserved for a school site and playing pitch in the western part of the site. Permission is also sought to

demolish all existing structures on site, i.e. 3 no. single storey dwellings & associated out-buildings (659m² in total).

10.1.7 The purpose of this TTA is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of transport impact generated as a result of the proposed development. Our methodology incorporated a number of key inter-related stages, including;

- Site Audit,
- Planning File Review,
- Policy Review,
- Commissioning and Analysis of Traffic Surveys,
- Trip Generation, Distribution and Assignment, and Network Impact
- Network Analysis.

10.1.8 This TTA has carried out a range of assessments for an Opening Year of 2023, Interim Year of 2028 and a Future Horizon Year of 2038. This assessment assumed and accounted for complete development and occupation of all units proposed to occur by Opening Year, as this provided a conservative design assessment of network operations.

10.1.9 Based upon the information and analysis detailed within this TTA, it has been demonstrated that:

- The site of the proposed residential development is ideally located to maximise access to / from the site by sustainable forms of travel including walking and cycling to local amenities.
- The proposals are in accordance with the land use zoned for the subject development site, which is described within the Meath County Development Plan 2021-2027 as *"To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy"*.
- The subject site and the access junction proposals being promoted will deliver a number of benefits for pedestrians and cyclists with a network of dedicated and shared linkages integrating with the off-site network to

provide attractive, safe and convenient connections towards the R135 and Ashbourne Town centre.

- The site benefits from good accessibility to a number of bus services with interchanges being located in the local centre which is within a convenient walking distance of the subject development site (approx. 500m of the site, see **DBFL Drawings No. 200059-DBFL-TR-SP-DR-C-1101**).
- The subject development will benefit from the proposed enhanced cycle facilities proposed along the R135 as part of the phase 2 of the "Ashbourne Main Street Refurbishment Scheme".
- The subject scheme proposes to provide 1,262 no. car parking spaces, including 1,223 no. spaces for residential units. Houses will benefit from 2 in-curtilage car parking spaces per unit or 2 on-street spaces in close proximity to the individual dwellings, whilst apartment and duplex units will have 1.36 car parking spaces per unit (1 spacer per unit for residents and 0.36 spaces per unit for visitors). For the non-residential units the following car parking is proposed:
 - Block A: 8 no. spaces
 - Block A1 & B1: 31 no. spaces
- The proposed quantum of car parking has been developed in reference to both the MCC Development Plan and to national guidance. Consequently, the proposed provision is considered appropriate based on the accessibility characteristics of the subject site.
- The proposed development provides a total of 869 no. cycle parking spaces. 817no. spaces are residential, comprising 610 no. long term and 207 no. short stay cycle parking spaces. The residential cycle parking has been provided in accordance with the MCC Development Plan and the DHPLG Apartment Guideline requirements. 52 no. spaces are dedicated for the non-residential aspects of the development, exceeding MCC Development Plan and the DHPLG Apartment Guideline requirements.

- **Figure 10.1** details the total amount of two-way vehicle trips that will pass through the key off-site junctions in the assessment year of 2038 and the resulting percentage increase in traffic flows as a result of the traffic generated by the proposed development.
- The junction impact analysis undertaken has demonstrated that due to the proposals, Junctions 1 (Dublin Road R135 / Cherry Lane), Junction 2 (Dublin Road R135 / Hickey's Lane), Junction 3 (Dublin Rd/Alderbrook Rd/Deerpark), & Junction 5 (Nine Mile Stone Roundabout) exceeded the TII threshold for assessment for normal and congested networks (10% and 5% respectively) during the 2038 Future Design Year scenario. Consequently, additional performance analysis was conducted on all junctions.

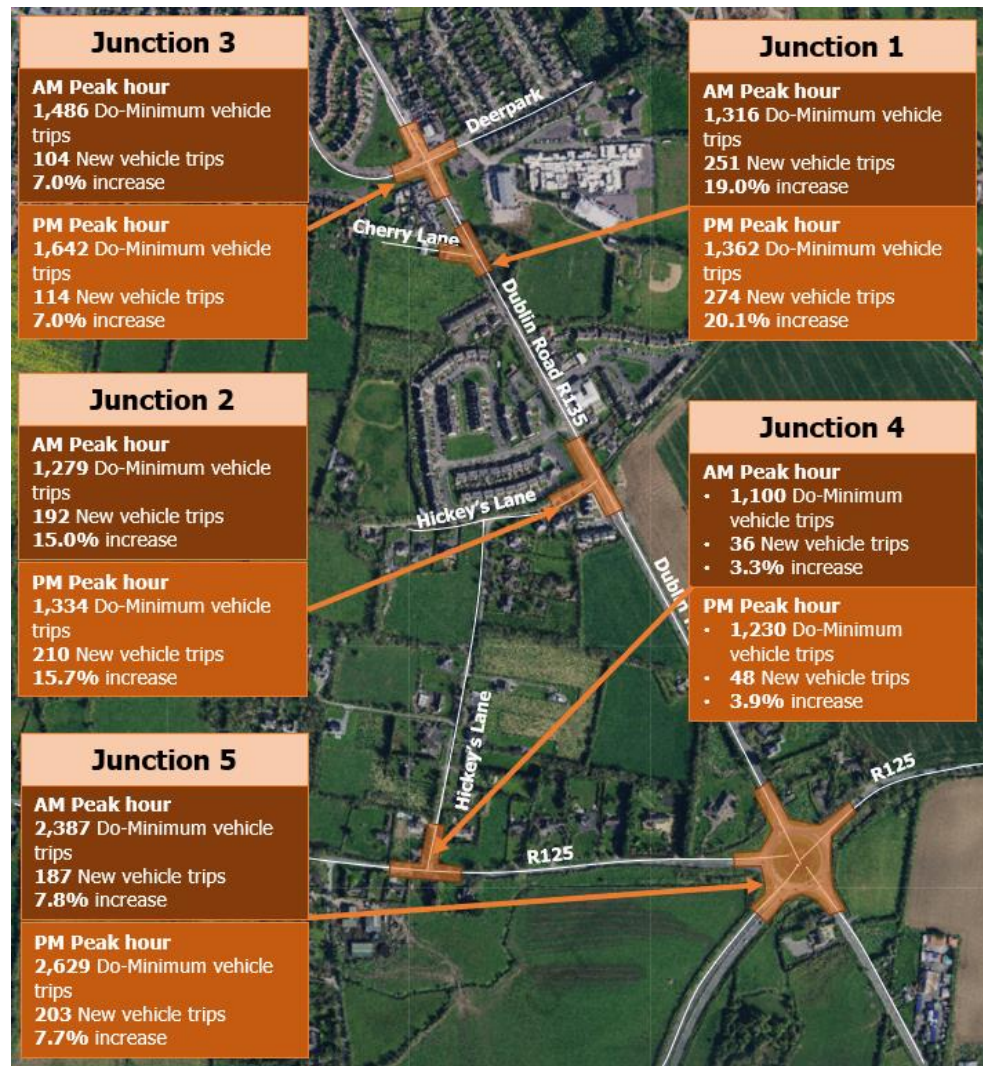


Figure 10.1: Increase in Vehicle Trips Generated at Site Access and Key Off Site Junctions (2038 Do-Something)

- An operational assessment of the junctions was undertaken using the Junction computer package TRANSYT and PICADY. Under the 'Do-Something' Scenario, the result of the analysis showed that:

In the 2023 Opening Year:

- **Junction 1:** Maximum Degree of Saturation (DoS) of 61% (AM) on Arm C – Dublin Rd (N), and 74% (PM) on Arm A – Dublin Road (S).
- **Junction 2:** Maximum RFC of 8% (AM) and 8% (PM) on Hickey's Lane arm.
- **Junction 3:** Maximum Degree of Saturation (DoS) of 61% (AM) on Arm C – Dublin Rd (N), and 70% (PM) on Arm A – Dublin Road (S).
- **Junction 5:** Maximum RFC of 44% (AM) on Arm 3 – Ratoath Rd, and 47% (PM) on Arm 2 – M2 Access.

In the 2038 Future Design Year:

- **Junction 1:** Maximum Degree of Saturation (DoS) of 79% (AM) on Arm C – Dublin Rd (N), and 88% (PM) on Arm A – Dublin Road (S).
 - **Junction 2:** Maximum RFC of 22% (AM) and 19% (PM) on Hickey's Lane arm.
 - **Junction 3:** Maximum Degree of Saturation (DoS) of 76% (AM) on Arm C – Dublin Rd (N), and 80% (PM) on Arm A – Dublin Road (S).
 - **Junction 5:** Maximum RFC of 59% (AM) on Arm 4 – R135 (N), and 60% (PM) on Arm 2 – M2 Access.
- All of the results for this analysis show all junctions operates within capacity in the Opening 2023 Year and the 2038 Future Design Year.
 - To promote the update of sustainable travel practices at the proposed development a Mobility Management Plan has been compiled to encourage sustainable travel behaviours of residents and visitors.
 - The scheme proposals being presented for planning has been the subject of a Stage 1 Road Safety Audit. The auditors raised a number of recommendations to address a range of issues identified within the RSA

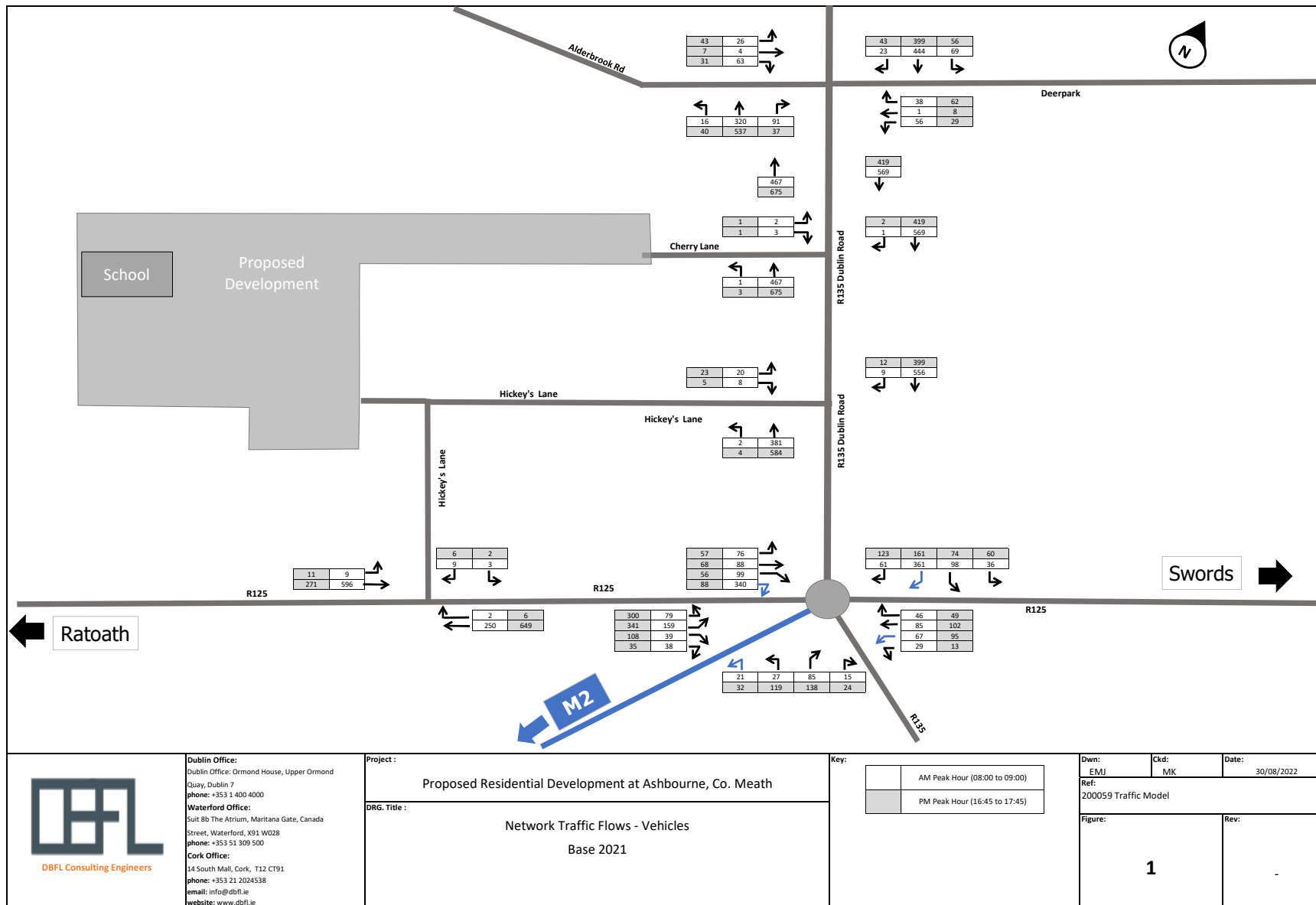
report (which accompanies the planning application). The auditors recommendations have been incorporated by the scheme designers into the updated final layout which are now forms part of the planning application.

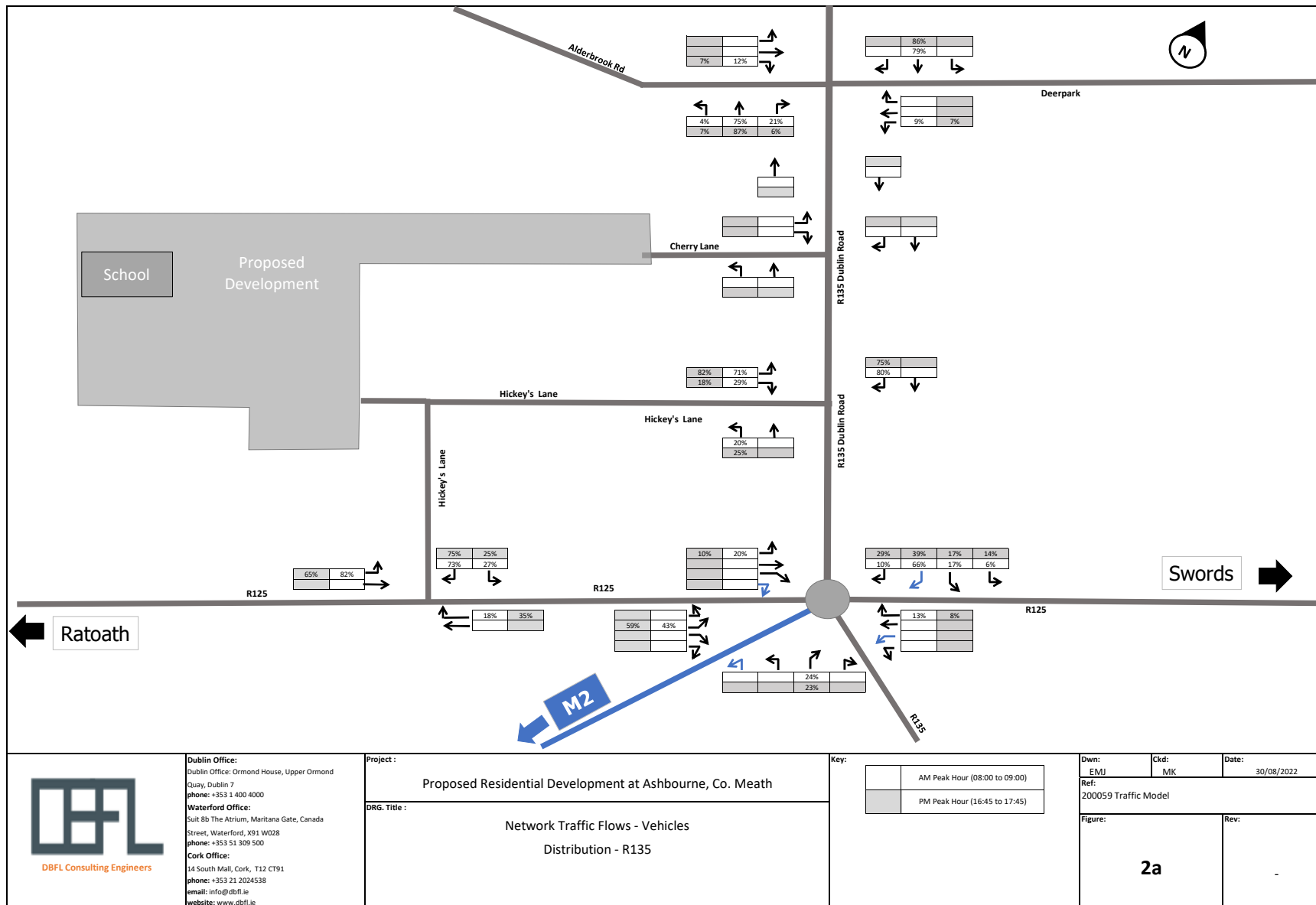
10.2 CONCLUSIONS

- 10.2.1 In conclusion, DBLF believe that the opportunity is available, in terms of transport and traffic, for the local authority to consider favourably the proposed residential development on the subject site.
- 10.2.2 It is concluded that there are no traffic or transportation related reasons that should prevent the granting of planning permission for the proposed development.

APPENDIX A

Traffic Flows Diagram





Dublin Office:
Dublin Office: Ormond House, Upper Ormond
Quay, Dublin 7
phone: +353 1 400 4000

Waterford Office:
Sult 8b The Atrium, Maritana Gate, Canada
Street, Waterford, X91 W028
phone: +353 51 309 500

Cork Office:
14 South Mall, Cork, T12 CT91
phone: +353 21 2024538
email: info@dbfl.ie
website: www.dbfl.ie

Project :
Proposed Residential Development at Ashbourne, Co. Meath

DRG. Title :
Network Traffic Flows - Vehicles
Distribution - R135

Key:

	AM Peak Hour (08:00 to 09:00)
	PM Peak Hour (16:45 to 17:45)

Dwn: EMJ
Ckd: MK
Date: 30/08/2022

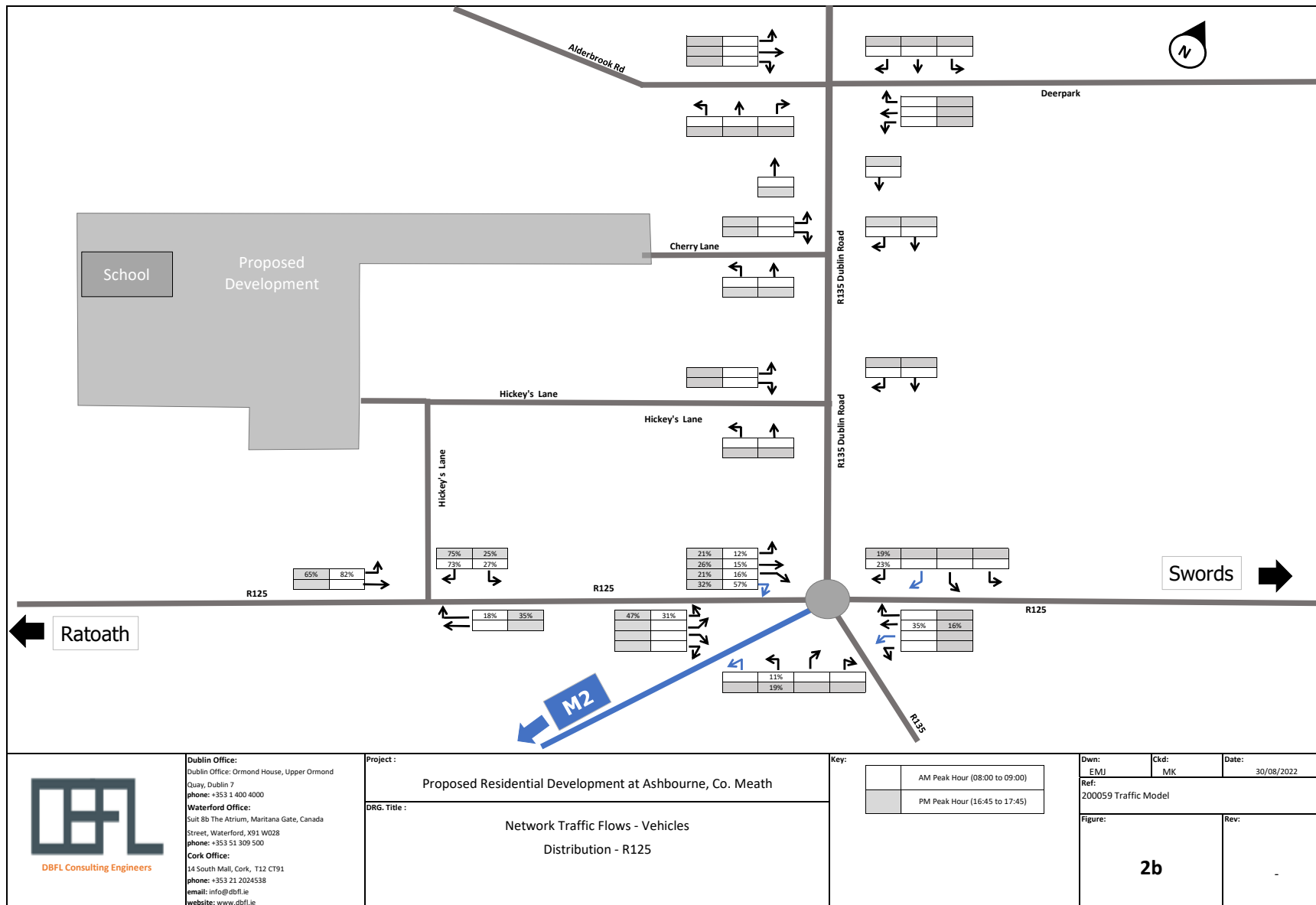
Ref: 200059 Traffic Model

Figure:

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Rev:

-



Dublin Office:
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Quay, Dublin 7
phone: +353 1 400 4000

Waterford Office:
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phone: +353 51 309 500

Cork Office:
14 South Mall, Cork, T12 CT91
phone: +353 21 2024538
email: info@dbfl.ie
website: www.dbfl.ie

Project :
Proposed Residential Development at Ashbourne, Co. Meath

DRG. Title :
Network Traffic Flows - Vehicles
Distribution - R125

Key:

	AM Peak Hour (08:00 to 09:00)
	PM Peak Hour (16:45 to 17:45)

Dwn: EMJ
Ckd: MK
Date: 30/08/2022

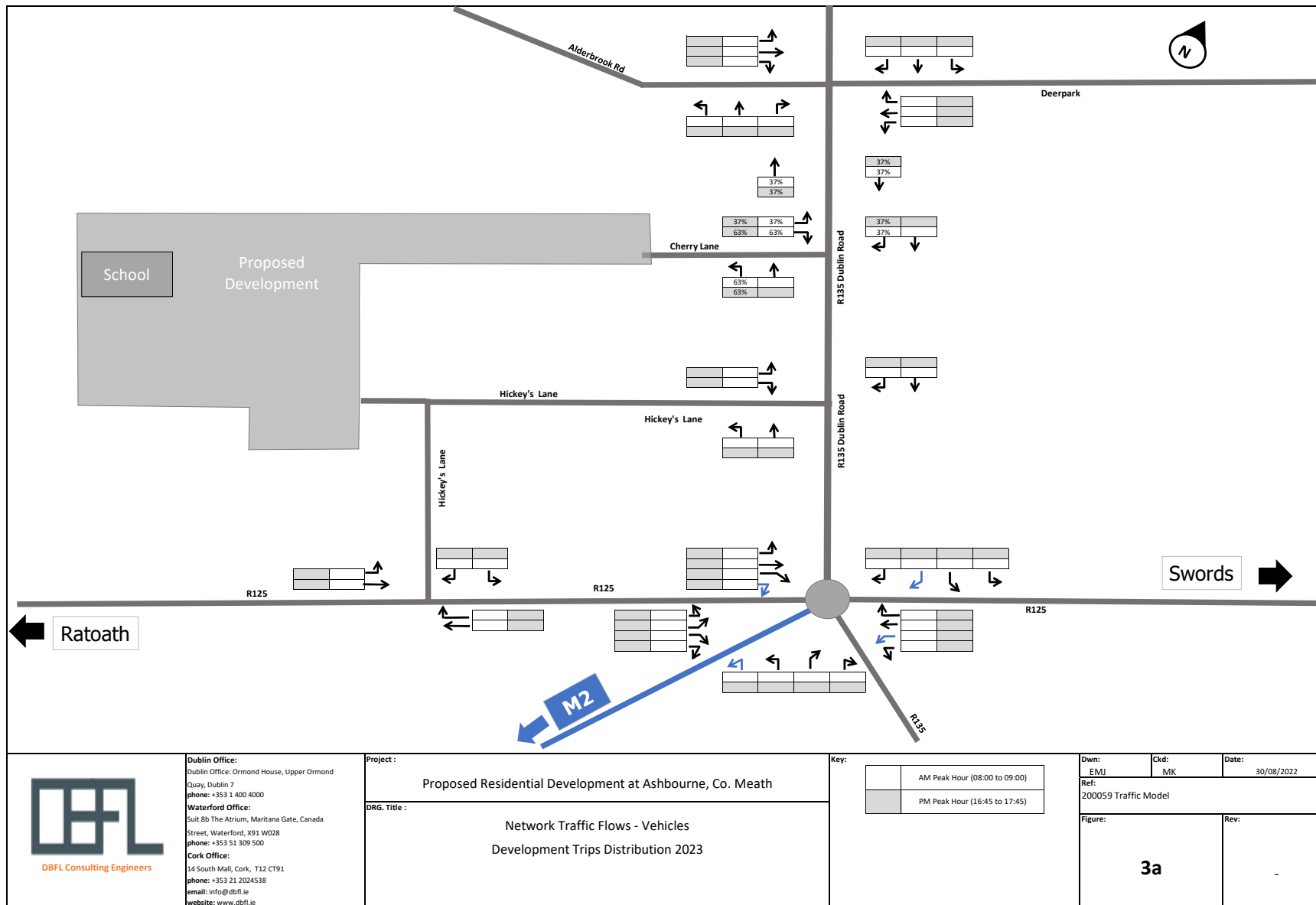
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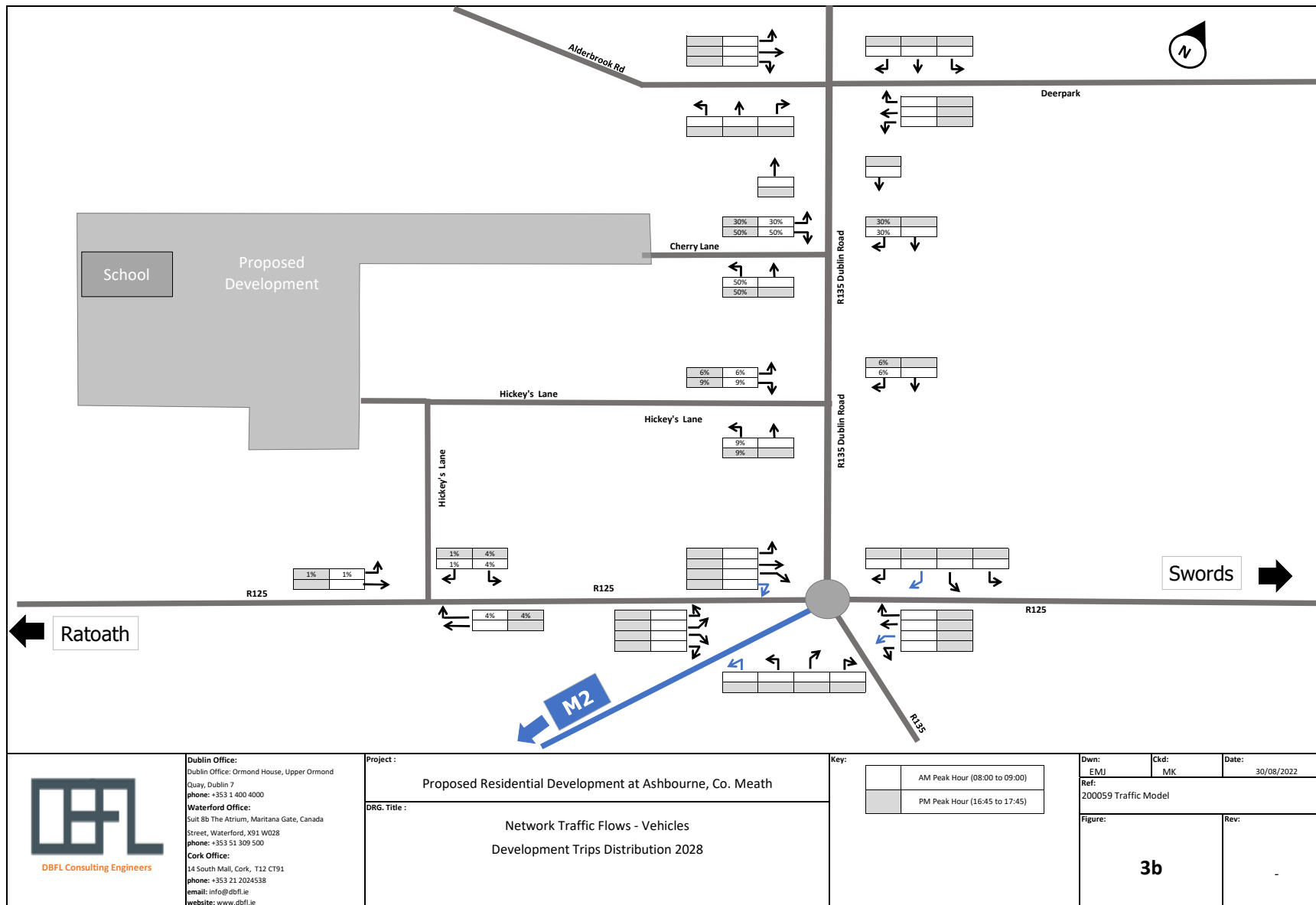
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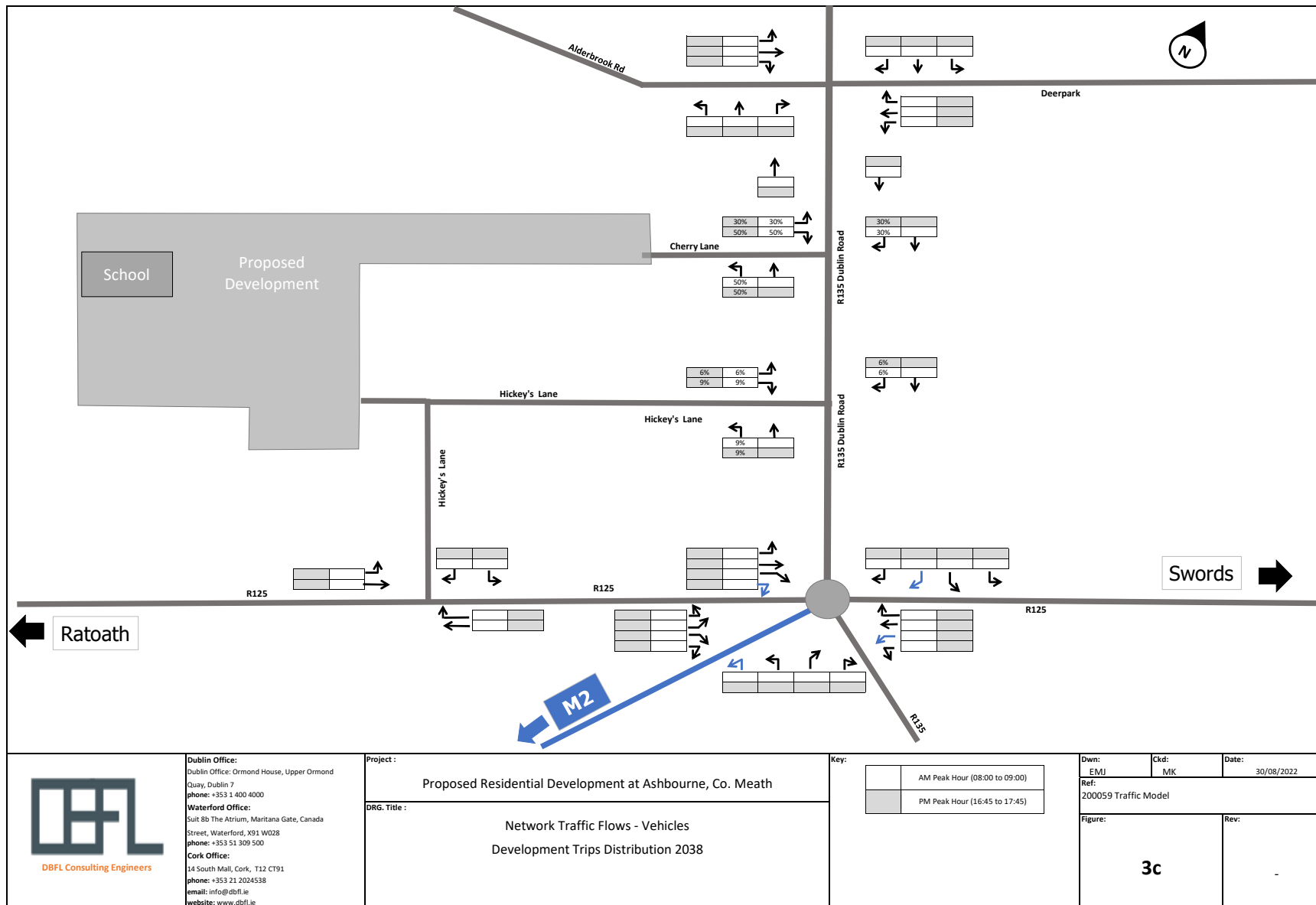
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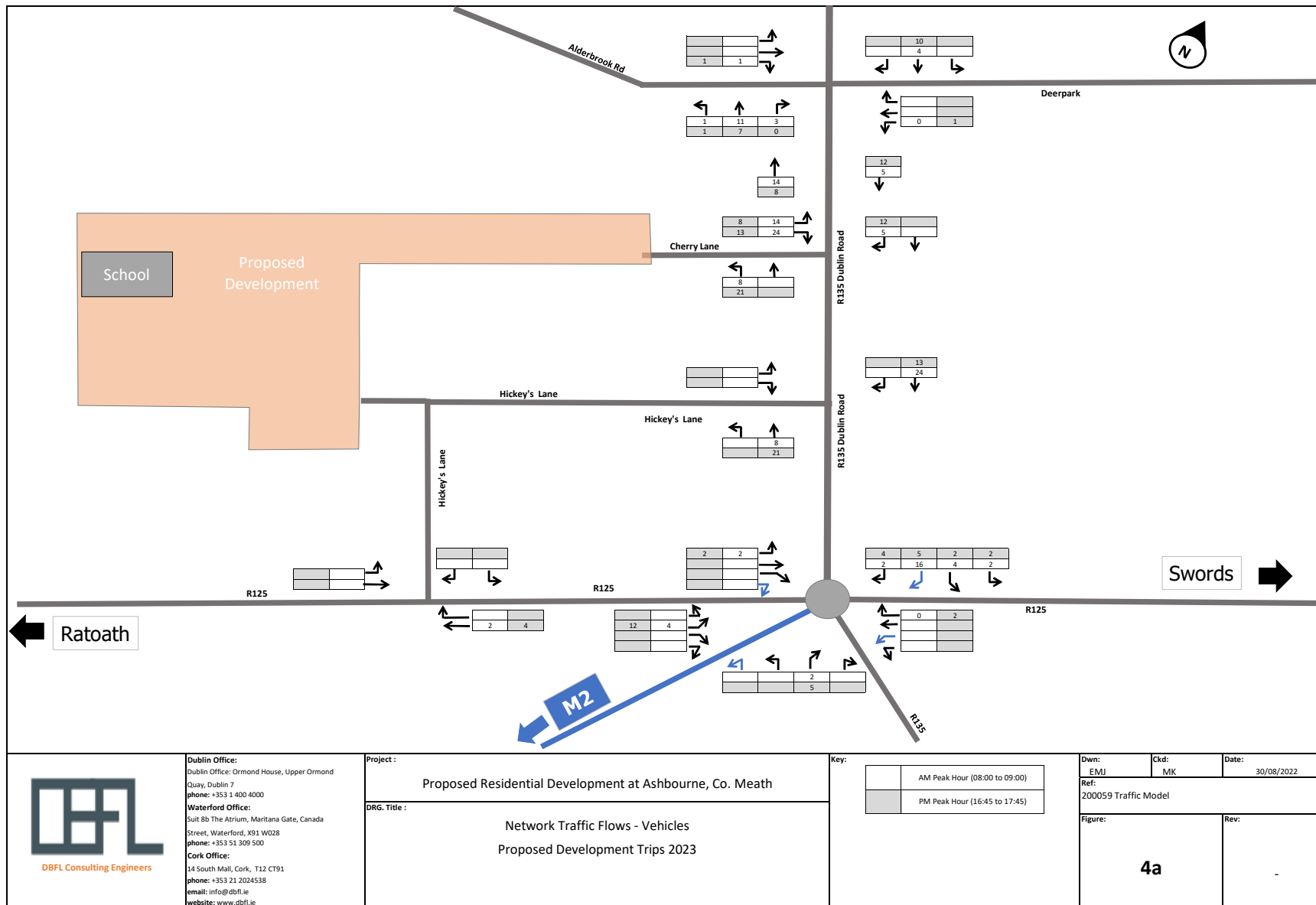
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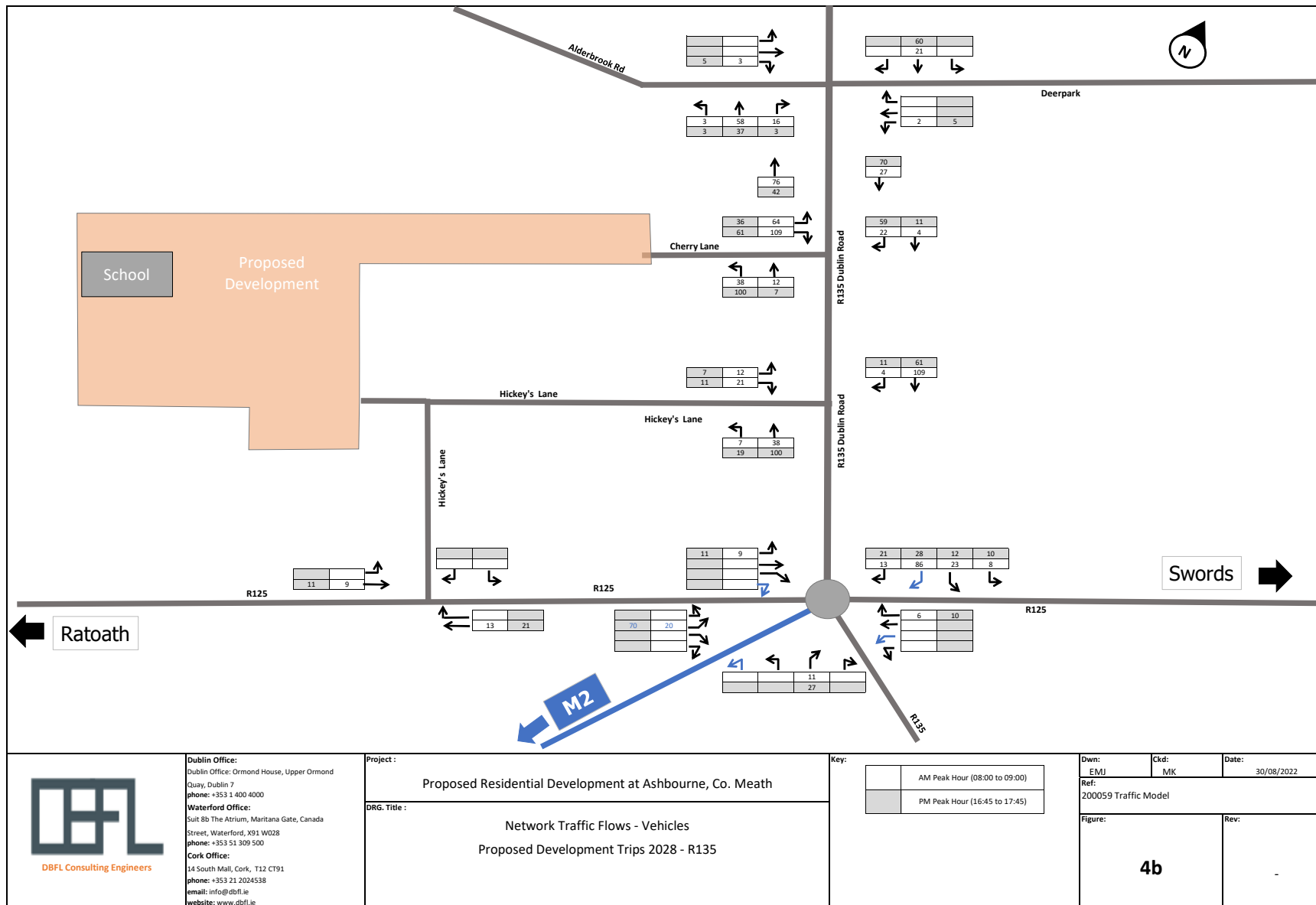
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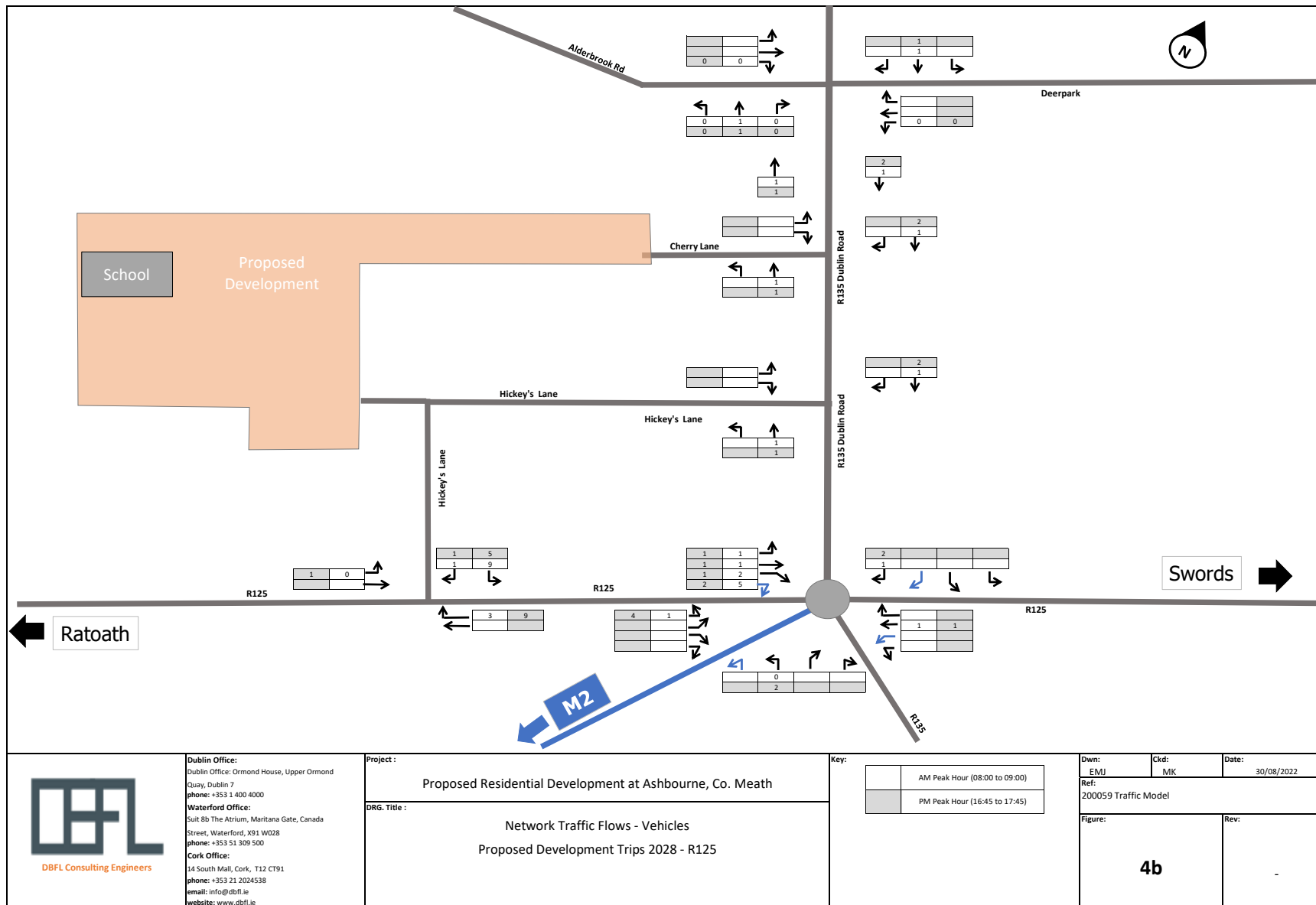


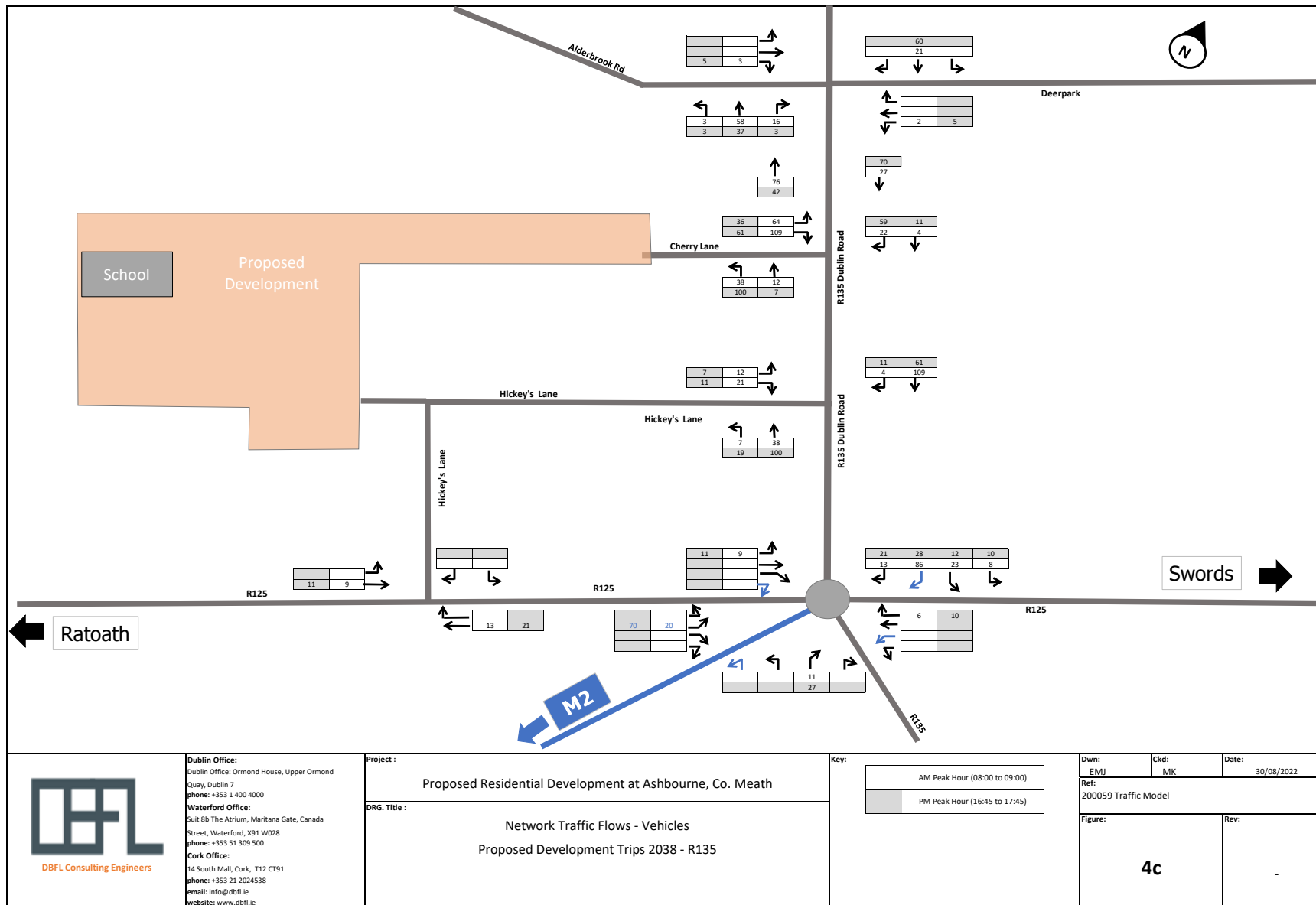


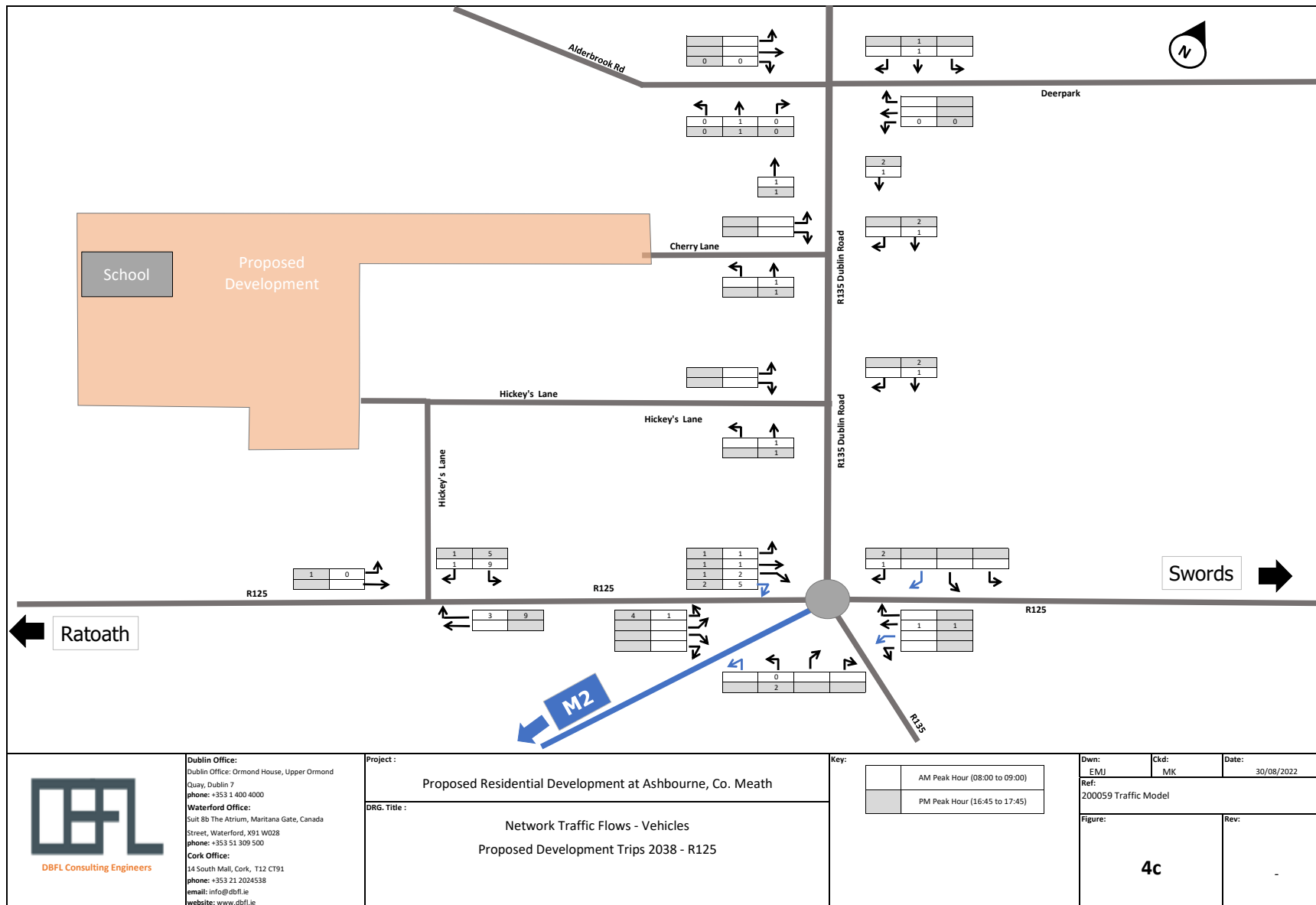


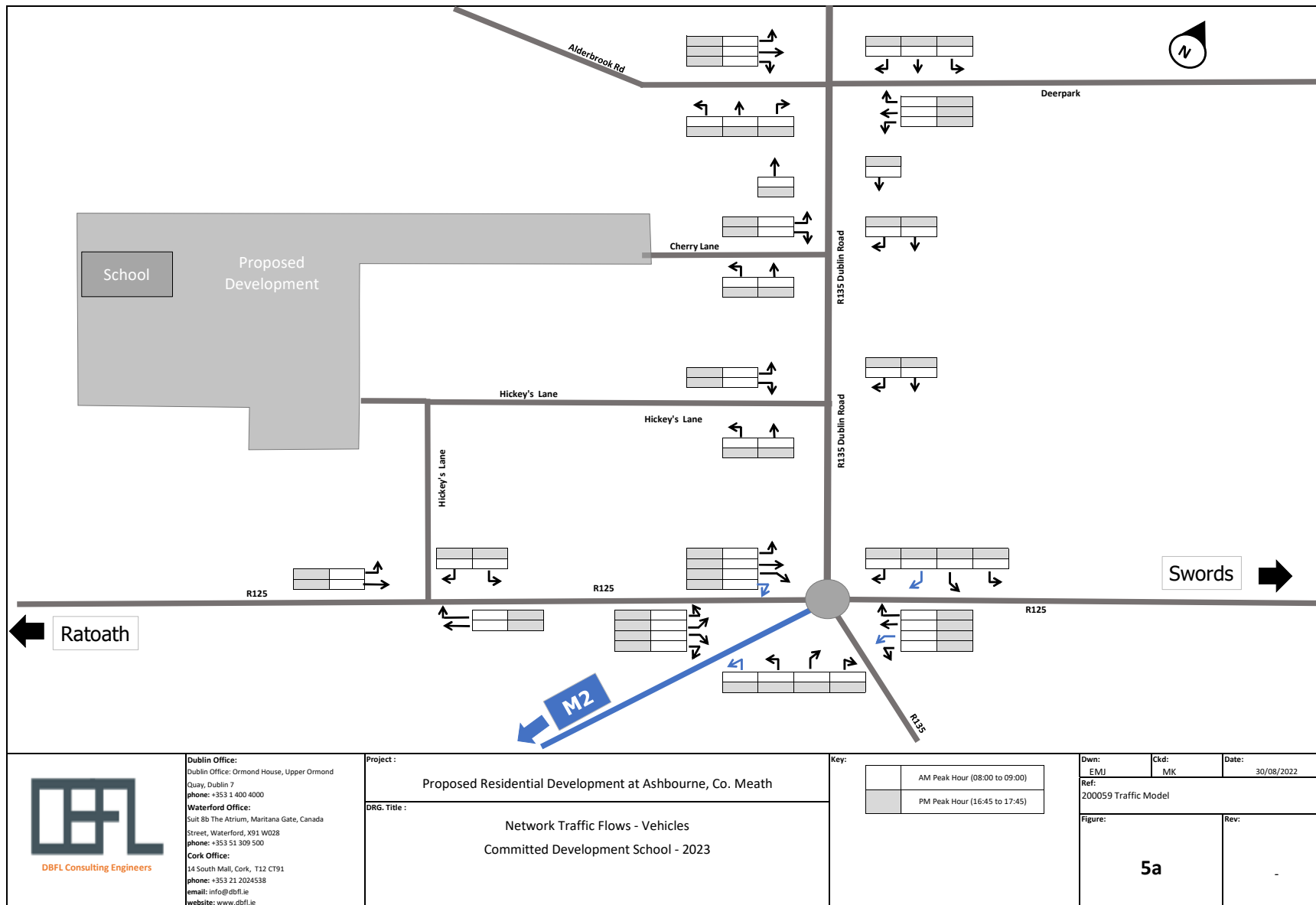


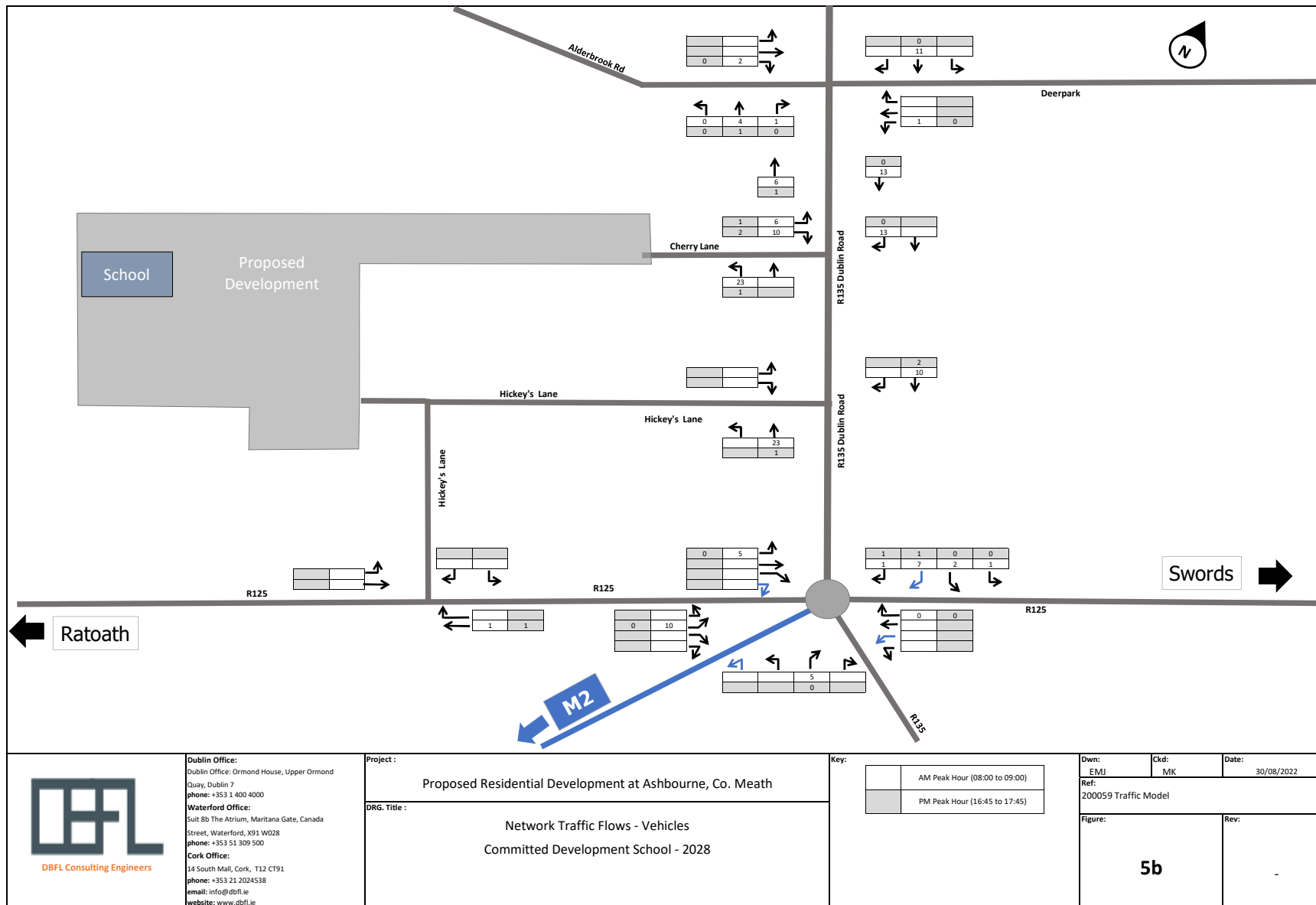


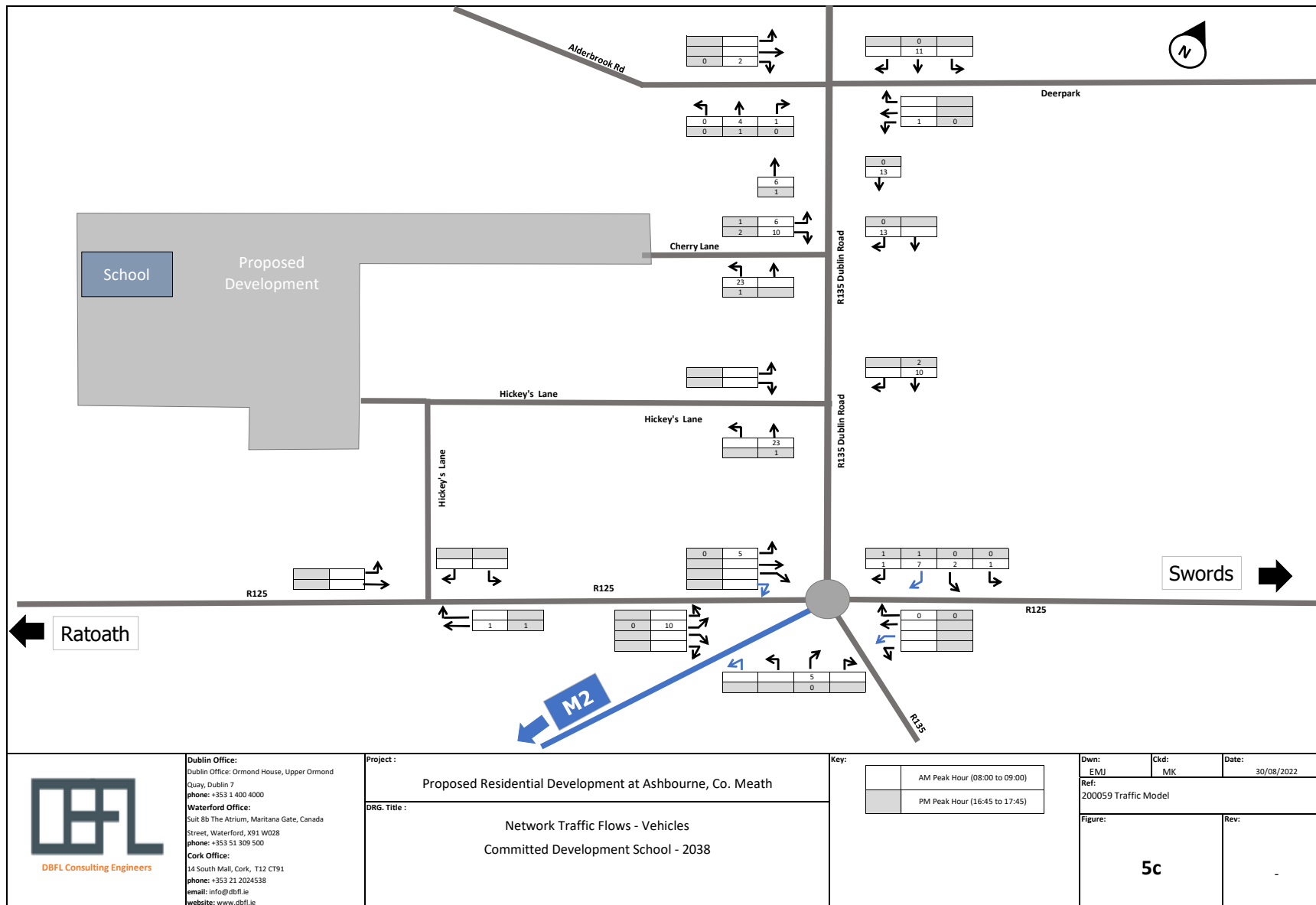


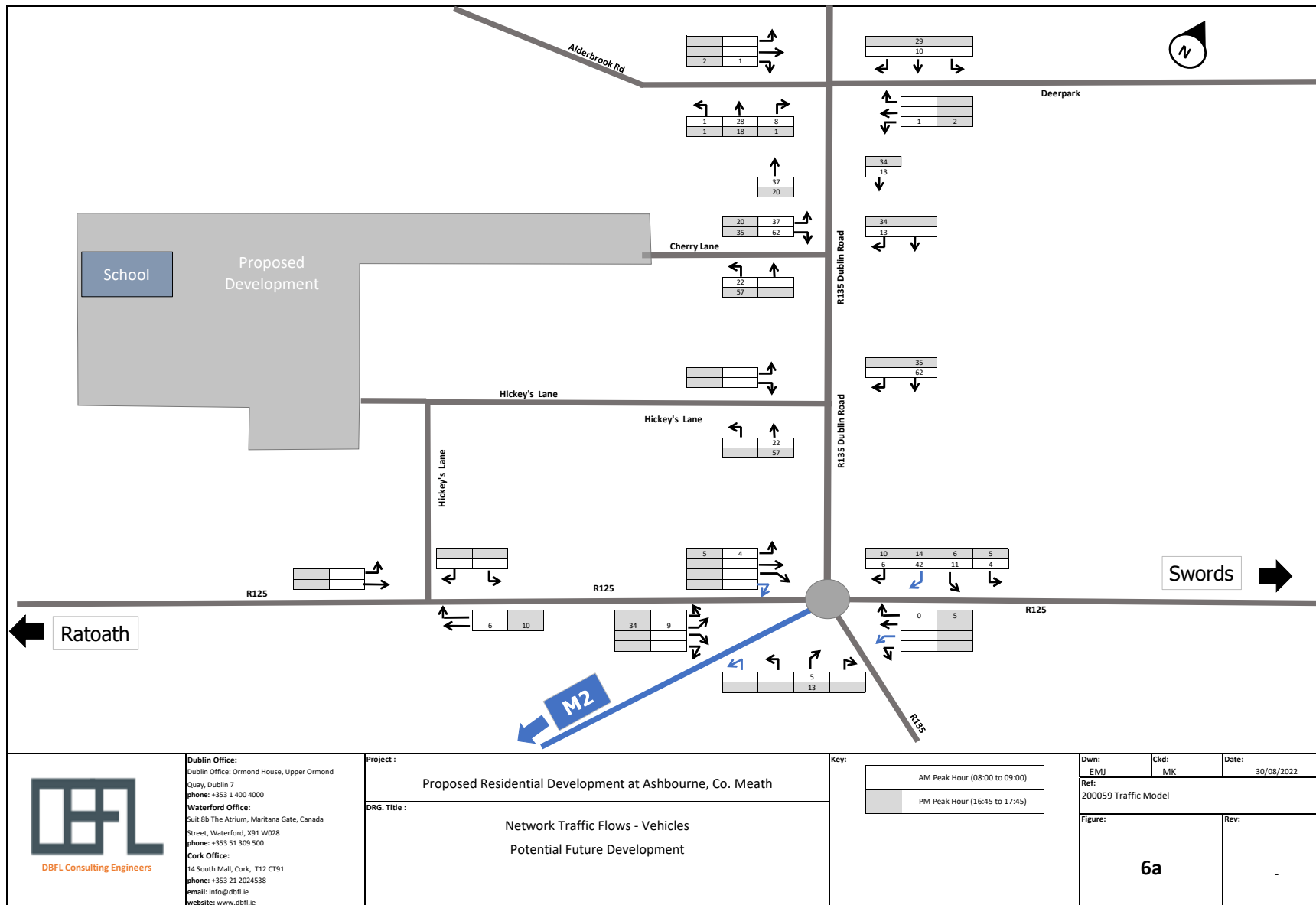


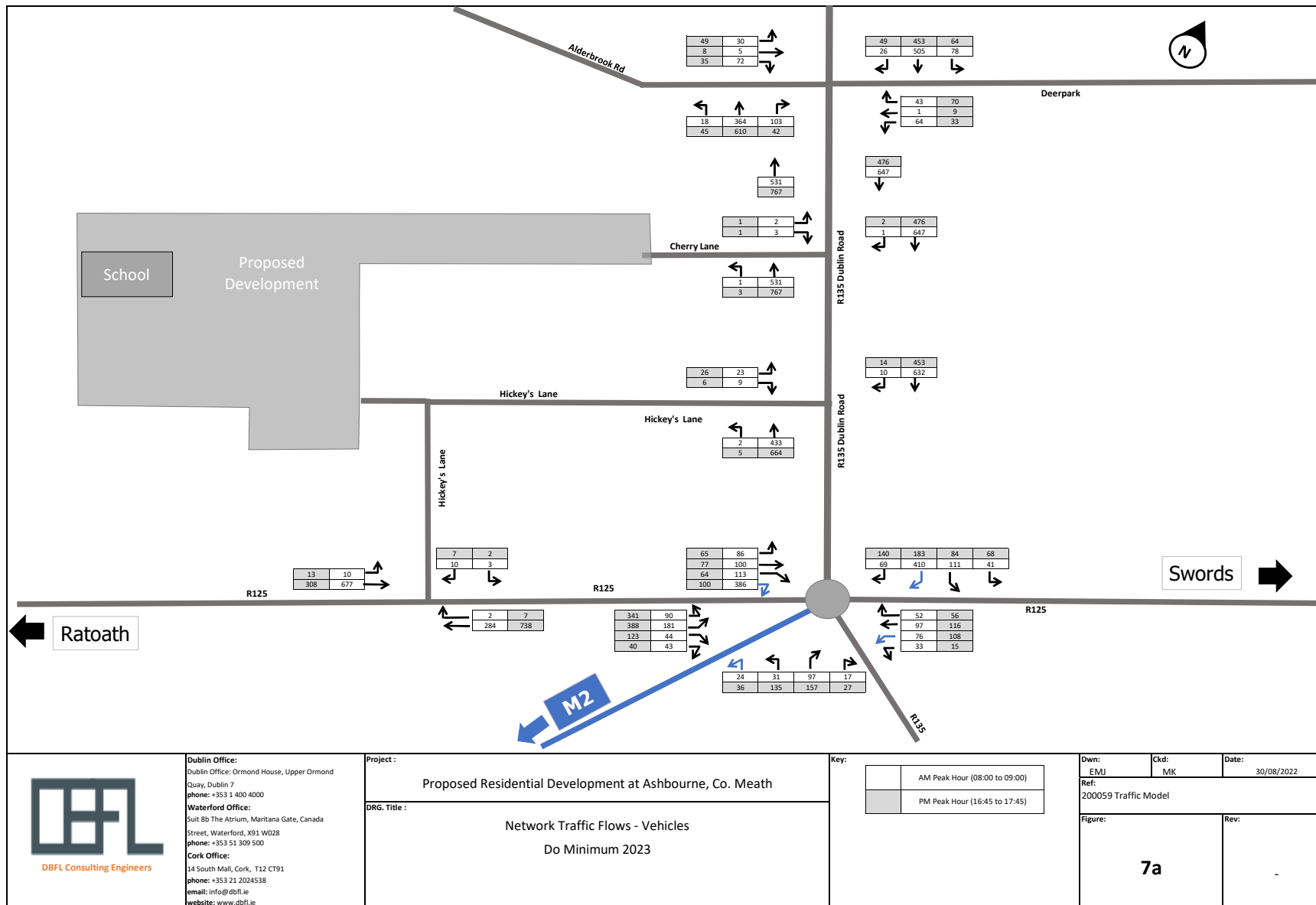


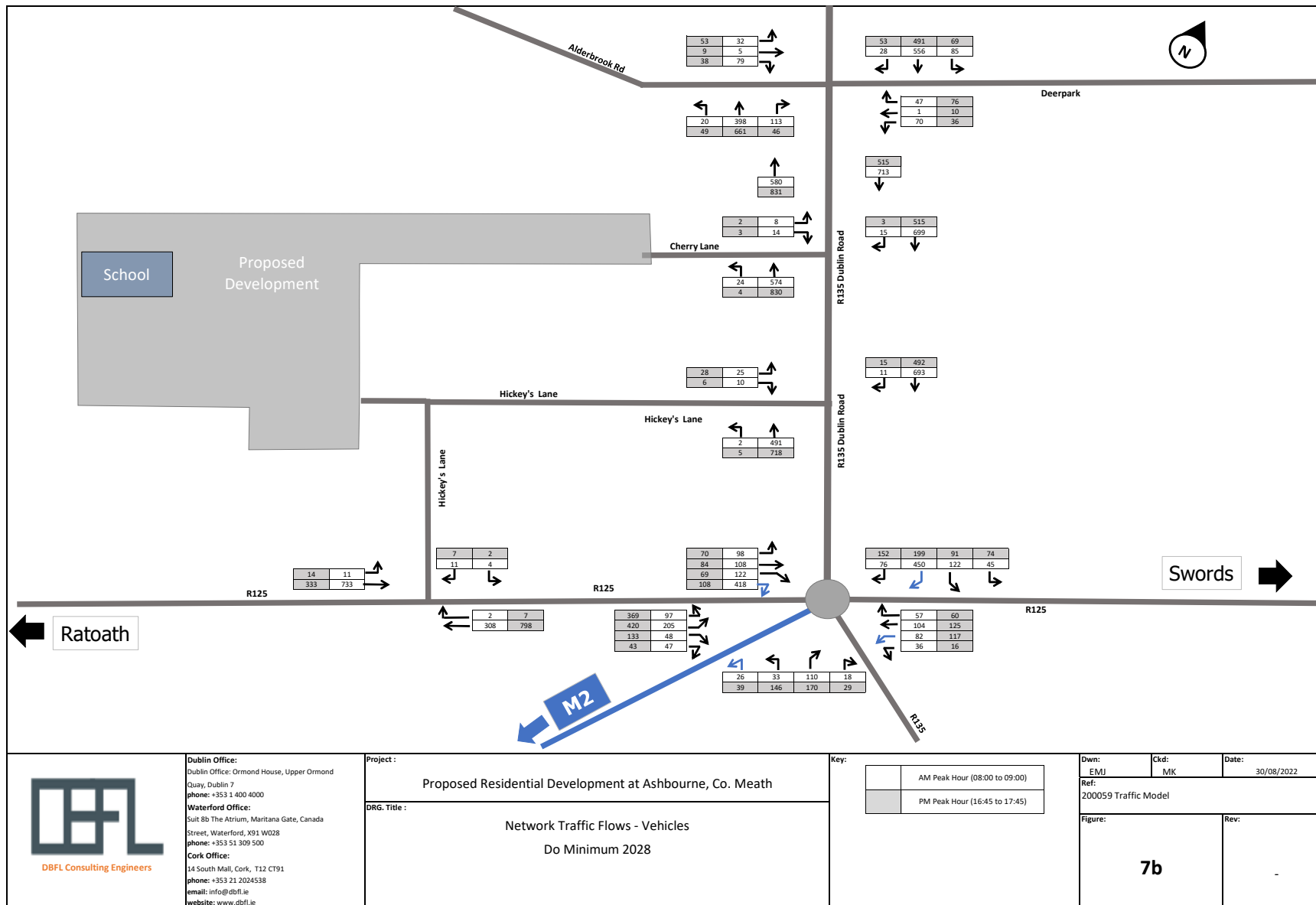












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Project :
Proposed Residential Development at Ashbourne, Co. Meath

DRG. Title :
Network Traffic Flows - Vehicles
Do Minimum 2028

Key:

	AM Peak Hour (08:00 to 09:00)
	PM Peak Hour (16:45 to 17:45)

Dwn: EMJ
Ckd: MK
Date: 30/08/2022

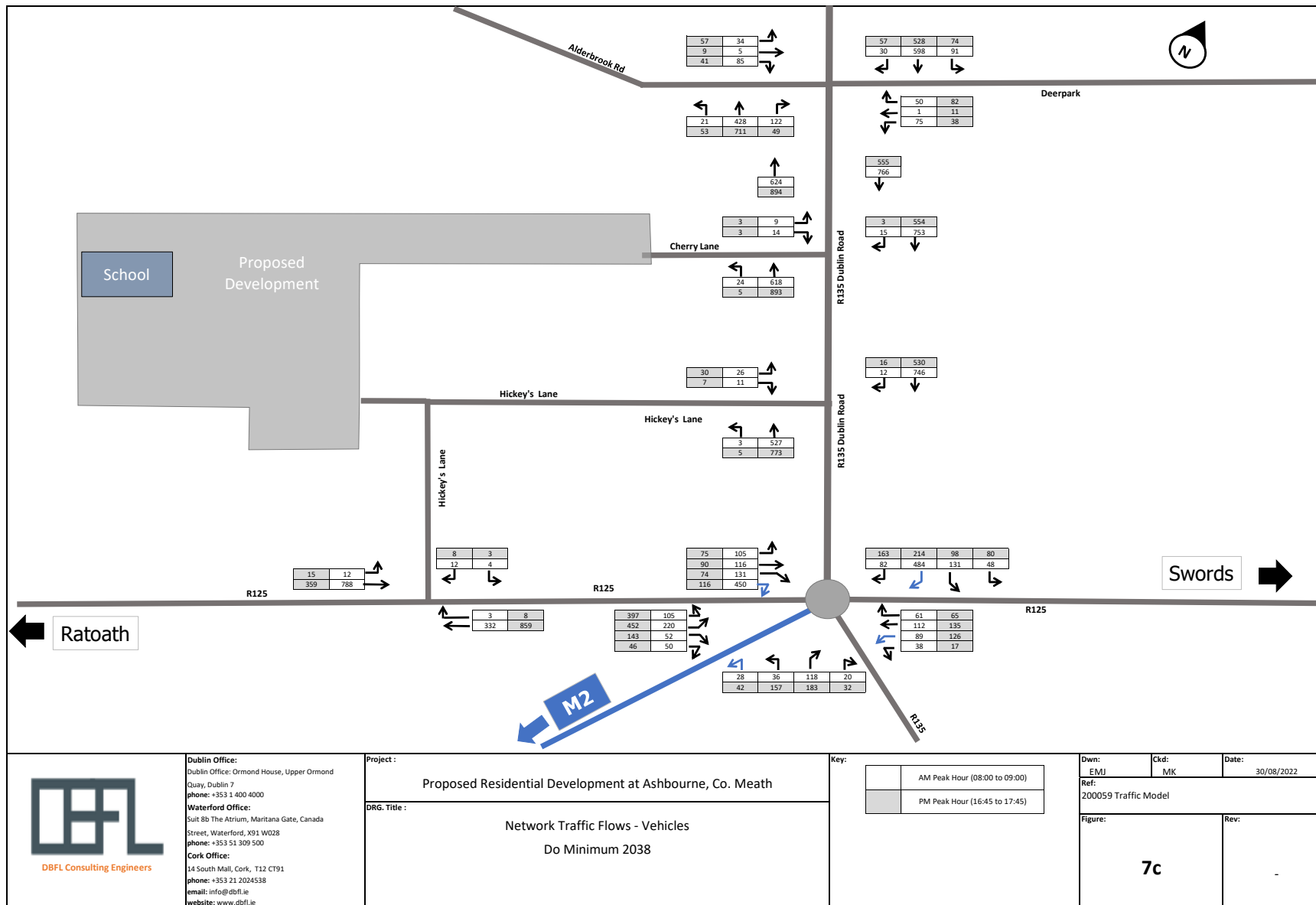
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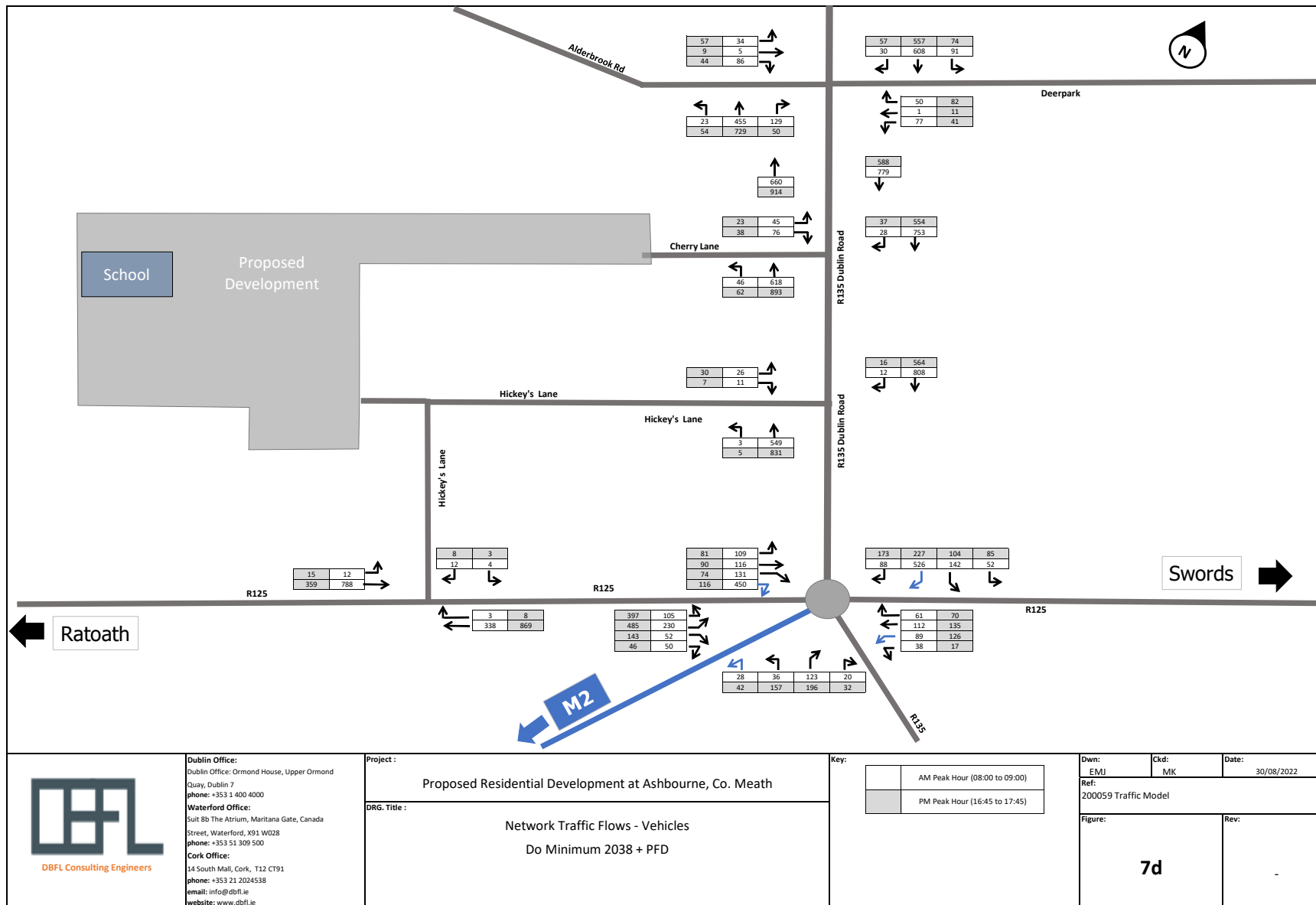
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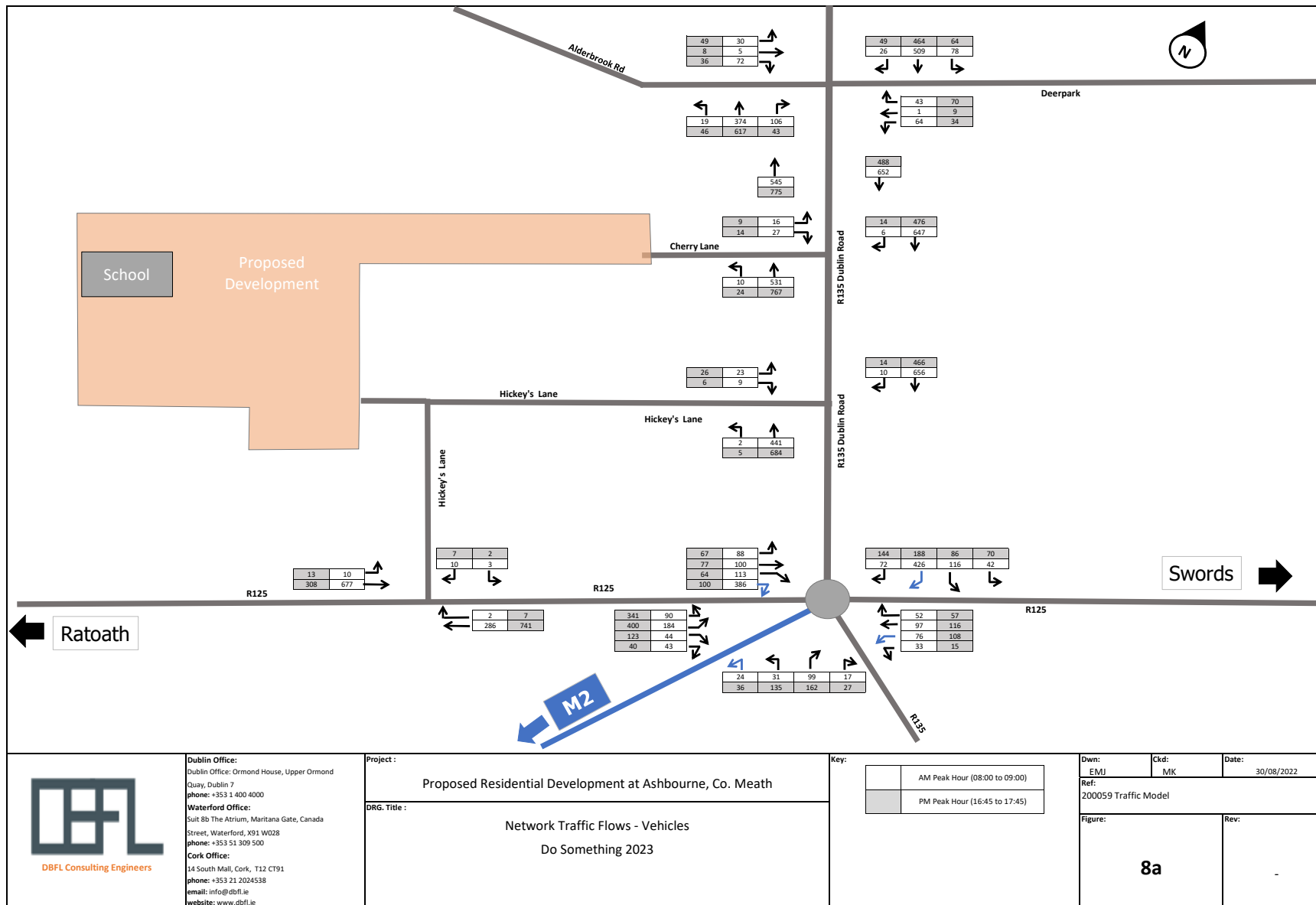
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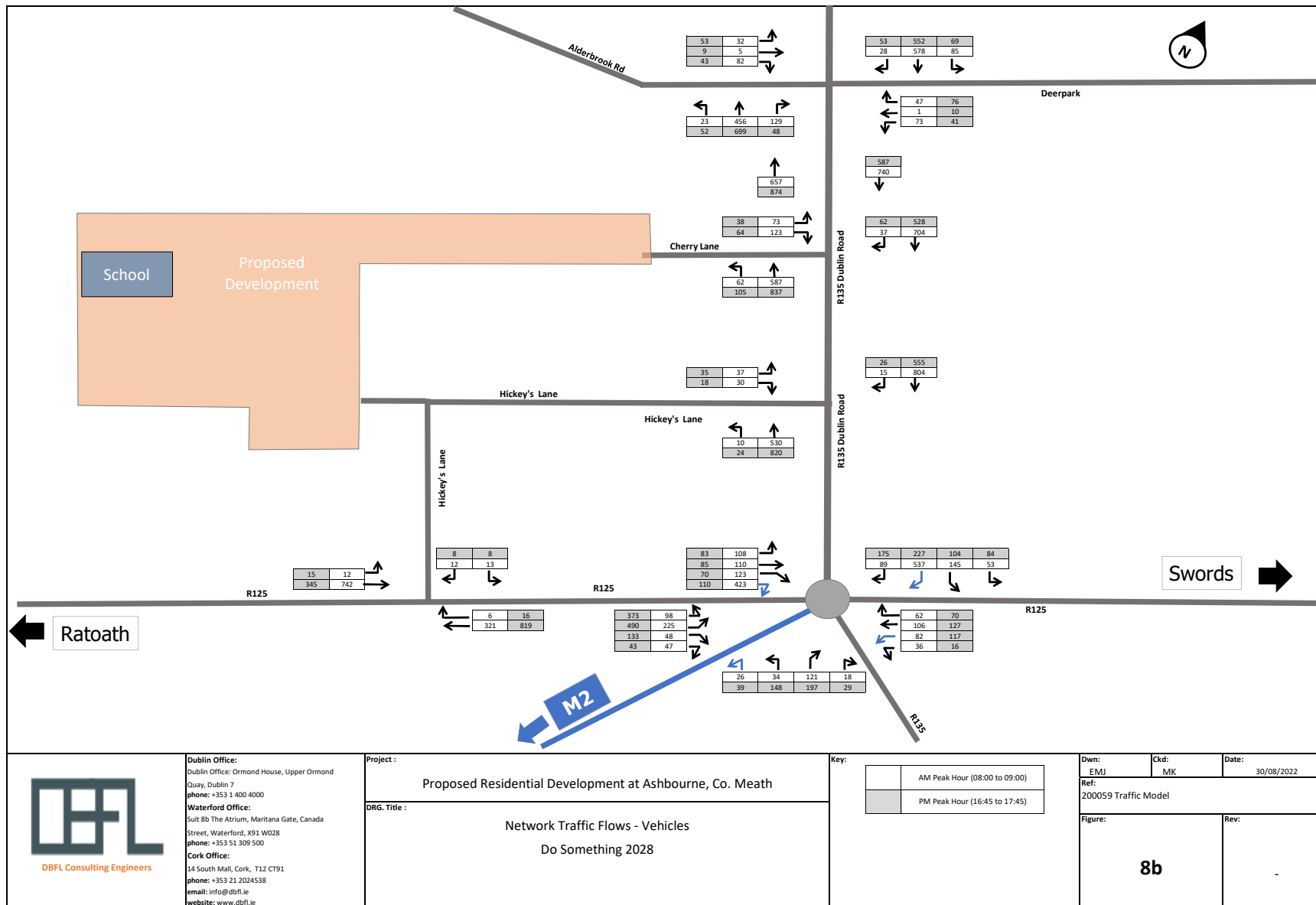
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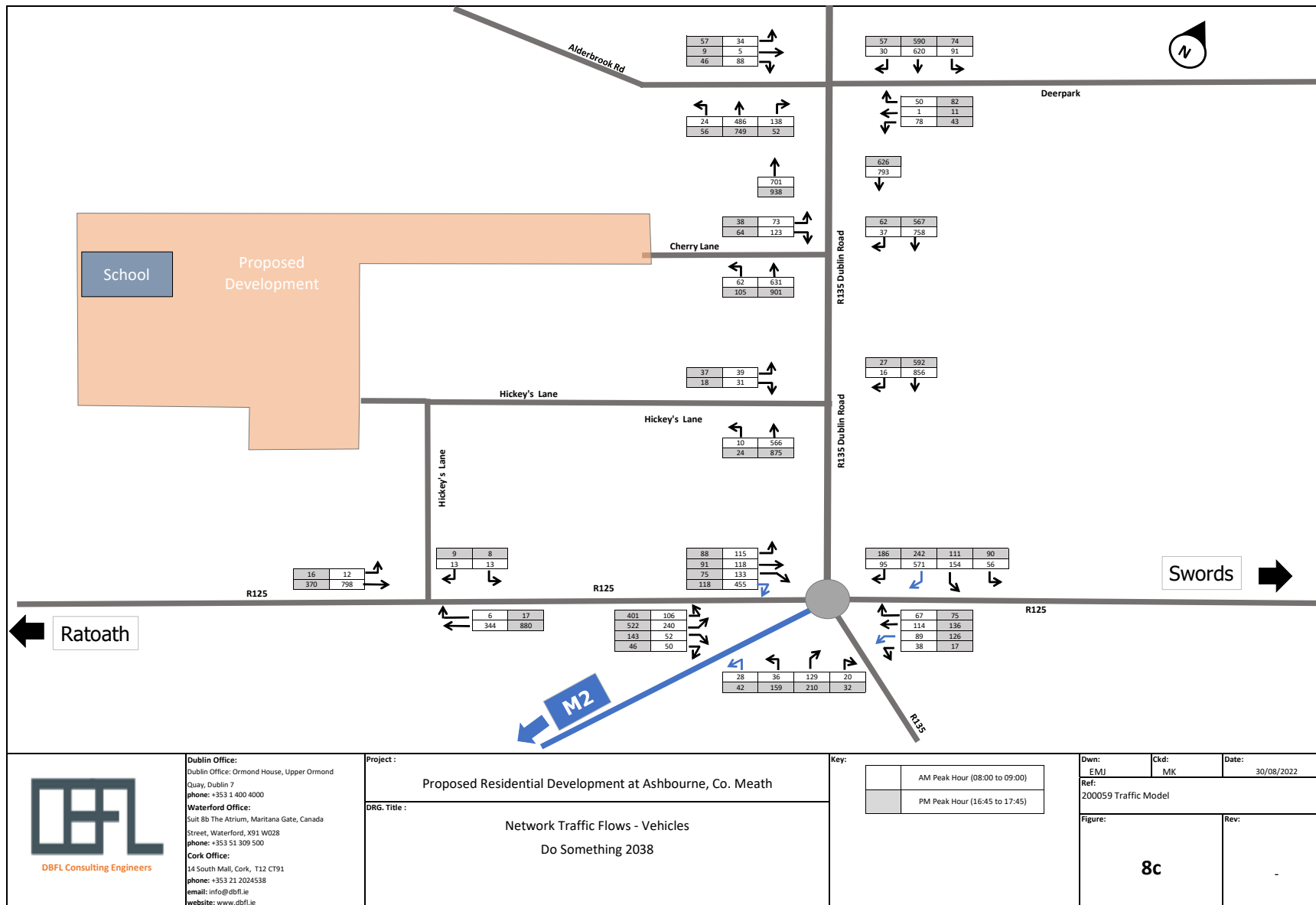
-











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Project :
Proposed Residential Development at Ashbourne, Co. Meath

DRG. Title :
Network Traffic Flows - Vehicles
Do Something 2038

Key:

	AM Peak Hour (08:00 to 09:00)
	PM Peak Hour (16:45 to 17:45)

Dwn: EMJ
Ckd: MK
Date: 30/08/2022

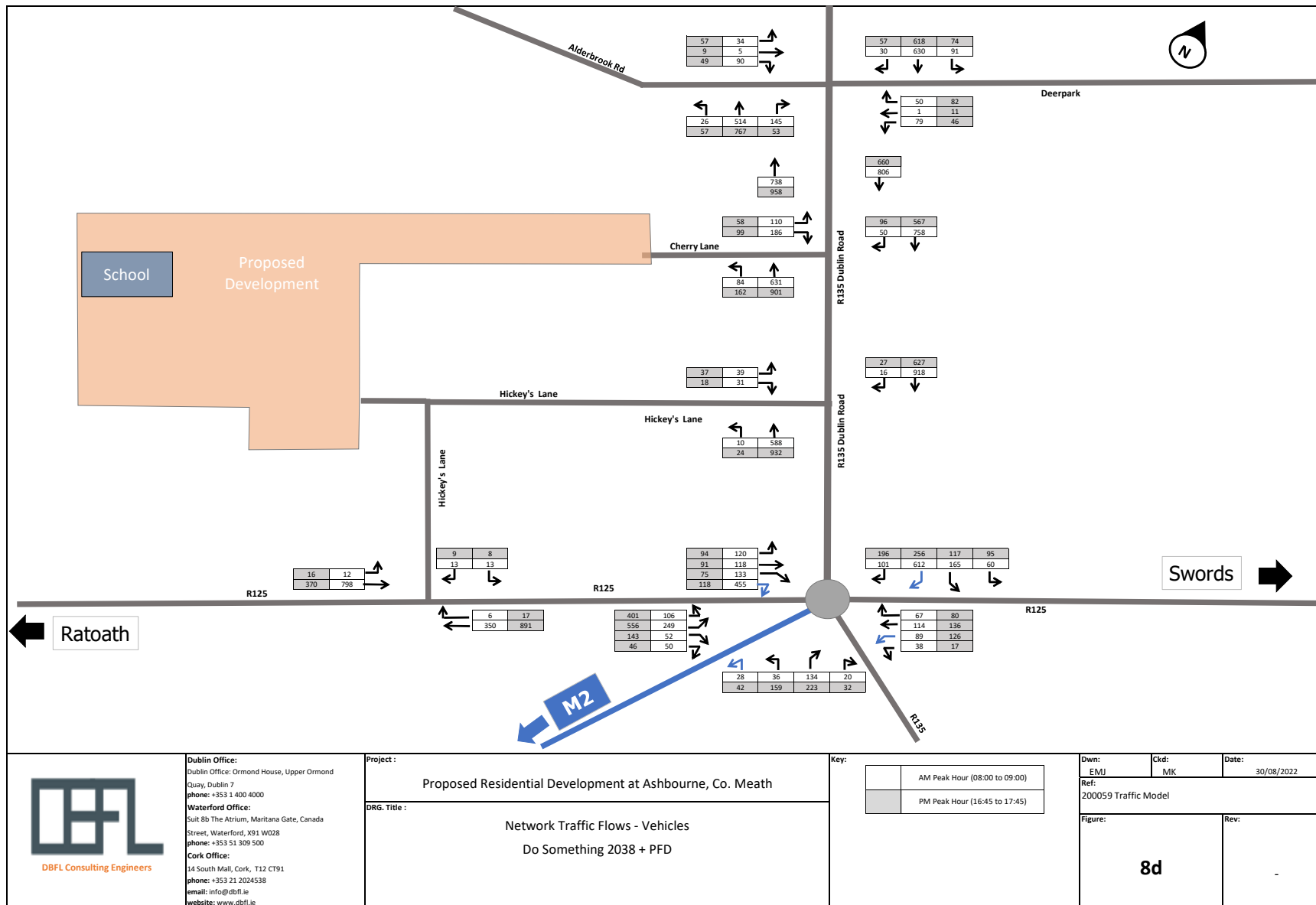
Ref:
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Figure:

8c

Rev:

-



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Proposed Residential Development at Ashbourne, Co. Meath

DRG. Title :
Network Traffic Flows - Vehicles
Do Something 2038 + PFD

Key:
AM Peak Hour (08:00 to 09:00)
PM Peak Hour (16:45 to 17:45)

Dwn: EMJ
Ckd: MK
Date: 30/08/2022

Ref:
200059 Traffic Model

Figure:

8d

Rev:

-

APPENDIX B

TRICS Database Output

Calculation Reference: AUDIT-638801-211202-1221

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

03 SOUTH WEST	
DC DORSET	1 days
04 EAST ANGLIA	
NF NORFOLK	1 days
SF SUFFOLK	2 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
RI EAST RIDING OF YORKSHIRE	1 days
09 NORTH	
CB CUMBRIA	1 days
10 WALES	
CO CONWY	1 days
11 SCOTLAND	
SA SOUTH AYRSHIRE	1 days
SR STIRLING	1 days
12 CONNAUGHT	
GA GALWAY	1 days
13 MUNSTER	
WA WATERFORD	1 days
14 LEINSTER	
LU LOUTH	3 days
16 ULSTER (REPUBLIC OF IRELAND)	
MG MONAGHAN	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: No of Dwellings
Actual Range: 14 to 85 (units:)
Range Selected by User: 8 to 215 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 16/10/20

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

Selected survey days:	
Monday	3 days
Tuesday	4 days
Wednesday	2 days
Thursday	4 days
Friday	2 days

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

Selected survey types:	
Manual count	15 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:

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:

Residential Zone	9
Built-Up Zone	3
No Sub Category	3

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.

Secondary Filtering selection:

Use Class:

C3	15 days
----	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	3 days
10,001 to 15,000	7 days
15,001 to 20,000	3 days

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

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	3 days
50,001 to 75,000	10 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	11 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 Plans:

No	15 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	15 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	CB-03-C-02 BRIDGE LANE PENRITH Edge of Town No Sub Category Total No of Dwellings: 35 Survey date: WEDNESDAY 11/06/14	BLOCK OF FLATS	CUMBRIA	
2	CO-03-C-01 MOSTYN BROADWAY LLANDUDNO Edge of Town Built-Up Zone Total No of Dwellings: 37 Survey date: MONDAY 26/03/18	BLOCKS OF FLATS	CONWY	Survey Type: MANUAL
3	DC-03-C-02 PALM COURT WEYMOUTH SPA ROAD Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 14 Survey date: FRIDAY 28/03/14	FLATS IN BLOCKS	DORSET	Survey Type: MANUAL
4	GA-03-C-01 BALLYLOUGHANE ROAD GALWAY Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 34 Survey date: THURSDAY 31/10/13	FLATS	GALWAY	Survey Type: MANUAL
5	LU-03-C-01 DONORE ROAD DROGHEDA Edge of Town Centre Residential Zone Total No of Dwellings: 52 Survey date: THURSDAY 12/09/13	BLOCKS OF FLATS	LOUTH	Survey Type: MANUAL
6	LU-03-C-02 NICHOLAS STREET DUNDALK Edge of Town Centre Residential Zone Total No of Dwellings: 33 Survey date: MONDAY 16/09/13	BLOCK OF FLATS	LOUTH	Survey Type: MANUAL
7	LU-03-C-03 NICHOLAS STREET DUNDALK Edge of Town Centre Residential Zone Total No of Dwellings: 20 Survey date: MONDAY 16/09/13	BLOCK OF FLATS	MONAGHAN	Survey Type: MANUAL
8	MG-03-C-01 MALL ROAD MONAGHAN Edge of Town Centre No Sub Category Total No of Dwellings: 28 Survey date: FRIDAY 06/09/13	BLOCK OF FLATS		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9	NF-03-C-01 PAGE STAIR LANE KING'S LYNN Edge of Town Centre Built-Up Zone Total No of Dwellings: 51 Survey date: THURSDAY 11/12/14	BLOCKS OF FLATS	NORFOLK	Survey Type: MANUAL
10	RI-03-C-01 465 PRIORY ROAD HULL Edge of Town Residential Zone Total No of Dwellings: 20 Survey date: TUESDAY 13/05/14	FLATS	EAST RIDING OF YORKSHIRE	Survey Type: MANUAL
11	SA-03-C-01 RACECOURSE ROAD AYR Edge of Town Centre Residential Zone Total No of Dwellings: 51 Survey date: TUESDAY 16/09/14	BLOCK OF FLATS	SOUTH AYRSHIRE	Survey Type: MANUAL
12	SF-03-C-01 STATION HILL BURY ST EDMUNDS Edge of Town Centre Built-Up Zone Total No of Dwellings: 85 Survey date: THURSDAY 18/12/14	BLOCKS OF FLATS	SUFFOLK	Survey Type: MANUAL
13	SF-03-C-03 TOLLGATE LANE BURY ST EDMUNDS Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 30 Survey date: WEDNESDAY 03/12/14	BLOCKS OF FLATS	SUFFOLK	Survey Type: MANUAL
14	SR-03-C-03 KERSEBONNY ROAD STIRLING CAMBUSBARRON Edge of Town Residential Zone Total No of Dwellings: 82 Survey date: TUESDAY 01/09/20	BLOCK OF FLATS & TERRACED	STIRLING	Survey Type: MANUAL
15	WA-03-C-01 UPPER YELLOW ROAD WATERFORD Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51 Survey date: TUESDAY 12/05/15	BLOCKS OF FLATS	WATERFORD	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	42	0.039	15	42	0.120	15	42	0.159
08:00 - 09:00	15	42	0.061	15	42	0.185	15	42	0.246
09:00 - 10:00	15	42	0.087	15	42	0.106	15	42	0.193
10:00 - 11:00	15	42	0.080	15	42	0.098	15	42	0.178
11:00 - 12:00	15	42	0.103	15	42	0.108	15	42	0.211
12:00 - 13:00	15	42	0.122	15	42	0.103	15	42	0.225
13:00 - 14:00	15	42	0.104	15	42	0.109	15	42	0.213
14:00 - 15:00	15	42	0.095	15	42	0.109	15	42	0.204
15:00 - 16:00	15	42	0.130	15	42	0.101	15	42	0.231
16:00 - 17:00	15	42	0.125	15	42	0.106	15	42	0.231
17:00 - 18:00	15	42	0.207	15	42	0.114	15	42	0.321
18:00 - 19:00	15	42	0.157	15	42	0.127	15	42	0.284
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1,310			1,386			2,696

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:	14 - 85 (units:)
Survey date date range:	01/01/13 - 16/10/20
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-638801-211202-1244

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

- 03SOUTH WESTDVDEVON2 days
- 04EAST ANGLIANFNORFOLK6 days
SFSUFFOLK1 days
- 06WEST MIDLANDSSHSHROPSHIRE1 days
- 07YORKSHIRE & NORTH LINCOLNSHIRENE NORTH EAST LINCOLNSHIRE2 days
NY NORTH YORKSHIRE3 days
- 08NORTH WESTCHCHESHIRE2 days
- 09NORTHCBCUMBRIA1 days
- 10WALESPSPOWYS2 days
- 11SCOTLANDHIHIGHLAND1 days
- 12CONNAUGHTLTLEITRIM2 days
RO ROSCOMMON1 days
- 13MUNSTERWAWATERFORD1 days
- 14LEINSTERCCCARLOW1 days
WC WICKLOW2 days
WX WEXFORD1 days
- 16ULSTER (REPUBLIC OF IRELAND)CVCAVAN2 days
DN DONEGAL5 days
- 17ULSTER (NORTHERN IRELAND)ANANTRIM1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 9 to 432 (units:)
Range Selected by User: 4 to 1882 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 27/05/21

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

Selected survey days:

- Monday10 days
- Tuesday6 days
- Wednesday12 days
- Thursday4 days
- Friday4 days
- Sunday1 days

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

Selected survey types:

- Manual count34 days
- Directional ATC Count3 days

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

Selected Locations:

- Edge of Town Centre7
- Suburban Area (PPS6 Out of Centre)11
- Edge of Town19

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:

- Residential Zone30
- Out of Town1
- No Sub Category6

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.

Secondary Filtering selection:

Use Class:

- C337 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:
1,001 to 5,00012 days
5,001 to 10,00011 days
10,001 to 15,00011 days
15,001 to 20,0003 days

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

Population within 5 miles:
5,001 to 25,00022 days
25,001 to 50,0008 days
50,001 to 75,0007 days

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

Car ownership within 5 miles:
0.6 to 1.011 days
1.1 to 1.523 days
1.6 to 2.03 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:
Yes6 days
No31 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 Present37 days

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

Covid-19 RestrictionsYesAt 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	AN-03-A-09 SLOEFIELD DRIVE CARRICKFERGUS Edge of Town No Sub Category Total No of Dwellings: 151 Survey date: WEDNESDAY 12/10/16	DETACHED & SEMI-DETACHED	ANTRIM	
2	CB-03-A-05 MACADAM WAY PENRITH Edge of Town Centre Residential Zone Total No of Dwellings: 50 Survey date: TUESDAY 21/06/16	DETACHED/ TERRACED HOUSING	CUMBRIA	Survey Type: MANUAL
3	CC-03-A-01 R417 ANTHY ROAD CARLOW Edge of Town Residential Zone Total No of Dwellings: 23 Survey date: WEDNESDAY 25/05/16	DETACHED HOUSES	CARLOW	Survey Type: MANUAL
4	CH-03-A-10 MEADOW DRIVE NORTHWICH BARNTON Edge of Town Residential Zone Total No of Dwellings: 40 Survey date: TUESDAY 04/06/19	SEMI-DETACHED & TERRACED	CHESHIRE	Survey Type: MANUAL
5	CH-03-A-11 LONDON ROAD NORTHWICH LEFTWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 24 Survey date: THURSDAY 06/06/19	TOWN HOUSES	CHESHIRE	Survey Type: MANUAL
6	CV-03-A-02 R212 DUBLIN ROAD CAVAN KILLYNEBBER Edge of Town No Sub Category Total No of Dwellings: 80 Survey date: MONDAY 22/05/17	DETACHED & SEMI DETACHED	CAVAN	Survey Type: MANUAL
7	CV-03-A-03 R212 DUBLIN ROAD CAVAN PULLAMORE NEAR Edge of Town No Sub Category Total No of Dwellings: 37 Survey date: MONDAY 22/05/17	DETACHED HOUSES	CAVAN	Survey Type: MANUAL
8	DN-03-A-03 THE GRANGE LETTERKENNY GLENCAR IRISH Edge of Town Residential Zone Total No of Dwellings: 50 Survey date: MONDAY 01/09/14	DETACHED/ SEMI-DETACHED	DONEGAL	Survey Type: MANUAL

9	DN-03-A-04 GORTLEE ROAD LETTERKENNY GORTLEE Edge of Town Residential Zone Total No of Dwellings: 83 Survey date: FRIDAY 26/09/14	SEMI-DETACHED	DONEGAL	Survey Type: MANUAL
10	DN-03-A-05 GORTLEE ROAD LETTERKENNY GORTLEE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 146 Survey date: WEDNESDAY 03/09/14	DETACHED / SEMI-DETACHED	DONEGAL	Survey Type: MANUAL
11	DN-03-A-07 ST ORANS ROAD BUNCRANA Edge of Town Centre Residential Zone Total No of Dwellings: 9 Survey date: WEDNESDAY 29/05/19	DETACHED & SEMI-DETACHED	DONEGAL	Survey Type: MANUAL
12	DN-03-A-08 CHURCH ROAD CARNDONAGH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 36 Survey date: WEDNESDAY 30/09/20	SEMI DETACHED & DETACHED	DONEGAL	Survey Type: MANUAL
13	DV-03-A-02 MILLHEAD ROAD HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 Survey date: FRIDAY 25/09/15	HOUSES & BUNGALOWS	DEVON	Survey Type: MANUAL
14	DV-03-A-03 LOWER BRAND LANE HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 70 Survey date: MONDAY 28/09/15	TERRACED & SEMI DETACHED	DEVON	Survey Type: MANUAL
15	HI-03-A-14 KING BRUDE ROAD INVERNESS SCORGUJE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 40 Survey date: WEDNESDAY 23/03/16	SEMI-DETACHED & TERRACED	HIGHLAND	Survey Type: MANUAL
16	LT-03-A-01 ARD NA SI CARRICK-ON-SHANNON ATTIRORY Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 90 Survey date: FRIDAY 24/04/15	SEMI-DETACHED & DETACHED	LEITRIM	Survey Type: MANUAL

17	LT-03-A-02 ARD ALAINN CARRICK-ON-SHANNON GALLOW'S HILL Edge of Town Centre Residential Zone Total No of Dwellings: 10 Survey date: MONDAY 22/05/17	BUNGALOWS	LEITRIM	Survey Type: MANUAL
18	NE-03-A-02 HANOVER WALK SCUNTHORPE Edge of Town No Sub Category Total No of Dwellings: 432 Survey date: MONDAY 12/05/14	SEMI DETACHED & DETACHED	NORTH EAST LINCOLNSHIRE	Survey Type: MANUAL
19	NE-03-A-03 STATION ROAD SCUNTHORPE Edge of Town Centre Residential Zone Total No of Dwellings: 180 Survey date: TUESDAY 20/05/14	PRIVATE HOUSES	NORTH EAST LINCOLNSHIRE	Survey Type: MANUAL
20	NF-03-A-03 HALING WAY THETFORD Edge of Town Residential Zone Total No of Dwellings: 10 Survey date: WEDNESDAY 16/09/15	DETACHED HOUSES	NORFOLK	Survey Type: MANUAL
21	NF-03-A-04 NORTH WALSHAM ROAD NORTH WALSHAM Edge of Town Residential Zone Total No of Dwellings: 70 Survey date: WEDNESDAY 18/09/19	MIXED HOUSES	NORFOLK	Survey Type: MANUAL
22	NF-03-A-05 HEATH DRIVE HOLT Edge of Town Residential Zone Total No of Dwellings: 40 Survey date: THURSDAY 19/09/19	MIXED HOUSES	NORFOLK	Survey Type: MANUAL
23	NF-03-A-07 SILFIELD ROAD WYMONDHAM Edge of Town Out of Town Total No of Dwellings: 297 Survey date: SUNDAY 22/09/19	MIXED HOUSES & FLATS	NORFOLK	Survey Type: DIRECTIONAL ATC COUNT
24	NF-03-A-10 HUNSTANTON ROAD HUNSTANTON Edge of Town Residential Zone Total No of Dwellings: 17 Survey date: WEDNESDAY 12/09/18	MIXED HOUSES & FLATS	NORFOLK	Survey Type: DIRECTIONAL ATC COUNT
25	NF-03-A-16 NORWICH COMMON WYMONDHAM Edge of Town Residential Zone Total No of Dwellings: 138 Survey date: TUESDAY 20/10/15	MIXED HOUSES & FLATS	NORFOLK	Survey Type: DIRECTIONAL ATC COUNT

LIST OF SITES relevant to selection parameters (Cont.)

26	NY-03-A-11 HORSEFAIR BOROUGHBRIDGE Edge of Town Residential Zone Total No of Dwellings: 23 Survey date: WEDNESDAY 18/09/13	PRIVATE HOUSING	NORTH YORKSHIRE	NORTH YORKSHIRE Survey Type: MANUAL
27	NY-03-A-12 RACECOURSE LANE NORTHALLERTON Edge of Town Residential Zone Total No of Dwellings: 47 Survey date: TUESDAY 27/09/16	TOWN HOUSES	NORTH YORKSHIRE	NORTH YORKSHIRE Survey Type: MANUAL
28	NY-03-A-13 CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 10 Survey date: WEDNESDAY 10/05/17	TERRACED HOUSES	NORTH YORKSHIRE	NORTH YORKSHIRE Survey Type: MANUAL
29	PS-03-A-01 BRYN GLAS WELSHPOOL Edge of Town Centre Residential Zone Total No of Dwellings: 16 Survey date: MONDAY 11/05/15	MIXED HOUSES	POWYS	POWYS Survey Type: MANUAL
30	PS-03-A-02 GUNROG ROAD WELSHPOOL Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 28 Survey date: MONDAY 11/05/15	DETACHED/SEMI-DETACHED	POWYS	POWYS Survey Type: MANUAL
31	RO-03-A-04 EAGLE COURT ROSCOMMON ARDNANAGH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 39 Survey date: FRIDAY 26/09/14	SEMI DET. & BUNGALOWS	ROSCOMMON	ROSCOMMON Survey Type: MANUAL
32	SF-03-A-05 VALE LANE BURY ST EDMONDS Edge of Town Residential Zone Total No of Dwellings: 18 Survey date: WEDNESDAY 09/09/15	DETACHED HOUSES	SUFFOLK	SUFFOLK Survey Type: MANUAL
33	SH-03-A-05 SANDCROFT TELFORD SUTTON HILL Edge of Town Residential Zone Total No of Dwellings: 54 Survey date: THURSDAY 24/10/13	SEMI-DETACHED/TERRACED	SHROPSHIRE	SHROPSHIRE Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

34	WA-03-A-04 MAYPARK LANE WATERFORD Edge of Town Residential Zone Total No of Dwellings: 280 Survey date: TUESDAY 24/06/14	DETACHED	WATERFORD	WATERFORD Survey Type: MANUAL
35	WC-03-A-01 STATION ROAD WICKLOW CORPORATION MURRAGH Edge of Town No Sub Category Total No of Dwellings: 50 Survey date: MONDAY 28/05/18	DETACHED HOUSES	WICKLOW	WICKLOW Survey Type: MANUAL
36	WC-03-A-02 MARLTON ROAD WICKLOW FRIARSHILL Edge of Town Centre Residential Zone Total No of Dwellings: 45 Survey date: MONDAY 28/05/18	DETACHED HOUSES	WICKLOW	WICKLOW Survey Type: MANUAL
37	WX-03-A-01 CLONARD ROAD WEXFORD Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 34 Survey date: THURSDAY 25/09/14	SEMI-DETACHED	WEXFORD	WEXFORD Survey Type: MANUAL

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

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

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	37	78	0.053	37	78	0.203	37	78	0.256
08:00 - 09:00	37	78	0.139	37	78	0.393	37	78	0.532
09:00 - 10:00	37	78	0.181	37	78	0.202	37	78	0.383
10:00 - 11:00	37	78	0.152	37	78	0.180	37	78	0.332
11:00 - 12:00	37	78	0.150	37	78	0.176	37	78	0.326
12:00 - 13:00	37	78	0.194	37	78	0.187	37	78	0.381
13:00 - 14:00	37	78	0.190	37	78	0.210	37	78	0.400
14:00 - 15:00	37	78	0.225	37	78	0.231	37	78	0.456
15:00 - 16:00	37	78	0.287	37	78	0.208	37	78	0.495
16:00 - 17:00	37	78	0.296	37	78	0.187	37	78	0.483
17:00 - 18:00	37	78	0.335	37	78	0.210	37	78	0.545
18:00 - 19:00	37	78	0.280	37	78	0.214	37	78	0.494
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2,482			2,601			5,083

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

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

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Parameter summary

Trip rate parameter range selected:	9 - 432 (units:)
Survey date date range:	01/01/13 - 27/05/21
Number of weekdays (Monday-Friday):	41
Number of Saturdays:	1
Number of Sundays:	1
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

APPENDIX C

TRANSYT Output Files

TRANSYT 15	
Version: 15.5.2.7994 © Copyright TRL Limited, 2018	
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: R135_AlderbrookRd_Deerpark_july22_pcu.t15
Path: G:\2020\p200059\calcs\Transyt
Report generation date: 16/08/2022 10:23:54

»A1 - DS 2023 AM : D1 - DS 2023 AM* :
»A2 - DS 2023 PM : D2 - DS 2023 PM* :
»A3 - DS 2028 AM : D3 - DS 2028 AM* :
»A4 - DS 2028 PM : D4 - DS 2028 PM* :
»A5 - DS 2038 AM : D5 - DS 2038 AM* :
»A6 - DS 2038 PM : D6 - DS 2038 PM* :
»A7 - DS 2038 AM+PFD : D7 - DS 2038 AM+PFD* :
»A8 - DS 2038 PM+PFD : D8 - DS 2038 PM+PFD* :
»A9 - DM 2023 AM : D9 - DM 2023 AM* :
»A10 - DM 2023 PM : D10 - DM 2023 PM* :
»A11 - DM 2028 AM : D11 - DM 2028 AM* :
»A12 - DM 2028 PM : D12 - DM 2028 PM* :
»A13 - DM 2038 AM : D13 - DM 2038 AM* :
»A14 - DM 2038 PM : D14 - DM 2038 PM* :
»A15 - DM 2038 AM+PFD : D15 - DM 2038 AM+PFD* :
»A16 - DM 2038 PM+PFD : D16 - DM 2038 PM+PFD* :

File summary

File description

File title	(untitled)
Location	
Site number	
UTCR/region	
Driving side	Left
Date	25/01/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HEADOFFICE\jlineteezem
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick time consumption	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display separate uniform queue results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-amber	Display End-Of-Green Amber

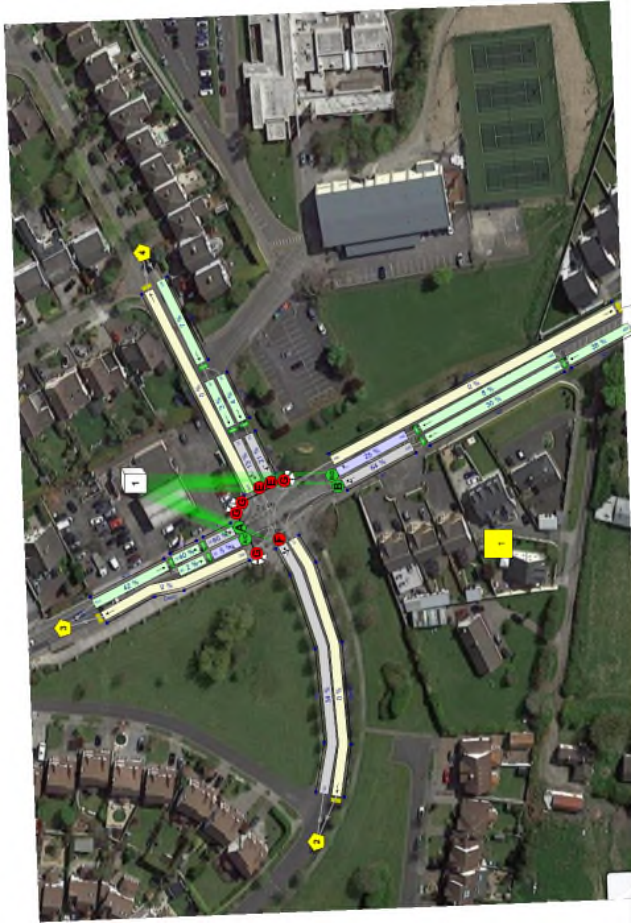
Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	PCU	PCU	per hour	s	-hour	per hour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Network Diagrams



A1 - DS 2023 AM
D1 - DS 2023 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network flow (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
1	16/08/2022 10:22:28	16/08/2022 10:22:28	08:00	100	142.63	9.19	69.39	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2023 AM		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2023 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	1				58.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RB67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
	1	1	(untitled)			
	1	1	(untitled)			
Dexit	1	1	(untitled)			
	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
	1	1	(untitled)			1800
A2	1	2	(untitled)			1800
	2	2	(untitled)			1800
	1	1	(untitled)			1800
D2	1	2	(untitled)			1800
	2	2	(untitled)			1800
	1	1	(untitled)			1800
D3	1	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	2	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		14.00		
D1	2	NetworkDefault	100	100	100		2.00		
A2	1	NetworkDefault	100	100	100		3.00		
C2	1	NetworkDefault	100	100	100		10.00		
D2	2	NetworkDefault	100	100	100		2.00		
A3	1	NetworkDefault	100	100	100		3.00		
C3	1	NetworkDefault	100	100	100		5.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	645	645
Bexit	1	46	46
Cexit	1	447	447
Dexit	1	189	189
A1	1	393	393
B1	2	108	108
C1	1	107	107
D1	1	587	587
A2	1	64	64
C2	2	44	44
D2	2	106	106
A3	1	587	587
C3	1	26	26
D3	1	64	64
A3	1	44	44
C3	1	499	499
D3	1	613	613
D3	1	108	108

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
B1	1	1	B	✓	D
C1	1	1	F		
D1	1	1	A		
D1	2	1	A	✓	C
D1	1	1	E		
D1	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axiit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Axiit	1	3	D1/1	Axiit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far Side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	19	374	106
From	2	72	0	30
	3	509	26	0
	4	64	1	43
				0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	509
	3		2	3	B1/1, Cexit/1	Normal	30
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	72
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	374
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	19
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	64
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	43
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	26
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	106
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	78

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name (untitled)	Description	Use sequence	Cycle time source	Cycle time (s)
1			1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A				6	6	5	
	B				6	7	9	
	C				6	6	5	
	D				6	6	9	
	E	6	6	6	6		8	
	F	6	7	6	6		7	
	G	12	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8
	4	12	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

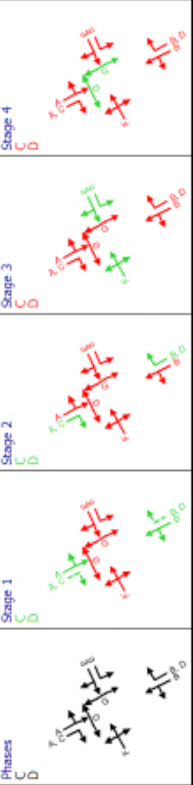
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

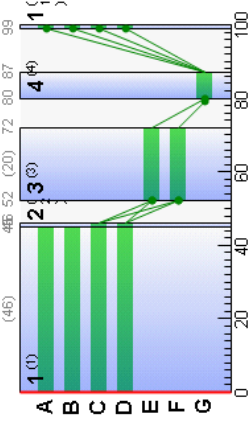
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit 1	0	Unrestricted	645		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit 1	0	Unrestricted	46		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit 1	0	Unrestricted	447		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit 1	0	Unrestricted	189		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1 1	46	94	393		1800	46	19.81	7.52	150.30	30.71	3.32	34.03
	A1 2	18	384	106		1213	47	15.52	1.70	33.97	6.49	0.74	7.23
	B1 1	28	218	107		1800	20	35.05	2.52	18.02	14.79	1.12	15.92
	B1 2	69	30	587		1800	46	25.61	13.50	674.78	59.30	5.95	65.28
	C1 1	4	1915	26		1213	47	13.99	0.38	19.19	1.44	0.17	1.60
	C1 2	17	432	64		1800	20	33.34	1.46	48.57	8.42	0.65	9.06
	D1 1	12	673	44		1800	20	32.62	0.99	32.85	5.86	0.44	6.10
	D1 2	22	312	393		1800	100	0.28	0.03	0.30	0.43	0.00	0.43
08:00-09:00	A2 1	6	1428	108		1800	100	0.08	0.00	0.02	0.03	0.00	0.03
	A2 2	33	176	587		1800	100	0.48	0.08	3.84	1.12	0.00	1.12
	C2 1	1	6131	26		1800	100	0.01	0.00	0.01	0.00	0.00	0.00
	C2 2	4	2431	64		1800	100	0.04	0.00	0.02	0.01	0.00	0.01
	D2 1	2	3582	44		1800	100	0.03	0.00	0.01	0.00	0.00	0.00
	D2 2	28	225	499		1800	100	0.38	0.05	1.08	0.75	0.00	0.75
	A3 1	34	164	613		1800	100	0.52	0.09	1.46	1.25	0.00	1.25
	C3 1	6	1400	108		1800	100	0.06	0.00	0.03	0.03	0.00	0.03
	D3 1	108	108			1800	100						
	D3 2	108	108			1800	100						
	D3 3	108	108			1800	100						
	D3 4	108	108			1800	100						

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Adjusted flow warning	Flow capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error (cycle)	Actual green cycle (s)
08:00-09:00	Aexit 1	645	645	0	Unrestricted	0		Unrestricted	0.35	100
	Bexit 1	46	46	0	Unrestricted	0		Unrestricted	0.61	100
	Cexit 1	447	447	0	Unrestricted	0		Unrestricted	0.55	100
	Dexit 1	189	189	0	Unrestricted	0		Unrestricted	0.65	100
	A1 1	393	393	0	1800	46		94	0.00	46
	A1 2	106	106	0	1213	582	18	394	0.00	47
	B1 1	107	107	0	1800	378	28	218	0.00	20
	B1 2	537	587	0	1800	846	69	30	0.00	46
	C1 1	26	26	0	1213	582	4	1915	0.00	47
	C1 2	64	64	0	1800	378	17	432	0.00	20
	D1 1	44	44	0	1800	378	12	673	0.00	20
	D1 2	393	393	0	1800	1800	22	312	0.00	100
08:00-09:00	A2 1	106	106	0	1800	1800	6	1428	0.00	100
	A2 2	587	587	0	1800	1800	33	176	0.00	100
	C2 1	26	26	0	1800	1800	1	6131	0.00	100
	C2 2	64	64	0	1800	1800	4	2431	0.00	100
	D2 1	44	44	0	1800	1800	2	3582	0.00	100
	D2 2	499	499	0	1800	1800	28	225	0.00	100
	A3 1	613	613	0	1800	1800	34	164	0.00	100
	C3 1	108	108	0	1800	1800	6	1400	0.00	100
	D3 1	108	108	0	1800	1800	6	1400	0.00	100
	D3 2	108	108	0	1800	1800	6	1400	0.00	100
	D3 3	108	108	0	1800	1800	6	1400	0.00	100
	D3 4	108	108	0	1800	1800	6	1400	0.00	100

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalled PRC	Item with worst over PR
1	16/08/2022 10:22:28	16/08/2022 10:22:28	08:00	100	142.83	9.19	69.39	C1/1	0	0	C3/1	C1/1

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit 1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit 1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit 1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit 1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1 1	3.72	19.81	2.16	30.71	67.42	284.96	3.32
	A1 2	3.72	15.52	0.46	6.49	55.72	59.08	0.74
	B1 1	10.20	35.05	1.04	14.79	83.68	89.54	1.12
	B1 2	1.32	25.61	4.18	59.30	80.90	474.91	5.95
	C1 1	1.32	13.99	0.10	1.44	51.94	13.50	0.17
	C1 2	2.16	33.34	0.59	8.42	80.78	51.70	0.65
	D1 1	2.16	32.62	0.40	5.66	79.44	34.86	0.44
	D1 2	7.01	0.28	0.03	0.43	0.00	0.00	0.00
08:00-09:00	A2 1	7.01	0.06	0.00	0.03	0.00	0.00	0.00
	A2 2	1.32	0.48	0.08	1.12	0.00	0.00	0.00
	C2 1	1.32	0.01	0.00	0.00	0.00	0.00	0.00
	C2 2	2.16	0.04	0.00	0.01	0.00	0.00	0.00
	D2 1	2.16	0.03	0.00	0.00	0.00	0.00	0.00
	D2 2	3.80	0.38	0.05	0.75	0.00	0.00	0.00
	A3 1	4.25	0.52	0.09	1.25	0.00	0.00	0.00
	C3 1	4.32	0.06	0.00	0.03	0.00	0.00	0.00
	D3 1							
	D3 2							
	D3 3							
	D3 4							

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	Aexit 1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit 1	0.00	0.00	93.43	0.00	0.00	62.00	
	Cexit 1	0.00	0.00	65.96	0.00	0.00	9.00	
	Dexit 1	0.00	0.00	81.89	0.00	0.00	27.00	
	A1 1	0.00	7.52	5.00	150.30	0.00	0.00	
	A1 2	0.00	1.70	5.00	33.97	0.00	0.00	
	B1 1	0.00	2.52	14.00	18.02	0.00	0.00	
	B1 2	0.00	13.50	2.00	674.79	0.00	0.00	
	C1 1	0.00	0.38	2.00	19.19	0.00	46.00	
	C1 2	0.00	1.46	3.00	48.57	0.00	0.00	
	D1 1	0.00	0.99	3.00	32.85	0.00	18.00	
	D1 2	0.00	0.03	10.00	0.30	0.00	24.00	
08:00-09:00	A2 1	0.00	0.00	10.00	0.02	0.00	0.00	
	A2 2	0.00	0.08	2.00	3.94	0.00	71.00	
	C2 1	0.00	0.00	2.00	0.01	0.00	100.00	
	C2 2	0.00	0.00	3.00	0.02	0.00	0.00	
	D2 1	0.00	0.00	3.00	0.01	0.00	100.00	
	D2 2	0.00	0.05	5.00	1.06	0.00	0.00	
	A3 1	0.00	0.09	6.00	1.46	0.00	0.00	
	C3 1	0.00	0.00	6.00	0.03	0.00	0.00	
	D3 1							
	D3 2							
	D3 3							
	D3 4							

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	69	0	5094	1546	6.49	130.43	12.40	142.83

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	5094	5094	0		69		30	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU*hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.53	6.49	9.19	130.43	19.41	988.64	12.40

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	674.79	0.00	458.00

A2 - DS 2023 PM
D2 - DS 2023 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU*hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
2	16/08/2022 10:22:29	16/08/2022 10:22:29	16:45	100	179.73	11.59	78.37	A1/1	0	0	A1/1	A3/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2023 PM		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2023 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	2				31.00	✓	Sum of lanes	1800	✓		Normal	
B1	1				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
					85.00	✓	Sum of lanes	1800	✓		Normal	
					11.00	✓	Sum of lanes	1800	✓		Normal	
C1	2				18.00	✓	Sum of lanes	1800	✓		Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
					59.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
					18.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
A3	2				18.00	✓	Sum of lanes	1800			Normal	
	1				30.00	✓	Sum of lanes	1800			Normal	
					35.40	✓	Sum of lanes	1800			Normal	
C3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
	1	2	(untitled)			1800
B1	2	1	(untitled)			1800
C1	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		5.00		
	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
C1	1	NetworkDefault	100	100	100		2.00		
	2	NetworkDefault	100	100	100		2.00		
	1	NetworkDefault	100	100	100		3.00		
D1	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
	2	NetworkDefault	100	100	100		10.00		
	1	NetworkDefault	100	100	100		2.00		
C2	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	534	534
	Bexit	1	104
Cexit	1	736	736
	Dexit	1	115
A1	1	663	663
	2	43	43
B1	1	93	93
	2	528	528
C1	1	49	49
	2	79	79
D1	1	34	34
	2	663	663
A2	1	528	528
	2	43	43
C2	1	34	34
	2	79	79
D2	1	706	706
	2	577	577
A3	1	113	113
	2		

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
	2	1	A		
C1	1	1	A		
	2	1	A	✓	C
D1	1	1	E		
	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	Bexit	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	Dexit	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	46	617	43
	2	36	0	49	8
	3	464	49	0	64
	4	34	9	70	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	464
	3		2	3	B1/1, Cexit/1	Normal	49
	4		2	4	B1/1, Dexit/1	Normal	8
	5		2	1	B1/1, Aexit/1	Normal	36
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	617
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	46
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	34
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	70
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	9
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	49
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	43
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	64

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1		1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

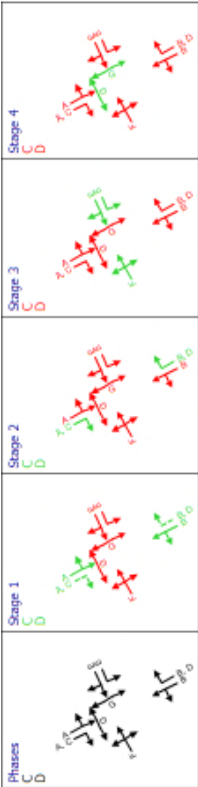
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

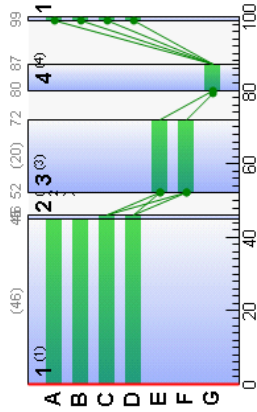
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	99	45	46
A1	2		1	B	99	45	46
B1	1		1	F	52	72	20
C1	1		1	A	99	45	46
C1	2		1	A	99	45	46
D1	1		1	E	52	72	20
D1	2		1	E	52	72	20

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated entering (PCU/hr)	Adjusted flow discrepancy warning	Flow discrepancy (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Adjusted sat flow	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean queue (PCU)	Utilised average (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)
16-45-17:45	Aexit	1	0	Unrestricted	534		0	534	534	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	104		0	104	104	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	736		0	736	736	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	115		0	115	115	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	78	15	663		0	663	663	1800	1800	46	29.77	16.67	933.45	77.94	7.36	85.21
	A1	2	7	1118	43		0	1213	1213	1800	1800	47	14.28	0.64	12.72	2.42	0.28	2.70
	B1	1	25	286	93		0	34.46	2.18	15.60	12.65	20	34.46	2.18	15.60	12.65	0.97	13.62
	C1	1	62	44	528		0	23.38	11.37	568.39	48.70	46	23.38	11.37	568.39	48.70	5.03	53.73
	C1	2	8	969	49		0	1213	1213	1800	1800	47	14.40	0.74	36.94	2.78	0.33	3.11
	D1	1	9	901	34		0	32.34	0.76	25.33	4.34	20	32.34	0.76	25.33	4.34	0.34	4.68
	D1	2	21	331	79		0	33.92	1.83	60.90	10.57	20	33.92	1.83	60.90	10.57	0.81	11.38
	A2	1	37	144	663		0	0.58	0.11	1.07	1.52	100	0.58	0.11	1.07	1.52	0.00	1.52
	C2	1	2	3687	43		0	1800	1800	1800	1800	100	0.02	0.00	0.00	0.00	0.00	0.00
	C2	2	29	207	528		0	1800	1800	1800	1800	100	0.41	0.06	3.04	0.86	0.00	0.86
	D2	1	3	3206	49		0	1800	1800	1800	1800	100	0.03	0.00	0.02	0.01	0.00	0.01
	D2	2	4	4685	34		0	1800	1800	1800	1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	A3	1	2	1951	79		0	1800	1800	1800	1800	100	0.05	0.00	0.03	0.01	0.00	0.01
	A3	2	39	129	706		0	1800	1800	1800	1800	100	0.64	0.13	2.53	1.80	0.00	1.80
	C3	1	32	181	577		0	1800	1800	1800	1800	100	0.47	0.08	1.26	1.07	0.00	1.07
	D3	1	6	1334	113		0	1800	1800	1800	1800	100	0.07	0.00	0.04	0.03	0.00	0.03

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Adjusted flow discrepancy warning	Flow discrepancy (PCU/hr)	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17:45	Aexit	1	534	534		0	Unrestricted	0		Unrestricted	0.42	100
	Bexit	1	104	104		0	Unrestricted	0		Unrestricted	0.49	100
	Cexit	1	736	736		0	Unrestricted	0		Unrestricted	0.54	100
	Dexit	1	115	115		0	Unrestricted	0		Unrestricted	0.58	100
	A1	1	663	663		0	1800	846	78	15	0.00	46
	A1	2	43	43		0	1213	582	7	1118	0.00	47
	B1	1	93	93		0	1800	378	25	266	0.00	20
	C1	1	528	528		0	1800	846	62	44	0.00	46
	C1	2	49	49		0	1213	582	8	989	0.00	47
	D1	1	34	34		0	1800	378	9	901	0.00	20
	D1	2	79	79		0	1800	378	21	331	0.00	20
	A2	1	663	663		0	1800	1800	37	144	0.00	100
	A2	2	43	43		0	1800	1800	2	3667	0.00	100
	C2	1	528	528		0	1800	1800	29	207	0.00	100
	C2	2	49	49		0	1800	1800	3	3206	0.00	100
	D2	1	34	34		0	1800	1800	2	4665	0.00	100
	D2	2	79	79		0	1800	1800	4	1951	0.00	100
	A3	1	706	706		0	1800	1800	39	129	0.00	100
	C3	1	577	577		0	1800	1800	32	181	0.00	100
	D3	1	113	113		0	1800	1800	6	1334	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	29.77	5.48	77.84	86.58	587.26	7.36
	2	3.72	14.28	0.17	2.42	2.42	52.06	22.39	0.28
	B1	1	10.20	34.48	0.89	12.65	83.31	77.48	0.97
	1	1.32	23.38	3.43	48.70	48.70	75.95	401.02	5.03
	C1	2	1.32	14.40	0.20	2.78	53.03	25.98	0.33
	1	2.16	32.34	0.31	4.34	79.29	26.96	26.96	0.34
16:45-17:45	D1	2	2.16	33.92	0.74	10.57	82.07	64.83	0.81
	A2	1	7.01	0.58	0.11	1.52	0.00	0.00	0.00
	2	7.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	C2	1	1.32	0.41	0.06	0.86	0.00	0.00	0.00
	2	1.32	0.03	0.00	0.01	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
	2	2.16	0.05	0.00	0.01	0.01	0.00	0.00	0.00
	A3	1	3.60	0.64	0.13	1.80	0.00	0.00	0.00
	C3	1	4.25	0.47	0.08	1.07	0.00	0.00	0.00
	D3	1	4.32	0.07	0.00	0.03	0.00	0.00	0.00

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	78	0	5770	1546	7.23	164,61	15,12	179,73

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
16:45-17:45	5770	5770	0		78		15	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.35	7.23	11,59	164,61	20,90	1205,92	15,12

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	568.39	0,00	603,00

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	0.00
	Bexit	1	0.00	0.00	93.43	0.00	0.00	31.00	0.00
	Cexit	1	0.00	0.00	65.96	0.00	0.00	2.00	0.00
	Dexit	1	0.00	0.00	81.89	0.00	0.00	32.00	0.00
	A1	1	0.00	16.67	5.00	333.45	0.00	0.00	0.00
	2	0.00	0.64	12.72	5.00	12.72	0.00	46.00	0.00
	B1	1	0.00	2.18	14.00	15.60	0.00	0.00	0.00
	1	0.00	11.37	2.00	568.39	0.00	0.00	0.00	0.00
	C1	2	0.00	0.74	2.00	36.94	0.00	45.00	0.00
	1	0.00	0.76	3.00	25.33	0.00	0.00	19.00	0.00
16:45-17:45	D1	2	0.00	1.83	3.00	60.90	0.00	0.00	0.00
	A2	1	0.00	0.11	10.00	1.07	0.00	64.00	0.00
	2	0.00	0.00	10.00	0.00	0.00	0.00	100.00	0.00
	C2	1	0.00	0.06	2.00	3.04	0.00	64.00	0.00
	2	0.00	0.00	2.00	0.02	0.00	0.00	100.00	0.00
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	0.00
	2	0.00	0.00	3.00	0.03	0.00	0.00	0.00	0.00
	A3	1	0.00	0.13	5.00	2.53	0.00	0.00	0.00
	C3	1	0.00	0.08	6.00	1.26	0.00	0.00	0.00
	D3	1	0.00	0.00	6.00	0.04	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))	Estimated blocking
	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	0.00
	Bexit	1	0.00	0.00	93.43	0.00	0.00	31.00	0.00
	Cexit	1	0.00	0.00	65.96	0.00	0.00	2.00	0.00
	Dexit	1	0.00	0.00	81.89	0.00	0.00	32.00	0.00
	A1	1	0.00	16.67	5.00	333.45	0.00	0.00	0.00
	2	0.00	0.64	12.72	5.00	12.72	0.00	46.00	0.00
	B1	1	0.00	2.18	14.00	15.60	0.00	0.00	0.00
	1	0.00	11.37	2.00	568.39	0.00	0.00	0.00	0.00
	C1	2	0.00	0.74	2.00	36.94	0.00	45.00	0.00
	1	0.00	0.76	3.00	25.33	0.00	0.00	19.00	0.00
16:45-17:45	D1	2	0.00	1.83	3.00	60.90	0.00	0.00	0.00
	A2	1	0.00	0.11	10.00	1.07	0.00	64.00	0.00
	2	0.00	0.00	10.00	0.00	0.00	0.00	100.00	0.00
	C2	1	0.00	0.06	2.00	3.04	0.00	64.00	0.00
	2	0.00	0.00	2.00	0.02	0.00	0.00	100.00	0.00
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	0.00
	2	0.00	0.00	3.00	0.03	0.00	0.00	0.00	0.00
	A3	1	0.00	0.13	5.00	2.53	0.00	0.00	0.00
	C3	1	0.00	0.08	6.00	1.26	0.00	0.00	0.00
	D3	1	0.00	0.00	6.00	0.04	0.00	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
2	16/08/2022 10:22:29	16/08/2022 10:22:29	16:45	100	175,73	11,59	78,37	A1/1	0	0	A1/1	A3/1	A1/1

A3 - DS 2028 AM
D3 - DS 2028 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network demand (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
3	16/08/2022 10:22:30	16/08/2022 10:22:30	08:00	100	182.12	11.74	78.37	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2028 AM		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2028 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Merside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	1				58.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RB67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	2	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		14.00		
D1	2	NetworkDefault	100	100	100		2.00		
A2	1	NetworkDefault	100	100	100		3.00		
C2	1	NetworkDefault	100	100	100		10.00		
D2	2	NetworkDefault	100	100	100		2.00		
A3	1	NetworkDefault	100	100	100		3.00		
C3	1	NetworkDefault	100	100	100		5.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	733	733
Bexit	1	52	52
Cexit	1	535	535
Dexit	1	219	219
A1	1	479	479
B1	2	129	129
C1	1	119	119
D1	1	663	663
A2	1	28	28
C2	1	73	73
D2	2	48	48
A3	1	479	479
C3	1	129	129
D3	1	663	663
A1	1	608	608
C1	1	691	691
D1	1	121	121

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
B1	1	1	B	✓	D
C1	1	1	F		
D1	1	1	A		
A2	2	1	A	✓	C
B2	2	1	E		
C2	2	1	E		
D2	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axiit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Axiit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Far Side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	23	456	129
From	2	82	0	32
	3	578	26	0
	4	73	1	47
				0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(unfilled)	A3/1	Aexit/1	#0000FF
	2	(unfilled)	B1/1	Bexit/1	#FF0000
	3	(unfilled)	C3/1	Cexit/1	#00FF00
	4	(unfilled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	578
	3		2	3	B1/1, Cexit/1	Normal	32
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	82
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	456
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	23
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	73
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	47
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	28
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	129
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	85

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A				6	6	5	
	B				6	7	9	
	C				6	6	5	
	D				6	6	9	
	E	6	6	6	6		8	
	F	6	7	6	6		7	
	G	12	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8
	4	12	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

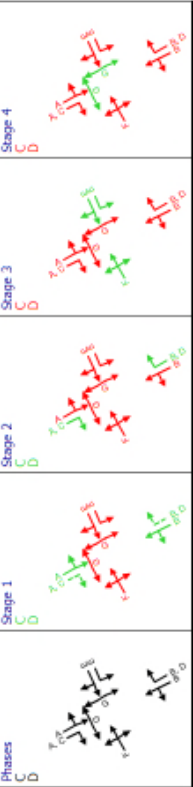
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

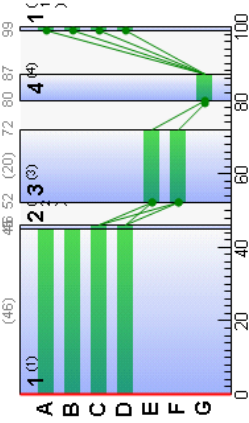
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am Stream	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay queue (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	733		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	52		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	535		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	219		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	57	59	479		1800	46	21.90	9.95	198.95	41.38	4.37	45.75
	2	22	306		129		1213	47	16.04	2.11	42.20	8.16	0.93	9.09
	B1	1	31	186	119		1800	20	35.61	2.85	20.35	16.72	1.27	17.98
	C1	1	78	15	663		1800	46	29.77	15.67	833.63	77.84	7.36	85.21
	2	5	1771	28	1213		1213	47	14.04	0.41	20.67	1.55	0.18	1.73
	D1	1	19	366	73		1800	20	33.69	1.69	56.20	9.70	0.75	10.45
	2	13	609	48	1800		1800	20	32.78	1.09	36.31	6.21	0.48	6.69
	A2	1	27	238	479		1800	100	0.36	0.05	0.48	0.68	0.00	0.68
08:00-09:00	2	7	1156	129	1800		1800	100	0.08	0.00	0.03	0.04	0.00	0.04
	C2	1	37	144	663		1800	100	0.58	0.11	5.37	1.52	0.00	1.52
	2	2	5696	28	1800		1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	1	4	2119	73		1800	100	0.04	0.00	0.03	0.01	0.00	0.01
	2	3	3275	48	1800		1800	100	0.03	0.00	0.01	0.00	0.00	0.00
	A3	1	34	166	608		1800	100	0.51	0.09	1.72	1.22	0.00	1.22
	C3	1	38	134	691		1800	100	0.62	0.12	1.99	1.70	0.00	1.70
	D3	1	7	1239	121		1800	100	0.07	0.00	0.04	0.03	0.00	0.03

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated entering (PCU/hr)	Calculated exit (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus or error	Actual green cycle (s)
08:00-09:00	Aexit	1	733	733	0		Unrestricted	Unrestricted	0		Unrestricted	0.35	100
	Bexit	1	52	52	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100
	Cexit	1	535	535	0		Unrestricted	Unrestricted	0		Unrestricted	0.56	100
	Dexit	1	219	219	0		Unrestricted	Unrestricted	0		Unrestricted	0.65	100
	A1	1	479	479	0		1800	846	57		59	0.00	46
	2	129	129	0		1213	582	22	31		306	0.00	47
	B1	1	119	119	0		1800	378	31		186	0.00	20
	C1	1	663	663	0		1800	846	78		15	0.00	46
	2	28	28	0		1213	582	5	5		1771	0.00	47
	D1	1	73	73	0		1800	378	19		366	0.00	20
	2	48	48	0		1800	378	13	13		609	0.00	20
	A2	1	479	479	0		1800	1800	27		238	0.00	100
08:00-09:00	2	129	129	0		1800	1800	7	7		1156	0.00	100
	C2	1	663	663	0		1800	1800	37		144	0.00	100
	2	28	28	0		1800	1800	2	2		5696	0.00	100
	D2	1	73	73	0		1800	1800	4		2119	0.00	100
	2	48	48	0		1800	1800	3	3		3275	0.00	100
	A3	1	608	608	0		1800	1800	34		166	0.00	100
	C3	1	691	691	0		1800	1800	38		134	0.00	100
	D3	1	121	121	0		1800	1800	7		1239	0.00	100

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst over PR
3	16/08/2022 10:22:30	16/08/2022 10:22:30	08:00	100	182.12	11.74	78.37	C1/1	0	0	C1/1	C1/1

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	21.90	2.91	41.38	72.69	348.18	4.37
	2	3.72	18.04	0.57	0.57	8.16	57.43	74.08	0.93
	B1	1	10.20	35.61	1.18	16.72	84.98	101.13	1.27
	C1	1	1.32	29.77	5.48	77.84	88.58	587.26	7.36
	2	1.32	14.04	0.11	0.11	1.55	51.97	14.55	0.18
	D1	1	2.16	33.69	0.68	9.70	81.95	59.82	0.75
	2	2.16	32.78	0.44	0.44	6.21	80.47	38.63	0.48
	A2	1	7.01	0.36	0.05	0.68	0.00	0.00	0.00
08:00-09:00	2	7.01	0.08	0.00	0.04	0.04	0.00	0.00	0.00
	C2	1	1.32	0.58	0.11	1.52	0.00	0.00	0.00
	2	1.32	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	D2	1	2.16	0.04	0.00	0.01	0.00	0.00	0.00
	2	2.16	0.03	0.00	0.01	0.01	0.00	0.00	0.00
	A3	1	3.80	0.51	0.09	1.22	0.00	0.00	0.00
	C3	1	4.25	0.62	0.12	1.70	0.00	0.00	0.00
	D3	1	4.32	0.07	0.00	0.03	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	52.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	8.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	25.00	
	A1	1	0.00	9.95	5.00	198.95	0.00	0.00	
	2	0.00	2.11	5.00	5.00	42.20	0.00	0.00	
	B1	1	0.00	2.85	14.00	20.35	0.00	0.00	
	C1	1	0.00	16.67	2.00	833.63	0.00	0.00	
	2	0.00	0.41	2.00	2.00	20.67	0.00	46.00	
	D1	1	0.00	1.69	3.00	56.20	0.00	0.00	
	2	0.00	1.09	3.00	3.00	36.31	0.00	18.00	
	A2	1	0.00	0.05	10.00	0.48	0.00	38.00	
08:00-09:00	2	0.00	0.00	10.00	10.00	0.03	0.00	0.00	
	C2	1	0.00	0.11	2.00	5.37	0.00	80.00	
	2	0.00	0.00	2.00	2.00	0.01	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.03	0.00	0.00	
	2	0.00	0.00	3.00	3.00	0.01	0.00	100.00	
	A3	1	0.00	0.09	5.00	1.72	0.00	0.00	
	C3	1	0.00	0.12	6.00	1.99	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.04	0.00	0.00	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	78	0	5918	1546	7.14	166.78	15.34	182.12

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	5918	5918	0		78		15	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.44	7.14	11.74	166.78	20.68	1223.85	15.34

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	833.63	0.00	487.00

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2028 PM		D4	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2028 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

A4 - DS 2028 PM
D4 - DS 2028 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
4	16/08/2022 10:22:31	16/08/2022 10:22:31	16:45	100	206.54	13.31	81.81	A1/1	0	0	A1/1	A3/1	A1/

Traffic Streams

Am	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	378.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	2				31.00	✓	Sum of lanes	1800	✓		Normal	
B1	1				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	2				85.00	✓	Sum of lanes	1800	✓		Normal	
D1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
D1	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				59.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
C2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
D2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
B1	2	1	(untitled)			1800
C1	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
D1	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
A2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
C2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
D2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
A1	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
C1	1	NetworkDefault	100	100	100		2.00		
C1	2	NetworkDefault	100	100	100		2.00		
D1	1	NetworkDefault	100	100	100		3.00		
D1	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
A2	2	NetworkDefault	100	100	100		10.00		
C2	1	NetworkDefault	100	100	100		2.00		
C2	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
D2	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	636	636
	Bexit	1	115
Cexit	1	828	828
	Dexit	1	126
A1	1	751	751
	2	48	48
B1	1	105	105
C1	1	621	621
	2	53	53
D1	1	41	41
	2	86	86
A2	1	751	751
	2	48	48
C2	1	621	621
	2	53	53
D2	1	41	41
	2	86	86
A3	1	799	799
C3	1	674	674
D3	1	127	127

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
C1	1	1	A		
	2	1	A	✓	C
D1	1	1	E		
	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	Bexit	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	Dexit	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	52	699	48
	2	43	0	53	9
	3	552	53	0	69
	4	41	10	76	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	552
	3		2	3	B1/1, Cexit/1	Normal	53
	4		2	4	B1/1, Dexit/1	Normal	9
	5		2	1	B1/1, Aexit/1	Normal	43
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	699
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	52
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	41
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	76
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	10
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	53
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	48
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	69

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
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Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

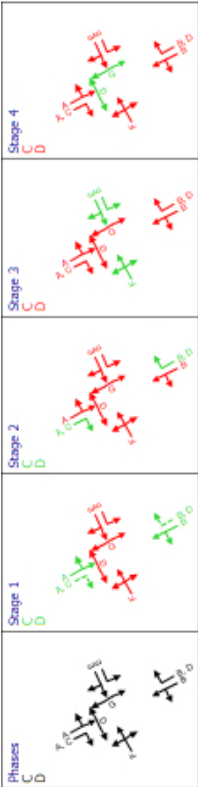
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

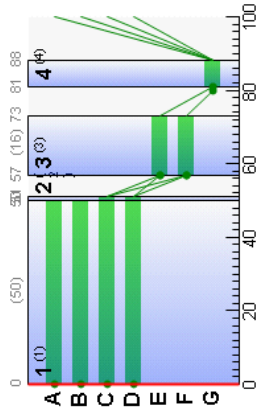
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean queue max (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)	
16:45-17:45	Aexit	1	0	Unrestricted	636	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	
	Bexit	1	0	Unrestricted	115	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	
	Cexit	1	0	Unrestricted	828	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	
	Dexit	1	0	Unrestricted	126	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	
	A1	1	82	10	751	1800	50	29.15	19.31	386.14	86.35	8.43	
		2	8	1081	48	1212	51	12.24	0.66	13.13	2.32	0.29	
	B1	1	34	162	105	1800	16	39.65	2.66	18.97	16.42	1.18	
		1	68	33	621	1800	50	22.39	13.47	673.29	54.85	5.94	
	C1	2	8	970	53	1212	51	12.33	0.74	37.00	2.58	0.33	
		1	13	572	41	1800	16	36.17	0.97	32.23	5.85	0.43	
	D1	2	28	220	86	1800	16	38.48	2.13	71.10	13.05	0.95	
		1	42	116	751	1800	100	0.72	0.15	1.49	2.12	0.00	
	A2	2	3	3275	48	1800	100	0.03	0.00	0.00	0.01	0.00	
		1	35	161	621	1800	100	0.53	0.09	4.54	1.29	0.00	
	C2	2	3	2957	53	1800	100	0.03	0.00	0.02	0.01	0.00	
		1	2	3851	41	1800	100	0.02	0.00	0.01	0.00	0.00	
	D2	2	5	1784	86	1800	100	0.05	0.00	0.04	0.02	0.00	
		A3	1	44	103	799	1800	100	0.80	0.18	3.54	2.51	0.00
		C3	1	37	140	674	1800	100	0.60	0.11	1.87	1.59	0.00
	D3	1	7	1176	127	1800	100	0.08	0.00	0.04	0.04	0.00	

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow discrepancy (PCU/hr)	Adjusted flow discrepancy warning	Adjusted sat flow	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17-45	Aexit	1	636	636		0	Unrestricted	Unrestricted	0		Unrestricted	0.38	100
	Bexit	1	115	115		0	Unrestricted	Unrestricted	0		Unrestricted	0.44	100
	Cexit	1	828	828		0	Unrestricted	Unrestricted	0		Unrestricted	0.49	100
	Dexit	1	126	126		0	Unrestricted	Unrestricted	0		Unrestricted	0.51	100
	A1	1	751	751		0	1800	918	82		10	0.00	50
	A1	2	48	48		0	1212	630	8		1081	0.00	51
	B1	1	105	105		0	1800	306	34		162	0.00	16
	C1	1	621	621		0	1800	918	68		33	0.00	50
	C1	2	53	53		0	1212	630	8		970	0.00	51
	D1	1	41	41		0	1800	306	13		572	0.00	16
	D1	2	86	86		0	1800	306	28		220	0.00	16
	A2	1	751	751		0	1800	1800	42		116	0.00	100
	A2	2	48	48		0	1800	1800	3		3275	0.00	100
	C2	1	621	621		0	1800	1800	35		161	0.00	100
	C2	2	53	53		0	1800	1800	3		2957	0.00	100
	D2	1	41	41		0	1800	1800	2		3851	0.00	100
	D2	2	86	86		0	1800	1800	5		1784	0.00	100
	A3	1	799	799		0	1800	1800	44		103	0.00	100
	C3	1	674	674		0	1800	1800	37		140	0.00	100
	D3	1	127	127		0	1800	1800	7		140	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	29.15	6.08	86.35	89.51	672.22	8.43
	2	2	3.72	12.24	0.16	2.32	48.05	23.07	0.29
	B1	1	10.20	39.65	1.16	16.42	89.59	94.07	1.18
	C1	1	1.32	22.39	3.96	54.85	76.24	473.45	5.94
	2	2	1.32	12.93	0.18	2.58	48.99	25.97	0.33
	D1	1	2.16	36.17	0.41	5.85	83.72	34.33	0.43
	2	2	2.16	38.48	0.92	13.05	87.93	75.92	0.95
	A2	1	7.01	0.72	0.15	2.12	0.00	0.00	0.00
16:45-17:45	2	2	7.01	0.03	0.00	0.01	0.00	0.00	0.00
	C2	1	1.32	0.53	0.09	1.29	0.00	0.00	0.00
	2	2	1.32	0.03	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
	2	2	2.16	0.05	0.00	0.02	0.00	0.00	0.00
	A3	1	3.60	0.80	0.18	2.51	0.00	0.00	0.00
	C3	1	4.25	0.60	0.11	1.59	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.04	0.00	0.00	0.00

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	82	0	6610	1550	7.25	189.00	17.54	206.54

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Actual stops (s per cycle)
16:45-17:45	6610	6610	0		82		10	1578	

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.44	7.25	13.31	189.00	21.16	1388.72	17.54

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	673.29	0.00	601.00

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	29.15	6.08	86.35	89.51	672.22	8.43
	2	2	3.72	12.24	0.16	2.32	48.05	23.07	0.29
	B1	1	10.20	39.65	1.16	16.42	89.59	94.07	1.18
	C1	1	1.32	22.39	3.96	54.85	76.24	473.45	5.94
	2	2	1.32	12.93	0.18	2.58	48.99	25.97	0.33
	D1	1	2.16	36.17	0.41	5.85	83.72	34.33	0.43
	2	2	2.16	38.48	0.92	13.05	87.93	75.92	0.95
	A2	1	7.01	0.72	0.15	2.12	0.00	0.00	0.00
16:45-17:45	2	2	7.01	0.03	0.00	0.01	0.00	0.00	0.00
	C2	1	1.32	0.53	0.09	1.29	0.00	0.00	0.00
	2	2	1.32	0.03	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
	2	2	2.16	0.05	0.00	0.02	0.00	0.00	0.00
	A3	1	3.60	0.80	0.18	2.51	0.00	0.00	0.00
	C3	1	4.25	0.60	0.11	1.59	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.04	0.00	0.00	0.00

Time Segment	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
Aexit	1	0.00	117.11	0.00	0.00	0.00	
Bexit	1	0.00	93.43	0.00	0.00	25.00	
Cexit	1	0.00	65.96	0.00	0.00	0.00	
Dexit	1	0.00	81.89	0.00	0.00	26.00	
A1	1	0.00	19.31	386.14	0.00	0.00	
2	2	0.00	0.66	13.13	0.00	50.00	
B1	1	0.00	2.66	14.00	0.00	0.00	
1	1	0.00	13.47	2.00	0.00	0.00	
2	2	0.00	0.74	37.00	0.00	49.00	
D1	1	0.00	0.97	3.00	0.00	15.00	
2	2	0.00	2.13	3.00	0.00	0.00	
A2	1	0.00	0.15	10.00	0.00	69.00	
2	2	0.00	0.00	10.00	0.00	100.00	
C2	1	0.00	0.09	2.00	0.00	67.00	
2	2	0.00	0.00	2.00	0.00	100.00	
D2	1	0.00	0.00	3.00	0.00	100.00	
2	2	0.00	0.00	3.00	0.00	0.00	
A3	1	0.00	0.18	5.00	0.00	0.00	
C3	1	0.00	0.11	6.00	0.00	0.00	
D3	1	0.00	0.00	6.00	0.00	0.00	

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	25.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	26.00	
	A1	1	0.00	19.31	5.00	386.14	0.00	0.00	
	2	2	0.00	0.66	5.00	13.13	0.00	50.00	
	B1	1	0.00	2.66	14.00	18.97	0.00	0.00	
	1	1	0.00	13.47	2.00	673.29	0.00	0.00	
	2	2	0.00	0.74	2.00	37.00	0.00	49.00	
	D1	1	0.00	0.97	3.00	32.23	0.00	15.00	
	2	2	0.00	2.13	3.00	71.10	0.00	0.00	
	A2	1	0.00	0.15	10.00	1.49	0.00	69.00	
16:45-17:45	2	2	0.00	0.00	10.00	0.00	0.00	100.00	
	C2	1	0.00	0.09	2.00	4.54	0.00	67.00	
	2	2	0.00	0.00	2.00	0.02	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	
	2	2	0.00	0.00	3.00	0.04	0.00	0.00	
	A3	1	0.00	0.18	5.00	3.54	0.00	0.00	
	C3	1	0.00	0.11	6.00	1.87	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.04	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling Cycle (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
4	16/08/2022 10:22:31	16/08/2022 10:22:31	16:45	100	206.54	13.31	81.81	A1/1	0	0	A1/1	A3/1	A1/1

A5 - DS 2038 AM
D5 - DS 2038 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network flow (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
5	16/08/2022 10:22:32	16/08/2022 10:22:32	08:00	100	210.02	13.58	84.04	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 AM		D5	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Merside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	1				31.00	✓	Sum of lanes	1800	✓		Normal	
2	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
2	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
2	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				58.40	✓	Sum of lanes	1800			Normal	
2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RB67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
2	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800
2	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
2	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	2	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		14.00		
D1	2	NetworkDefault	100	100	100		2.00		
A2	1	NetworkDefault	100	100	100		3.00		
C2	2	NetworkDefault	100	100	100		10.00		
D2	1	NetworkDefault	100	100	100		2.00		
A3	1	NetworkDefault	100	100	100		3.00		
C3	1	NetworkDefault	100	100	100		5.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	786	786
Bexit	1	55	55
Cexit	1	570	570
Dexit	1	234	234
A1	1	510	510
B1	2	138	138
C1	1	127	127
D1	2	78	78
A2	1	510	510
C2	2	711	711
D2	1	78	78
A3	1	648	648
C3	1	741	741
D3	1	129	129

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
B1	1	1	B	✓	D
C1	1	1	F		
D1	1	1	A		
B1	2	1	A	✓	C
D1	1	1	E		
D1	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
A1	Axit	1	1	C1/1	80.81	30.00	✓	Straight	Straight Movement
	Bexit	1	1	A1/1	64.47	30.00	✓	Nearside	31.74
C1	Cexit	1	1	B1/1	45.51	30.00	✓	Nearside	16.47
	Dexit	1	1	B1/1	56.50	30.00	✓	Straight	Straight Movement
D1		1	1	A2/1	3.72	30.00	✓	Straight	Straight Movement
		2	1	A2/2	3.72	30.00	✓	Straight	Straight Movement
D2		1	1	C2/1	1.32	30.00	✓	Straight	Straight Movement
		2	1	C2/2	1.32	30.00	✓	Straight	Straight Movement
A2		1	1	D2/1	2.16	30.00	✓	Straight	Straight Movement
		2	1	D2/2	2.16	30.00	✓	Straight	Straight Movement
C2		1	1	A3/1	7.01	30.00	✓	Straight	Straight Movement
		2	1	A3/1	7.01	30.00	✓	Straight	Straight Movement
D2		1	1	C3/1	1.32	30.00	✓	Straight	Straight Movement
		2	1	C3/1	1.32	30.00	✓	Straight	Straight Movement
Axit		1	1	D3/1	2.16	30.00	✓	Straight	Straight Movement
		2	1	D3/1	2.16	30.00	✓	Straight	Straight Movement
Bexit		1	2	B1/1	80.81	30.00	✓	Offside	77.56
		2	1	D1/2	64.47	30.00	✓	Straight	Straight Movement
Cexit		1	2	A1/1	45.51	30.00	✓	Straight	Straight Movement
		2	1	A1/2	56.50	30.00	✓	Offside	34.71
Axit		1	3	D1/1	80.81	30.00	✓	Nearside	20.08
		3	1	C1/2	64.47	30.00	✓	Offside	41.51
Cexit		1	3	D1/2	45.51	30.00	✓	Offside	62.46
		3	1	C1/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Far Side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on traffic nodes	Matrix to copy flows from	Copy flows	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path Equalisation		✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	24	486	138
From	2	88	0	34
	3	620	30	0
	4	78	1	50

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(unfilled)	A3/1	Aexit/1	#0000FF
	2	(unfilled)	B1/1	Bexit/1	#FF0000
	3	(unfilled)	C3/1	Cexit/1	#00FF00
	4	(unfilled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	820
	3		2	3	B1/1, Cexit/1	Normal	34
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	88
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	486
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	24
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	78
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	50
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	30
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	138
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	91

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name (untitled)	Description	Use sequence	Cycle time source	Cycle time (s)
1			1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D				6	6	9
	E	6	6	6		6	8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

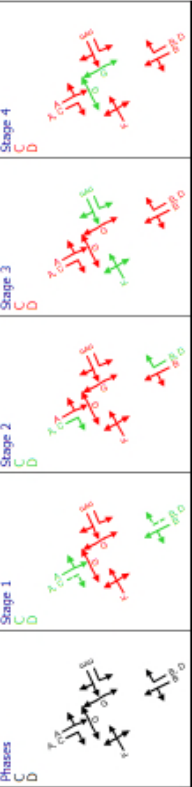
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

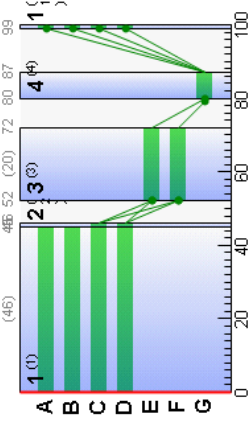
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
1	A1	1	1	B	99	45
	A1	2	1	B	99	45
	B1	1	1	F	52	72
	C1	1	1	A	99	45
	C1	2	1	A	99	45
	D1	1	1	E	52	72
	D1	2	1	E	52	72
	D1	2	1	E	52	20

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
	Aexit	1	0	Unrestricted	786	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	55	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	570	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	234	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	60	280	138	1213	47	22.81	10.80	215.93	45.88	4.77	50.66
	2	24	280	138	127	1800	20	35.98	3.05	21.77	18.02	1.36	9.84
	B1	1	34	168	127	1800	40	32.89	0.47	18.02	6.62	0.52	19.38
	1	84	7	711	1800	46	33.95	19.30	965.14	95.22	8.50	103.72	
	C1	2	5	1646	30	1213	47	14.08	0.44	22.15	1.67	0.20	1.86
	2	21	336	78	1800	20	33.88	1.80	60.12	10.42	0.80	11.23	
08:00-09:00	D1	2	13	567	51	1800	20	32.89	1.16	38.60	6.62	0.52	7.13
	1	28	218	510	1800	100	0.40	0.06	0.95	0.79	0.00	0.79	
	A2	2	8	1074	138	1800	100	0.08	0.00	0.03	0.05	0.00	0.05
	1	40	128	711	1800	100	0.85	0.13	6.44	1.83	0.00	1.83	
	C2	2	2	5300	30	1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	2	4	1977	78	1800	100	0.05	0.00	0.03	0.01	0.00	0.01
	1	3	3076	51	1800	100	0.03	0.00	0.01	0.01	0.00	0.00	
	A3	1	36	150	648	1800	100	0.56	0.10	2.02	1.44	0.00	1.44
	C3	1	41	119	741	1800	100	0.70	0.14	2.40	2.04	0.00	2.04
	D3	1	7	1156	129	1800	100	0.08	0.00	0.05	0.04	0.00	0.04

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green cycle (s (per of error cycle))
08:00-09:00	Aexit	1	786	786	0		Unrestricted	Unrestricted	0		Unrestricted	0.35	100
	Bexit	1	55	55	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100
	Cexit	1	570	570	0		Unrestricted	Unrestricted	0		Unrestricted	0.56	100
	Dexit	1	234	234	0		Unrestricted	Unrestricted	0		Unrestricted	0.64	100
	A1	1	510	510	0		1800	846	60		49	0.00	46
		2	138	138	0		1213	582	24		280	0.00	47
	B1	1	127	127	0		1800	378	34		168	0.00	20
		1	711	711	0		1800	846	84		7	0.00	46
	C1	2	30	30	0		1213	582	5		1646	0.00	47
	D1	1	78	78	0		1800	378	21		336	0.00	20
		2	51	51	0		1800	378	13		567	0.00	20
	A2	1	510	510	0		1800	1800	28		218	0.00	100
		2	138	138	0		1800	1800	8		1074	0.00	100
	C2	1	711	711	0		1800	1800	40		128	0.00	100
		2	30	30	0		1800	1800	2		5300	0.00	100
	D2	1	78	78	0		1800	1800	4		1977	0.00	100
		2	51	51	0		1800	1800	3		3076	0.00	100
	A3	1	648	648	0		1800	1800	36		150	0.00	100
	C3	1	741	741	0		1800	1800	41		119	0.00	100
	D3	1	129	129	0		1800	1800	7		156	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	22.81	3.23	74.67	380.80	4.77
	2	3.72	16.24	0.62	8.84	57.73	79.67	1.00
	B1	1	10.20	35.98	1.27	85.20	108.21	1.36
	C1	1	1.32	33.95	6.71	95.34	677.85	8.50
	2	1.32	14.08	0.12	1.67	51.99	15.60	0.20
	D1	1	2.16	33.88	0.73	82.05	64.00	0.80
08:00-09:00	2	2.16	32.89	0.47	6.62	80.56	41.08	0.52
	A2	1	7.01	0.40	0.06	0.79	0.00	0.00
	2	7.01	0.08	0.00	0.05	0.00	0.00	0.00
	C2	1	1.32	0.65	0.13	1.83	0.00	0.00
	2	1.32	0.02	0.00	0.00	0.00	0.00	0.00
	D2	1	2.16	0.05	0.00	0.00	0.00	0.00
	2	2.16	0.03	0.00	0.01	0.00	0.00	0.00
	A3	1	3.80	0.56	0.10	1.44	0.00	0.00
	C3	1	4.25	0.70	0.14	2.04	0.00	0.00
	D3	1	4.32	0.08	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
	Aexit	1	0.00	0.00	117.11	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	51.00	
	Cexit	1	0.00	0.00	65.96	0.00	7.00	
	Dexit	1	0.00	0.00	81.89	0.00	24.00	
	A1	2	0.00	10.80	5.00	215.93	0.00	
	1	0.00	2.26	5.00	45.20	0.00	0.00	
	B1	1	0.00	3.05	14.00	21.77	0.00	
	C1	1	0.00	19.30	2.00	965.14	0.00	
	2	0.00	0.44	2.00	22.15	0.00	46.00	
	D1	1	0.00	1.80	3.00	60.12	0.00	
08:00-09:00	2	0.00	1.16	3.00	38.50	0.00	18.00	
	A2	1	0.00	0.06	10.00	0.56	41.00	
	2	0.00	0.00	10.00	0.03	0.00	0.00	
	C2	1	0.00	0.13	2.00	6.44	100.00	
	2	0.00	0.00	2.00	0.01	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.03	0.00	
	2	0.00	0.00	3.00	0.01	0.00	100.00	
	A3	1	0.00	0.10	5.00	2.02	0.00	
	C3	1	0.00	0.14	6.00	2.40	0.00	
	D3	1	0.00	0.00	6.00	0.05	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalled PRC	Item with worst over PR
5	16/08/2022 10:22:32	16/08/2022 10:22:32	08:00	100	210.02	13.58	84.04	C1/1	0	0	C3/1	C1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	84	0	6326	1546	7.73	192.88	17.14	210.02

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	6326	6326	0		84		7	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.45	7.73	13.58	192.88	21.61	1367.21	17.14

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	965.14	0.00	487.00

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 PM		D6	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

A6 - DS 2038 PM
D6 - DS 2038 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
6	16/08/2022 10:22:32	16/08/2022 10:22:33	16:45	100	246.21	15.93	87.69	A1/1	0	0	A1/1	A3/1	A1/

Traffic Streams

Am	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	2				31.00	✓	Sum of lanes	1800	✓		Normal	
B1	1				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	2				85.00	✓	Sum of lanes	1800	✓		Normal	
D1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
D1	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				59.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
C2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
D2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
B1	2	1	(untitled)			1800
C1	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
D1	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
A2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
C2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
D2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
A1	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
C1	1	NetworkDefault	100	100	100		2.00		
C1	2	NetworkDefault	100	100	100		2.00		
D1	1	NetworkDefault	100	100	100		3.00		
D1	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
A2	2	NetworkDefault	100	100	100		10.00		
C2	1	NetworkDefault	100	100	100		2.00		
C2	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
D2	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	679	679
	2		
Bexit	1	124	124
	2		
Cexit	1	888	888
	2		
Dexit	1	135	135
	2		
A1	1	805	805
	2	52	52
B1	1	112	112
	2		
C1	1	664	664
	2	57	57
D1	1	43	43
	2	93	93
A2	1	805	805
	2	52	52
C2	1	664	664
	2	57	57
D2	1	43	43
	2	93	93
A3	1	857	857
	2		
C3	1	721	721
	2		
D3	1	136	136
	2		

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
	2	1	A		
C1	1	1	A		
	2	1	A	✓	C
D1	1	1	E		
	2	1	E		

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	2								
Bexit	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
	2								
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	2								
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
	2								
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
	2								
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
	2								
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
	2								
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
	2	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
	2								
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
	2								
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79
	2								

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	56	749	52
	2	46	0	57	9
	3	590	57	0	74
	4	43	11	82	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	590
	3		2	3	B1/1, Cexit/1	Normal	57
	4		2	4	B1/1, Dexit/1	Normal	9
	5		2	1	B1/1, Aexit/1	Normal	46
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	749
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	56
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	43
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	82
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	11
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	57
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	52
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	74

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

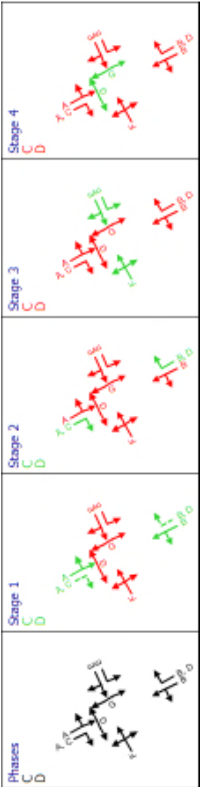
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

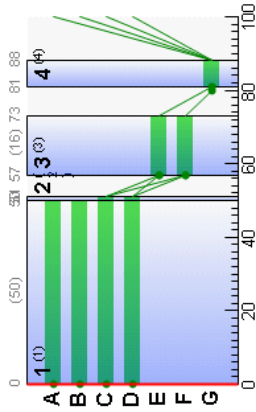
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean queue (PCU)	Utilised average (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)
16-45-17:45	Aexit	1	0	Unrestricted	679	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	124	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	888	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	135	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	88	3	805	1800	50	34.81	22.60	452.09	110.52	9.92	120.44
	A1	2	8	990	52	1212	51	12.31	0.73	14.52	2.53	0.32	2.84
	B1	1	37	146	112	1800	16	40.13	2.84	20.31	17.73	1.27	18.99
	C1	1	72	24	664	1800	50	24.08	15.14	756.77	63.08	6.66	69.74
	C1	2	9	895	57	1212	51	12.40	0.80	39.81	2.79	0.35	3.14
	D1	1	14	540	43	1800	16	36.25	1.03	34.23	6.15	0.45	6.60
	D1	2	30	196	93	1800	16	38.90	2.31	77.12	14.27	1.03	15.30
	A2	1	45	101	805	1800	100	0.81	0.18	1.81	2.57	0.00	2.57
	A2	2	3	3015	52	1800	100	0.03	0.00	0.00	0.01	0.00	0.01
	C2	1	37	144	664	1800	100	0.58	0.11	5.39	1.53	0.00	1.53
	C2	2	3	2742	57	1800	100	0.03	0.00	0.03	0.01	0.00	0.01
	D2	1	2	3667	43	1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	2	5	1642	93	1800	100	0.05	0.00	0.05	0.02	0.00	0.02
	A3	1	48	89	857	1800	100	0.91	0.22	4.32	3.07	0.00	3.07
	C3	1	40	125	721	1800	100	0.67	0.13	2.23	1.90	0.00	1.90
	D3	1	8	1091	136	1800	100	0.08	0.00	0.05	0.04	0.00	0.04

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow leaving (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17:45	Aexit	1	679	679	0		Unrestricted	Unrestricted	0		Unrestricted	0.38	100
	Bexit	1	124	124	0		Unrestricted	Unrestricted	0		Unrestricted	0.42	100
	Cexit	1	888	888	0		Unrestricted	Unrestricted	0		Unrestricted	0.48	100
	Dexit	1	135	135	0		Unrestricted	Unrestricted	0		Unrestricted	0.51	100
	A1	1	805	805	0		1800	918	88		3	0.00	50
	A1	2	52	52	0		1212	630	8		990	0.00	51
	B1	1	112	112	0		1800	306	37		146	0.00	16
	C1	1	664	664	0		1800	918	72		24	0.00	50
	C1	2	57	57	0		1212	630	9		895	0.00	51
	D1	1	43	43	0		1800	306	14		540	0.00	16
	D1	2	93	93	0		1800	306	30		196	0.00	16
	A2	1	805	805	0		1800	1800	45		101	0.00	100
	A2	2	52	52	0		1800	1800	3		3015	0.00	100
	C2	1	664	664	0		1800	1800	37		144	0.00	100
	C2	2	57	57	0		1800	1800	3		2742	0.00	100
	D2	1	43	43	0		1800	1800	2		3667	0.00	100
	D2	2	93	93	0		1800	1800	5		1642	0.00	100
	A3	1	857	857	0		1800	1800	48		89	0.00	100
	C3	1	721	721	0		1800	1800	40		125	0.00	100
	D3	1	136	136	0		1800	1800	8		1091	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	34.81	7.76	110.52	96.30	791.32	9.92
	2	3.72	12.31	0.18	0.18	2.53	48.94	25.45	0.32
	B1	1	10.20	40.13	1.25	17.73	90.16	100.98	1.27
	C1	1	1.32	24.08	4.44	63.08	80.03	531.43	6.66
	2	1.32	12.40	0.20	0.20	2.79	49.09	27.98	0.35
	D1	1	2.16	36.25	0.43	6.15	84.37	36.28	0.45
	2	2.16	38.90	1.01	1.01	14.27	88.36	82.18	1.03
	A2	1	7.01	0.81	0.18	2.57	0.00	0.00	0.00
16:45-17:45	2	7.01	0.03	0.00	0.01	0.00	0.00	0.00	0.00
	C2	1	1.32	0.58	0.11	1.53	0.00	0.00	0.00
	2	1.32	0.03	0.00	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
	2	2.16	0.05	0.00	0.02	0.00	0.00	0.00	0.00
	A3	1	3.60	0.91	0.22	3.07	0.00	0.00	0.00
	C3	1	4.25	0.87	0.13	1.90	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.04	0.00	0.00	0.00

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	88	0	7080	1550	8.10	226.21	20.01	246.21

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Actual green (s per hr)
16:45-17:45	7080	7080	0		88		3		1578

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.43	8.10	15.93	226.21	22.54	1595.62	20.01

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	756.77	0.00	612.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	23.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	26.00	
	A1	1	0.00	22.60	5.00	452.09	0.00	0.00	
	2	0.00	0.73	5.00	14.52	0.00	0.00	49.00	
	B1	1	0.00	2.84	14.00	20.31	0.00	0.00	
	C1	1	0.00	15.14	2.00	756.77	0.00	0.00	
	2	0.00	0.80	2.00	39.81	0.00	0.00	49.00	
	D1	1	0.00	1.03	3.00	34.23	0.00	14.00	
	2	0.00	2.31	3.00	77.12	0.00	0.00	0.00	
	A2	1	0.00	0.18	10.00	1.81	0.00	79.00	
16:45-17:45	2	0.00	0.00	0.00	10.00	0.00	0.00	100.00	
	C2	1	0.00	0.11	2.00	5.39	0.00	72.00	
	2	0.00	0.00	0.00	2.00	0.03	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	
	2	0.00	0.00	0.00	3.00	0.05	0.00	0.00	
	A3	1	0.00	0.22	5.00	4.32	0.00	0.00	
	C3	1	0.00	0.13	6.00	2.23	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.05	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling Cycle (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
6	16/08/2022 10:22:32	16/08/2022 10:22:33	16:45	100	246.21	15.93	87.69	A1/1	0	0	A1/1	A3/1	A1/1

A7 - DS 2038 AM+PFD
D7 - DS 2038 AM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network demand (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
7	16/08/2022 10:22:33	16/08/2022 10:22:34	08:00	100	221.77	14.35	85.22	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 AM+PFD		D7	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 AM+PFD				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	1				58.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RB67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
	1	1	(untitled)			
	1	1	(untitled)			
Dexit	1	1	(untitled)			
	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
	1	1	(untitled)			1800
A2	1	2	(untitled)			1800
	2	2	(untitled)			1800
	1	1	(untitled)			1800
C2	1	1	(untitled)			1800
	2	2	(untitled)			1800
	1	2	(untitled)			1800
D2	1	2	(untitled)			1800
	2	1	(untitled)			1800
	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	2	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		14.00		
D1	2	NetworkDefault	100	100	100		2.00		
A2	1	NetworkDefault	100	100	100		3.00		
C2	1	NetworkDefault	100	100	100		10.00		
D2	2	NetworkDefault	100	100	100		2.00		
A3	1	NetworkDefault	100	100	100		3.00		
C3	1	NetworkDefault	100	100	100		5.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	799	799
Bexit	1	57	57
Cexit	1	598	598
Dexit	1	241	241
A1	1	540	540
B1	2	145	145
C1	1	129	129
D1	2	30	30
A2	1	540	540
C2	2	721	721
D2	1	79	79
A3	1	51	51
C3	1	685	685
D3	1	751	751
		130	130

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
B1	1	1	B	✓	D
C1	1	1	F		
D1	1	1	A		
	2	1	A	✓	C
	1	1	E		
	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axiit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
A1	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
C1	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
D1	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
A2	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
C2	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
D2	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Aexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Axiit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Far Side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	26	514	145
From	2	90	0	34
	3	630	30	0
	4	79	1	50

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(unfilled)	A3/1	Aexit/1	#0000FF
	2	(unfilled)	B1/1	Bexit/1	#FF0000
	3	(unfilled)	C3/1	Cexit/1	#00FF00
	4	(unfilled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	630
	3		2	3	B1/1, Cexit/1	Normal	34
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	90
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	514
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	26
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	79
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	50
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	30
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	145
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	91

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A				6	6	5	
	B				6	7	9	
	C				6	6	5	
	D				6	6	9	
	E	6	6	6		6	8	
	F	6	7	6	6		7	

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

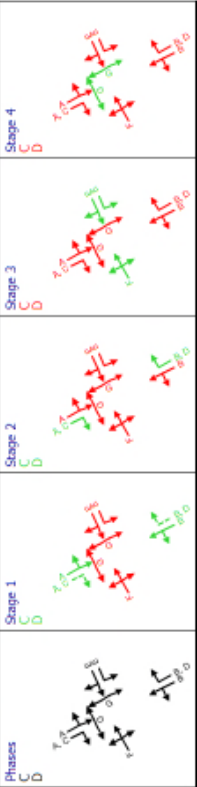
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

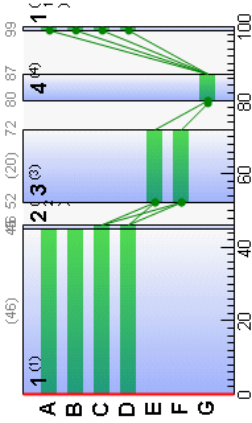
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	799		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	57		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	588		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	241		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	64	41	540		1800	46	23.79	11.81	236.18	50.68	5.21	55.89
	2	25	261		145		1213	47	16.41	2.42	48.35	9.38	1.06	10.45
	B1	1	34	164	129		1800	20	36.08	3.13	22.39	18.36	1.39	19.75
	2	85	6		721		1800	46	35.11	19.96	996.15	99.85	8.77	108.81
	C1	1	5	1646	30		1213	47	14.08	0.44	22.15	1.67	0.20	1.86
	2	21	331		79		1800	20	33.92	1.83	60.90	10.57	0.81	11.38
08:00-09:00	D1	1	13	567	51		1800	20	32.89	1.16	38.60	6.62	0.52	7.13
	A2	1	30	200	540		1800	100	0.43	0.06	0.64	0.91	0.00	0.91
	2	8	1017		145		1800	100	0.09	0.00	0.04	0.05	0.00	0.05
	C2	1	40	125	721		1800	100	0.67	0.13	6.68	1.90	0.00	1.90
	2	2	5300		30		1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	1	4	1951	79		1800	100	0.05	0.00	0.03	0.01	0.00	0.01
	2	3	3076		51		1800	100	0.03	0.00	0.01	0.00	0.00	0.01
	A3	1	38	136	685		1800	100	0.61	0.12	2.34	1.66	0.00	1.66
	C3	1	42	116	751		1800	100	0.72	0.15	2.49	2.12	0.00	2.12
	D3	1	7	1146	130		1800	100	0.08	0.00	0.05	0.04	0.00	0.04

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error (s per cycle)	Actual green (s per cycle)	
08:00-09:00	Aexit	1	799	799	0		Unrestricted	Unrestricted	0		Unrestricted	0.35	100	
	Bexit	1	57	57	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100	
	Cexit	1	598	598	0		Unrestricted	Unrestricted	0		Unrestricted	0.57	100	
	Dexit	1	241	241	0		Unrestricted	Unrestricted	0		Unrestricted	0.64	100	
	A1	1	540	540	0		1800	846	64	25		41	0.00	46
		2	145	145	0		1213	582	25	25		261	0.00	47
	B1	1	129	129	0		1800	378	34	34		164	0.00	20
		2	721	721	0		1800	846	85	85		6	0.00	46
	C1	1	30	30	0		1213	582	5	5		1646	0.00	47
		2	79	79	0		1800	378	21	21		331	0.00	20
	D1	1	51	51	0		1800	378	13	13		567	0.00	20
		2	540	540	0		1800	1800	30	30		200	0.00	100
	A2	1	145	145	0		1800	1800	8	8		1017	0.00	100
		2	721	721	0		1800	1800	40	40		125	0.00	100
	C2	1	30	30	0		1800	1800	2	2		5300	0.00	100
		2	79	79	0		1800	1800	4	4		1951	0.00	100
D2	1	51	51	0		1800	1800	3	3		3076	0.00	100	
	2	685	685	0		1800	1800	38	38		136	0.00	100	
A3	1	751	751	0		1800	1800	42	42		116	0.00	100	
C3	1	130	130	0		1800	1800	7	7		146	0.00	100	
D3	1													

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst over PR
7	16/08/2022 10:22:33	16/08/2022 10:22:34	08:00	100	221.77	14.35	85.22	C1/1	0	0	C3/1	C1/

Traffic Stream Results: Stops and delays

Time Segment	Am	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	23.79	3.57	50.68	77.01	415.66	5.21
	2	3.72	18.41	0.66	0.66	9.38	58.39	84.67	1.06
	B1	1	10.20	36.08	1.29	18.36	85.85	110.75	1.39
	C1	1	1.32	35.11	7.03	99.85	96.98	699.21	8.77
	2	1.32	14.08	0.12	0.12	1.67	51.99	15.60	0.20
	D1	1	2.16	33.92	0.74	10.57	82.07	64.83	0.81
08:00-09:00	A2	1	7.01	0.43	0.06	0.91	0.00	0.00	0.00
	2	7.01	0.09	0.00	0.00	0.05	0.00	0.00	0.00
	C2	1	1.32	0.67	0.13	1.90	0.00	0.00	0.00
	2	1.32	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	D2	1	2.16	0.05	0.00	0.01	0.00	0.00	0.00
	2	2.16	0.03	0.00	0.00	0.01	0.00	0.00	0.00
	A3	1	3.80	0.61	0.12	1.66	0.00	0.00	0.00
	C3	1	4.25	0.72	0.15	2.12	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.04	0.00	0.00	0.00
	2	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	50.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	6.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	23.00	
	A1	1	0.00	11.81	5.00	236.18	0.00	0.00	
	2	0.00	2.42	5.00	5.00	48.35	0.00	0.00	
	B1	1	0.00	3.13	14.00	22.39	0.00	0.00	
	C1	1	0.00	19.96	2.00	998.15	0.00	0.00	
	2	0.00	0.44	2.00	2.00	22.15	0.00	46.00	
	D1	1	0.00	1.83	3.00	60.90	0.00	0.00	
08:00-09:00	2	0.00	1.16	3.00	3.00	38.50	0.00	18.00	
	A2	1	0.00	0.06	10.00	0.64	0.00	46.00	
	2	0.00	0.00	10.00	10.00	0.04	0.00	0.00	
	C2	1	0.00	0.13	2.00	6.68	0.00	100.00	
	2	0.00	0.00	2.00	2.00	0.01	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.03	0.00	0.00	
	2	0.00	0.00	3.00	3.00	0.01	0.00	100.00	
	A3	1	0.00	0.12	5.00	2.34	0.00	0.00	
	C3	1	0.00	0.15	6.00	2.49	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.05	0.00	0.00	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	85	0	6522	1546	7.92	203.82	17.96	221.77

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	6522	6522	0		85		6	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.40	7.92	14.35	203.82	21.96	1432.01	17.96

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	998.15	0.00	489.00

A8 - DS 2038 PM+PFD
D8 - DS 2038 PM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
8	16/08/2022 10:22:34	16/08/2022 10:22:35	16:45	100	268.03	17.38	89.76	A1/1	0	0	A1/1	A3/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 PM+PFD		D8	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 PM+PFD				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
Cexit	1			✓	379.28						Normal	
	1			✓	470.84						Normal	
A1	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				59.40	✓	Sum of lanes	1800			Normal	
	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
	2	NetworkDefault	100	100	100		2.00		
D1	1	NetworkDefault	100	100	100		3.00		
	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
	2	NetworkDefault	100	100	100		10.00		
C2	1	NetworkDefault	100	100	100		2.00		
	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	713	713
	2		
Bexit	1	125	125
	2		
Cexit	1	906	906
	2		
Dexit	1	136	136
	2		
A1	1	824	824
	2		
B1	1	53	53
	2		
C1	1	115	115
	2		
D1	1	692	692
	2		
A2	1	57	57
	2		
B2	1	46	46
	2		
C2	1	93	93
	2		
D2	1	824	824
	2		
A3	1	53	53
	2		
B3	1	692	692
	2		
C3	1	57	57
	2		
D3	1	46	46
	2		
A4	1	93	93
	2		
B4	1	824	824
	2		
C4	1	53	53
	2		
D4	1	692	692
	2		
A5	1	57	57
	2		
B5	1	46	46
	2		
C5	1	93	93
	2		
D5	1	824	824
	2		
A6	1	53	53
	2		
B6	1	692	692
	2		
C6	1	57	57
	2		
D6	1	46	46
	2		
A7	1	93	93
	2		
B7	1	824	824
	2		
C7	1	53	53
	2		
D7	1	692	692
	2		
A8	1	57	57
	2		
B8	1	46	46
	2		
C8	1	93	93
	2		
D8	1	824	824
	2		
A9	1	53	53
	2		
B9	1	692	692
	2		
C9	1	57	57
	2		
D9	1	46	46
	2		
A10	1	93	93
	2		
B10	1	824	824
	2		
C10	1	53	53
	2		
D10	1	692	692
	2		
A11	1	57	57
	2		
B11	1	46	46
	2		
C11	1	93	93
	2		
D11	1	824	824
	2		
A12	1	53	53
	2		
B12	1	692	692
	2		
C12	1	57	57
	2		
D12	1	46	46
	2		
A13	1	93	93
	2		
B13	1	824	824
	2		
C13	1	53	53
	2		
D13	1	692	692
	2		
A14	1	57	57
	2		
B14	1	46	46
	2		
C14	1	93	93
	2		
D14	1	824	824
	2		
A15	1	53	53
	2		
B15	1	692	692
	2		
C15	1	57	57
	2		
D15	1	46	46
	2		
A16	1	93	93
	2		
B16	1	824	824
	2		
C16	1	53	53
	2		
D16	1	692	692
	2		
A17	1	57	57
	2		
B17	1	46	46
	2		
C17	1	93	93
	2		
D17	1	824	824
	2		
A18	1	53	53
	2		
B18	1	692	692
	2		
C18	1	57	57
	2		
D18	1	46	46
	2		
A19	1	93	93
	2		
B19	1	824	824
	2		
C19	1	53	53
	2		
D19	1	692	692
	2		
A20	1	57	57
	2		
B20	1	46	46
	2		
C20	1	93	93
	2		
D20	1	824	824
	2		
A21	1	53	53
	2		
B21	1	692	692
	2		
C21	1	57	57
	2		
D21	1	46	46
	2		
A22	1	93	93
	2		
B22	1	824	824
	2		
C22	1	53	53
	2		
D22	1	692	692
	2		
A23	1	57	57
	2		
B23	1	46	46
	2		
C23	1	93	93
	2		
D23	1	824	824
	2		
A24	1	53	53
	2		
B24	1	692	692
	2		
C24	1	57	57
	2		
D24	1	46	46
	2		
A25	1	93	93
	2		
B25	1	824	824
	2		
C25	1	53	53
	2		
D25	1	692	692
	2		
A26	1	57	57
	2		
B26	1	46	46
	2		
C26	1	93	93
	2		
D26	1	824	824
	2		
A27	1	53	53
	2		
B27	1	692	692
	2		
C27	1	57	57
	2		
D27	1	46	46
	2		
A28	1	93	93
	2		
B28	1	824	824
	2		
C28	1	53	53
	2		
D28	1	692	692
	2		
A29	1	57	57
	2		
B29	1	46	46
	2		
C29	1	93	93
	2		
D29	1	824	824
	2		
A30	1	53	53
	2		
B30	1	692	692
	2		
C30	1	57	57
	2		
D30	1	46	46
	2		
A31	1	93	93
	2		
B31	1	824	824
	2		
C31	1	53	53
	2		
D31	1	692	692
	2		
A32	1	57	57
	2		
B32	1	46	46
	2		
C32	1	93	93
	2		
D32	1	824	824
	2		
A33	1	53	53
	2		
B33	1	692	692
	2		
C33	1	57	57
	2		
D33	1	46	46
	2		
A34	1	93	93
	2		
B34	1	824	824
	2		
C34	1	53	53
	2		
D34	1	692	692
	2		
A35	1	57	57
	2		
B35	1	46	46
	2		
C35	1	93	93
	2		
D35	1	824	824
	2		
A36	1	53	53
	2		
B36	1	692	692
	2		
C36	1	57	57
	2		
D36	1	46	46
	2		
A37	1	93	93
	2		
B37	1	824	824
	2		
C37	1	53	53
	2		
D37	1	692	692
	2		
A38	1	57	57
	2		
B38	1	46	46
	2		
C38	1	93	93
	2		
D38	1	824	824
	2		
A39	1	53	53
	2		
B39	1	692	692
	2		
C39	1	57	57
	2		
D39	1	46	46
	2		
A40	1	93	93
	2		
B40	1	824	824
	2		
C40	1	53	53
	2		
D40	1	692	692
	2		
A41	1	57	57
	2		
B41	1	46	46
	2		
C41	1	93	93
	2		
D41	1	824	824
	2		
A42	1	53	53
	2		
B42	1	692	692
	2		
C42	1	57	57
	2		
D42	1	46	46
	2		
A43	1	93	93
	2		
B43	1	824	824
	2		
C43	1	53	53
	2		
D43	1	692	692
	2		
A44	1	57	57
	2		
B44	1	46	46
	2		
C44	1	93	93
	2		
D44	1	824	824
	2		
A45	1	53	53
	2		
B45	1	692	692
	2		
C45	1	57	57
	2		
D45	1	46	46
	2		
A46	1	93	93
	2		
B46	1	824	824
	2		
C46	1	53	53
	2		
D46	1	692	692
	2		
A47	1	57	57
	2		
B47	1	46	46
	2		
C47	1	93	93
	2		
D47	1	824	824
	2		
A48	1	53	53
	2		
B48	1	692	692
	2		
C48	1	57	57
	2		
D48	1	46	46
	2		
A49	1	93	93
	2		
B49	1	824	824
	2		
C49	1	53	53
	2		
D49	1	692	692
	2		
A50	1	57	57
	2		
B50	1	46	46
	2		
C50	1	93	93
	2		
D50	1	824	824
	2		
A51	1	53	53
	2		
B51	1	692	692
	2		
C51	1	57	57
	2		
D51	1	46	46
	2		
A52	1	93	93
	2		
B52	1	824	824
	2		
C52	1	53	53
	2		
D52	1	692	692
	2		
A53	1	57	57
	2		
B53	1	46	46
	2		
C53	1	93	93
	2		
D53	1	824	824
	2		
A54	1	53	53
	2		
B54	1	692	692
	2		
C54	1	57	57
	2		
D54	1	46	46
	2		
A55	1	93	93
	2		
B55	1	824	824
	2		
C55	1	53	53
	2		
D55	1	692	692
	2		
A56	1	57	57
	2		
B56	1	46	46
	2		
C56	1	93	93
	2		
D56	1	824	824
	2		
A57	1	53	53
	2		
B57	1	692	692
	2		
C57	1	57	57</

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	57	767	53
	2	49	0	57	9
	3	618	57	0	74
	4	46	11	82	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	618
	3		2	3	B1/1, Cexit/1	Normal	57
	4		2	4	B1/1, Dexit/1	Normal	9
	5		2	1	B1/1, Aexit/1	Normal	49
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	757
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	57
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	46
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	82
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	11
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	57
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	53
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	74

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

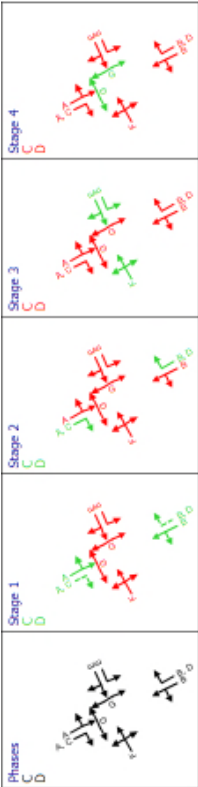
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

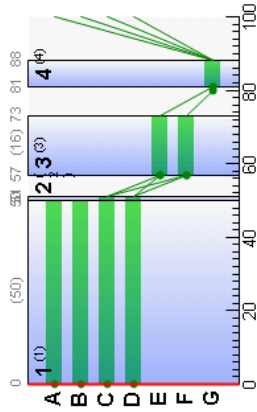
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean max queue (PCU)	Utilised average (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)
16-45-17-45	Aexit	1	0	Unrestricted	713	0		Unrestricted	713	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	125	0		Unrestricted	125	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	906	0		Unrestricted	906	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	136	0		Unrestricted	136	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	90	0	824	0		1800	1800	50	37.83	24.19	483.83	122.96	10.58	133.54
	A1	2	8	970	53			1212	1212	51	12.33	0.74	14.80	2.58	0.33	2.90
	B1	1	38	139	115			1800	1800	16	40.34	2.92	20.88	18.30	1.30	19.60
	C1	1	75	19	692			1800	1800	50	25.41	16.32	816.03	68.36	7.18	76.54
	C1	2	9	895	57			1212	1212	51	12.40	0.80	39.81	2.79	0.35	3.14
	D1	1	15	499	46			1800	1800	16	36.42	1.10	36.65	6.61	0.49	7.10
	D1	2	30	196	93			1800	1800	16	38.90	2.31	77.12	14.27	1.03	15.30
	A2	1	46	97	824			1800	1800	100	0.84	0.19	1.93	2.74	0.00	2.74
	A2	2	3	2957	53			1800	1800	100	0.03	0.00	0.00	0.01	0.00	0.01
	C2	1	38	134	692			1800	1800	100	0.62	0.12	6.00	1.70	0.00	1.70
	C2	2	3	2742	57			1800	1800	100	0.03	0.00	0.03	0.01	0.00	0.01
	D2	1	3	3422	46			1800	1800	100	0.03	0.00	0.01	0.00	0.00	0.00
	D2	2	5	1642	93			1800	1800	100	0.05	0.00	0.05	0.02	0.00	0.02
	A3	1	49	85	877			1800	1800	100	0.95	0.23	4.62	3.28	0.00	3.28
	C3	1	42	116	749			1800	1800	100	0.71	0.15	2.47	2.10	0.00	2.10
	D3	1	8	1065	139			1800	1800	100	0.08	0.00	0.05	0.05	0.00	0.05

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow entering (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17-45	Aexit	1	713	713	0		Unrestricted	Unrestricted	0		Unrestricted	0.37	100
	Bexit	1	125	125	0		Unrestricted	Unrestricted	0		Unrestricted	0.42	100
	Cexit	1	906	906	0		Unrestricted	Unrestricted	0		Unrestricted	0.48	100
	Dexit	1	136	136	0		Unrestricted	Unrestricted	0		Unrestricted	0.51	100
	A1	1	824	824	0		1800	918	90		0	0.00	50
	A1	2	53	53			1212	630	8		970	0.00	51
	B1	1	115	115	0		1800	306	38		139	0.00	16
	C1	1	692	692	0		1800	918	75		19	0.00	50
	C1	2	57	57			1212	630	9		895	0.00	51
	D1	1	46	46	0		1800	306	15		499	0.00	16
	D1	2	93	93	0		1800	306	30		196	0.00	16
	A2	1	824	824	0		1800	1800	46		97	0.00	100
	A2	2	53	53			1800	1800	3		2957	0.00	100
	C2	1	692	692	0		1800	1800	38		134	0.00	100
	C2	2	57	57	0		1800	1800	3		2742	0.00	100
	D2	1	46	46	0		1800	1800	3		3422	0.00	100
	D2	2	93	93	0		1800	1800	5		1642	0.00	100
	A3	1	877	877	0		1800	1800	49		85	0.00	100
	C3	1	749	749	0		1800	1800	42		116	0.00	100
	D3	1	139	139	0		1800	1800	8		1065	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	37.83	8.66	122.96	102.36	843.44	10.58
	2	3.72	12.33	0.18	2.56	48.39	25.97	0.33	0.33
	B1	1	10.20	40.34	1.29	18.30	90.31	103.86	1.30
	C1	1	1.32	25.41	4.88	69.36	82.76	572.71	7.18
	2	1.32	12.40	0.20	2.79	49.09	27.98	0.35	0.35
	D1	1	2.16	36.42	0.47	6.61	84.83	39.02	0.49
16:45-17:45	2	2.16	38.90	1.01	14.27	88.36	82.18	1.03	1.03
	A2	1	7.01	0.84	0.19	2.74	0.00	0.00	0.00
	2	7.01	0.03	0.00	0.01	0.00	0.00	0.00	0.00
	C2	1	1.32	0.62	0.12	1.70	0.00	0.00	0.00
	2	1.32	0.03	0.00	0.01	0.00	0.00	0.00	0.00
	D2	1	2.16	0.03	0.00	0.00	0.00	0.00	0.00
	2	2.16	0.05	0.00	0.02	0.00	0.00	0.00	0.00
	A3	1	3.60	0.95	0.23	3.28	0.00	0.00	0.00
	C3	1	4.25	0.71	0.15	2.10	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.05	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	23.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	25.00	
	A1	1	0.00	24.19	5.00	483.83	0.00	0.00	
	2	0.00	0.74	5.00	14.80	0.00	0.00	49.00	
	B1	1	0.00	2.92	14.00	20.88	0.00	0.00	
	C1	1	0.00	16.32	2.00	816.03	0.00	0.00	
	2	0.00	0.80	2.00	39.81	0.00	0.00	49.00	
	D1	1	0.00	1.10	3.00	36.65	0.00	14.00	
16:45-17:45	2	0.00	2.31	3.00	77.12	0.00	0.00	0.00	
	A2	1	0.00	0.19	10.00	1.93	0.00	84.00	
	2	0.00	0.00	10.00	0.00	0.00	0.00	100.00	
	C2	1	0.00	0.12	2.00	6.00	0.00	75.00	
	2	0.00	0.00	2.00	0.03	0.00	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	
	2	0.00	0.00	3.00	0.05	0.00	0.00	0.00	
	A3	1	0.00	0.23	5.00	4.82	0.00	0.00	
	C3	1	0.00	0.15	6.00	2.47	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.05	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
8	16/08/2022 10:22:34	16/08/2022 10:22:35	16:45	100	268.03	17.38	89.76	A1/1	0	0	A1/1	A3/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	90	0	7290	1550	8.58	246.78	21.25	288.03

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
16:45-17:45	7290	7290	0		90		0	1578

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.48	8.58	17.38	246.78	23.25	1695.15	21.25

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	816.03	0.00	618.00

A9 - DM 2023 AM
D9 - DM 2023 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network flow (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
9	16/08/2022 10:22:35	16/08/2022 10:22:36	08:00	100	140.29	9.02	66.91	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2023 AM		D9	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2023 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Merside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	1				31.00	✓	Sum of lanes	1800	✓		Normal	
2	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
2	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
2	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				58.40	✓	Sum of lanes	1800			Normal	
2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use R67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
2	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
1	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
2	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Exit	1	NetworkDefault	100	100	100		0.00		
Exit	1	NetworkDefault	100	100	100		0.00		
Exit	1	NetworkDefault	100	100	100		0.00		
Exit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
2	NetworkDefault	100	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
1	NetworkDefault	100	100	100	100		2.00		
2	NetworkDefault	100	100	100	100		3.00		
D1	1	NetworkDefault	100	100	100		3.00		
2	NetworkDefault	100	100	100	100		10.00		
A2	1	NetworkDefault	100	100	100		10.00		
2	NetworkDefault	100	100	100	100		2.00		
C2	1	NetworkDefault	100	100	100		2.00		
2	NetworkDefault	100	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
2	NetworkDefault	100	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	0.50	✓	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Exit	1	641	641
Exit	1	45	45
Exit	1	437	437
Exit	1	186	186
Exit	1	382	382
A1	2	103	103
B1	1	107	107
C1	1	583	583
2	26	26	26
D1	1	64	64
2	44	44	44
A2	1	382	382
2	103	103	103
C2	1	583	583
2	26	26	26
D2	1	64	64
2	44	44	44
A3	1	485	485
C3	1	609	609
D3	1	108	108

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
2	1	B	✓	D	
B1	1	1	F		
C1	1	1	A		
2	1	A	✓	C	
D1	1	1	E		
2	1	E			

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axiit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
Bexit	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
2	1	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
2	1	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
2	1	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
2	1	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
2	1	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
2	1	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Axiit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11'000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on traffic nodes	Matrix to copy flows from	Copy flows	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation		✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
From	1	0	18	364
	2	72	0	30
	3	505	26	0
	4	64	1	43
				0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	505
	3		2	3	B1/1, Cexit/1	Normal	30
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	72
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	364
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	18
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	64
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	43
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	26
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	103
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	78

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A				6	6	5	
	B				6	7	9	
	C				6	6	5	
	D				6	6	9	
	E	6	6	6	6		8	
	F	6	7	6	6		7	
	G	12	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8
	4	12	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

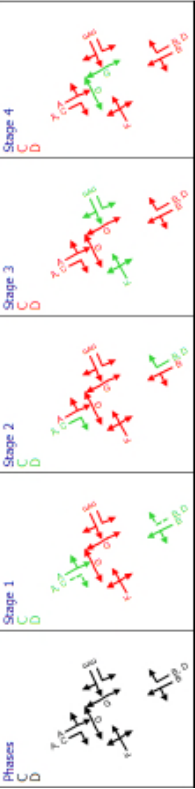
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

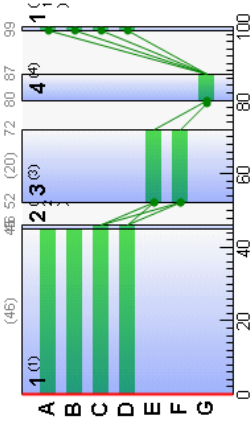
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
	Aexit	1	0	Unrestricted	641		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	45		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	437		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	186		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	45	99	382		1800	46	19.58	7.29	145.90	29.50	3.21	32.71
		2	18	409	103		1213	47	15.46	1.62	32.42	6.28	0.72	7.00
	B1	1	28	218	107		1800	20	35.05	2.52	18.02	14.79	1.12	15.92
		1	69	31	583		1800	46	25.44	13.39	569.36	58.50	5.89	64.40
	C1	1	4	1915	26		1213	47	13.99	0.38	19.19	1.44	0.17	1.60
		2	17	432	64		1800	20	33.34	1.46	48.57	8.42	0.65	9.06
	D1	1	12	673	44		1800	20	32.62	0.99	32.85	5.86	0.44	6.10
08:00-09:00	A2	1	21	324	382		1800	100	0.27	0.03	0.29	0.41	0.00	0.41
		2	6	1473	103		1800	100	0.08	0.00	0.02	0.02	0.00	0.02
	C2	1	32	178	583		1800	100	0.48	0.08	3.88	1.10	0.00	1.10
		2	1	6131	26		1800	100	0.01	0.00	0.01	0.00	0.00	0.00
	D2	1	4	2431	64		1800	100	0.04	0.00	0.02	0.01	0.00	0.01
		2	2	3582	44		1800	100	0.03	0.00	0.01	0.00	0.00	0.00
	A3	1	27	234	485		1800	100	0.37	0.05	0.89	0.71	0.00	0.71
	C3	1	34	166	609		1800	100	0.51	0.09	1.44	1.23	0.00	1.23
		1	6	1400	108		1800	100	0.06	0.00	0.03	0.03	0.00	0.03
	D3	1												

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Adjusted flow warning	Flow capacity (PCU/hr)	Degree of saturation (%)	Calculated capacity	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green cycle (s)
	Aexit	1	641	641		0	Unrestricted	Unrestricted		Unrestricted	0.35	100
	Bexit	1	45	45		0	Unrestricted	Unrestricted		Unrestricted	0.61	100
	Cexit	1	437	437		0	Unrestricted	Unrestricted		Unrestricted	0.54	100
	Dexit	1	186	186		0	Unrestricted	Unrestricted		Unrestricted	0.65	100
	A1	1	382	382		0	1800	846		99	0.00	46
		2	103	103		0	1213	582		409	0.00	47
	B1	1	107	107		0	1800	378		218	0.00	20
	C1	1	583	583		0	1800	846		31	0.00	46
		2	26	26		0	1213	582		1915	0.00	47
	D1	1	64	64		0	1800	378		432	0.00	20
		2	44	44		0	1800	378		673	0.00	20
	A2	1	382	382		0	1800	1800		324	0.00	100
08:00-09:00		2	103	103		0	1800	1800		1473	0.00	100
	C2	1	583	583		0	1800	1800		178	0.00	100
		2	26	26		0	1800	1800		6131	0.00	100
	D2	1	64	64		0	1800	1800		2431	0.00	100
		2	44	44		0	1800	1800		3582	0.00	100
	A3	1	485	485		0	1800	1800		234	0.00	100
	C3	1	609	609		0	1800	1800		166	0.00	100
		1	108	108		0	1800	1800		1400	0.00	100
	D3	1				0						

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalled PRC	Item with worst over PR
9	16/08/2022 10:22:35	16/08/2022 10:22:36	08:00	100	140.29	9.02	68.91	C1/1	0	0	C3/1	C1/

Traffic Stream Results: Stops and delays

Time Segment	Am	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	19.58	2.08	29.50	67.02	256.02	3.21
		2	3.72	15.46	0.44	6.28	55.48	57.14	0.72
	B1	1	10.20	35.05	1.04	14.79	83.68	89.54	1.12
		1	1.32	26.44	4.12	58.50	80.59	466.82	5.89
	C1	2	1.32	13.99	0.10	1.44	51.94	13.50	0.17
		1	2.16	33.34	0.59	8.42	80.78	51.70	0.65
	D1	2	2.16	32.62	0.40	5.66	79.44	34.86	0.44
	A2	1	7.01	0.27	0.03	0.41	0.00	0.00	0.00
08:00-09:00		2	7.01	0.06	0.00	0.02	0.00	0.00	0.00
	C2	1	1.32	0.48	0.08	1.10	0.00	0.00	0.00
		2	1.32	0.01	0.00	0.00	0.00	0.00	0.00
	D2	1	2.16	0.04	0.00	0.01	0.00	0.00	0.00
		2	2.16	0.03	0.00	0.00	0.00	0.00	0.00
	A3	1	3.80	0.37	0.05	0.71	0.00	0.00	0.00
	C3	1	4.25	0.51	0.09	1.23	0.00	0.00	0.00
		1	4.32	0.06	0.00	0.03	0.00	0.00	0.00
	D3	1							

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	64.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	10.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	28.00	
	A1	2	0.00	7.29	5.00	145.90	0.00	0.00	
		1	0.00	1.62	5.00	32.42	0.00	0.00	
	B1	1	0.00	2.52	14.00	18.02	0.00	0.00	
		1	0.00	13.39	2.00	669.36	0.00	0.00	
	C1	2	0.00	0.38	2.00	19.19	0.00	46.00	
		1	0.00	1.46	3.00	48.57	0.00	0.00	
	D1	2	0.00	0.99	3.00	32.85	0.00	18.00	
		1	0.00	0.03	10.00	0.29	0.00	22.00	
08:00-09:00	A2	2	0.00	0.00	10.00	0.02	0.00	0.00	
		1	0.00	0.08	2.00	3.88	0.00	71.00	
	C2	2	0.00	0.00	2.00	0.01	0.00	100.00	
		1	0.00	0.00	3.00	0.02	0.00	0.00	
	D2	2	0.00	0.00	3.00	0.01	0.00	100.00	
		1	0.00	0.05	5.00	0.99	0.00	0.00	
	A3	1	0.00	0.09	6.00	1.44	0.00	0.00	
	C3	1	0.00	0.09	6.00	0.03	0.00	0.00	
		1	0.00	0.00	6.00	0.00	0.00	0.00	
	D3	1							

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	69	0	5022	1546	6.47	128.10	12.20	140.29

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	5022	5022	0		69		31	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Total delay (PCU-hr/hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.57	6.47	128.10	9.02	19.37	972.69	12.20

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	668.36	0.00	460.00

A10 - DM 2023 PM
D10 - DM 2023 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
10	16/08/2022 10:22:36	16/08/2022 10:22:36	16:45	100	154.57	9.92	71.35	A1/1	0	0	A1/1	A3/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2023 PM		D10	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2023 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Am	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	2				31.00	✓	Sum of lanes	1800	✓		Normal	
B1	1				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	2				85.00	✓	Sum of lanes	1800	✓		Normal	
D1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
D1	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				59.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
C2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
D2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
B1	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
D1	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
A2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
C2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
D2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
A1	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
C1	1	NetworkDefault	100	100	100		2.00		
C1	2	NetworkDefault	100	100	100		2.00		
D1	1	NetworkDefault	100	100	100		3.00		
D1	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
A2	2	NetworkDefault	100	100	100		10.00		
C2	1	NetworkDefault	100	100	100		2.00		
C2	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
D2	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	521	521
	Bexit	1	103
Cexit	1	729	729
	Dexit	1	114
A1	1	655	655
	2	42	42
B1	1	92	92
	1	517	517
C1	2	49	49
	1	33	33
D1	2	79	79
	1	655	655
A2	1	42	42
	1	517	517
C2	2	49	49
	1	33	33
D2	2	79	79
	1	697	697
A3	1	566	566
	1	112	112

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
C1	1	1	A		
	2	1	A	✓	C
D1	1	1	E		
	2	1	E		

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	Bexit	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	Dexit	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	45	610	42
	2	35	0	49	8
	3	453	49	0	64
	4	33	9	70	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	453
	3		2	3	B1/1, Cexit/1	Normal	49
	4		2	4	B1/1, Dexit/1	Normal	8
	5		2	1	B1/1, Aexit/1	Normal	35
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	610
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	45
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	33
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	70
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	9
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	49
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	42
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	64

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

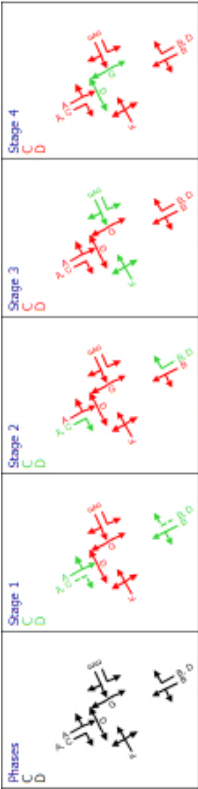
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

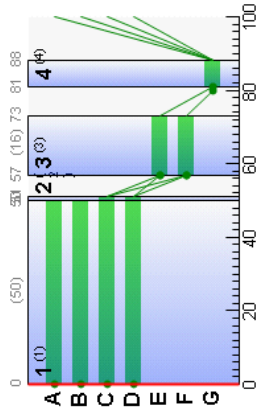
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated entering (PCU/hr)	Adjusted flow warning	Flow discrepancy (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Calculated capacity	Degree of saturation (%)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean queue (PCU)	Utilised average (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)
16-45-17-45	Aexit	1	0	Unrestricted	521		0	521	521	Unrestricted	0	0.00	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	103		0	103	103	Unrestricted	0	0.00	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	729		0	729	729	Unrestricted	0	0.00	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	114		0	114	114	Unrestricted	0	0.00	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	71	26	655		0	655	655	1800	50	23.70	14.71	294.11	61.23	6.49	67.72		
	A1	2	7	1250	42	1212		51	1212	1800	16	12.17	0.57	11.48	2.02	0.25	2.27		
	B1	1	30	199	92	38.84		2.29	16.34	14.70	1.02	15.11							
	C1	1	56	60	517		0	517	517	1800	50	19.38	10.13	506.35	38.48	4.47	43.95		
	C1	2	8	1057	49	1212		51	1212	1800	16	12.26	0.68	34.19	2.37	0.30	2.67		
	D1	1	11	735	33	1800		16	35.87	0.78	25.86	4.67	0.35	5.01					
	D1	2	26	249	79	1800		16	38.08	1.93	64.40	11.87	0.86	12.73					
	A2	1	36	147	655		0	57	1.04	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C2	1	29	3757	42	1800		100	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C2	2	3	3206	49	1800		100	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D2	1	2	4809	33	1800		100	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D2	2	4	1951	79	1800		100	0.05	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A3	1	39	132	697		0	697	1800	1800	100	0.63	0.12	2.44	1.74	0.00	0.00	1.74	
	C3	1	31	186	566		0	566	1800	1800	100	0.46	0.07	1.20	1.02	0.00	0.00	1.02	
	D3	1	6	1346	112		0	112	1800	1800	100	0.07	0.00	0.03	0.03	0.00	0.00	0.03	

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17-45	Aexit	1	521	521	0		Unrestricted	Unrestricted	0		Unrestricted	0.38	100
	Bexit	1	103	103	0		Unrestricted	Unrestricted	0		Unrestricted	0.45	100
	Cexit	1	729	729	0		Unrestricted	Unrestricted	0		Unrestricted	0.49	100
	Dexit	1	114	114	0		Unrestricted	Unrestricted	0		Unrestricted	0.52	100
	A1	1	655	655	0		1800	918	71		26	0.00	50
	A1	2	42	42	0		1212	630	7		1250	0.00	51
	B1	1	92	92	0		1800	306	30		199	0.00	16
	C1	1	517	517	0		1800	918	56		60	0.00	50
	C1	2	49	49	0		1212	630	8		1057	0.00	51
	D1	1	33	33	0		1800	306	11		735	0.00	16
	D1	2	79	79	0		1800	306	26		249	0.00	16
	A2	1	655	655	0		1800	1800	36		147	0.00	100
	A2	2	42	42	0		1800	1800	2		3757	0.00	100
	C2	1	517	517	0		1800	1800	29		213	0.00	100
	C2	2	49	49	0		1800	1800	3		3206	0.00	100
	D2	1	33	33	0		1800	1800	2		4809	0.00	100
	D2	2	79	79	0		1800	1800	4		1951	0.00	100
	A3	1	697	697	0		1800	1800	39		132	0.00	100
	C3	1	566	566	0		1800	1800	31		186	0.00	100
	D3	1	112	112	0		1800	1800	6		1346	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU/hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	Ai	1	3.72	23.70	4.31	61.23	79.06	517.86	6.49
		2	3.72	12.17	0.14	2.02	48.02	20.17	0.25
	B1	1	10.20	38.84	0.99	14.10	86.32	81.25	1.02
		1	1.32	19.36	2.78	39.48	68.88	356.10	4.47
	C1	2	1.32	12.26	0.17	2.37	48.51	23.82	0.30
		1	2.16	35.67	0.33	83.53	83.53	27.56	0.35
	D1	2	2.16	38.08	0.84	11.87	86.85	68.81	0.86
	A2	1	7.01	0.57	0.10	1.48	0.00	0.00	0.00
16:45-17:45		2	7.01	0.02	0.00	0.00	0.00	0.00	0.00
	C2	1	1.32	0.40	0.06	0.82	0.00	0.00	0.00
		2	1.32	0.03	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
		2	2.16	0.05	0.00	0.01	0.00	0.00	0.00
	A3	1	3.60	0.63	0.12	1.74	0.00	0.00	0.00
	C3	1	4.25	0.46	0.07	1.02	0.00	0.00	0.00
		1	4.32	0.07	0.00	0.03	0.00	0.00	0.00
	D3	1							

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	27.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	29.00	
	Ai	1	0.00	14.71	5.00	294.11	0.00	0.00	
		2	0.00	0.57	5.00	11.48	0.00	50.00	
	B1	1	0.00	2.29	14.00	16.34	0.00	0.00	
		1	0.00	10.13	2.00	506.35	0.00	0.00	
	C1	2	0.00	0.68	2.00	34.19	0.00	49.00	
		1	0.00	0.78	3.00	25.88	0.00	15.00	
	D1	2	0.00	1.93	3.00	64.40	0.00	0.00	
		1	0.00	0.10	10.00	1.04	0.00	54.00	
16:45-17:45	A2	2	0.00	0.00	10.00	0.00	0.00	100.00	
		1	0.00	0.06	2.00	2.89	0.00	57.00	
	C2	2	0.00	0.00	2.00	0.02	0.00	100.00	
		1	0.00	0.00	3.00	0.01	0.00	100.00	
	D2	2	0.00	0.00	3.00	0.03	0.00	0.00	
	A3	1	0.00	0.12	5.00	2.44	0.00	0.00	
		1	0.00	0.07	6.00	1.20	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.03	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
10	16/08/2022 10:22:36	16/08/2022 10:22:36	16:45	100	154.57	9.92	71.35	A1/1	0	0	A1/1	A3/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	71	0	5684	1550	6.28	140.84	13.73	154.57

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
16:45-17:45	5684	5684	0		71		26	1578

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU/hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.32	6.28	9.92	140.84	19.27	1095.38	13.73

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	506.35	0.00	581.00

A11 - DM 2028 AM
D11 - DM 2028 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network flow (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
11	16/08/2022 10:22:37	16/08/2022 10:22:37	08:00	100	163.85	10.56	75.77	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2028 AM		D11	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2028 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nerside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	1				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
	1				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RB67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
C2	1	2	(untitled)			1800
	2	1	(untitled)			1800
D2	1	2	(untitled)			1800
D2	1	2	(untitled)			1800
	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
2	NetworkDefault	100	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
1	NetworkDefault	100	100	100	100		2.00		
2	NetworkDefault	100	100	100	100		3.00		
D1	1	NetworkDefault	100	100	100		3.00		
2	NetworkDefault	100	100	100	100		10.00		
A2	1	NetworkDefault	100	100	100		10.00		
2	NetworkDefault	100	100	100	100		2.00		
C2	1	NetworkDefault	100	100	100		2.00		
2	NetworkDefault	100	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
2	NetworkDefault	100	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	705	705
Bexit	1	49	49
Cexit	1	477	477
Dexit	1	203	203
A1	1	418	418
2	113	113	
B1	1	116	116
1	641	641	
C1	2	28	28
1	70	70	
D1	2	48	48
A2	1	418	418
2	113	113	
C2	1	641	641
2	28	28	
D2	1	70	70
2	48	48	
A3	1	531	531
C3	1	669	669
D3	1	118	118

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
2	1	B	✓	D	
B1	1	1	F		
C1	1	1	A		
2	1	A	✓	C	
D1	1	1	E		
2	1	E			

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axiit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Axiit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Far side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	20	398	113
From	2	79	0	32
	3	556	26	0
	4	70	1	47
				0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(unfilled)	A3/1	Aexit/1	#0000FF
	2	(unfilled)	B1/1	Bexit/1	#FF0000
	3	(unfilled)	C3/1	Cexit/1	#00FF00
	4	(unfilled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	556
	3		2	3	B1/1, Cexit/1	Normal	32
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	79
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	398
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	20
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	70
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	47
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	28
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	113
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	85

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A				6	6	5	
	B				6	7	9	
	C				6	6	5	
	D				6	6	9	
	E	6	6	6	6		8	
	F	6	7	6	6		7	
	G	12	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8
	4	12	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

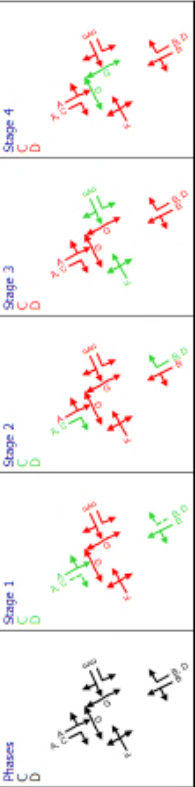
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

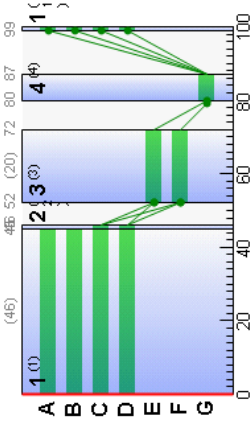
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
	Aexit	1	0	Unrestricted	705		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	49		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	477		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	203		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	49	82	418		1800	46	20.36	8.25	165.04	33.58	3.60	37.18
	2	19	364		113		1213	47	15.68	1.81	36.25	6.99	0.80	7.79
	B1	1	31	193	116		1800	20	35.47	2.77	19.82	16.23	1.23	17.47
	C1	1	76	19	641		1800	46	28.35	15.76	788.17	71.67	6.92	78.59
	2	5	1771	28	1213		47	14.04	0.41	20.67	1.55	0.18	1.73	9.99
	D1	1	19	366	70		1800	20	33.57	1.62	53.85	9.27	0.72	6.69
08:00-09:00	2	13	609	48	1800		1800	20	32.78	1.09	36.31	6.21	0.48	6.69
	A2	1	23	288	418		1800	100	0.30	0.04	0.35	0.50	0.00	0.50
	2	6	1334	113	1800		1800	100	0.07	0.00	0.02	0.03	0.00	0.03
	C2	1	36	153	641		1800	100	0.55	0.10	4.92	1.40	0.00	1.40
	2	2	5686	28	1800		1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	1	4	2214	70		1800	100	0.04	0.00	0.03	0.01	0.00	0.01
	2	3	3275	48	1800		1800	100	0.03	0.00	0.01	0.00	0.00	0.01
	A3	1	30	205	531		1800	100	0.42	0.06	1.23	0.88	0.00	0.88
	C3	1	37	142	669		1800	100	0.59	0.11	1.83	1.56	0.00	1.56
	D3	1	7	1273	118		1800	100	0.07	0.00	0.04	0.03	0.00	0.03

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Adjusted flow warning	Flow discrepancy (PCU/hr)	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green cycle (s)
	Aexit	1	705	705	0	0	Unrestricted	0		Unrestricted	0.35	100
	Bexit	1	49	49	0	0	Unrestricted	0		Unrestricted	0.61	100
	Cexit	1	477	477	0	0	Unrestricted	0		Unrestricted	0.54	100
	Dexit	1	203	203	0	0	Unrestricted	0		Unrestricted	0.64	100
	A1	1	418	418	0	1800	846	49		82	0.00	46
	2	113	113	0	1213	582	19			384	0.00	47
	B1	1	116	116	0	1800	378	31		193	0.00	20
	C1	1	641	641	0	1800	846	76		19	0.00	46
	2	28	28	0	1213	582	5			1771	0.00	47
	D1	1	70	70	0	1800	378	19		386	0.00	20
08:00-09:00	2	48	48	0	1800	378	13			609	0.00	20
	A2	1	418	418	0	1800	1800	23		288	0.00	100
	2	113	113	0	1800	1800	6			1334	0.00	100
	C2	1	641	641	0	1800	1800	36		153	0.00	100
	2	28	28	0	1800	1800	2			5686	0.00	100
	D2	1	70	70	0	1800	1800	4		2214	0.00	100
	2	48	48	0	1800	1800	3			3275	0.00	100
	A3	1	531	531	0	1800	1800	30		205	0.00	100
	C3	1	669	669	0	1800	1800	37		142	0.00	100
	D3	1	118	118	0	1800	1800	7		1273	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	20.36	2.36	33.58	68.75	287.37	3.60
	2	3.72	15.68	0.49	0.49	6.99	56.43	63.77	0.80
	B1	1	10.20	35.47	1.14	16.23	84.88	98.46	1.23
	C1	1	1.32	28.35	5.05	71.67	86.14	552.17	6.92
	2	1.32	14.04	0.11	0.11	1.55	51.97	14.55	0.18
	D1	1	2.16	33.57	0.65	9.27	81.82	57.27	0.72
08:00-09:00	2	2.16	32.78	0.44	0.44	6.21	80.47	38.63	0.48
	A2	1	7.01	0.30	0.04	0.50	0.00	0.00	0.00
	2	7.01	0.07	0.00	0.03	0.00	0.00	0.00	0.00
	C2	1	1.32	0.55	0.10	1.40	0.00	0.00	0.00
	2	1.32	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	D2	1	2.16	0.04	0.00	0.01	0.00	0.00	0.00
	2	2.16	0.03	0.00	0.01	0.01	0.00	0.00	0.00
	A3	1	3.80	0.42	0.06	0.88	0.00	0.00	0.00
	C3	1	4.25	0.59	0.11	1.56	0.00	0.00	0.00
	D3	1	4.32	0.07	0.00	0.03	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	57.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	8.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	26.00	
	A1	1	0.00	8.25	5.00	165.04	0.00	0.00	
	2	0.00	1.81	5.00	36.25	0.00	0.00	0.00	
	B1	1	0.00	2.77	14.00	19.82	0.00	0.00	
	C1	1	0.00	15.76	2.00	788.17	0.00	0.00	
	2	0.00	0.41	2.00	20.67	0.00	0.00	46.00	
	D1	1	0.00	1.62	3.00	53.85	0.00	0.00	
08:00-09:00	2	0.00	1.09	3.00	36.31	0.00	0.00	18.00	
	A2	1	0.00	0.04	10.00	0.35	0.00	28.00	
	2	0.00	0.00	10.00	10.00	0.02	0.00	0.00	
	C2	1	0.00	0.10	2.00	4.92	0.00	76.00	
	2	0.00	0.00	2.00	2.00	0.01	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.03	0.00	0.00	
	2	0.00	0.00	0.00	3.00	0.01	0.00	100.00	
	A3	1	0.00	0.06	5.00	1.23	0.00	0.00	
	C3	1	0.00	0.11	6.00	1.83	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.04	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalled PRC	Item with worst over PR
11	16/08/2022 10:22:37	16/08/2022 10:22:37	08:00	100	163.85	10.56	75.77	C1/1	0	0	C1/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	76	0	5504	1546	6.90	149.90	13.95	163.85

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	5504	5504	0		76		19	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.57	6.90	10.56	149.90	20.21	1112.22	13.95

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	788.17	0.00	462.00

A12 - DM 2028 PM
D12 - DM 2028 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
12	16/08/2022 10:22:37	16/08/2022 10:22:38	16:45	100	179.49	11.54	77.34	A1/1	0	0	A1/1	A3/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2028 PM		D12	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2028 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				59.40	✓	Sum of lanes	1800			Normal	
A2	1				58.40	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	
	1											

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	2	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
	1	2	(untitled)			1800
	2	1	(untitled)			1800
A2	2	2	(untitled)			1800
	1	1	(untitled)			1800
	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
	2	2	(untitled)			1800
	1	2	(untitled)			1800
D2	2	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800
A3	1	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
	1	NetworkDefault	100	100	100		2.00		
	2	NetworkDefault	100	100	100		3.00		
D1	1	NetworkDefault	100	100	100		3.00		
	1	NetworkDefault	100	100	100		10.00		
	2	NetworkDefault	100	100	100		10.00		
A2	1	NetworkDefault	100	100	100		2.00		
	2	NetworkDefault	100	100	100		2.00		
	2	NetworkDefault	100	100	100		3.00		
D2	1	NetworkDefault	100	100	100		3.00		
	2	NetworkDefault	100	100	100		3.00		
	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
	1	NetworkDefault	100	100	100		6.00		
	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	565	565
	Bexit	112	112
Cexit	1	790	790
	Dexit	124	124
A1	1	710	710
	2	46	46
B1	1	100	100
	1	560	560
C1	2	53	53
	1	36	36
D1	2	86	86
	1	710	710
A2	1	46	46
	2	560	560
C2	2	53	53
	1	36	36
D2	2	86	86
	1	756	756
A3	1	613	613
	1	122	122

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
	1	1	A		
C1	2	1	A	✓	C
	1	1	E		
D1	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	Bexit	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	Dexit	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To					
From		1	2	3	4	
	1	0	49	66	1	46
	2	38	0	53	9	
	3	49	53	0	69	
	4	36	10	76	0	

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	491
	3		2	3	B1/1, Cexit/1	Normal	53
	4		2	4	B1/1, Dexit/1	Normal	9
	5		2	1	B1/1, Aexit/1	Normal	38
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	661
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	49
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	36
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	76
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	10
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	53
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	46
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	69

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To				
From		1	2	3	4
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8
	4	12	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

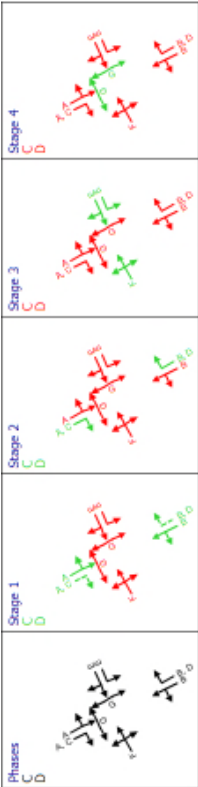
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

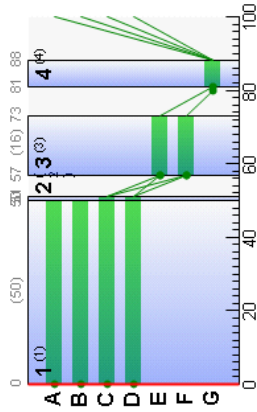
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results : Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated entering (PCU/hr)	Adjusted flow discrepancy warning	Flow discrepancy (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Adjusted capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)	Weighted cost of stops (£ per hr)	Weighted cost of delay (£ per hr)	Utilised average (s per hr)	Mean max queue (pCU)	Mean Delay (s per Veh)	Actual green (s per cycle)	Calculated sat flow	Actual green (s per cycle)	Performance Index (s per hr)
16-45-17-45	Aexit	1	0	Unrestricted	585		0	565	565	Unrestricted	0		Unrestricted	0.38	100	0.00	0.00	0.00	0.00	0.00	100	Unrestricted	100	0.00
	Bexit	1	0	Unrestricted	112		0	112	112	Unrestricted	0		Unrestricted	0.44	100	0.00	0.00	0.00	0.00	0.00	100	Unrestricted	100	0.00
	Cexit	1	0	Unrestricted	790		0	790	790	Unrestricted	0		Unrestricted	0.49	100	0.00	0.00	0.00	0.00	0.00	100	Unrestricted	100	0.00
	Dexit	1	0	Unrestricted	124		0	124	124	Unrestricted	0		Unrestricted	0.52	100	0.00	0.00	0.00	0.00	0.00	100	Unrestricted	100	0.00
	A1	1	77	16	710		0	710	710	1800	77		16	0.00	50	0.00	0.00	0.00	0.00	0.00	1800	1800	50	81.43
	A1	2	7	1133	48		0	1133	1133	1800	39		1133	0.00	51	12.21	0.63	12.58	7.53	0.28	1800	1800	51	2.49
	B1	1	33	175	100		0	175	175	1800	33		175	0.00	16	39.32	2.50	17.83	1.11	0.02	1800	1800	16	16.62
	B1	2	61	48	560		0	560	560	1800	61		48	0.00	50	20.48	1.52	575.93	45.23	0.00	1800	1800	50	50.26
	C1	1	8	970	53		0	970	970	1800	8		970	0.00	51	12.33	0.74	37.00	2.58	0.00	1800	1800	51	2.90
	C1	2	12	665	36		0	665	665	1800	12		665	0.00	16	35.96	0.85	28.26	5.11	0.38	1800	1800	16	5.49
	D1	1	28	220	88		0	220	220	1800	28		220	0.00	16	38.48	2.13	71.10	13.05	0.95	1800	1800	16	14.00
	D1	2	39	123	710		0	123	123	1800	39		123	0.00	100	0.65	0.13	1.28	1.82	0.00	1800	1800	100	1.82
	A2	1	3	3422	46		0	3422	3422	1800	3		3422	0.00	100	0.03	0.00	0.00	0.00	0.00	1800	1800	100	0.00
	A2	2	3	2957	53		0	2957	2957	1800	3		2957	0.00	100	0.03	0.00	0.02	0.01	0.00	1800	1800	100	0.01
	D2	1	2	4400	36		0	4400	4400	1800	2		4400	0.00	100	0.02	0.00	0.01	0.00	0.00	1800	1800	100	0.00
	D2	2	5	1784	86		0	1784	1784	1800	5		1784	0.00	100	0.05	0.00	0.04	0.02	0.00	1800	1800	100	0.02
	A3	1	42	114	756		0	114	114	1800	42		114	0.00	100	0.72	0.15	3.04	2.16	0.00	1800	1800	100	2.16
	C3	1	34	164	613		0	164	164	1800	34		164	0.00	100	0.52	0.09	1.46	1.25	0.00	1800	1800	100	1.25
	D3	1	7	1228	122		0	1228	1228	1800	7		1228	0.00	100	0.07	0.00	0.04	0.03	0.00	1800	1800	100	0.03

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Adjusted flow discrepancy warning	Flow discrepancy (PCU/hr)	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17-45	Aexit	1	565	565		0	Unrestricted	0		Unrestricted	0.38	100
	Bexit	1	112	112		0	Unrestricted	0		Unrestricted	0.44	100
	Cexit	1	790	790		0	Unrestricted	0		Unrestricted	0.49	100
	Dexit	1	124	124		0	Unrestricted	0		Unrestricted	0.52	100
	A1	1	710	710		0	1800	77		16	0.00	50
	A1	2	46	46		0	1212	39		1133	0.00	51
	B1	1	100	100		0	1800	33		175	0.00	16
	B1	2	560	560		0	1800	61		48	0.00	50
	C1	1	53	53		0	1212	8		970	0.00	51
	C1	2	36	36		0	1800	12		665	0.00	16
	D1	1	86	86		0	1800	28		220	0.00	16
	D1	2	710	710		0	1800	39		128	0.00	100
	A2	1	46	46		0	1800	3		3422	0.00	100
	A2	2	560	560		0	1800	61		189	0.00	100
	C2	1	53	53		0	1800	3		2957	0.00	100
	C2	2	36	36		0	1800	12		665	0.00	16
	D2	1	86	86		0	1800	28		220	0.00	100
	D2	2	756	756		0	1800	42		1784	0.00	100
	A3	1	613	613		0	1800	34		164	0.00	100
	C3	1	122	122		0	1800	7		1228	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.72	26.39	5.20	73.90	84.55	600.29	7.53
	2	2	3.72	12.21	0.16	2.22	48.04	22.10	0.26
	B1	1	10.20	38.32	1.09	15.51	86.64	88.64	1.11
	2	2	1.32	20.48	3.19	45.23	71.66	401.27	5.03
	C1	1	1.32	12.93	0.18	2.58	46.99	25.97	0.33
	2	2	2.16	35.98	0.36	5.11	83.60	30.10	0.38
	D1	1	2.16	38.48	0.92	13.05	87.93	75.92	0.95
	2	2	7.01	0.65	0.13	1.82	0.00	0.00	0.00
16:45-17:45	A2	1	7.01	0.03	0.00	0.00	0.00	0.00	0.00
	2	2	7.01	0.03	0.00	0.00	0.00	0.00	0.00
	C2	1	1.32	0.45	0.07	1.00	0.00	0.00	0.00
	2	2	1.32	0.03	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
	2	2	2.16	0.05	0.00	0.02	0.00	0.00	0.00
	A3	1	3.60	0.72	0.15	2.16	0.00	0.00	0.00
	C3	1	4.25	0.52	0.09	1.25	0.00	0.00	0.00
	D3	1	4.32	0.07	0.00	0.03	0.00	0.00	0.00
	2	2	4.32	0.07	0.00	0.03	0.00	0.00	0.00
	3	3	4.32	0.07	0.00	0.03	0.00	0.00	0.00
	4	4	4.32	0.07	0.00	0.03	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	25.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	27.00	
	A1	1	0.00	17.07	5.00	341.44	0.00	0.00	
	2	2	0.00	0.63	5.00	12.58	0.00	50.00	
	B1	1	0.00	2.50	14.00	17.83	0.00	0.00	
	2	2	0.00	11.52	2.00	575.93	0.00	0.00	
	C1	1	0.00	0.74	2.00	37.00	0.00	49.00	
	2	2	0.00	0.85	3.00	28.28	0.00	15.00	
	D1	1	0.00	2.13	3.00	71.10	0.00	0.00	
	2	2	0.00	0.13	10.00	1.28	0.00	62.00	
16:45-17:45	A2	1	0.00	0.00	10.00	0.00	0.00	100.00	
	2	2	0.00	0.00	10.00	0.00	0.00	0.00	
	C2	1	0.00	0.07	2.00	3.51	0.00	82.00	
	2	2	0.00	0.00	2.00	0.02	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	
	2	2	0.00	0.00	3.00	0.04	0.00	0.00	
	A3	1	0.00	0.15	5.00	3.04	0.00	0.00	
	C3	1	0.00	0.09	6.00	1.46	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.04	0.00	0.00	
	2	2	0.00	0.00	6.00	0.04	0.00	0.00	
	3	3	0.00	0.00	6.00	0.04	0.00	0.00	
	4	4	0.00	0.00	6.00	0.04	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
12	16/08/2022 10:22:37	16/08/2022 10:22:38	16:45	100	175.49	11.54	77.34	A1/1	0	0	A1/1	A3/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	77	0	6164	1550	6.74	163.89	15.60	179.49

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
16:45-17:45	6164	6164	0		77		16	1578

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.33	6.74	11.54	163.89	20.18	1243.99	15.60

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	575.93	0.00	590.00

A13 - DM 2038 AM
D13 - DM 2038 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network flow (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
13	16/08/2022 10:22:38	16/08/2022 10:22:39	08:00	100	188.15	12.15	81.44	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 AM		D13	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Merside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	1				58.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RB67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
	1	1	(untitled)			
	1	1	(untitled)			
Dexit	1	1	(untitled)			
	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
	1	1	(untitled)			1800
A2	1	2	(untitled)			1800
	2	2	(untitled)			1800
	1	1	(untitled)			1800
C2	1	1	(untitled)			1800
	2	2	(untitled)			1800
	1	2	(untitled)			1800
D2	1	2	(untitled)			1800
	2	1	(untitled)			1800
	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	2	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		14.00		
D1	2	NetworkDefault	100	100	100		2.00		
A2	1	NetworkDefault	100	100	100		3.00		
C2	1	NetworkDefault	100	100	100		10.00		
D2	2	NetworkDefault	100	100	100		2.00		
A3	1	NetworkDefault	100	100	100		3.00		
C3	1	NetworkDefault	100	100	100		5.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	758	758
Bexit	1	52	52
Cexit	1	512	512
Dexit	1	218	218
A1	1	449	449
B1	2	122	122
C1	1	124	124
D1	1	689	689
A2	1	30	30
C2	1	75	75
D2	2	51	51
A3	1	449	449
C3	1	122	122
D3	1	689	689
A3	1	571	571
C3	1	719	719
D3	1	126	126

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
B1	1	1	B	✓	D
C1	1	1	F		
D1	1	1	A		
D1	2	1	A	✓	C
D1	1	1	E		
D1	2	1	E		

Entry Sources

Am	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
A1	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
C1	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
D1	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
A2	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
C2	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
D2	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Aexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Far Side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	21	428	122
From	2	85	0	34
	3	598	30	0
	4	75	1	50

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(unfilled)	A3/1	Aexit/1	#0000FF
	2	(unfilled)	B1/1	Bexit/1	#FF0000
	3	(unfilled)	C3/1	Cexit/1	#00FF00
	4	(unfilled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	598
	3		2	3	B1/1, Cexit/1	Normal	34
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	85
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	428
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	21
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	75
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	50
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	30
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	122
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	91

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name (untitled)	Description	Use sequence	Cycle time source	Cycle time (s)
1			1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level Offsets And Green Splits	Auto redistribute	Enable stage constraint
1						✓	

Phases

Controller stream	Phase	Name (ALL)	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1			7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D				6	6	9
	E	6	6	6		6	8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

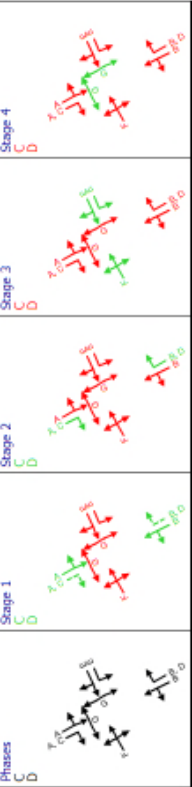
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

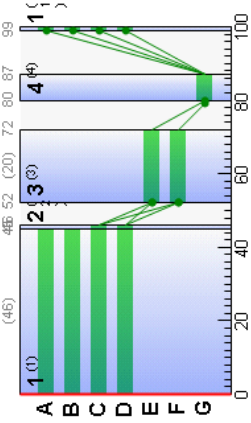
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit 1	0	Unrestricted	758		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit 1	0	Unrestricted	52		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit 1	0	Unrestricted	512		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit 1	0	Unrestricted	218		Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1 1	53	70	449		1800	46	21.11	9.03	180.59	37.39	3.99	41.38
	A2 1	21	329	122		1213	47	15.87	1.96	39.19	7.64	0.87	8.51
	B1 1	33	174	124		1800	20	35.84	2.97	21.24	17.53	1.32	18.85
	C1 1	81	11	689		1800	46	31.80	18.00	899.95	86.42	7.94	94.37
	D1 1	20	354	75		1800	20	33.77	1.73	57.76	9.99	0.77	10.76
	D2 1	13	567	51		1800	20	32.89	1.16	38.60	6.62	0.52	7.13
08:00-09:00	A2 1	25	261	449		1800	100	0.33	0.04	0.41	0.59	0.00	0.59
	D2 1	7	1228	122		1800	100	0.07	0.00	0.02	0.03	0.00	0.03
	C2 1	38	135	689		1800	100	0.62	0.12	5.93	1.68	0.00	1.68
	D2 1	2	5300	30		1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D3 1	4	2060	75		1800	100	0.04	0.00	0.03	0.01	0.00	0.01
	A3 1	32	184	571		1800	100	0.46	0.07	1.47	1.05	0.00	1.05
	C3 1	40	125	719		1800	100	0.66	0.13	2.21	1.88	0.00	1.88
	D3 1	7	1186	126		1800	100	0.08	0.00	0.04	0.04	0.00	0.04

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated exit (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green cycle (s)
08:00-09:00	Aexit 1	758	758	0		Unrestricted	Unrestricted	0		Unrestricted	0.35	100
	Bexit 1	52	52	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100
	Cexit 1	512	512	0		Unrestricted	Unrestricted	0		Unrestricted	0.55	100
	Dexit 1	218	218	0		Unrestricted	Unrestricted	0		Unrestricted	0.64	100
	A1 1	449	449	0		1800	846	53		70	0.00	46
	B1 1	124	124	0		1800	378	33		329	0.00	47
	C1 1	689	689	0		1800	846	81		11	0.00	46
	D1 1	75	75	0		1213	582	5		1646	0.00	47
	D2 1	51	51	0		1800	378	20		354	0.00	20
	A2 1	449	449	0		1800	1800	25		567	0.00	20
08:00-09:00	A3 1	449	449	0		1800	1800	20		261	0.00	100
	D2 1	122	122	0		1800	1800	7		1228	0.00	100
	C2 1	689	689	0		1800	1800	38		135	0.00	100
	D2 1	30	30	0		1800	1800	2		5300	0.00	100
	D3 1	75	75	0		1800	1800	4		2060	0.00	100
	A3 1	51	51	0		1800	1800	3		3076	0.00	100
	C3 1	571	571	0		1800	1800	32		184	0.00	100
	D3 1	719	719	0		1800	1800	40		125	0.00	100
		126	126	0		1800	1800	7		1186	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit 1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit 1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit 1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit 1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	A1 1	3.72	21.11	2.63	37.39	70.80	317.89	3.99
	B1 1	3.72	15.87	0.54	7.64	56.63	69.09	0.87
	C1 1	10.20	35.84	1.23	17.53	85.12	105.55	1.32
	D1 1	1.32	31.80	6.09	86.42	91.96	633.57	7.94
	D2 1	1.32	14.08	0.12	1.67	51.99	15.60	0.20
	A2 1	2.16	33.77	0.70	9.99	81.99	61.49	0.77
08:00-09:00	B2 1	2.16	32.89	0.47	6.62	80.56	41.08	0.52
	A3 1	7.01	0.33	0.04	0.03	0.00	0.00	0.00
	D2 1	1.32	0.62	0.12	1.68	0.00	0.00	0.00
	C2 1	1.32	0.02	0.00	0.00	0.00	0.00	0.00
	D2 1	2.16	0.04	0.00	0.01	0.00	0.00	0.00
	A3 1	2.16	0.03	0.00	0.01	0.00	0.00	0.00
	A3 1	3.80	0.46	0.07	1.05	0.00	0.00	0.00
	C3 1	4.25	0.66	0.13	1.88	0.00	0.00	0.00
	D3 1	4.32	0.08	0.00	0.04	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	Aexit 1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit 1	0.00	0.00	93.43	0.00	0.00	52.00	
	Cexit 1	0.00	0.00	65.96	0.00	0.00	7.00	
	Dexit 1	0.00	0.00	81.89	0.00	0.00	25.00	
	A1 1	0.00	9.03	5.00	180.59	0.00	0.00	
	B1 1	0.00	1.96	5.00	39.19	0.00	0.00	
	C1 1	0.00	2.97	14.00	21.24	0.00	0.00	
	D1 1	0.00	18.00	2.00	899.95	0.00	0.00	
	D2 1	0.00	0.44	2.00	22.15	0.00	46.00	
	A2 1	0.00	1.73	3.00	57.76	0.00	0.00	
08:00-09:00	B2 1	0.00	1.16	3.00	38.50	0.00	18.00	
	C2 1	0.00	0.04	10.00	0.41	0.00	33.00	
	D2 1	0.00	0.00	10.00	0.02	0.00	0.00	
	A3 1	0.00	0.12	2.00	5.93	0.00	84.00	
	B3 1	0.00	0.00	2.00	0.01	0.00	100.00	
	C3 1	0.00	0.00	3.00	0.03	0.00	0.00	
	D3 1	0.00	0.00	3.00	0.01	0.00	100.00	
	A3 1	0.00	0.07	5.00	1.47	0.00	0.00	
	C3 1	0.00	0.13	6.00	2.21	0.00	0.00	
	D3 1	0.00	0.00	6.00	0.04	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalled PRC	Item with worst over PR
13	16/08/2022 10:22:38	16/08/2022 10:22:39	08:00	100	188.15	12.15	81.44	C1/1	0	0	C3/1	C1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	81	0	5912	1546	7.40	172.55	15.60	188.15

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	5912	5912	0		81		11	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19.57	7.40	12.15	172.55	21.05	1244.27	15.60

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	899.95	0.00	465.00

A14 - DM 2038 PM
D14 - DM 2038 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
14	16/08/2022 10:22:39	16/08/2022 10:22:40	16:45	100	209.71	13.52	83.22	A1/1	0	0	A1/1	A3/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 PM		D14	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Am	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	378.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	2				31.00	✓	Sum of lanes	1800	✓		Normal	
B1	1				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	2				85.00	✓	Sum of lanes	1800	✓		Normal	
D1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
D1	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				59.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
C2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
D2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
A1	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
C1	1	NetworkDefault	100	100	100		2.00		
C1	2	NetworkDefault	100	100	100		2.00		
D1	1	NetworkDefault	100	100	100		3.00		
D1	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
A2	2	NetworkDefault	100	100	100		10.00		
C2	1	NetworkDefault	100	100	100		2.00		
C2	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
D2	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
A1	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
D1	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
A2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
C2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
D2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	607	607
	Bexit	1	121
Cexit	1	850	850
	Dexit	1	132
A1	1	764	764
	2	49	49
B1	1	107	107
C1	1	602	602
	2	57	57
D1	1	38	38
	2	93	93
A2	1	764	764
	2	49	49
C2	1	602	602
	2	57	57
D2	1	38	38
	2	93	93
A3	1	813	813
C3	1	659	659
D3	1	131	131

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
C1	1	1	A		
	2	1	A	✓	C
D1	1	1	E		
	2	1	E		

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
A3	1	3.60	30.00
C3	1	4.25	30.00
D3	1	4.32	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	Bexit	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	Dexit	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	53	711	49
	2	41	0	57	9
	3	528	57	0	74
	4	38	11	82	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	528
	3		2	3	B1/1, Cexit/1	Normal	57
	4		2	4	B1/1, Dexit/1	Normal	9
	5		2	1	B1/1, Aexit/1	Normal	41
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	711
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	53
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	38
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	82
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	11
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	57
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	49
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	74

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

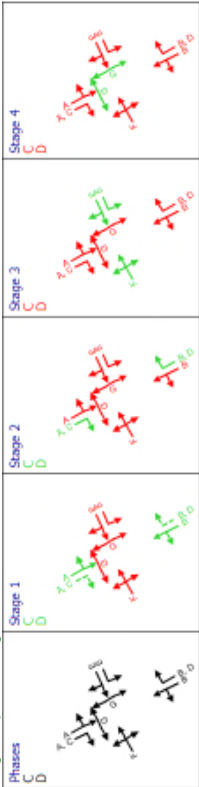
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

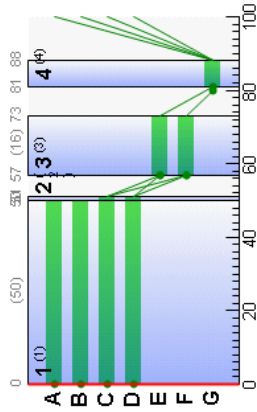
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean max queue (pCU)	Utilised average (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)
16-45-17-45	Aexit	1	0	Unrestricted	607	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	121	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	850	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	132	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	83	8	764	1800	50	30.24	20.03	400.61	91.14	8.75	99.89
	A1	2	8	1057	49	1212	51	12.26	0.68	13.88	2.37	0.30	2.67
	B1	1	35	157	107	1800	16	39.79	2.71	19.35	16.79	1.20	18.00
	C1	1	66	37	602	1800	50	21.75	12.83	841.34	51.84	5.65	57.28
	C1	2	9	895	57	1212	51	12.40	0.80	39.81	2.79	0.35	3.14
	D1	1	12	625	38	1800	16	36.06	0.90	29.85	5.40	0.40	5.80
	D1	2	30	196	93	1800	16	38.90	2.31	77.12	14.27	1.03	15.30
	A2	1	42	112	764	1800	100	0.74	0.16	1.56	2.22	0.00	2.22
	C2	1	3	3208	49	1800	100	0.03	0.00	0.00	0.01	0.00	0.01
	C2	2	3	2742	57	1800	100	0.03	0.00	0.03	0.01	0.00	0.01
	D2	1	2	4163	38	1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	2	5	1642	93	1800	100	0.05	0.00	0.05	0.02	0.00	0.02
	A3	1	45	99	813	1800	100	0.82	0.19	3.72	2.64	0.00	2.64
	C3	1	37	146	659	1800	100	0.58	0.11	1.76	1.50	0.00	1.50
	D3	1	7	1137	131	1800	100	0.08	0.00	0.05	0.04	0.00	0.04

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow leaving (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17-45	Aexit	1	607	607	0		Unrestricted	Unrestricted	0		Unrestricted	0.38	100
	Bexit	1	121	121	0		Unrestricted	Unrestricted	0		Unrestricted	0.43	100
	Cexit	1	850	850	0		Unrestricted	Unrestricted	0		Unrestricted	0.48	100
	Dexit	1	132	132	0		Unrestricted	Unrestricted	0		Unrestricted	0.52	100
	A1	1	764	764	0		1800	918	83		8	0.00	50
	A1	2	49	49	0		1212	630	8		1057	0.00	51
	B1	1	107	107	0		1800	306	35		157	0.00	16
	C1	1	602	602	0		1800	918	66		37	0.00	50
	C1	2	57	57	0		1212	630	9		885	0.00	51
	D1	1	38	38	0		1800	306	12		625	0.00	16
	D1	2	93	93	0		1800	306	30		196	0.00	16
	A2	1	764	764	0		1800	1800	42		112	0.00	100
	A2	2	49	49	0		1800	1800	3		3206	0.00	100
	C2	1	602	602	0		1800	1800	33		169	0.00	100
	C2	2	57	57	0		1800	1800	3		2742	0.00	100
	D2	1	38	38	0		1800	1800	2		4163	0.00	100
	D2	2	93	93	0		1800	1800	5		1642	0.00	100
	A3	1	813	813	0		1800	1800	45		99	0.00	100
	C3	1	659	659	0		1800	1800	37		146	0.00	100
	D3	1	131	131	0		1800	1800	7		1137	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU/hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	Ai	1	3.72	30.24	6.42	91.14	91.34	697.84	8.75
		2	3.72	12.26	0.17	2.37	48.61	23.92	0.30
	B1	1	10.20	38.79	1.18	16.79	89.81	96.10	1.20
		1	1.32	21.75	3.64	51.64	74.82	450.44	5.65
	C1	2	1.32	12.40	0.20	2.79	49.09	27.98	0.35
		1	2.16	36.06	0.38	83.65	31.79	0.40	
	D1	2	2.16	38.90	1.01	14.27	88.36	82.18	1.03
	A2	1	7.01	0.74	0.16	2.22	0.00	0.00	0.00
		2	7.01	0.03	0.00	0.01	0.00	0.00	0.00
	C2	1	1.32	0.50	0.08	1.19	0.00	0.00	0.00
		2	1.32	0.03	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
		2	2.16	0.05	0.00	0.02	0.00	0.00	0.00
	A3	1	3.60	0.82	0.19	2.64	0.00	0.00	0.00
	C3	1	4.25	0.68	0.11	1.50	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.04	0.00	0.00	0.00

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	83	0	6626	1550	7.35	192.03	17.68	209.71

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Actual green (s per hr)
16:45-17:45	6626	6626	0		83		8		1578

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU/hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.32	7.35	13.52	192.03	21.28	1410.14	17.68

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	641.34	0.00	598.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	23.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	26.00	
	Ai	1	0.00	20.03	5.00	400.61	0.00	0.00	
		2	0.00	0.68	5.00	13.68	0.00	49.00	
	B1	1	0.00	2.71	14.00	19.35	0.00	0.00	
		1	0.00	12.83	2.00	641.34	0.00	0.00	
	C1	2	0.00	0.80	2.00	39.81	0.00	49.00	
		1	0.00	0.90	3.00	29.85	0.00	15.00	
	D1	2	0.00	2.31	3.00	77.12	0.00	0.00	
		1	0.00	0.16	10.00	1.56	0.00	71.00	
	A2	2	0.00	0.00	10.00	0.00	0.00	100.00	
		1	0.00	0.08	2.00	4.20	0.00	85.00	
	C2	2	0.00	0.00	2.00	0.03	0.00	100.00	
		1	0.00	0.00	3.00	0.01	0.00	100.00	
	D2	2	0.00	0.00	3.00	0.05	0.00	0.00	
	A3	1	0.00	0.19	5.00	3.72	0.00	0.00	
		1	0.00	0.11	6.00	1.76	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.05	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
14	16/08/2022 10:22:39	16/08/2022 10:22:40	16:45	100	209.71	13.52	83.22	A1/1	0	0	A1/1	A3/1	A1/1

A15 - DM 2038 AM+PFD
D15 - DM 2038 AM+PFD *

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycles Time (s)	Performance Index (c per hr)	Total network demand (PCU/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst oversaturated PRC
15	16/08/2022 10:22:40	16/08/2022 10:22:41	08:00	100	197.89	12.79	82.62	C1/1	0	0	C1/1	C3/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 AM+PFD		D15	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 AM+PFD				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is signal give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	673.41						Normal	
	1			✓	537.22						Normal	
	1			✓	379.28						Normal	
Dexit	1			✓	470.84						Normal	
	1				31.00	✓	Sum of lanes	1800	✓		Normal	
	2				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
B1	1				85.00	✓	Sum of lanes	1800	✓		Normal	
	1				11.00	✓	Sum of lanes	1800	✓		Normal	
	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
D1	1				18.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
	1				58.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
	1				11.00	✓	Sum of lanes	1800			Normal	
	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
	1				35.40	✓	Sum of lanes	1800			Normal	
	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use R867	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
	1	1	(untitled)			
	1	1	(untitled)			
Dexit	1	1	(untitled)			
	1	2	(untitled)			1800
	2	1	(untitled)			1800
B1	1	1	(untitled)			1800
	1	1	(untitled)			1800
	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
	2	1	(untitled)			1800
	1	1	(untitled)			1800
A2	1	2	(untitled)			1800
	2	2	(untitled)			1800
	1	1	(untitled)			1800
D2	1	2	(untitled)			1800
	2	2	(untitled)			1800
	1	1	(untitled)			1800
A3	1	1	(untitled)			1800
	1	1	(untitled)			1800
	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	2	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		14.00		
D1	2	NetworkDefault	100	100	100		2.00		
A2	1	NetworkDefault	100	100	100		3.00		
C2	2	NetworkDefault	100	100	100		10.00		
D2	1	NetworkDefault	100	100	100		2.00		
A3	1	NetworkDefault	100	100	100		3.00		
C3	1	NetworkDefault	100	100	100		5.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	771	771
Bexit	1	54	54
Cexit	1	539	539
Dexit	1	225	225
A1	1	478	478
B1	2	129	129
C1	1	125	125
D1	1	699	699
A2	1	30	30
C2	1	77	77
D2	2	51	51
A3	1	478	478
C3	1	129	129
D3	1	699	699
		30	30
		77	77
		51	51
		478	478
		129	129
		699	699
		30	30
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		77	77
		51	51
		478	478
		129	129
		699	699
		30	30
		77	77
		51	51
		478	478

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Axit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
Aexit	1	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

	To			
	1	2	3	4
1	0	23	455	129
From	2	86	0	34
	3	608	30	0
	4	77	1	50

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	908
	3		2	3	B1/1, Cexit/1	Normal	34
	4		2	4	B1/1, Dexit/1	Normal	5
	5		2	1	B1/1, Aexit/1	Normal	86
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	455
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	23
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	77
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	50
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	1
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	30
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	129
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	91

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	1
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	45, 46, 72, 87

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A				6	6	5	
	B				6	7	9	
	C				6	6	5	
	D				6	6	9	
	E	6	6	6		6	8	
	F	6	7	6	6		7	
	G	12	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	0	7	9
	2	0	0	6	9
	3	7	6	0	8
	4	12	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	99	45	46	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	E,F	52	72	20	1	7
	4	✓	4	G	80	87	7	1	7

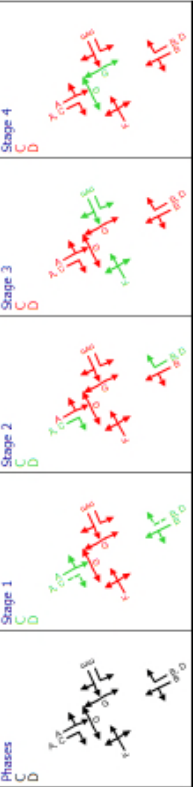
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	99	45	46
	B	1	✓	99	45	46
	C	1	✓	99	46	47
	D	1	✓	99	46	47
	E	1	✓	52	72	20
	F	1	✓	52	72	20
	G	1	✓	80	87	7

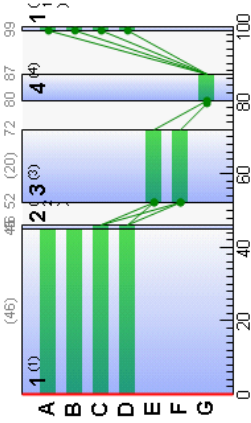
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End
A1	1		1	B	99	45
A1	2		1	B	99	45
B1	1		1	F	52	72
C1	1		1	A	99	45
C1	2		1	A	99	45
D1	1		1	E	52	72
D1	2		1	E	52	72

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	83	0	6106	1546	7.54	161,58	16,31	197,89

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)
08:00-09:00	6106	6106	0		83		9	1574

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	19,51	7,54	12,79	181,58	21,30	1300,78	16,31

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))
08:00-09:00	929,64	0,00	470,00

A16 - DM 2038 PM+PFD
D16 - DM 2038 PM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
16	16/08/2022 10:22:41	16/08/2022 10:22:42	16:45	100	225,50	14,56	85,29	A1/1	0	0	A1/1	A3/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 PM+PFD		D16	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 PM+PFD				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Am	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/m)	Is signal controlled	Is give way	Traffic type	Allow Heerside Turn On Red
Aexit	1			✓	673.41						Normal	
Bexit	1			✓	537.22						Normal	
Cexit	1			✓	378.28						Normal	
Dexit	1			✓	470.84						Normal	
A1	2				31.00	✓	Sum of lanes	1800	✓		Normal	
B1	1				31.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	2				85.00	✓	Sum of lanes	1800	✓		Normal	
D1	1				11.00	✓	Sum of lanes	1800	✓		Normal	
D1	2				18.00	✓	Sum of lanes	1800	✓		Normal	
A2	1				59.40	✓	Sum of lanes	1800			Normal	
A2	2				58.40	✓	Sum of lanes	1800			Normal	
C2	1				11.00	✓	Sum of lanes	1800			Normal	
C2	2				11.00	✓	Sum of lanes	1800			Normal	
D2	1				18.00	✓	Sum of lanes	1800			Normal	
D2	2				18.00	✓	Sum of lanes	1800			Normal	
A3	1				30.00	✓	Sum of lanes	1800			Normal	
C3	1				35.40	✓	Sum of lanes	1800			Normal	
D3	1				36.00	✓	Sum of lanes	1800			Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/m)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	2	(untitled)			1800
B1	2	1	(untitled)			1800
C1	1	1	(untitled)			1800
C1	2	2	(untitled)			1800
D1	1	2	(untitled)			1800
D1	2	1	(untitled)			1800
A2	1	1	(untitled)			1800
A2	2	2	(untitled)			1800
C2	1	1	(untitled)			1800
C2	2	2	(untitled)			1800
D2	1	2	(untitled)			1800
D2	2	1	(untitled)			1800
A3	1	1	(untitled)			1800
C3	1	1	(untitled)			1800
D3	1	1	(untitled)			1800

Modelling

Am	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
A1	2	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		14.00		
C1	1	NetworkDefault	100	100	100		2.00		
C1	2	NetworkDefault	100	100	100		2.00		
D1	1	NetworkDefault	100	100	100		3.00		
D1	2	NetworkDefault	100	100	100		3.00		
A2	1	NetworkDefault	100	100	100		10.00		
A2	2	NetworkDefault	100	100	100		10.00		
C2	1	NetworkDefault	100	100	100		2.00		
C2	2	NetworkDefault	100	100	100		2.00		
D2	1	NetworkDefault	100	100	100		3.00		
D2	2	NetworkDefault	100	100	100		3.00		
A3	1	NetworkDefault	100	100	100		5.00		
C3	1	NetworkDefault	100	100	100		6.00		
D3	1	NetworkDefault	100	100	100		6.00		

Modelling - Advanced

Am	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	No-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Am	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Am	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	642	642
	2		
Bexit	1	122	122
	2		
Cexit	1	868	868
	2		
Dexit	1	133	133
	2		
A1	1	783	783
	2		
B1	1	50	50
	2		
C1	1	110	110
	2		
D1	1	631	631
	2		
A2	1	57	57
	2		
B2	1	41	41
	2		
C2	1	93	93
	2		
D2	1	783	783
	2		
A3	1	50	50
	2		
B3	1	631	631
	2		
C3	1	57	57
	2		
D3	1	41	41
	2		
A4	1	93	93
	2		
B4	1	833	833
	2		
C4	1	688	688
	2		
D4	1	134	134
	2		

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled	Second phase
A1	1	1	B		
	2	1	B	✓	D
B1	1	1	F		
	2	1	A		
C1	1	1	A		
	2	1	A	✓	C
D1	1	1	E		
	2	1	E		

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
B1	1	10.20	30.00
	2		
A3	1	3.60	30.00
	2		
C3	1	4.25	30.00
	2		

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Aexit	1	1	C1/1	Aexit/1	80.81	30.00	✓	Straight	Straight Movement
	2								
Bexit	1	1	A1/1	Bexit/1	64.47	30.00	✓	Nearside	31.74
	2								
Cexit	1	1	B1/1	Cexit/1	45.51	30.00	✓	Nearside	16.47
	2								
Dexit	1	1	B1/1	Dexit/1	56.50	30.00	✓	Straight	Straight Movement
	2								
A1	1	1	A2/1	A1/1	3.72	30.00	✓	Straight	Straight Movement
	2	1	A2/2	A1/2	3.72	30.00	✓	Straight	Straight Movement
C1	1	1	C2/1	C1/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C2/2	C1/2	1.32	30.00	✓	Straight	Straight Movement
D1	1	1	D2/1	D1/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D2/2	D1/2	2.16	30.00	✓	Straight	Straight Movement
A2	1	1	A3/1	A2/1	7.01	30.00	✓	Straight	Straight Movement
	2	1	A3/1	A2/2	7.01	30.00	✓	Straight	Straight Movement
C2	1	1	C3/1	C2/1	1.32	30.00	✓	Straight	Straight Movement
	2	1	C3/1	C2/2	1.32	30.00	✓	Straight	Straight Movement
D2	1	1	D3/1	D2/1	2.16	30.00	✓	Straight	Straight Movement
	2	1	D3/1	D2/2	2.16	30.00	✓	Straight	Straight Movement
Aexit	1	2	B1/1	Aexit/1	80.81	30.00	✓	Offside	77.56
	2								
Bexit	1	2	D1/2	Bexit/1	64.47	30.00	✓	Straight	Straight Movement
	2								
Cexit	1	2	A1/1	Cexit/1	45.51	30.00	✓	Straight	Straight Movement
	2								
Dexit	1	2	A1/2	Dexit/1	56.50	30.00	✓	Offside	34.71
	2	3	D1/1	Aexit/1	80.81	30.00	✓	Nearside	20.08
Bexit	1	3	C1/2	Bexit/1	64.47	30.00	✓	Offside	41.51
	2								
Cexit	1	3	D1/2	Cexit/1	45.51	30.00	✓	Offside	62.46
	2								
Dexit	1	3	C1/1	Dexit/1	56.50	30.00	✓	Nearside	42.79
	2								

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(unfilled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
From	1	2	3	4	
	1	0	54	729	50
	2	44	0	57	9
	3	557	57	0	74
	4	41	11	82	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A3/1	Aexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	C3/1	Cexit/1	#00FF00
	4	(untitled)	D3/1	Dexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path Items	Allocation Type	Normal Calculated Flow (PCU/hr)
1	2		3	1	C3/1, C2/1, C1/1, Aexit/1	Normal	557
	3		2	3	B1/1, Cexit/1	Normal	57
	4		2	4	B1/1, Dexit/1	Normal	9
	5		2	1	B1/1, Aexit/1	Normal	44
	6		1	3	A3/1, A2/1, A1/1, Cexit/1	Normal	729
	7		1	2	A3/1, A2/1, A1/1, Bexit/1	Normal	54
	9		4	1	D3/1, D2/1, D1/1, Aexit/1	Normal	41
	10		4	3	D3/1, D2/2, D1/2, Cexit/1	Normal	82
	11		4	2	D3/1, D2/2, D1/2, Bexit/1	Normal	11
	12		3	2	C3/1, C2/2, C1/2, Bexit/1	Normal	57
	13		1	4	A3/1, A2/2, A1/2, Dexit/1	Normal	50
	14		3	4	C3/1, C2/1, C1/1, Dexit/1	Normal	74

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	100

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	✓	Allow green split optimisation	✓	Optimisation level	Auto redistribute	Enable stage constraint
1					Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, D	20
	2	C, D	1
	3	E, F	1
	4	G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	50, 51, 73, 88

Intergreen Matrix for Controller Stream 1

	To						
	A	B	C	D	E	F	G
From	A				6	6	5
	B				6	7	9
	C				6	6	5
	D	6	6	6	6	6	9
	E	6	6	6	6		8
	F	6	7	6	6		7
	G	12	12	12	12	12	

Interstage Matrix for Controller Stream 1

	To			
	1	2	3	4
From	1	0	0	7
	2	0	0	6
	3	7	6	0
	4	12	12	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B,C,D	0	50	50	20	20
	2	✓	2	C,D	50	51	1	1	1
	3	✓	3	E,F	57	73	16	1	7
	4	✓	4	G	81	88	7	1	7

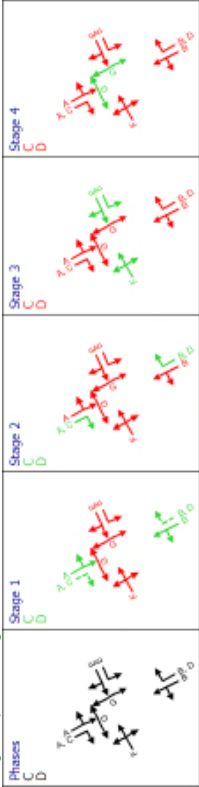
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	50	50
	B	1	✓	0	50	50
	C	1	✓	0	51	51
	D	1	✓	0	51	51
	E	1	✓	57	73	16
	F	1	✓	57	73	16
	G	1	✓	81	88	7

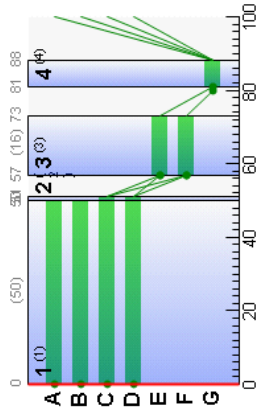
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	B	0	50	50
A1	2		1	B	0	50	50
B1	1		1	F	57	73	16
C1	1		1	A	0	50	50
C1	2		1	A	0	50	50
D1	1		1	E	57	73	16
D1	2		1	E	57	73	16

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean max queue (PCU)	Utilised average (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per hr)
16-45-17-45	Aexit	1	0	Unrestricted	642	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	122	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	868	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	133	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	85	6	783	1800	50	32.11	21.07	421.32	98.16	9.26	108.42
	B1	2	8	1034	50	1212	51	12.28	0.70	13.96	2.42	0.31	2.73
	B1	1	36	150	110	1800	16	39.99	2.79	19.92	17.35	1.24	18.59
	C1	1	69	31	631	1800	50	22.76	13.89	894.70	56.84	6.10	62.74
	C1	2	9	895	57	1212	51	12.40	0.80	39.81	2.79	0.35	3.14
	D1	1	13	572	41	1800	16	36.17	0.97	32.23	5.85	0.43	6.28
	D1	2	30	196	93	1800	16	38.90	2.31	77.12	14.27	1.03	15.30
	A2	1	44	107	783	1800	100	0.77	0.17	1.67	2.38	0.00	2.38
	C2	1	3	3140	50	1800	100	0.03	0.00	0.00	0.01	0.00	0.01
	C2	2	3	2742	57	1800	100	0.03	0.00	0.03	0.01	0.00	0.01
	D2	1	2	3851	41	1800	100	0.02	0.00	0.01	0.00	0.00	0.00
	D2	2	5	1642	93	1800	100	0.05	0.00	0.05	0.02	0.00	0.02
	A3	1	46	94	833	1800	100	0.86	0.20	3.98	2.83	0.00	2.83
	C3	1	38	135	688	1800	100	0.62	0.12	1.97	1.68	0.00	1.68
	D3	1	7	1109	134	1800	100	0.08	0.00	0.05	0.04	0.00	0.04

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow exiting (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s per cycle)
16-45-17-45	Aexit	1	642	642	0		Unrestricted	Unrestricted	0		Unrestricted	0.38	100
	Bexit	1	122	122	0		Unrestricted	Unrestricted	0		Unrestricted	0.43	100
	Cexit	1	868	868	0		Unrestricted	Unrestricted	0		Unrestricted	0.46	100
	Dexit	1	133	133	0		Unrestricted	Unrestricted	0		Unrestricted	0.52	100
	A1	1	783	783	0		1800	918	85		6	0.00	50
	B1	2	50	50	0		1212	630	8		1034	0.00	51
	B1	1	110	110	0		1800	306	38		150	0.00	16
	C1	1	631	631	0		1800	918	69		31	0.00	50
	C1	2	57	57	0		1212	630	9		885	0.00	51
	D1	1	41	41	0		1800	306	13		572	0.00	16
	D1	2	93	93	0		1800	306	30		196	0.00	16
	A2	1	783	783	0		1800	1800	44		107	0.00	100
	A2	2	50	50	0		1800	1800	3		3140	0.00	100
	C2	1	631	631	0		1800	1800	35		157	0.00	100
	C2	2	57	57	0		1800	1800	3		2742	0.00	100
	D2	1	41	41	0		1800	1800	2		3851	0.00	100
	D2	2	93	93	0		1800	1800	5		1642	0.00	100
	A3	1	833	833	0		1800	1800	46		94	0.00	100
	C3	1	688	688	0		1800	1800	38		135	0.00	100
	D3	1	134	134	0		1800	1800	7		1109	0.00	100

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Aexit	1	80.81	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	64.47	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	45.51	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	56.50	0.00	0.00	0.00	0.00	0.00	0.00
	Ai	1	3.72	32.11	6.98	99.16	94.36	738.80	9.26
		2	3.72	12.28	0.17	2.42	48.77	24.39	0.31
	B1	1	10.20	39.99	1.22	17.35	90.04	99.05	1.24
		1	1.32	22.76	3.99	56.64	77.15	486.80	6.10
	C1	2	1.32	12.40	0.20	2.79	49.09	27.98	0.35
		1	2.16	36.17	0.41	5.85	83.72	34.33	0.43
	D1	2	2.16	38.90	1.01	14.27	88.36	82.18	1.03
	A2	1	7.01	0.77	0.17	2.38	0.00	0.00	0.00
16:45-17:45		2	7.01	0.03	0.00	0.01	0.00	0.00	0.00
	C2	1	1.32	0.54	0.09	1.34	0.00	0.00	0.00
		2	1.32	0.03	0.00	0.01	0.00	0.00	0.00
	D2	1	2.16	0.02	0.00	0.00	0.00	0.00	0.00
		2	2.16	0.05	0.00	0.02	0.00	0.00	0.00
	A3	1	3.60	0.86	0.20	2.83	0.00	0.00	0.00
	C3	1	4.25	0.62	0.12	1.66	0.00	0.00	0.00
	D3	1	4.32	0.08	0.00	0.04	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle))	Estimated blocking
16:45-17:45	Aexit	1	0.00	0.00	117.11	0.00	0.00	0.00	
	Bexit	1	0.00	0.00	93.43	0.00	0.00	23.00	
	Cexit	1	0.00	0.00	65.96	0.00	0.00	0.00	
	Dexit	1	0.00	0.00	81.89	0.00	0.00	26.00	
	Ai	1	0.00	21.07	5.00	421.32	0.00	0.00	
		2	0.00	0.70	5.00	13.96	0.00	49.00	
	B1	1	0.00	2.79	14.00	19.92	0.00	0.00	
		1	0.00	13.89	2.00	694.70	0.00	0.00	
	C1	2	0.00	0.80	2.00	39.81	0.00	49.00	
		1	0.00	0.97	3.00	32.23	0.00	15.00	
	D1	2	0.00	2.31	3.00	77.12	0.00	0.00	
	A2	1	0.00	0.17	10.00	1.67	0.00	74.00	
16:45-17:45		2	0.00	0.00	10.00	0.00	0.00	100.00	
	C2	1	0.00	0.09	2.00	4.73	0.00	88.00	
		2	0.00	0.00	2.00	0.03	0.00	100.00	
	D2	1	0.00	0.00	3.00	0.01	0.00	100.00	
		2	0.00	0.00	3.00	0.05	0.00	0.00	
	A3	1	0.00	0.20	5.00	3.98	0.00	0.00	
		1	0.00	0.12	6.00	1.97	0.00	0.00	
	D3	1	0.00	0.00	6.00	0.05	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
16	16/08/2022 10:22:41	16/08/2022 10:22:42	16:45	100	225.50	14.56	85.29	A1/1	0	0	A1/1	A3/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	85	0	6840	1550	7.66	206.78	16.73	225.50

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Actual green (s per hr)
16:45-17:45	6840	6840	0		85		6		1578

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	18.38	7.66	14.56	206.78	21.84	1453.52	18.73

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)
16:45-17:45	694.70	0.00	604.00



TRANSYT 15	
Version: 15.5.2.7994 © Copyright TRL Limited, 2018	
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Filename: Cherry Lane Site Access_july22_pcu.t15

Path: G:\2020\p200059\calcs\Transyt

Report generation date: 16/08/2022 12:52:40

»A1 - DS 2023 AM : D1 - DS 2023 AM* :
»A2 - DS 2023 PM : D2 - DS 2023 PM* :
»A3 - DS 2028 AM : D3 - DS 2028 AM* :
»A4 - DS 2028 PM : D4 - DS 2028 PM* :
»A5 - DS 2038 AM : D5 - DS 2038 AM* :
»A6 - DS 2038 PM : D6 - DS 2038 PM* :
»A7 - DS 2038 AM+PFD : D7 - DS 2038 AM+PFD* :
»A8 - DS 2038 PM+PFD : D8 - DS 2038 PM+PFD* :
»A9 - DM 2023 AM : D9 - DM 2023 AM* :
»A10 - DM 2023 PM : D10 - DM 2023 PM* :
»A11 - DM 2028 AM : D11 - DM 2028 AM* :
»A12 - DM 2028 PM : D12 - DM 2028 PM* :
»A13 - DM 2038 AM : D13 - DM 2038 AM* :
»A14 - DM 2038 PM : D14 - DM 2038 PM* :
»A15 - DM 2038 AM+PFD : D15 - DM 2038 AM+PFD* :
»A16 - DM 2038 PM+PFD : D16 - DM 2038 PM+PFD* :

File summary

File description

File title	Residential Developemnt at Cherry Lane
Location	Ashbourne
Site number	
UTCRregion	
Driving side	Left
Date	03/12/2021
Version	
Status	(new file)
Identifier	SAS
Client	
Jobnumber	200059
Enumerator	HEADOFFICE\saeds
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red- With- Amber	Display End-Of- Green Amber
		✓		✓	✓	✓	✓	✓	✓	✓		

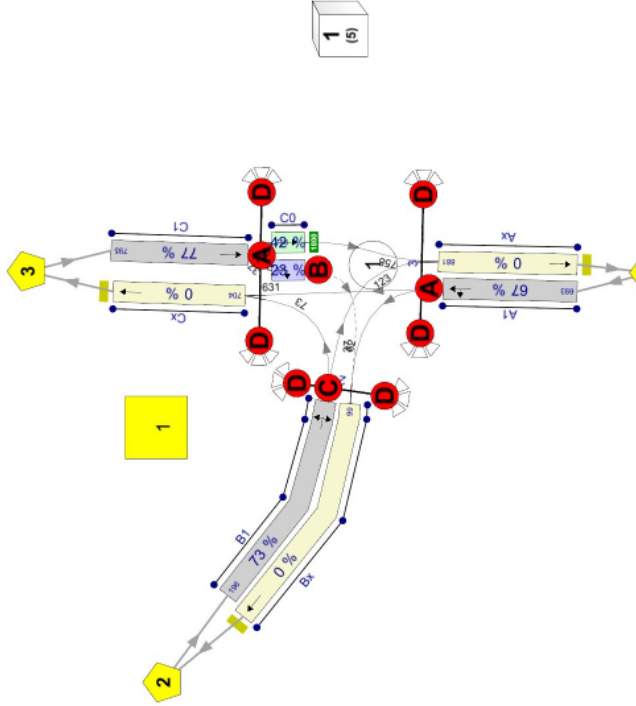
Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	PCU	PCU	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Network Diagrams



A1 - DS 2023 AM

D1 - DS 2023 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on PR
1	16/08/2022 12:51:59	16/08/2022 12:52:00	08:00	100	119.19	7.64	65.96	C1/1	0	0	C1/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2023 AM		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2023 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	1	NetworkDefault	100	100	100		2.00		
Cx	2	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	674	674
Bx	1	16	16
C0	1	647	647
Cx	2	6	6
A1	1	547	547
B1	1	43	43
C1	1	653	653

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	10	531
	2	27	0	16
	3	647	6	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	531
	2		1	2	A1/1, Bx/1	Normal	10
	5		2	1	B1/1, Ax/1	Normal	27
	6		2	3	B1/1, Cx/1	Normal	16
	7		3	2	C1/1, C0/2, Bx/1	Normal	6
	8		3	1	C1/1, C0/1, Ax/1	Normal	647

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	15
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	117, 62, 67, 92, 107

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	107	117	10	8	8
	2	✓	1	A, B, E, G	117	62	65	15	15
	3	✓	2	B, F, G	62	67	5	1	5
	4	✓	3	C, G	72	92	20	1	7
	5	✓	4	D	100	107	7	1	7

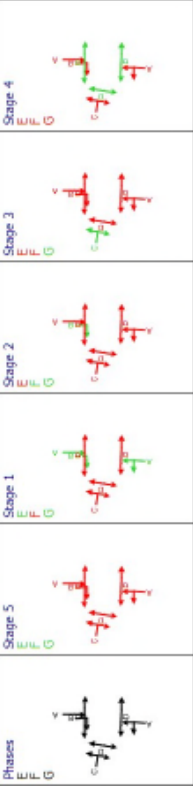
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	117	62	65
	B	1	✓	117	67	70
	C	1	✓	72	92	20
	D	1	✓	100	107	7
	E	1	✓	107	62	75
	F	1	✓	62	67	5
	G	1	✓	107	92	105

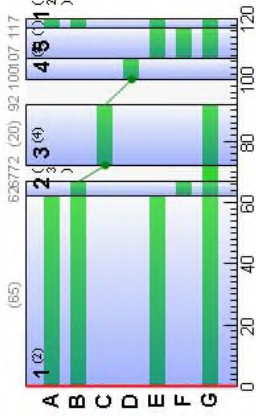
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 117 End 67 Duration 70
	1	1	1	A	Start 117 End 62 Duration 65
	1	1	1	C	Start 72 End 92 Duration 20
	1	1	1	A	Start 117 End 62 Duration 65

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	674	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	16	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	36	150	647	1800	120	0.56	0.10	5.04	1.43	0.00	1.43
	Cx	2	4	2263	6	266	70	0.45	0.00	0.04	0.01	0.00	0.01
	A1	1	55	65	541	1800	65	19.55	11.90	237.89	41.73	4.35	46.08
	B1	1	14	559	43	1800	20	42.78	1.22	24.34	7.26	0.45	7.71
	C1	1	66	36	653	1800	65	22.56	15.87	317.42	58.12	5.84	63.96

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Flow reserve warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	674	16	0		Unrestricted	Unrestricted	0	Unrestricted	0.72	120	12
	Bx	1	647	647	0		Unrestricted	1800	36	150	0.89	120	12
	C0	2	6	6	0		266	158	4	2263	0.89	70	71
	Cx	1	547	547	0		Unrestricted	Unrestricted	0	Unrestricted	0.74	120	12
	A1	1	541	541	0		1800	990	55	65	0.00	65	66
	B1	1	43	43	0		1800	315	14	559	0.00	20	21
	C1	1	653	653	0		1800	990	66	36	0.00	65	66

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.56	0.00	1.43	1.43	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
	A1	1	3.80	19.85	2.61	41.73	41.73	9.79	337.18	64.14	4.35	4.35
	B1	1	3.24	42.78	0.50	7.26	83.93	0.32	35.77	0.32	0.45	0.45
	C1	1	3.80	22.56	3.46	58.12	58.12	18.89	446.87	71.33	5.84	5.84

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Excess queue penalty (£ per hr)	Average limit queue (PCU)	Average storage queue (PCU)	Utilised storage (%)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time to clear queue (s per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00		24.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00		120.00	0.00	
	C0	2	0.00	0.10	2.00	5.04	0.00	0.00	0.00		53.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00		28.00	0.00	
	A1	1	0.00	11.90	5.00	237.99	1.35	0.00	0.33	8.44	0.00	0.00	
	B1	1	0.00	1.22	5.00	24.34	0.00	0.00	0.01	1.19	18.00	0.00	
	C1	1	0.00	15.87	5.00	317.42	2.76	0.00	0.63	10.43	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
1	16/08/2022 12:51:59	16/08/2022 12:52:00	08:00	100	119.19	7.64	65.96	C1/1	0	0	C1/1	C0/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	66	0	3127	700	8.80	108.55	10.64	119.19

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3127	3127	0		66		36	742	746

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.32	8.80	6.57	1.07	106.55	106.55	27.14	819.82	29.00	10.64	10.64

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	317.42	0.00	314.00	0.00	314.00

A2 - DS 2023 PM
D2 - DS 2023 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (c per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst PRC	Item with worst PRC
2	16/08/2022 12:52:00	16/08/2022 12:52:01	16:45	100	142.20	9.15	79.90	A1/1	0	0	A1/1	C0/1	A1/	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2023 PM		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2023 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	296.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
					30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
		2	(untitled)			1800
Cx	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓
							120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	490	490
Bx	1	38	38
C0	2	476	476
		14	14
Cx	1	776	776
A1	1	791	791
B1	1	23	23
C1	1	490	490

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
	1	3.24	30.00
C1	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

To		1	2	3
From	1	0	24	767
	2	14	0	9
	3	476	14	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	767
	2		1	2	A1/1, Bx/1	Normal	24
	5		2	1	B1/1, Ax/1	Normal	14
	6		2	3	B1/1, Cx/1	Normal	9
	7		3	2	C1/1, C0/2, Bx/1	Normal	14
	8		3	1	C1/1, C0/1, Ax/1	Normal	476

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	15
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	117, 62, 67, 92, 107

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	107	117	10	8	8
	2	✓	1	A, B, E, G	117	62	65	15	15
	3	✓	2	B, F, G	62	67	5	1	5
	4	✓	3	C, G	72	92	20	1	7
	5	✓	4	D	100	107	7	1	7

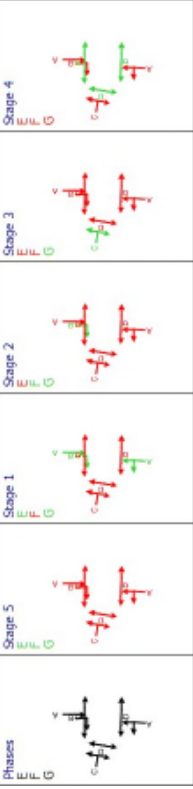
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	117	62	65
	B	1	✓	117	67	70
	C	1	✓	72	92	20
	D	1	✓	100	107	7
	E	1	✓	107	62	75
	F	1	✓	62	67	5
	G	1	✓	107	92	105

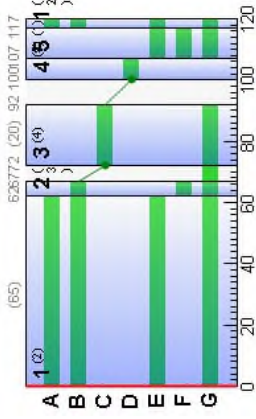
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 117 End 67 Duration 70
	1	1	1	A	Start 117 End 62 Duration 65
	1	1	1	C	Start 72 End 92 Duration 20
	1	1	1	A	Start 117 End 62 Duration 65

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	Ax	1	0	Unrestricted	490	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	38	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	26	240	476	1800	120	0.36	0.05	2.38	0.67	0.00	0.67
	Cx	2	9	913	14	266	70	1.11	0.00	0.22	0.06	0.00	0.06
16:45-17:45	Cx	1	0	Unrestricted	776	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	90	13	791	1800	65	28.74	22.64	452.89	89.06	8.29	97.95
	B1	1	7	1133	23	1800	20	41.88	0.64	12.84	3.80	0.24	4.04
16:45-17:45	C1	1	49	82	490	1800	65	18.47	10.31	206.28	35.70	3.77	39.48

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Calculated sat flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax	1	490	490	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.73	120	12
	Bx	1	38	38	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.75	120	12
	C0	1	476	476	0	1800	1800	26		240	0.89	120	12
	C2	14	14	14	0	266	158	9		913	0.89	70	71
	Cx	1	776	776	0	Unrestricted	Unrestricted	0		Unrestricted	0.77	120	12
	A1	1	791	791	0	1800	990	80		13	0.00	65	66
	B1	1	23	23	0	1800	315	7		1133	0.00	20	21
	C1	1	490	490	0	1800	990	49		92	0.00	65	66

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.36	0.00	0.67	0.67	0.00	0.00	0.00	0.00	0.00
	C2	2	1.20	1.11	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.80	28.74	4.76	1.55	89.66	83.58	615.22	45.86	8.29	8.29
	B1	1	3.24	41.88	0.26	0.00	3.80	82.72	18.94	0.09	0.24	0.24
	C1	1	3.80	18.47	2.27	0.24	35.70	61.38	293.54	7.23	3.77	3.77

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (£ per cycle)	Estimated blocking
16:45-17:45	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00		30.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00		83.00	0.00	
	C0	2	0.00	0.05	2.00	2.38	0.00	0.00		53.00	0.00	
	Cx	1	0.00	0.00	2.00	0.22	0.00	0.00	0.00	71.00	0.00	
	A1	1	0.00	0.00	38.79	0.00	0.00	0.00		30.00	0.00	
	A1	1	0.00	22.64	5.00	452.89	5.98	0.00	1.55	13.42	0.00	
	B1	1	0.00	0.64	5.00	12.84	0.00	0.00	0.64	19.00	0.00	
	C1	1	0.00	10.31	5.00	206.28	0.89	0.00	0.24	7.59	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
2	16/08/2022 12:52:00	16/08/2022 12:52:01	16:45	100	142.20	9.15	79.90	A1/1	0	0	A1/1	C0/1	A1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	80	0	3098	700	10.63	129.90	12.30	142.20

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	3098	3098	0		80		13	742	746

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	13.09	10.63	7.30	1.85	129.90	129.90	31.66	927.70	53.18	12.30	12.30

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	452.89	0.00	286.00	0.00	286.00

A3 - DS 2028 AM

D3 - DS 2028 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on red PRC
3	16/08/2022 12:52:01	16/08/2022 12:52:01	08:00	100	193.75	12.55	74.85	C1/1	0	0	C1/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2028 AM		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2028 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓		Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	1	NetworkDefault	100	100	100		2.00		
Cx	2	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	827	827
Bx	1	99	99
C0	1	704	704
Cx	2	37	37
A1	1	660	660
B1	1	649	649
		196	196
C1	1	741	741

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

To		1	2	3
From	1	0	62	587
	2	123	0	73
	3	704	37	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	587
	2		1	2	A1/1, Bx/1	Normal	62
	5		2	1	B1/1, Ax/1	Normal	123
	6		2	3	B1/1, Cx/1	Normal	73
	7		3	2	C1/1, C0/2, Bx/1	Normal	37
	8		3	1	C1/1, C0/1, Ax/1	Normal	704

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	15
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	117, 62, 67, 92, 107

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	107	117	10	8	8
	2	✓	1	A, B, E, G	117	62	65	15	15
	3	✓	2	B, F, G	62	67	5	1	5
	4	✓	3	C, G	72	92	20	1	7
	5	✓	4	D	100	107	7	1	7

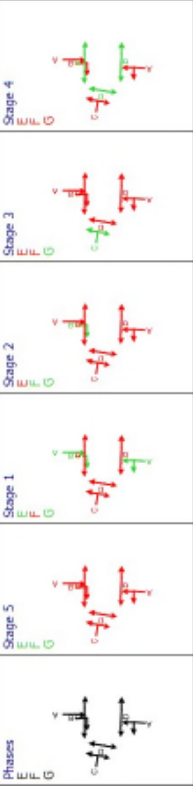
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	117	62	65
	B	1	✓	117	67	70
	C	1	✓	72	92	20
	D	1	✓	100	107	7
	E	1	✓	107	62	75
	F	1	✓	62	67	5
	G	1	✓	107	92	105

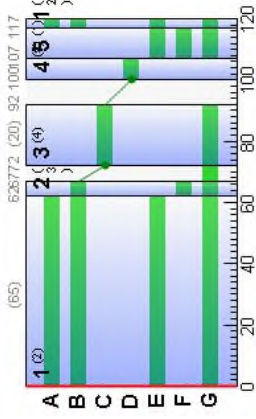
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 117 End 67 Duration 70
	1	1	1	A	Start 117 End 62 Duration 65
	1	1	1	C	Start 72 End 92 Duration 20
	1	1	1	A	Start 117 End 62 Duration 65

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	827	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	99	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	39	130	704	1800	120	0.64	0.13	6.27	1.78	0.00	1.78
	Cx	2	23	283	37	266	70	3.49	0.04	1.80	0.51	0.00	0.51
	A1	1	0	Unrestricted	660	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	66	37	649	1800	65	22.44	15.76	315.25	57.44	578	63.22
	B1	1	62	45	196	1800	20	55.07	6.55	130.93	42.57	2.42	45.00
	C1	1	75	20	741	1800	65	25.98	19.83	396.57	75.95	7.30	83.24

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Adjusted flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean stops per cycle	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	827	0	Unrestricted	Unrestricted	0	Unrestricted	0.75	120	12
	Bx	1	99	0	Unrestricted	Unrestricted	0	Unrestricted	0.75	120	12
	C0	1	704	0	1800	1800	39	130	0.89	120	12
	Cx	2	37	0	266	158	23	283	0.89	70	71
	At	1	660	0	Unrestricted	Unrestricted	0	Unrestricted	0.61	120	12
	At	1	649	0	1800	990	66	37	0.00	65	66
	B1	1	196	0	1800	315	82	45	0.00	20	21
	C1	1	741	0	1800	990	75	20	0.00	65	66

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.64	0.00	1.78	1.78	0.00	0.00	0.00	0.00	0.00
	Cx	2	1.20	3.49	0.00	0.51	0.51	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	22.44	3.43	57.44	57.44	71.07	442.81	18.44	5.78	5.78
	B1	1	3.24	55.07	2.50	42.57	42.57	96.60	178.45	14.80	2.42	2.42
	C1	1	3.80	25.98	4.25	75.95	75.95	78.52	549.25	32.56	7.30	7.30

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Excess queue penalty (£ per hr)	Average limit queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (s per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	38.70	0.00	0.00	11.00	0.00	11.00
	Bx	1	0.00	51.85	0.00	0.00	51.00	0.00	51.00
	C0	2	0.00	0.13	2.00	0.00	53.00	0.00	53.00
	Cx	1	0.00	0.04	2.00	0.00	33.00	0.00	33.00
	At	1	0.00	0.00	0.00	0.00	14.00	0.00	14.00
	At	1	0.00	15.76	5.00	315.25	0.00	0.00	0.00
	B1	1	0.00	5.55	5.00	130.93	0.00	0.00	0.00
	C1	1	0.00	19.83	5.00	396.57	0.00	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling Cycle (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalised PRC	Item with most work over PR
3	16/08/2022 12:52:01	16/08/2022 12:52:01	08:00	100	193.75	12.55	74.85	C1/1	0	0	C1/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	75	0	3913	700	11.55	178.25	15.50	193.75

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3913	3913	0		75		20	742	746

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.75	11.55	10.17	2.38	178.25	178.25	31.59	1170.50	65.81	15.50	15.50

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	396.57	0.00	162.00	0.00	162.00

A4 - DS 2028 PM
D4 - DS 2028 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst PRC	Item with worst PRC
4	16/08/2022 12:52:02	16/08/2022 12:52:02	16:45	100	204.05	13.17	88.45	A1/1	0	0	A1/1	C0/1	A1/	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2028 PM		D4	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2028 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	592	592
Bx	1	167	167
C0	1	528	528
Cx	2	62	62
A1	1	875	875
B1	1	942	942
C1	1	102	102
		590	590

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	105	837
	2	64	0	38
	3	528	62	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	837
	2		1	2	A1/1, Bx/1	Normal	105
	5		2	1	B1/1, Ax/1	Normal	64
	6		2	3	B1/1, Cx/1	Normal	38
	7		3	2	C1/1, C0/2, Bx/1	Normal	62
	8		3	1	C1/1, C0/1, Ax/1	Normal	528

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	40
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	2, 72, 77, 97, 112

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	112	2	10	8	8
	2	✓	1	A, B, E, G	2	72	70	40	40
	3	✓	2	B, F, G	72	77	5	1	5
	4	✓	3	C, G	82	97	15	1	7
	5	✓	4	D	105	112	7	1	7

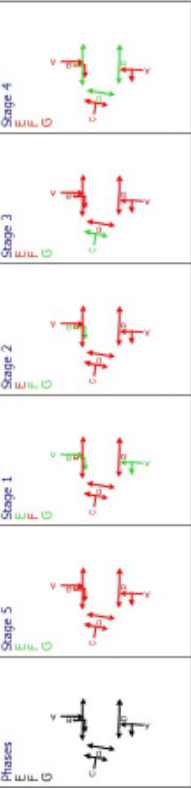
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	2	72	70
	B	1	✓	2	77	75
	C	1	✓	82	97	15
	D	1	✓	105	112	7
	E	1	✓	112	72	80
	F	1	✓	72	77	5
	G	1	✓	112	97	105

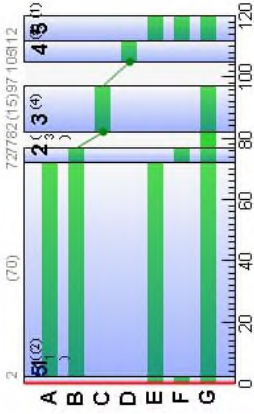
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Start	End	Duration
CO	2	1	1	B	2	77	75
	1	1	1	A	2	72	70
	1	1	1	C	82	97	15
	1	1	1	A	2	72	70

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16-45-17-45	Ax	1	0	Unrestricted	592	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	167	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	29	207	528	1800	120	0.41	0.06	3.04	0.86	0.00	0.86
	Cx	1	38	138	62	259	75	8.61	1.50	74.93	2.11	0.42	2.52
B1	At	1	0	Unrestricted	875	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	88	2	942	1800	70	33.13	29.87	597.35	123.10	10.93	134.04
	B1	1	43	112	102	1800	15	53.28	3.27	65.45	21.44	1.22	22.65
C1	1	55	62	580	580	1800	70	16.97	12.14	242.86	36.50	4.46	43.97

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax	1	592	592	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.55	120	12
	Bx	1	167	167	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.67	120	12
	C0	1	528	528	0	1800	1800	29		207	0.81	120	12
	Cx	2	62	62	0	259	164	38		138	0.81	75	76
	At	1	875	875	0	Unrestricted	Unrestricted	0		Unrestricted	0.64	120	12
	At	1	942	942	0	1800	1065	88		2	0.00	70	71
	B1	1	102	102	0	1800	240	43		112	0.00	15	16
	C1	1	590	590	0	1800	1065	55		62	0.00	70	71

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.41	0.00	0.86	0.86	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cx	2	1.20	8.61	0.03	2.11	2.11	53.71	29.92	3.38	0.42	0.42
	At	1	3.80	33.13	5.49	3.18	123.10	92.58	779.15	92.95	10.93	10.93
	B1	1	3.24	53.28	1.35	0.16	21.44	95.12	92.40	4.62	1.22	1.22
	C1	1	3.80	18.97	2.44	0.34	39.50	60.34	345.77	10.24	4.46	4.46

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage (PCU)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (£ per cycle)	Estimated blocking
16:45-17:45	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00			14.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00			39.00	0.00	
	C0	2	0.00	0.06	2.00	0.00	0.00	0.00	0.00			48.00	0.00	
	Cx	1	0.00	1.50	2.00	74.93	0.00	0.00	0.00	0.11	0.11	5.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00			16.00	0.00	
	At	1	0.00	29.87	5.00	597.35	9.95	0.00	0.00	3.18	16.00	0.00	0.00	
	B1	1	0.00	3.27	5.00	65.45	0.00	0.00	0.00	0.16	3.10	0.00	0.00	
	C1	1	0.00	12.14	5.00	242.86	1.33	0.00	0.00	0.34	8.37	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
4	16/08/2022 12:52:02	16/08/2022 12:52:02	16:45	100	204.05	13.17	88.45	A1/1	0	0	A1/1	C0/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	88	0	3958	710	12.29	187.02	17.03	204.05

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	3958	3958	0		88		2	752	756

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	13.43	12.29	9.32	3.85	187.02	187.02	35.21	1247.24	111.19	17.03	17.03

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	597.35	0.00	122.00	0.00	122.00

A5 - DS 2038 AM
D5 - DS 2038 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
5	16/08/2022 12:52:02	16/08/2022 12:52:03	08:00	100	206.21	13.36	76.81	C1/1	0	0	C1/1	C0/1	C1/1	C1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 AM		D5	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	296.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	881	881
Bx	1	99	99
C0	1	758	758
Cx	2	37	37
A1	1	704	704
A1	1	693	693
B1	1	196	196
C1	1	795	795

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	62	631
	2	123	0	73
	3	758	37	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	631
	2		1	2	A1/1, Bx/1	Normal	62
	5		2	1	B1/1, Ax/1	Normal	123
	6		2	3	B1/1, Cx/1	Normal	73
	7		3	2	C1/1, C0/2, Bx/1	Normal	37
	8		3	1	C1/1, C0/1, Ax/1	Normal	758

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

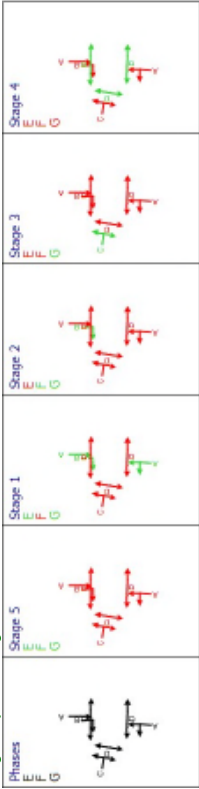
Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

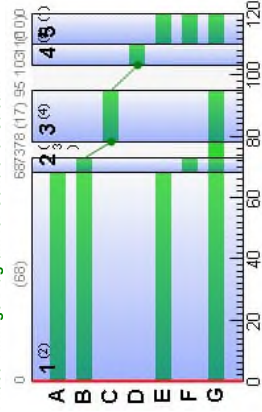
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
C0	2	1	1	B	0	73	
	1	1	1	A	0	68	
	1	1	1	C	78	95	
B1	1	1	1	A	0	68	
C1	1	1	1	A	0	68	

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Vehicle (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	881	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	99	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	42	114	758	1800	120	0.73	0.15	7.65	2.17	0.00	2.17
	Cx	2	23	292	37	281	73	3.31	0.03	1.70	0.48	0.00	0.48
	At	1	0	Unrestricted	704	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	67	34	683	1800	68	21.12	16.46	328.16	57.73	6.05	63.78
	B1	1	73	24	196	1800	17	65.56	7.13	142.54	50.69	2.64	53.33
	C1	1	77	17	795	1800	68	25.08	21.35	426.94	76.64	7.80	86.44

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	30
	2	B, F, G	1
	3	C, G	1
	4	D	1
5		E, F, G	8

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling (untitled)	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	0, 68, 73, 95, 110

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Library stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	✓	5	E, F, G	110	0	10	8	8
	2	✓	✓	1	A, B, E, G	0	68	68	30	30
	3	✓	✓	2	B, F, G	68	73	5	1	5
	4	✓	✓	3	C, G	78	95	17	1	7
	5	✓	✓	4	D	103	110	7	1	7

Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	0	68	68
	B	1	✓	0	73	73
	C	1	✓	78	95	17
	D	1	✓	103	110	7
	E	1	✓	110	68	78
	F	1	✓	68	73	5
	G	1	✓	110	95	105

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Calculated sat flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean module error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax 1	881	881	0	Unrestricted	Unrestricted	0		Unrestricted	0.51	120	12
	Bx 1	99	99	0	Unrestricted	Unrestricted	0		Unrestricted	0.71	120	12
	C0 1	758	758	0	1800	1800	42		114	0.84	120	12
	Cx 1	37	37	0	261	161	23		292	0.84	73	74
	A1 1	704	704	0	Unrestricted	Unrestricted	0		Unrestricted	0.57	120	12
	A1 1	693	693	0	1800	1035	67		34	0.00	68	66
	B1 1	196	196	0	1800	270	73		24	0.00	17	16
	C1 1	795	795	0	1800	1035	77		17	0.00	68	66

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax 1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx 1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0 1	1.32	0.73	0.00	0.15	2.17	2.17	0.00	0.00	0.00	0.00	0.00
	Cx 1	1.20	3.31	0.00	0.03	0.48	0.48	0.00	0.00	0.00	0.00	0.00
	A1 1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1 1	3.80	21.12	3.39	0.87	57.73	57.73	89.87	482.77	20.05	6.05	6.05
	B1 1	3.24	66.56	2.65	0.92	50.69	107.51	184.05	26.66	2.64	2.64	2.64
	C1 1	3.80	25.08	4.29	1.25	78.64	78.64	78.28	586.20	37.09	7.80	7.80

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (s per cycle)	Estimated blocking
08:00-09:00	Ax 1	0.00	0.00	38.70	0.00	0.00	0.00	0.00			8.00	0.00	
	Bx 1	0.00	0.00	51.85	0.00	0.00	0.00	0.00			0.00	48.00	
	C0 1	0.00	0.15	2.00	7.85	0.00	0.00	0.00			50.00	0.00	
	Cx 1	0.00	0.03	2.00	1.70	0.00	0.00	0.00	0.03	0.03	33.00	0.00	
	A1 1	0.00	0.00	38.79	0.00	0.00	0.00	0.00			11.00	0.00	
	A1 1	0.00	16.46	5.00	328.16	2.89	0.00	0.00	0.67	10.49	0.00	0.00	
	B1 1	0.00	7.13	5.00	142.54	0.36	0.00	0.00	0.92	6.47	0.00	0.00	
	C1 1	0.00	21.35	5.00	426.94	5.11	0.00	0.00	1.25	12.51	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
5	16/08/2022 12:52:02	16/08/2022 12:52:03	08:00	100	206.21	13.36	76.81	C1/1	0	0	C1/1	C0/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	77	0	4163	706	11.55	189.71	16.50	206.21

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	4163	4163	0		77		17	748	752

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.72	11.55	10.33	3.03	186.71	186.71	31.61	1232.02	83.81	16.50	16.50

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	426.94	0.00	150.00	0.00	150.00

A6 - DS 2038 PM
D6 - DS 2038 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on red PRC
6	16/08/2022 12:52:03	16/08/2022 12:52:03	16:45	100	205.57	13.51	89.42	A1/1	0	0	A1/1	C0/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 PM		D6	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	223.04		Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	631	631
Bx	1	167	167
C0	1	567	567
Cx	2	62	62
A1	1	939	939
B1	1	1006	1006
C1	1	102	102
		629	629

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
	1	3.24	30.00
	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
	1	1	C1/1	C0/1	1.32	30.00	✓	Straight	Straight Movement
C0	2	1	C1/1	C0/2	1.20	30.00	✓	Straight	Straight Movement
	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight	Straight Movement
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight	Straight Movement
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	105	901
	2	64	0	38
	3	567	62	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	901
	2		1	2	A1/1, Bx/1	Normal	105
	5		2	1	B1/1, Ax/1	Normal	64
	6		2	3	B1/1, Cx/1	Normal	38
	7		3	2	C1/1, C0/2, Bx/1	Normal	62
	8		3	1	C1/1, C0/1, Ax/1	Normal	567

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	60
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	6, 80, 85, 101, 116

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
From	1	2	3	4	5	
	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	116	6	10	8	8
	2	✓	1	A, B, E, G	6	80	74	60	60
	3	✓	2	B, F, G	80	85	5	1	5
	4	✓	3	C, G	90	101	11	1	7
	5	✓	4	D	109	116	7	1	7

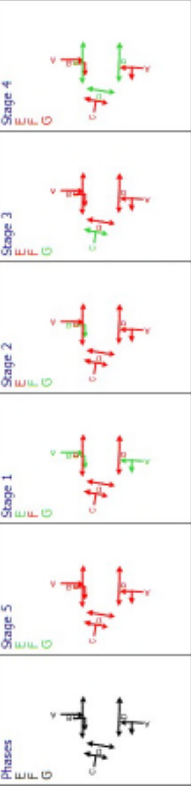
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	6	80	74
	B	1	✓	6	85	79
	C	1	✓	90	101	11
	D	1	✓	109	116	7
	E	1	✓	116	80	84
	F	1	✓	80	85	5
	G	1	✓	116	101	105

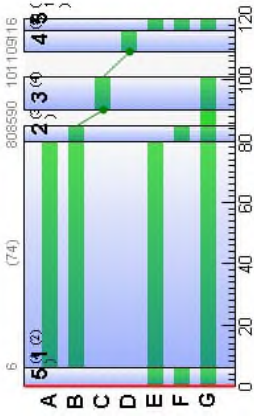
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	6 85 79
	1	1	1	A	6 80 74
	1	1	1	C	90 101 11
	1	1	1	A	6 80 74

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	Ax	1	0	Unrestricted	631	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	167	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	32	186	567	1800	120	0.46	0.07	3.62	1.03	0.00	1.03
	Cx	2	37	145	62	253	79	7.41	1.37	68.60	1.81	0.34	2.16
	At	1	0	Unrestricted	939	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	89	1	1006	1800	74	31.72	31.74	834.86	125.87	11.61	137.48
	B1	1	57	59	102	1800	11	64.31	3.59	71.84	25.87	1.33	27.21
	C1	1	56	61	629	1800	74	14.99	12.41	248.18	37.20	4.51	41.70

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax 1	631	631	0		Unrestricted	Unrestricted	0	Unrestricted	0.50	120	12
	Bx 1	167	167	0		Unrestricted	Unrestricted	0	Unrestricted	0.61	120	12
	C0 1	567	567	0		1800	32		186	0.74	120	12
	Cx 1	62	62	0		253	37		145	0.74	79	80
	At 1	939	939	0		Unrestricted	Unrestricted	0	Unrestricted	0.58	120	12
	At 1	1006	1006	0		1800	1125	89	1	0.00	74	75
	B1 1	102	102	0		1800	180	57	59	0.00	11	12
	C1 1	629	629	0		1800	1125	56	61	0.00	74	75

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus offset delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax 1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx 1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0 1	1.32	0.46	0.00	0.07	1.03	1.03	0.00	0.00	0.00	0.00	0.00
	Cx 1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At 1	3.80	31.72	5.35	3.52	125.87	125.87	92.03	822.93	102.85	11.61	11.61
	B1 1	3.24	64.31	1.46	0.36	25.87	25.87	104.38	95.89	10.57	1.33	1.33
	C1 1	3.80	14.99	2.27	0.35	37.20	37.20	57.14	348.85	10.55	4.51	4.51

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (£ per cycle)	Estimated blocking
16:45-17:45	Ax 1	0.00	0.00	38.70	0.00	0.00	0.00		10.00	0.00	
	Bx 1	0.00	0.00	51.85	0.00	0.00	0.00		35.00	0.00	
	C0 1	0.00	0.07	2.00	3.62	0.00	0.00		44.00	0.00	
	Cx 1	0.00	1.37	2.00	88.60	0.00	0.00	0.11	5.00	0.00	
	At 1	0.00	0.00	38.79	0.00	0.00	0.00		12.00	0.00	
	At 1	0.00	31.74	5.00	834.86	10.78	0.00	3.52	16.09	0.00	
	B1 1	0.00	3.59	5.00	71.84	0.00	0.00	0.36	3.42	0.00	
	C1 1	0.00	12.41	5.00	245.18	1.34	0.00	0.35	8.22	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalised PRC	Item with most work over PRC
6	16/08/2022 12:52:03	16/08/2022 12:52:03	16:45	100	209.57	13.51	89.42	A1/1	0	0	A1/1	C0/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
16:45-17:45	89	0	4103	718	11.85	191.78	209.57

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	4103	4103	0		89		1	760	764

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	13.40	11.85	9.09	4.41	191.78	191.78	34.58	1291.82	127.11	17.79	17.79

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	634.86	0.00	106.00	0.00	106.00

A7 - DS 2038 AM+PFD

D7 - DS 2038 AM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst PRC	Item with worst PRC
7	16/08/2022 12:52:08	16/08/2022 12:52:09	08:00	100	299.83	19.63	86.88	C1/1	0	0	C1/1	C0/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 AM+PFD		D7	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 AM+PFD				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	944	944
Bx	1	134	134
C0	1	758	758
Cx	2	50	50
A1	1	741	741
B1	1	715	715
C1	1	296	296
		808	808

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	84	631
	2	186	0	110
	3	758	50	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	631
	2		1	2	A1/1, Bx/1	Normal	84
	5		2	1	B1/1, Ax/1	Normal	186
	6		2	3	B1/1, Cx/1	Normal	110
	7		3	2	C1/1, C0/2, Bx/1	Normal	50
	8		3	1	C1/1, C0/1, Ax/1	Normal	758

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	10
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	116, 57, 62, 91, 106

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5		8			
	B			5		8		
	C	5	5			8		
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	106	116	10	8	8
	2	✓	1	A, B, E, G	116	57	61	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	91	24	10	10
	5	✓	4	D	99	106	7	1	7

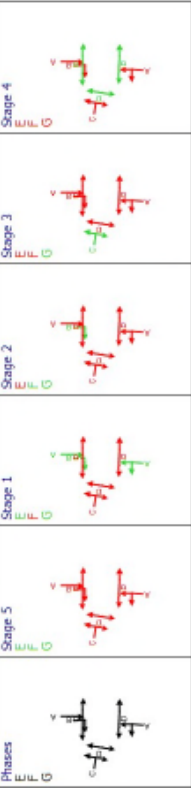
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	116	57	61
	B	1	✓	116	62	66
	C	1	✓	91	67	24
	D	1	✓	89	106	7
	E	1	✓	106	57	71
	F	1	✓	57	62	5
	G	1	✓	106	116	10
				106	91	105

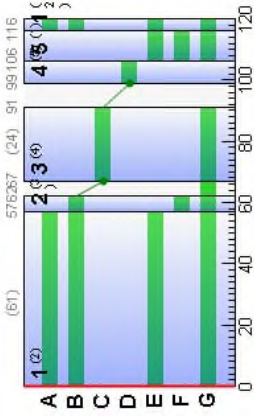
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 116 End 62 Duration 66
	1	1	1	A	116 57 61
	1	1	1	C	67 91 24
	1	1	1	A	116 57 61

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	944	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	134	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	42	114	758	1800	120	0.73	0.15	7.65	2.17	0.00	2.17
	Cx	2	33	175	50	273	66	5.71	0.08	3.97	1.13	0.00	1.13
	At	1	0	Unrestricted	741	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	77	17	715	1800	61	29.57	20.32	406.43	83.40	7.44	90.85
	B1	1	79	14	296	1800	24	62.05	10.69	213.85	72.45	3.96	76.41
	C1	1	87	4	808	1800	61	37.54	26.28	525.68	119.65	9.62	129.27

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Flow saturation warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean module error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	944	944	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.50	120	12
	Bx	1	134	134	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.80	120	12
	C0	1	758	758	0	1800	1800	42		114	0.96	120	12
	Cx	2	50	50	0	273	153	33		175	0.96	66	67
	At	1	741	741	0	Unrestricted	Unrestricted	0		Unrestricted	0.59	120	12
	At	1	715	715	0	1800	930	77		17	0.00	61	62
	B1	1	296	296	0	1800	375	79		14	0.00	24	25
	C1	1	808	808	0	1800	930	87		4	0.00	61	62

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.73	0.00	0.15	2.17	2.17	0.00	0.00	0.00	0.00	0.00
	Cx	1	1.20	5.71	0.00	0.08	1.13	1.13	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	26.57	4.62	1.25	83.40	83.40	83.04	566.58	37.15	7.44	7.44
	B1	1	3.24	62.05	3.70	1.40	72.45	72.45	106.76	275.44	40.58	3.96	3.96
	C1	1	3.80	37.54	5.71	2.72	119.65	119.65	94.98	687.98	79.50	9.62	9.62

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (s per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00			7.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00			50.00	0.00	
	C0	2	0.00	0.15	2.00	7.85	0.00	0.00			57.00	0.00	
	Cx	1	0.00	0.08	2.00	3.97	0.00	0.00	0.08	0.08	19.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00			11.00	0.00	
	At	1	0.00	20.32	5.00	406.43	4.99	0.00	1.25	12.77	0.00	0.00	
	B1	1	0.00	10.69	5.00	213.85	1.87	0.00	1.40	9.21	0.00	0.00	
	C1	1	0.00	26.28	5.00	525.68	8.50	0.00	2.72	15.74	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with highest PRC	Item with most unsignalled PRC	Item with most work over PR
7	16/08/2022 12:52:08	16/08/2022 12:52:09	08:00	100	299.83	19.63	86.88	C1/1	0	0	C1/1	C0/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	87	0	4446	692	15.90	278.80	21.03	299.83

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	4446	4446	0		87		4	734	738

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.90	15.90	14.03	5.61	278.80	278.80	37.72	1519.99	157.23	21.03	21.03

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	525.68	0.00	144.00	0.00	144.00

A8 - DS 2038 PM+PFD

D8 - DS 2038 PM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling set time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work time of PR
8	16/08/2022 12:52:09	16/08/2022 12:52:10	16:45	100	318.91	20.84	94.49	A1/1	1	7	A1/1	C0/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS 2038 PM+PFD		D8	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS 2038 PM+PFD				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	1	NetworkDefault	100	100	100		2.00		
Cx	2	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓
							120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	666	666
Bx	1	258	258
C0	1	567	567
Cx	2	96	96
A1	1	959	959
B1	1	1063	1063
C1	1	157	157
		663	663

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
	1	3.24	30.00
	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
C0	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	162	901
	2	99	0	58
	3	567	96	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	901
	2		1	2	A1/1, Bx/1	Normal	162
	5		2	1	B1/1, Ax/1	Normal	99
	6		2	3	B1/1, Cx/1	Normal	58
	7		3	2	C1/1, C0/2, Bx/1	Normal	96
	8		3	1	C1/1, C0/1, Ax/1	Normal	567

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	56
	2	B, F, G	1
	3	C, G	1
	4	D	1
5	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	2, 76, 81, 97, 112

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
G								

Interstage Matrix for Controller Stream 1

		To				
From	1	2	3	4	5	
	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
5	0	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	112	2	10	8	8
	2	✓	1	A, B, E, G	2	76	74	56	56
	3	✓	2	B, F, G	76	81	5	1	5
	4	✓	3	C, G	86	97	11	1	7
	5	✓	4	D	105	112	7	1	7

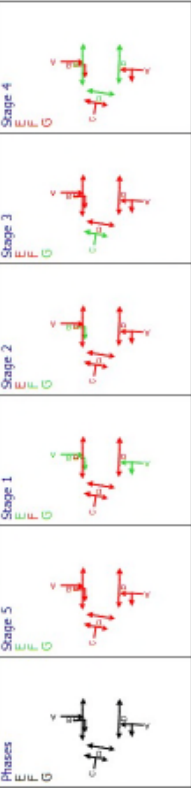
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	2	76	74
	B	1	✓	2	81	79
	C	1	✓	86	97	11
	D	1	✓	105	112	7
	E	1	✓	112	76	84
1		1	✓	76	81	5
	F	2	✓	112	2	10
	G	1	✓	112	97	105

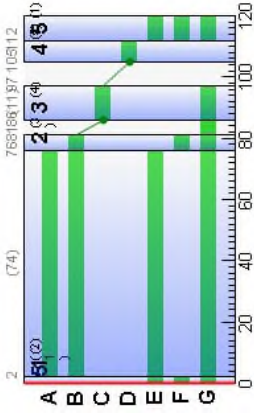
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
CO	2	1	1	B	2	81	79
	1	1	1	A	2	76	74
	1	1	1	C	86	97	11
	1	1	1	A	2	76	74

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s per Veh)	Mean max (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	Ax	1	0	Unrestricted	666	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	258	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	32	186	567	1800	120	0.46	0.07	3.62	1.03	0.00	1.03
	Cx	1	0	Unrestricted	96	253	79	23.40	3.53	176.52	8.86	1.23	10.09
	At	1	94	-5	959	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	87	3	1063	1800	74	42.71	38.71	774.26	179.10	14.09	193.19
	B1	1	87	3	157	1800	11	106.69	7.48	146.53	66.07	2.70	68.77
	C1	1	59	53	663	1800	74	15.64	13.50	269.94	40.91	4.91	45.82

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax 1	666	666	0		Unrestricted	Unrestricted		Unrestricted	0.46	120	12
	Bx 1	258	258	0		Unrestricted	Unrestricted	0		0.58	120	12
	C0 1	567	567	0		1800	1800	32	186	0.74	120	12
	Cx 1	96	96	0		253	169	57	58	0.74	79	80
	Cx 1	959	959	0		Unrestricted	Unrestricted	0		0.54	120	12
	A1 1	1063	1063	0		1800	1125	94	Unrestricted	0.00	74	75
	B1 1	157	157	0		1800	180	87	3	0.00	11	12
	C1 1	663	663	0		1800	1125	59	53	0.00	74	75

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax 1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx 1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0 1	1.32	0.46	0.00	0.07	1.03	1.03	0.00	0.00	0.00	0.00	0.00
	Cx 1	1.20	23.40	0.26	0.37	8.86	8.86	102.38	87.61	10.67	1.23	1.23
	Cx 1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1 1	3.80	42.71	5.08	6.53	179.10	179.10	105.74	936.96	187.09	14.09	14.09
	B1 1	3.24	106.69	2.32	2.33	66.07	66.07	137.13	152.62	62.68	2.70	2.70
	C1 1	3.80	15.84	2.46	0.42	40.91	40.91	59.04	375.84	12.57	4.91	4.91

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage (PCU)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (£ per cycle)	Estimated blocking
16:45-17:45	Ax 1	0.00	0.00	38.70	0.00	0.00	0.00	0.00			0.00	6.00	
	Bx 1	0.00	0.00	51.85	0.00	0.00	0.00	0.00			0.00	27.00	
	C0 1	0.00	0.07	2.00	3.62	0.00	0.00	0.00			44.00	0.00	
	Cx 1	0.00	3.53	2.00	176.52	0.37	0.00	0.00	0.37	0.37	5.00	0.00	
	Cx 1	0.00	0.00	38.79	0.00	0.00	0.00	0.00			8.00	0.00	
	A1 1	0.00	38.71	5.00	774.26	16.28	0.00	6.53	19.82	0.00	0.00	0.00	
	B1 1	0.00	7.48	5.00	149.53	0.80	0.00	2.33	7.04	0.00	0.00	0.00	
	C1 1	0.00	13.50	5.00	269.94	1.67	0.00	0.00	0.42	8.71	0.00	52.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
8	16/08/2022 12:52:09	16/08/2022 12:52:10	16:45	100	318.91	20.84	94.49	A1/1	1	7	A1/1	C0/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	94	-5	4429	718	16.94	295.98	22.93	318.91

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	4429	4429	0		94	✓	-5	760	764

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	13.61	16.94	11.13	9.72	295.98	295.98	41.30	1556.03	273.01	22.93	22.93

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	774.26	0.00	90.00	52.00	142.00

A9 - DM 2023 AM
D9 - DM 2023 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on red PRC
9	16/08/2022 12:52:04	16/08/2022 12:52:04	08:00	100	114.28	7.33	66.46	C1/1	0	0	C1/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2023 AM		D9	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2023 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	296.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	1	1	(untitled)			1800
	2	2	(untitled)			1800
Cx	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	1	NetworkDefault	100	100	100		2.00		
	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	650	650
	2		2
Bx	1		
		647	647
C0	2	1	1
Cx	1	533	533
A1	1	532	532
B1	1	5	5
C1	1	648	648

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	1	531
	2	3	0	2
	3	647	1	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	531
	2		1	2	A1/1, Bx/1	Normal	1
	5		2	1	B1/1, Ax/1	Normal	3
	6		2	3	B1/1, Cx/1	Normal	2
	7		3	2	C1/1, C0/2, Bx/1	Normal	1
	8		3	1	C1/1, C0/1, Ax/1	Normal	647

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	113, 57, 62, 88, 103

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
From	1	2	3	4	5	
	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	103	113	10	8	8
	2	✓	1	A, B, E, G	113	57	64	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	88	21	1	7
	5	✓	4	D	96	103	7	1	7

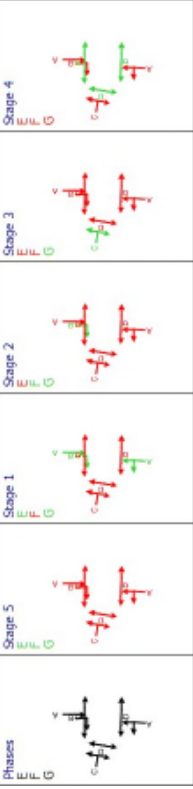
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	113	57	64
	B	1	✓	113	62	69
	C	1	✓	67	88	21
	D	1	✓	96	103	7
	E	1	✓	103	57	74
	F	2	✓	103	113	10
	G	1	✓	103	88	105

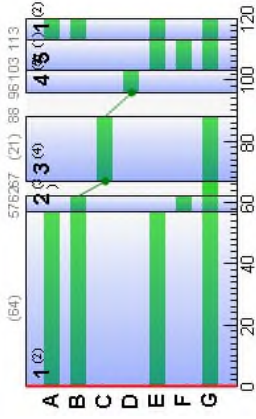
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 113 End 62 Duration 69
	1	1	1	A	Start 113 End 57 Duration 64
	1	1	1	C	Start 67 End 88 Duration 21
	1	1	1	A	Start 113 End 57 Duration 64

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	650	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	2	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	36	150	647	1800	120	0.56	0.10	5.04	1.43	0.00	1.43
	Cx	2	1	13963	1	268	69	0.07	0.00	0.00	0.00	0.00	0.00
	Cx	1	0	Unrestricted	533	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	55	65	532	1800	64	20.10	11.86	237.06	42.18	4.32	46.51
	B1	1	2	5840	5	1800	21	40.51	0.14	2.72	0.80	0.05	0.85
	C1	1	66	35	648	1800	64	23.32	15.95	319.07	58.62	5.88	65.49

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	650	650	0		Unrestricted	Unrestricted	0		Unrestricted	0.76	120	12
	Bx	1	2	2	0		Unrestricted	Unrestricted	0		Unrestricted	0.80	120	12
	C0	1	647	647	0		1800	1800	36		150	0.81	120	12
		2	1	1	0		268	156	1		13963	0.91	69	70
	Cx	1	533	533	0		Unrestricted	Unrestricted	0		Unrestricted	0.80	120	12
	At	1	532	532	0		1800	975	55		65	0.00	64	65
	B1	1	5	5	0		1800	330	2		5840	0.00	21	22
08:00-09:00	C1	1	648	648	0		1800	975	66		35	0.00	64	65

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3018	3018	0		66		35	740	744

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Random cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.20	8.74	6.25	1.08	104.03	104.03	104.03	27.10	788.64	29.20	10.25	10.25

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	319.07	0.00	336.00	0.00	336.00

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.56	0.00	0.10	1.43	1.43	0.00	0.00	0.00	0.00	0.00
		2	1.20	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	20.10	2.64	0.33	42.18	42.18	64.83	335.14	9.75	4.32	4.32
	B1	1	3.24	40.51	0.06	0.00	0.80	80.75	4.03	0.00	0.05	0.05	0.05
08:00-09:00	C1	1	3.80	23.32	3.55	0.85	59.62	59.62	72.36	449.46	19.45	5.88	5.88

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.56	0.00	0.10	1.43	1.43	0.00	0.00	0.00	0.00	0.00
		2	1.20	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	20.10	2.64	0.33	42.18	42.18	64.83	335.14	9.75	4.32	4.32
	B1	1	3.24	40.51	0.06	0.00	0.80	80.75	4.03	0.00	0.05	0.05	0.05
08:00-09:00	C1	1	3.80	23.32	3.55	0.85	59.62	59.62	72.36	449.46	19.45	5.88	5.88

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time starvation (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00	34.00	0.00	34.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00	120.00	0.00	120.00	
	C0	1	0.00	0.10	2.00	5.04	0.00	0.00	0.00	54.00	0.00	54.00	
		2	0.00	0.00	2.00	0.00	0.00	0.00	0.00	70.00	0.00	70.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00	37.00	0.00	37.00	
	At	1	0.00	11.85	5.00	237.06	1.35	0.00	0.33	8.45	0.00	0.00	
	B1	1	0.00	0.14	5.00	2.72	0.00	0.00	0.00	21.00	0.00	21.00	
08:00-09:00	C1	1	0.00	15.95	5.00	319.07	2.82	0.00	0.65	10.55	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalised PRC	Item with most work over PRC	Item with most work over PRC
9	16/08/2022 12:52:04	16/08/2022 12:52:04	08:00	100	114.28	7.33	66.46	C1/1	0	0	C1/1	C0/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	66	0	3018	688	8.74	104.03	114.28

A10 - DM 2023 PM

D10 - DM 2023 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst PRC	Item with worst PRC
10	16/08/2022 12:52:04	16/08/2022 12:52:05	16:45	100	135.97	8.75	78.97	A1/1	0	0	A1/1	C0/1	A1/1	A1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2023 PM		D10	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2023 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	477	477
Bx	1	5	5
C0	1	476	476
Cx	2	2	2
A1	1	768	768
B1	1	770	770
C1	1	2	2
		478	478

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
	1	3.24	30.00
C1	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

To		1	2	3
From	1	0	3	767
	2	1	0	1
	3	476	2	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	767
	2		1	2	A1/1, Bx/1	Normal	3
	5		2	1	B1/1, Ax/1	Normal	1
	6		2	3	B1/1, Cx/1	Normal	1
	7		3	2	C1/1, C0/2, Bx/1	Normal	2
	8		3	1	C1/1, C0/1, Ax/1	Normal	476

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	113, 57, 62, 88, 103

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
G								

Interstage Matrix for Controller Stream 1

		To				
From	1	2	3	4	5	
	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
5	0	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	103	113	10	8	8
	2	✓	1	A, B, E, G	113	57	64	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	88	21	1	7
	5	✓	4	D	96	103	7	1	7

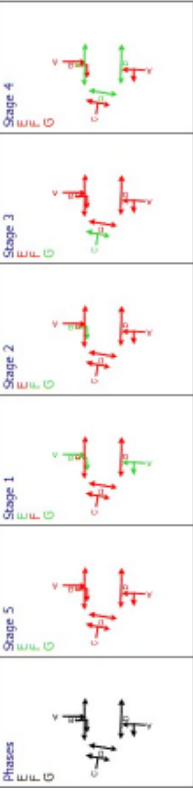
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	113	57	64
	B	1	✓	113	62	69
	C	1	✓	67	88	21
	D	1	✓	96	103	7
	E	1	✓	103	57	74
	F	1	✓	57	62	5
	G	2	✓	103	113	10
		1	✓	103	88	105

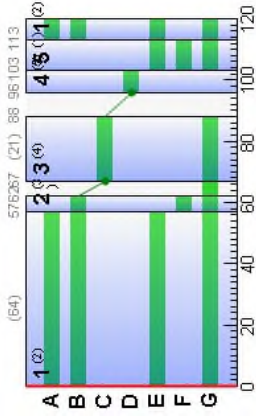
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 113 End 62 Duration 69
	1	1	1	A	Start 113 End 57 Duration 64
	1	1	1	C	Start 67 End 88 Duration 21
	1	1	1	A	Start 113 End 57 Duration 64

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	Ax	1	0	Unrestricted	477	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	5	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	26	240	476	1800	120	0.36	0.05	2.38	0.67	0.00	0.67
	Cx	2	1	6931	2	268	69	0.15	0.00	0.00	0.00	0.00	0.00
	A1	1	0	Unrestricted	768	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	79	14	770	1800	64	28.81	21.98	438.70	87.51	8.03	95.54
	B1	1	1	14750	2	1800	21	40.46	0.00	0.00	0.32	0.02	0.34
	C1	1	49	84	478	1800	64	18.93	10.06	201.21	35.70	3.71	39.41

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Calculated sat flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax	1	477	477	0	Unrestricted	Unrestricted	0		Unrestricted	0.80	120	12
	Bx	1	5	5	0	Unrestricted	Unrestricted	0		Unrestricted	0.76	120	12
	C0	2	2	2	0	1800	1800	26		240	0.81	120	12
	Cx	1	768	768	0	268	156	1		6931	0.91	69	70
	A1	1	770	770	0	Unrestricted	Unrestricted	0		Unrestricted	0.81	120	12
	B1	1	2	2	0	1800	975	79		14	0.00	64	65
	C1	1	2	2	0	1800	330	1		14750	0.00	21	22
	C1	1	478	478	0	1800	975	49		84	0.00	64	65

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.36	0.00	0.67	0.67	0.00	0.00	0.00	0.00	0.00
	Cx	1	1.20	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.80	28.81	4.71	1.45	87.51	83.19	597.61	42.93	8.03	8.03
	B1	1	3.24	40.46	0.02	0.00	0.32	80.68	1.61	0.00	0.02	0.02
	C1	1	3.80	18.93	2.28	0.24	35.70	61.89	288.81	7.03	3.71	3.71

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	Average limit queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
16:45-17:45	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00	0.00	38.00	36.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00	0.00	120.00	120.00	
	C0	2	0.00	0.05	2.00	2.38	0.00	0.00	0.00	0.00	54.00	54.00	
	Cx	1	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	70.00	70.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00	0.00	34.00	34.00	
	A1	1	0.00	21.98	5.00	438.70	5.69	0.00	0.00	1.45	13.22	0.00	0.00
	B1	1	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	21.00	21.00	
	C1	1	0.00	10.06	5.00	201.21	0.82	0.00	0.00	0.24	7.54	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalised PRC	Item with most work over PR	Item with most work over PR
10	16/08/2022 12:52:04	16/08/2022 12:52:05	16:45	100	135.97	8.75	78.97	A1/1	0	0	A1/1	C0/1	A1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	79	0	2978	688	10.57	124.20	11.76	135.97

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	2978	2978	0		79		14	740	744

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	12.96	10.57	7.01	124.20	124.20	124.20	31.50	888.03	49.96	11.76	11.76

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	439.70	0.00	337.00	0.00	337.00

A11 - DM 2028 AM
D11 - DM 2028 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on red PRC
11	16/08/2022 12:52:05	16/08/2022 12:52:06	08:00	100	142.00	9.13	73.23	C1/1	0	0	C1/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2028 AM		D11	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2028 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	713	713
Bx	1	39	39
C0	1	699	699
Cx	2	15	15
A1	1	582	582
B1	1	598	598
C1	1	22	22
		714	714

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	24	574
	2	14	0	8
	3	699	15	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	574
	2		1	2	A1/1, Bx/1	Normal	24
	5		2	1	B1/1, Ax/1	Normal	14
	6		2	3	B1/1, Cx/1	Normal	8
	7		3	2	C1/1, C0/2, Bx/1	Normal	15
	8		3	1	C1/1, C0/1, Ax/1	Normal	699

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	113, 57, 62, 88, 103

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	103	113	10	8	8
	2	✓	1	A, B, E, G	113	57	64	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	88	21	1	7
	5	✓	4	D	96	103	7	1	7

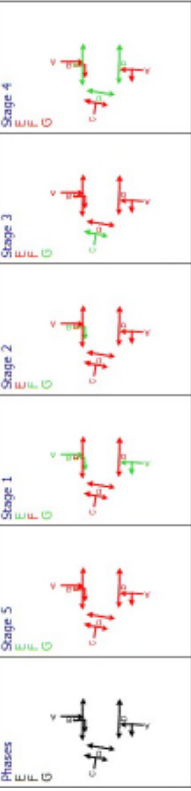
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	113	57	64
	B	1	✓	113	62	69
	C	1	✓	67	88	21
	D	1	✓	96	103	7
	E	1	✓	103	57	74
	F	2	✓	103	113	10
	G	1	✓	103	88	105

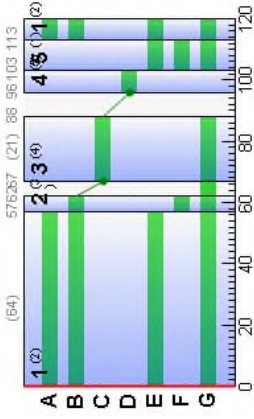
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 113 End 62 Duration 69
	1	1	1	A	Start 113 End 57 Duration 64
	1	1	1	C	Start 67 End 88 Duration 21
	1	1	1	A	Start 113 End 57 Duration 64

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Vehicle (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	713	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	39	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	39	132	699	1800	120	0.63	0.12	6.16	1.75	0.00	1.75
	Cx	2	10	838	15	268	69	1.22	0.01	0.25	0.07	0.00	0.07
	A1	1	0	Unrestricted	582	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	61	47	588	1800	64	21.79	14.10	282.09	51.39	5.17	56.57
	B1	1	7	1250	22	1800	21	40.96	0.61	12.15	3.55	0.23	3.78
	C1	1	73	23	714	1800	64	25.88	19.04	380.74	72.88	6.96	79.83

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	713	713	0	Unrestricted	Unrestricted	0	Unrestricted	0.77	120	12
	Bx	1	39	39	0	Unrestricted	Unrestricted	0	Unrestricted	0.76	120	12
	C0	1	699	699	0	1800	1800	39	132	0.81	120	12
	Cx	2	15	15	0	268	156	10	838	0.91	69	70
	At	1	582	582	0	Unrestricted	Unrestricted	0	Unrestricted	0.78	120	12
	At	1	598	598	0	1800	975	61	47	0.00	64	65
	B1	1	22	22	0	1800	330	7	1250	0.00	21	22
	C1	1	714	714	0	1800	975	73	23	0.00	64	65

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.63	0.00	1.75	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	21.79	3.14	51.39	68.99	398.14	14.42	5.17	5.17
	B1	1	3.24	40.96	0.25	3.55	81.84	17.93	0.07	0.23	0.23
	C1	1	3.80	25.88	4.14	72.88	77.72	525.59	29.35	6.96	6.96

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00			0.00	29.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00			0.00	85.00	
	C0	2	0.00	0.12	2.00	6.16	0.00	0.00			0.00	54.00	
	Cx	1	0.00	0.01	2.00	0.25	0.00	0.00	0.01	0.01	0.00	70.00	
	At	1	0.00	0.00	38.79	0.00	0.00	0.00			0.00	33.00	
	At	1	0.00	14.10	5.00	282.09	2.12	0.00	0.48	9.62	0.00	0.00	
	B1	1	0.00	0.61	5.00	12.15	0.00	0.00	0.00	0.80	20.00	0.00	
	C1	1	0.00	19.04	5.00	380.74	4.20	0.00	0.99	11.90	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PRC	Item C1/
11	16/08/2022 12:52:05	16/08/2022 12:52:06	08:00	100	142.00	9.13	73.23	C1/1	0	0	C1/1	C0/1	C1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	73	0	3382	698	9.72	129.65	12.36	142.00

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3382	3382	0		73		23	740	744

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.34	9.72	7.53	1.60	129.65	129.65	29.14	941.66	43.85	12.36	12.36

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	380.74	0.00	291.00	0.00	291.00

A12 - DM 2028 PM
D12 - DM 2028 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC	Item with worst unsignalised PRC
12	16/08/2022 12:52:06	16/08/2022 12:52:07	16:45	100	167.40	10.92	85.54	A1/1	0	0	A1/1	C0/1	A1/1	A1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2028 PM		D12	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2028 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	294.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓	✓	Normal	
					30.00	✓	Sum of lanes	1800	✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
		2	(untitled)			1800
Cx	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓
							120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	518	518
Bx	1	7	7
C0	1	515	515
	2	3	3
Cx	1	832	832
A1	1	834	834
B1	1	5	5
C1	1	518	518

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Am	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	4	830
	2	3	0	2
	3	515	3	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	830
	2		1	2	A1/1, Bx/1	Normal	4
	5		2	1	B1/1, Ax/1	Normal	3
	6		2	3	B1/1, Cx/1	Normal	2
	7		3	2	C1/1, C0/2, Bx/1	Normal	3
	8		3	1	C1/1, C0/1, Ax/1	Normal	515

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	113, 57, 62, 88, 103

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	103	113	10	8	8
	2	✓	1	A, B, E, G	113	57	64	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	88	21	1	7
	5	✓	4	D	96	103	7	1	7

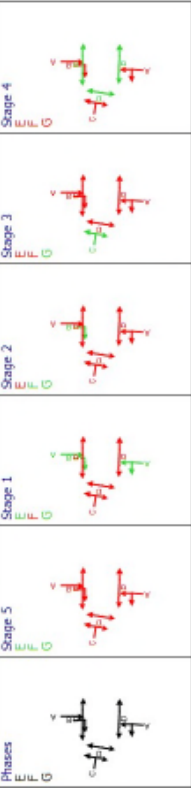
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	113	57	64
	B	1	✓	113	62	69
	C	1	✓	67	88	21
	D	1	✓	96	103	7
	E	1	✓	103	57	74
	F	1	✓	57	62	5
	G	1	✓	103	88	105

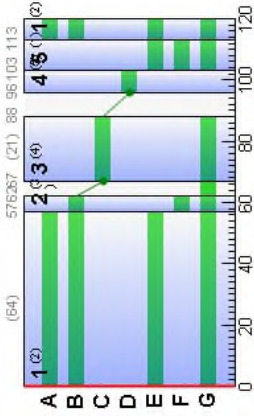
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 113 End 62 Duration 69
	1	1	1	A	Start 113 End 57 Duration 64
	1	1	1	C	Start 67 End 88 Duration 21
	1	1	1	A	Start 113 End 57 Duration 64

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16-45-17-45	Ax	1	0	Unrestricted	518	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	7	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	29	215	515	1800	120	0.40	0.06	2.87	0.81	0.00	0.81
	Cx	2	2	4588	3	268	69	0.23	0.00	0.01	0.00	0.00	0.00
	At	1	0	Unrestricted	832	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	96	5	834	1800	64	33.92	26.05	520.95	111.80	9.55	121.14
	B1	1	2	5840	5	1800	21	40.51	0.14	2.72	0.80	0.05	0.85
	C1	1	53	69	518	1800	64	19.78	11.38	227.59	40.42	4.16	44.59

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax	1	518	518	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.79	120	12
	Bx	1	7	7	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.76	120	12
	C0	1	515	515	0	1800	1800	29		215	0.81	120	12
	Cx	2	3	3	0	268	156	2		4588	0.91	69	70
	At	1	832	832	0	Unrestricted	Unrestricted	0		Unrestricted	0.80	120	12
	B1	1	834	834	0	1800	975	86		5	0.00	64	65
	C1	1	5	5	0	1800	330	2		5840	0.00	21	22
	B1	1	5	5	0								
	C1	1	518	518	0	1800	975	53		69	0.00	64	65

Traffic Stream Results: Stops and delays

Time Segment	Am Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.40	0.00	0.81	0.00	0.00	0.00	0.00	0.00
	Cx	2	1.20	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	33.82	5.44	2.42	111.60	690.56	91.31	70.97	9.55
	B1	1	3.24	40.51	0.06	0.00	80.75	4.03	0.00	0.05	0.05
	C1	1	3.80	19.78	2.55	0.30	40.42	323.20	8.96	4.16	4.16

Traffic Stream Results: Queues and blocking

Time Segment	Am Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	Average limit queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (£ per cycle)	Estimated blocking
16:45-17:45	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00		36.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00		120.00	0.00	
	C0	2	0.00	0.06	2.00	2.87	0.00	0.00		54.00	0.00	
	Cx	1	0.00	0.00	2.00	0.01	0.00	0.00	0.00	70.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00		33.00	0.00	
	At	1	0.00	26.05	5.00	520.95	8.06	0.00	2.42	15.16	0.00	
	B1	1	0.00	0.14	5.00	2.72	0.00	0.00	0.00	21.00	0.00	
	C1	1	0.00	11.38	5.00	227.59	1.21	0.00	0.30	8.21	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
12	16/08/2022 12:52:06	16/08/2022 12:52:07	16:45	100	167.40	10.82	85.54	A1/1	0	0	A1/1	C0/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	86	0	3232	688	12.05	153.63	13.76	167.40

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	3232	3232	0		86		5	740	744

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	12.97	12.05	8.04	2.78	153.63	153.63	33.96	1017.80	79.94	13.76	13.76

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	520.95	0.00	334.00	0.00	334.00

A13 - DM 2038 AM
D13 - DM 2038 AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on red PRC
13	16/08/2022 12:52:07	16/08/2022 12:52:07	08:00	100	165.43	10.66	78.77	C1/1	0	0	C1/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 AM		D13	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	294.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
		2	(untitled)			1800
Cx	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	767	767
Bx	1	39	39
C0	2	753	753
		15	15
Cx	1	627	627
A1	1	642	642
B1	1	23	23
C1	1	768	768

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	24	618
	2	14	0	9
	3	753	15	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	618
	2		1	2	A1/1, Bx/1	Normal	24
	5		2	1	B1/1, Ax/1	Normal	14
	6		2	3	B1/1, Cx/1	Normal	9
	7		3	2	C1/1, C0/2, Bx/1	Normal	15
	8		3	1	C1/1, C0/1, Ax/1	Normal	753

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	113, 57, 62, 88, 103

Intergreen Matrix for Controller Stream 1

		To						
From	A	B	C	D	E	F	G	
	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
From		1	2	3	4	5
	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	103	113	10	8	8
	2	✓	1	A, B, E, G	113	57	64	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	88	21	1	7
	5	✓	4	D	96	103	7	1	7

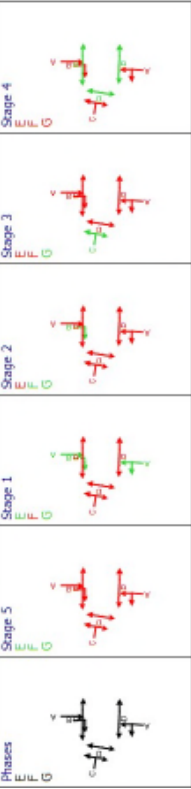
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	113	57	64
	B	1	✓	113	62	69
	C	1	✓	67	88	21
	D	1	✓	96	103	7
	E	1	✓	103	57	74
		1	✓	57	62	5
	F	2	✓	103	113	10
	G	1	✓	103	88	105

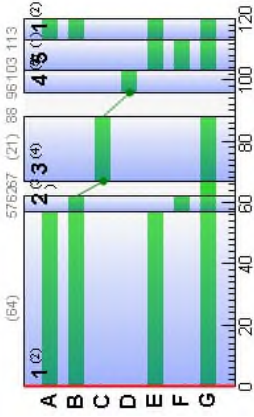
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 113 End 62 Duration 69
	1	1	1	A	Start 113 End 57 Duration 64
	1	1	1	C	Start 67 End 88 Duration 21
	1	1	1	A	Start 113 End 57 Duration 64

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Ven (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	767	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	39	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	42	115	753	1800	120	0.72	0.15	7.51	2.13	0.00	2.13
	Cx	2	10	838	15	268	69	1.22	0.01	0.25	0.07	0.00	0.07
	At	1	0	Unrestricted	627	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	66	37	642	1800	64	23.13	15.79	315.76	58.56	5.80	64.36
	B1	1	7	1191	23	1800	21	41.01	0.64	12.70	3.72	0.24	3.96
	C1	1	79	14	768	1800	64	28.69	21.70	433.85	86.91	7.99	94.90

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean stops per cycle or error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	767	767	0	Unrestricted	Unrestricted	0		Unrestricted	0.78	120	12
	Bx	1	39	39	0	Unrestricted	Unrestricted	0		Unrestricted	0.76	120	12
	C0	1	753	753	0	1800	1800	42		115	0.91	120	12
	C2	2	15	15	0	268	156	10		838	0.91	69	70
	Cx	1	627	627	0	Unrestricted	Unrestricted	0		Unrestricted	0.78	120	12
	A1	1	642	642	0	1800	975	66		37	0.00	64	65
	B1	1	23	23	0	1800	330	7		1191	0.00	21	22
	C1	1	768	768	0	1800	975	79		14	0.00	64	65

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.72	0.00	0.15	2.13	2.13	0.00	0.00	0.00	0.00	0.00
	C2	2	1.20	1.22	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.80	23.13	3.49	0.83	58.56	58.56	72.05	443.79	18.76	5.80	5.80
	B1	1	3.24	41.01	0.26	0.00	3.72	81.85	18.75	0.08	0.24	0.24	0.24
	C1	1	3.80	28.89	4.69	1.43	86.91	86.91	82.98	594.94	42.32	7.99	7.99

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	End of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time to clear queue (s per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00	0.00	0.00	29.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00	0.00	0.00	83.00	
	C0	2	0.00	0.15	2.00	7.51	0.00	0.00	0.00	0.00	54.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00	0.01	70.00	0.00	
	A1	1	0.00	15.79	5.00	315.76	2.76	0.00	0.63	10.44	0.00	0.00	
	B1	1	0.00	0.64	5.00	12.70	0.00	0.00	0.00	0.63	20.00	0.00	
	C1	1	0.00	21.70	5.00	433.95	5.52	0.00	1.43	13.16	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PR	Item with most work over PR
13	16/08/2022 12:52:07	16/08/2022 12:52:07	08:00	100	165.43	10.66	78.77	C1/1	0	0	C1/1	C0/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	79	0	3634	698	10.56	151.40	14.03	165.43

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3634	3634	0		79		14	740	744

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.33	10.56	8.44	2.22	151.40	151.40	30.78	1057.47	61.16	14.03	14.03

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	433.95	0.00	288.00	0.00	288.00

A14 - DM 2038 PM

D14 - DM 2038 PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (c per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst PRC	Item with worst PRC
14	16/08/2022 12:52:07	16/08/2022 12:52:08	16:45	100	180.33	11.65	88.04	A1/1	0	0	A1/1	C0/1	A1/	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 PM		D14	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 PM				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	284.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	557	557
Bx	1	8	8
C0	1	554	554
Cx	2	3	3
A1	1	896	896
B1	1	898	898
C1	1	6	6
		557	557

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	5	893
	2	3	0	3
	3	554	3	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	893
	2		1	2	A1/1, Bx/1	Normal	5
	5		2	1	B1/1, Ax/1	Normal	3
	6		2	3	B1/1, Cx/1	Normal	3
	7		3	2	C1/1, C0/2, Bx/1	Normal	3
	8		3	1	C1/1, C0/1, Ax/1	Normal	554

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	25
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	119, 66, 71, 94, 109

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	109	119	10	8	8
	2	✓	1	A, B, E, G	119	66	67	25	25
	3	✓	2	B, F, G	66	71	5	1	5
	4	✓	3	C, G	76	94	18	1	7
	5	✓	4	D	102	109	7	1	7

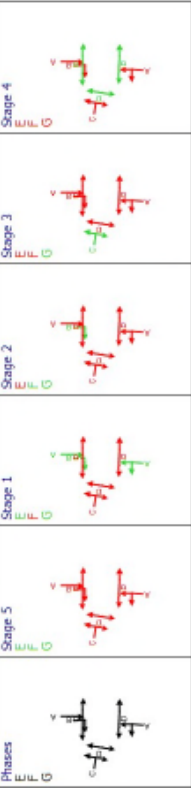
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	119	66	67
	B	1	✓	119	71	72
	C	1	✓	76	94	18
	D	1	✓	102	109	7
	E	1	✓	109	66	77
	F	1	✓	66	71	5
	G	1	✓	109	94	105

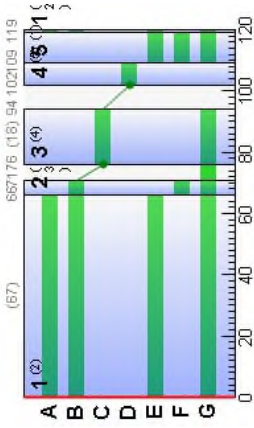
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 119 End 71 Duration 72
	1	1	1	A	Start 119 End 66 Duration 67
	1	1	1	C	Start 76 End 94 Duration 18
	1	1	1	A	Start 119 End 66 Duration 67

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16-45-17-45	Ax	1	0	Unrestricted	557	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	8	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	31	192	554	1800	120	0.44	0.07	3.42	0.97	0.00	0.97
	Cx	2	2	4700	3	263	72	0.22	0.00	0.01	0.00	0.00	0.00
	At	1	0	Unrestricted	896	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	88	2	888	1800	67	34.69	28.74	574.74	122.87	10.54	133.41
	B1	1	2	4175	6	1800	18	43.06	0.17	3.37	1.02	0.06	1.08
	C1	1	55	65	557	1800	67	18.43	11.93	238.63	40.50	4.37	44.86

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax	1	557	557	0		Unrestricted	Unrestricted	0		Unrestricted	0.75	120	12
	Bx	1	8	8	0		Unrestricted	Unrestricted	0		Unrestricted	0.71	120	12
	C0	1	554	554	0		1800	1800	31		192	0.86	120	12
	Cx	1	896	896	0		263	160	2		4700	0.86	72	72
	At	1	898	898	0		Unrestricted	Unrestricted	0		Unrestricted	0.75	120	12
	B1	1	6	6	0		1800	1020	83		2	0.00	67	66
	B1	1	6	6	0		1800	285	2		4175	0.00	18	16
	C1	1	557	557	0		1800	1020	55		65	0.00	67	66

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random plus oversat delay (PCU-hr/hr)	Uniform delay (PCU-hr/hr)	Mean stops per Veh (%)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.44	0.00	0.97	0.97	0.07	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	34.89	5.61	122.87	122.87	3.04	93.59	751.42	89.05	10.54	10.54
	B1	1	3.24	43.06	0.07	1.02	83.29	4.99	0.01	83.29	0.01	0.06	0.06
	C1	1	3.80	18.43	2.52	0.33	40.50	0.33	338.41	9.77	4.37	4.37	4.37

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage queue (PCU)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time to clear back (s per cycle)	Estimated blocking
16:45-17:45	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00	0.00	33.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00	0.00	120.00	0.00	
	C0	1	0.00	0.07	2.00	0.01	0.00	0.00	0.00	0.00	51.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00	0.00	73.00	0.00	
	At	1	0.00	28.74	5.00	574.74	9.51	0.00	0.00	3.04	29.00	0.00	
	B1	1	0.00	0.17	5.00	3.37	0.00	0.00	0.00	0.17	18.00	0.00	
	C1	1	0.00	11.93	5.00	238.63	1.32	0.00	0.00	0.33	8.37	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most wor PRC	Item with most over PR
14	16/08/2022 12:52:07	16/08/2022 12:52:08	16:45	100	180.33	11.65	88.04	A1/1	0	0	A1/1	C0/1	A1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	88	0	3479	704	12.05	165.36	14.97	180.33

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	3479	3479	0		88		2	746	750

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	12.97	12.05	8.20	3.44	165.36	165.36	34.31	1094.83	98.83	14.97	14.97

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	574.74	0.00	324.00	0.00	324.00

A15 - DM 2038 AM+PFD

D15 - DM 2038 AM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling set time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work on red PRC
15	16/08/2022 12:52:10	16/08/2022 12:52:10	08:00	100	193.61	12.53	80.10	C1/1	0	0	C1/1	C0/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 AM+PFD		D15	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 AM+PFD				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓	Sum of lanes	1800			Normal	
C0	2				11.00	✓	Sum of lanes	1800	✓	✓	Normal	
Cx	1	(untitled)		✓	223.04						Normal	
A1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
B1	1	(untitled)			27.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	1	1	(untitled)			1800
C0	2	2	(untitled)			1800
Cx	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	1	NetworkDefault	100	100	100		2.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		5.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	829	829
Bx	1	74	74
C0	1	753	753
C0	2	28	28
Cx	1	663	663
A1	1	664	664
B1	1	121	121
C1	1	781	781

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Far-side	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	46	618
	2	76	0	45
	3	753	28	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	618
	2		1	2	A1/1, Bx/1	Normal	46
	5		2	1	B1/1, Ax/1	Normal	76
	6		2	3	B1/1, Cx/1	Normal	45
	7		3	2	C1/1, C0/2, Bx/1	Normal	28
	8		3	1	C1/1, C0/1, Ax/1	Normal	753

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	1
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	113, 57, 62, 88, 103

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5		8			
	B			5		8		
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	103	113	10	8	8
	2	✓	1	A, B, E, G	113	57	64	1	7
	3	✓	2	B, F, G	57	62	5	1	5
	4	✓	3	C, G	67	88	21	1	7
	5	✓	4	D	96	103	7	1	7

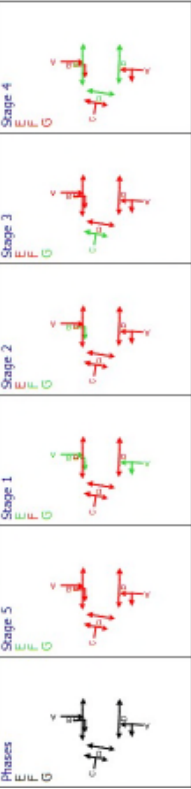
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	113	57	64
	B	1	✓	113	62	69
	C	1	✓	67	88	21
	D	1	✓	96	103	7
	E	1	✓	103	57	74
	F	2	✓	103	113	10
	G	1	✓	103	88	105

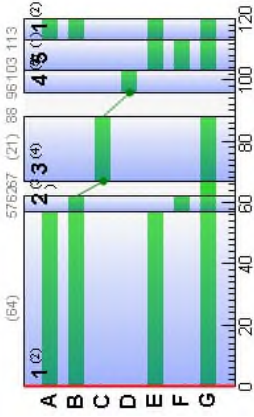
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 113 End 62 Duration 69
	1	1	1	A	Start 113 End 57 Duration 64
	1	1	1	C	Start 67 End 88 Duration 21
	1	1	1	A	Start 113 End 57 Duration 64

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Vehicle (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Ax	1	0	Unrestricted	829	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	74	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	42	115	753	1800	120	0.72	0.15	7.51	2.13	0.00	2.13
	Cx	2	18	402	28	268	69	2.51	0.02	0.98	0.28	0.00	0.28
	A1	1	0	Unrestricted	663	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	68	32	664	1800	64	23.68	16.77	335.34	62.54	6.13	68.67
	C1	1	37	145	121	1800	21	46.05	3.63	72.70	21.98	1.35	23.32
	C1	1	80	12	781	1800	64	29.52	22.62	452.35	90.94	8.27	98.21

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Adjusted flow discrepancy (PCU/hr)	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modules of error	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	Ax	1	829	74	0	Unrestricted	Unrestricted	0	Unrestricted	0.64	120	12
	Bx	1	74	74	0	Unrestricted	Unrestricted	0	Unrestricted	0.76	120	12
	C0	2	753	753	0	1800	42		115	0.81	120	12
	Cx	1	28	28	0	268	18		402	0.91	69	70
	A1	1	663	663	0	Unrestricted	Unrestricted	0	Unrestricted	0.69	120	12
	B1	1	664	664	0	1800	975	63	32	0.00	64	65
	C1	1	121	121	0	1800	330	37	145	0.00	21	22
	C1	1	781	781	0	1800	975	80	12	0.00	64	65

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.72	0.00	2.13	2.13	0.00	0.00	0.00	0.00	0.00
	C0	2	1.20	2.51	0.00	0.02	0.28	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3.80	23.88	3.68	0.72	62.54	73.60	467.25	21.44	6.13	6.13
	B1	1	3.24	46.05	1.44	0.11	21.98	88.68	104.15	3.15	1.35	1.35
	C1	1	3.80	29.52	4.83	1.57	90.94	90.94	612.76	46.51	8.27	8.27

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue (PCU)	Utilised storage (%)	Average storage (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (£ per cycle)	Estimated blocking
08:00-09:00	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00		16.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00		56.00	0.00	
	C0	2	0.00	0.15	2.00	7.51	0.00	0.00		54.00	0.00	
	Cx	1	0.00	0.02	2.00	0.98	0.00	0.00	0.02	29.00	0.00	
	A1	1	0.00	0.00	38.79	0.00	0.00	0.00		20.00	0.00	
	A1	1	0.00	16.77	5.00	335.34	3.18	0.00	0.72	10.86	0.00	
	B1	1	0.00	3.63	5.00	72.70	0.00	0.00	0.11	3.40	0.00	
	C1	1	0.00	22.62	5.00	452.35	6.03	0.00	1.57	13.51	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling (HH:mm)	Network Cycle Time (s)	Performance Index (per hr)	Total network delay (PCU-hr)	Highest DOS	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalled PRC	Item with most work over PRC
15	16/08/2022 12:52:10	16/08/2022 12:52:10	08:00	100	193.61	12.53	80.10	C1/1	0	0	C1/1	C1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	80	0	3913	698	11.52	177.87	193.61

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3913	3913	0		80		12	740	744

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	12.56	11.52	9.96	2.57	177.87	177.87	32.08	1184.16	71.10	15.74	15.74

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	452.35	0.00	175.00	0.00	175.00

A16 - DM 2038 PM+PFD

D16 - DM 2038 PM+PFD*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle time (s)	Performance Index (£ per hr)	Total network delay (PCU hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst work time or PR
16	16/08/2022 12:52:11	16/08/2022 12:52:11	16:45	100	186.77	12.23	88.43	A1/1	0	0	A1/1	C0/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM 2038 PM+PFD		D16	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM 2038 PM+PFD				16:45	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
Ax	(untitled)		
Bx			
C0			1
Cx	(untitled)		
A1	R135 Dublin Road (S)		1
B1			1
C1	Dublin Rd (N)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Ax	1	(untitled)		✓	222.55						Normal	
Bx	1			✓	298.14	✓					Normal	
C0	2				11.00	✓	Sum of lanes	1800			Normal	
Cx	1	(untitled)		✓	10.00	✓	Sum of lanes	1800	✓	✓	Normal	
A1	1	(untitled)			223.04						Normal	
B1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	
C1	1	(untitled)			30.00	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Ax	1	1	(untitled)			
Bx	1	1	(untitled)			
C0	2	1	(untitled)			1800
Cx	1	2	(untitled)			1800
A1	1	1	(untitled)			
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Ax	1	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C0	2	NetworkDefault	100	100	100		2.00		
Cx	1	NetworkDefault	100	100	100		2.00		
A1	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100		5.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-In-Service	Vehicle-In-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Ax	1	592	592
Bx	1	99	99
C0	2	554	554
Cx	1	37	37
A1	1	916	916
B1	1	955	955
C1	1	61	61
		591	591

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
C0	2	1	B	
A1	1	1	A	
B1	1	1	C	
C1	1	1	A	

Entry Sources

Ami	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A1	1	3.60	30.00
B1	1	3.24	30.00
C1	1	3.60	30.00

Sources

Ami	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	B1/1	Ax/1	26.71	30.00	✓	Offside	80.27
Bx	1	1	A1/1	Bx/1	35.78	30.00	✓	Nearside	65.03
C0	1	1	C1/1	C0/1	1.32	30.00	✓	Straight Movement	
	2	1	C1/1	C0/2	1.20	30.00	✓	Straight Movement	
Cx	1	1	A1/1	Cx/1	26.76	30.00	✓	Straight Movement	
Ax	1	2	C0/1	Ax/1	26.71	30.00	✓	Straight Movement	
Bx	1	2	C0/2	Bx/1	35.78	30.00	✓	Offside	32.13
Cx	1	2	B1/1	Cx/1	26.76	30.00	✓	Nearside	61.27

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
(ALL)	(untitled)				Farside	3.00	2.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	D	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Lane Balancing			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From	1	2	3	
	1	0	62	893
	2	36	0	23
	3	554	37	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	A1/1	Ax/1	#0000FF
	2	(untitled)	B1/1	Bx/1	#FF0000
	3	(untitled)	C1/1	Cx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	3	A1/1, Cx/1	Normal	893
	2		1	2	A1/1, Bx/1	Normal	62
	5		2	1	B1/1, Ax/1	Normal	36
	6		2	3	B1/1, Cx/1	Normal	23
	7		3	2	C1/1, C0/2, Bx/1	Normal	37
	8		3	1	C1/1, C0/1, Ax/1	Normal	554

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream

Controller stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	Manual	120

Controller Stream - Properties

Controller stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream - Optimisation

Controller stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	5	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Cycle	
	F	(untitled)	5	300	0	0	Cycle	
	G	(untitled)	5	300	0	0	Cycle	

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A, B, E, G	45
	2	B, F, G	1
	3	C, G	1
	4	D	1
	5	E, F, G	8

Stage Sequences

Controller stream	Sequence	Name (untitled)	Multiple cycling	Stage IDs	Stage ends
1	1		Single	5, 1, 2, 3, 4	3, 74, 79, 98, 113

Intergreen Matrix for Controller Stream 1

		To						
		A	B	C	D	E	F	G
From	A		5	8				
	B			5	8			
	C	5	5		8			
	D	10	10	10				
	E							
	F							
	G							

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	0	5	8	0
	2	0	0	5	8	0
	3	5	5	0	8	0
	4	10	10	10	0	0
	5	0	0	0	0	0

Resultant Stages

Controller stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	5	E, F, G	113	3	10	8	8
	2	✓	1	A, B, E, G	3	74	71	45	45
	3	✓	2	B, F, G	74	79	5	1	5
	4	✓	3	C, G	84	98	14	1	7
	5	✓	4	D	106	113	7	1	7

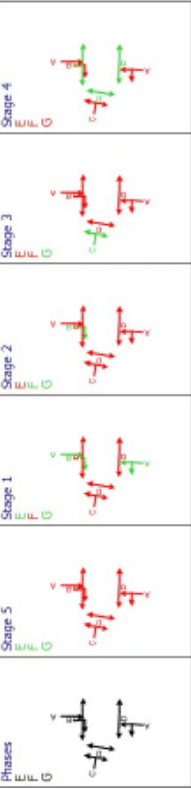
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	3	74	71
	B	1	✓	3	79	76
	C	1	✓	84	98	14
	D	1	✓	106	113	7
	E	1	✓	113	74	81
1	F	1	✓	74	79	5
	G	2	✓	113	3	10
		1	✓	113	98	105

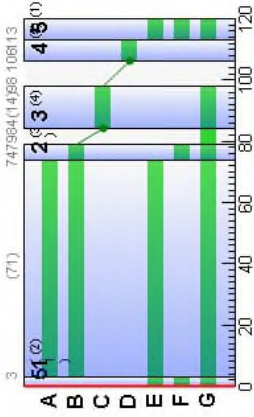
Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
CO	2	1	1	B	Start 3 End 79 Duration 76
	1	1	1	A	Start 3 End 74 Duration 71
	1	1	1	C	Start 84 End 98 Duration 14
	1	1	1	A	Start 3 End 74 Duration 71

Stage Sequence Diagram for Controller Stream 1



Phase Timings Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16-45-17-45	Ax	1	0	Unrestricted	592	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	0	Unrestricted	99	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	31	192	554	1800	120	0.44	0.07	3.42	0.97	0.00	0.97
	Cx	2	22	301	37	257	76	3.14	0.03	1.61	0.46	0.00	0.46
	At	1	0	Unrestricted	916	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	88	2	985	1800	71	32.41	30.23	804.61	122.08	11.01	133.09
	B1	1	27	232	61	1800	14	50.54	1.88	37.60	12.16	0.70	12.86
	C1	1	55	64	591	1800	71	16.30	11.99	239.71	36.00	4.39	42.39

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean stops per cycle	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	Ax	1	592	592	0	Unrestricted	Unrestricted	0		Unrestricted	0.59	120	12
	Bx	1	99	99	0	Unrestricted	Unrestricted	0		Unrestricted	0.66	120	12
	C0	1	554	554	0	1800	1800	31		192	0.79	120	12
	Cx	2	37	37	0	257	165	22		301	0.79	76	71
	At	1	916	916	0	Unrestricted	Unrestricted	0		Unrestricted	0.65	120	12
	At	1	955	955	0	1800	1080	88		2	0.00	71	72
	B1	1	61	61	0	1800	225	27		232	0.00	14	15
	C1	1	591	591	0	1800	1080	55		64	0.00	71	72

Traffic Stream Results: Stops and delays

Time Segment	Am	Traffic Stream	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops (Stops per hr)	Uniform stops (Stops per hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	Ax	1	26.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	35.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C0	1	1.32	0.44	0.00	0.97	0.97	0.00	0.00	0.00	0.00	0.00
	Cx	2	1.20	3.14	0.00	0.03	0.46	0.00	0.00	0.00	0.00	0.00
	Cx	1	26.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	At	1	3.80	32.41	5.43	3.17	122.08	91.96	785.35	92.83	11.01	11.01
	B1	1	3.24	50.54	0.81	0.05	12.16	91.47	54.30	1.50	0.70	0.70
	C1	1	3.80	16.30	2.35	0.33	38.00	59.22	340.13	9.84	4.39	4.39

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage (PCU)	Average limit queue (PCU)	Excess queue penalty (£ per hr)	Max end of queue (PCU)	Max end of queue (PCU)	Wasted time blocking back (s per cycle)	Wasted time blocking back (s per cycle)	Estimated blocking
16:45-17:45	Ax	1	0.00	0.00	38.70	0.00	0.00	0.00	0.00	0.00	0.00	18.00	0.00	
	Bx	1	0.00	0.00	51.85	0.00	0.00	0.00	0.00	0.00	0.00	45.00	0.00	
	C0	2	0.00	0.07	2.00	3.42	0.00	0.00	0.00	0.00	0.00	47.00	0.00	
	Cx	1	0.00	0.03	2.00	1.61	0.00	0.00	0.00	0.03	0.03	53.00	0.00	
	Cx	1	0.00	0.00	38.79	0.00	0.00	0.00	0.00	0.00	0.00	19.00	0.00	
	At	1	0.00	30.23	5.00	604.61	10.10	0.00	0.00	3.17	15.91	0.00	0.00	
	B1	1	0.00	1.88	5.00	37.60	0.00	0.00	0.00	0.05	1.83	0.00	0.00	
	C1	1	0.00	11.99	5.00	238.71	1.27	0.00	0.00	0.33	8.21	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling Time (HH:mm)	Network Cycle Time (s)	Performance Index (s per cycle)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with most unsignalised PRC	Item with most work over PR	Item with most work over PR
16	16/08/2022 12:52:11	16/08/2022 12:52:11	16:45	100	189.77	12.23	88.43	A1/1	0	0	A1/1	C0/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
16:45-17:45	88	0	3905	712	11.57	173.67	16.10	189.77

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
16:45-17:45	3905	3905	0		88		2	754	758

Network Results: Stops and delays

Time Segment	Mean Cruise time per Veh (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Weighted cost of delay (£ per hr)	Unweighted cost of delay (£ per hr)	Random stops plus oversat (PCU-hr/hr)	Uniform delay (PCU-hr/hr)	Mean stops per Veh (%)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
16:45-17:45	13.25	11.57	8.58	173.67	173.67	3.65	8.58	33.74	104.17	16.10

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
16:45-17:45	604.61	0.00	182.00	0.00	182.00



APPENDIX D

PICADY & ARCADY Output Files

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.0.4211 []
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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: Nine Mile Stone Rbt.j9
Path: G:\2020\p200059\calcs\Arcady
Report generation date: 16/08/2022 10:53:31

- »DM - DM 2023_ AM
- »DM - DM 2023_ PM
- »DM - DM 2028_ AM
- »DM - DM 2028_ PM
- »DM - DM 2038_ AM
- »DM - DM 2038_ PM
- »DM - DM 2038 + PFD_ AM
- »DM - DM 2038 + PFD_ PM
- »DS - DS 2023_ AM
- »DS - DS 2023_ PM
- »DS - DS 2028_ AM
- »DS - DS 2028_ PM
- »DS - DS 2038_ AM
- »DS - DS 2038_ PM
- »DS - DS 2038 + PFD_ AM
- »DS - DS 2038 + PFD_ PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
DM - DM 2023_								
Arm 1	0.1	2.90	0.13	A	0.3	2.90	0.24	A
Arm 2	0.2	1.94	0.18	A	0.9	3.26	0.47	A
Arm 3	0.8	3.99	0.46	A	0.3	3.19	0.23	A
Arm 4	0.7	3.72	0.42	A	0.4	2.80	0.29	A
Arm 5	0.3	3.99	0.24	A	0.3	3.17	0.22	A
DM - DM 2028_								
Arm 1	0.2	3.08	0.15	A	0.4	3.05	0.26	A
Arm 2	0.2	2.01	0.20	A	1.1	3.62	0.52	A
Arm 3	1.0	4.45	0.50	A	0.3	3.38	0.25	A
Arm 4	0.9	4.14	0.47	A	0.5	2.95	0.32	A
Arm 5	0.4	4.36	0.27	A	0.3	3.33	0.24	A
DM - DM 2038_								
Arm 1	0.2	3.26	0.17	A	0.4	3.23	0.29	A
Arm 2	0.3	2.07	0.21	A	1.3	4.08	0.56	A
Arm 3	1.2	4.95	0.55	A	0.4	3.59	0.28	A
Arm 4	1.0	4.61	0.51	A	0.5	3.10	0.35	A
Arm 5	0.4	4.78	0.30	A	0.4	3.50	0.27	A

DM - DM 2038 + PFD_								
Arm 1	0.2	3.35	0.18	A	0.4	3.31	0.30	A
Arm 2	0.3	2.09	0.22	A	1.4	4.34	0.59	A
Arm 3	1.2	5.04	0.55	A	0.4	3.71	0.29	A
Arm 4	1.2	5.06	0.56	A	0.6	3.21	0.37	A
Arm 5	0.5	4.98	0.31	A	0.4	3.57	0.28	A

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
DS - DS 2023_								
Arm 1	0.2	2.93	0.13	A	0.3	2.92	0.24	A
Arm 2	0.2	1.95	0.18	A	0.9	3.31	0.48	A
Arm 3	0.8	4.01	0.46	A	0.3	3.23	0.23	A
Arm 4	0.8	3.83	0.43	A	0.4	2.83	0.30	A
Arm 5	0.3	4.05	0.24	A	0.3	3.19	0.22	A
DS - DS 2028_								
Arm 1	0.2	3.28	0.17	A	0.4	3.23	0.29	A
Arm 2	0.3	2.06	0.21	A	1.3	4.11	0.57	A
Arm 3	1.1	4.68	0.52	A	0.4	3.64	0.28	A
Arm 4	1.3	5.00	0.56	A	0.6	3.16	0.36	A
Arm 5	0.4	4.80	0.30	A	0.4	3.48	0.26	A
DS - DS 2038_								
Arm 1	0.2	3.49	0.19	A	0.5	3.43	0.32	A
Arm 2	0.3	2.12	0.23	A	1.6	4.71	0.62	A
Arm 3	1.3	5.24	0.57	A	0.4	3.88	0.31	A
Arm 4	1.5	5.70	0.60	A	0.6	3.35	0.39	A
Arm 5	0.5	5.32	0.33	A	0.4	3.67	0.28	A
DS - DS 2038 + PFD_								
Arm 1	0.2	3.60	0.19	A	0.5	3.53	0.33	A
Arm 2	0.3	2.14	0.23	A	1.8	5.07	0.64	A
Arm 3	1.3	5.35	0.57	A	0.5	4.03	0.32	A
Arm 4	1.8	6.38	0.65	A	0.7	3.47	0.41	A
Arm 5	0.5	5.57	0.34	A	0.4	3.75	0.29	A

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

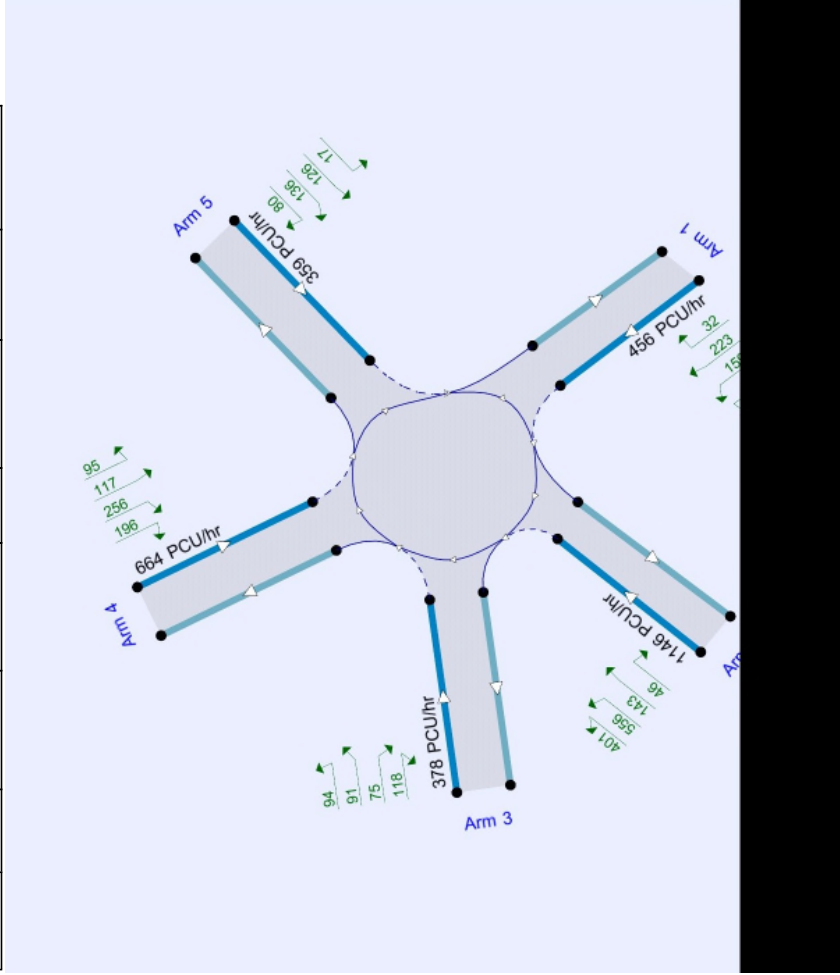
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	13/01/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HEADOFFICE\jminezem
Description	

Units

Distance units/ m	Speed units/ kph	Traffic units input PCU	Traffic units results PCU	Flow units perHour	Average delay units s	Total delay units -Min	Rate of delay units perMin
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The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:MM)	Model finish time (HH:MM)	Time segment length (min)	Run automatically
DM 2023_	AM	ONE HOUR	07:45	09:15	15	✓
DM 2023_	PM	ONE HOUR	16:30	18:00	15	✓
DM 2028_	AM	ONE HOUR	07:45	09:15	15	✓
DM 2028_	PM	ONE HOUR	16:30	18:00	15	✓
DM 2038_	AM	ONE HOUR	07:45	09:15	15	✓
DM 2038_	PM	ONE HOUR	16:30	18:00	15	✓
DM 2038 + PFD_	AM	ONE HOUR	07:45	09:15	15	✓
DM 2038 + PFD_	PM	ONE HOUR	16:30	18:00	15	✓
DS 2023_	AM	ONE HOUR	07:45	09:15	15	✓
DS 2023_	PM	ONE HOUR	16:30	18:00	15	✓
DS 2028_	AM	ONE HOUR	07:45	09:15	15	✓
DS 2028_	PM	ONE HOUR	16:30	18:00	15	✓
DS 2038_	AM	ONE HOUR	07:45	09:15	15	✓
DS 2038_	PM	ONE HOUR	16:30	18:00	15	✓
DS 2038 + PFD_	AM	ONE HOUR	07:45	09:15	15	✓
DS 2038 + PFD_	PM	ONE HOUR	16:30	18:00	15	✓

DM - DM 2023_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D17	DM 2023_	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	169.00	100.000
2		ONE HOUR	✓	358.00	100.000
3		ONE HOUR	✓	685.00	100.000
4		ONE HOUR	✓	631.00	100.000
5		ONE HOUR	✓	258.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	24.000	31.000	97.000
	2	43.000	0.000	90.000	181.000
	3	113.000	386.000	0.000	86.000
	4	111.000	410.000	69.000	0.000
	5	33.000	76.000	97.000	52.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.14	0.18	0.57
	2	0.12	0.00	0.25	0.51
	3	0.16	0.56	0.00	0.13
	4	0.18	0.65	0.11	0.00
	5	0.13	0.29	0.38	0.20

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.13	2.90	0.1	A	155.08	232.62
2	0.18	1.94	0.2	A	328.51	492.76
3	0.46	3.99	0.8	A	628.57	942.85
4	0.42	3.72	0.7	A	579.02	868.52
5	0.24	3.99	0.3	A	236.75	355.12

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	127.23	31.81	817.99	1611.87	0.079	126.89	225.18	0.0	0.1	2.424	A
2	269.52	67.38	272.46	2316.25	0.116	269.00	672.42	0.0	0.1	1.758	A
3	515.70	128.93	325.98	1731.67	0.298	514.02	215.47	0.0	0.4	2.953	A
4	475.05	118.76	527.62	1782.08	0.267	473.60	312.38	0.0	0.4	2.749	A
5	194.24	48.56	849.58	1374.53	0.141	193.58	151.64	0.0	0.2	3.047	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	151.93	37.98	979.01	1533.80	0.099	151.83	269.47	0.1	0.1	2.604	A
2	321.83	80.46	326.07	2287.20	0.141	321.71	804.77	0.1	0.2	1.830	A
3	615.80	153.95	389.95	1700.32	0.362	615.23	257.82	0.4	0.6	3.316	A
4	567.26	141.81	631.44	1731.86	0.328	566.77	373.74	0.4	0.5	3.088	A
5	231.94	57.98	1016.76	1295.20	0.179	231.72	181.45	0.2	0.2	3.384	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	186.07	46.52	1198.49	1427.39	0.130	185.91	329.90	0.1	0.1	2.899	A
2	394.17	98.54	399.21	2247.58	0.175	393.97	985.19	0.2	0.2	1.942	A
3	754.20	188.55	477.51	1657.40	0.455	753.14	315.67	0.6	0.8	3.975	A
4	694.74	173.69	773.03	1663.37	0.418	693.83	457.63	0.5	0.7	3.709	A
5	284.06	71.02	1244.71	1187.03	0.239	283.68	222.15	0.2	0.3	3.983	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	186.07	46.52	1200.09	1426.62	0.130	186.07	330.30	0.1	0.1	2.901	A
2	394.17	98.54	399.67	2247.33	0.175	394.16	986.50	0.2	0.2	1.942	A
3	754.20	188.55	477.84	1657.24	0.455	754.19	315.99	0.8	0.8	3.986	A
4	694.74	173.69	774.01	1662.90	0.418	694.73	458.02	0.7	0.7	3.717	A
5	284.06	71.02	1246.34	1186.26	0.239	284.06	222.40	0.3	0.3	3.989	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	151.93	37.98	981.49	1532.60	0.099	152.08	270.10	0.1	0.1	2.607	A
2	321.83	80.46	326.78	2286.82	0.141	322.03	806.79	0.2	0.2	1.831	A
3	615.80	153.95	390.48	1700.06	0.362	616.84	258.33	0.8	0.6	3.328	A
4	567.26	141.81	632.96	1731.13	0.328	568.16	374.37	0.7	0.5	3.099	A
5	231.94	57.98	1019.27	1294.01	0.179	232.31	181.84	0.3	0.2	3.391	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	127.23	31.81	821.50	1610.17	0.079	127.33	226.08	0.1	0.1	2.427	A
2	269.52	67.38	273.55	2315.65	0.116	269.65	675.28	0.2	0.1	1.761	A
3	515.70	128.93	326.94	1731.20	0.298	516.28	216.25	0.6	0.4	2.963	A
4	475.05	118.76	529.80	1781.02	0.267	475.55	313.42	0.5	0.4	2.760	A
5	194.24	48.56	853.13	1372.84	0.141	194.45	152.22	0.2	0.2	3.057	A

DM - DM 2023_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D18	DM 2023_	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	355.00	100.000
2		ONE HOUR	✓	892.00	100.000
3		ONE HOUR	✓	306.00	100.000
4		ONE HOUR	✓	475.00	100.000
5		ONE HOUR	✓	295.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.00	36.000	135.000	157.000
	2	40.000	0.000	341.000	388.000
	3	84.000	100.000	0.000	65.000
	4	84.000	183.000	140.000	0.000
	5	15.000	108.000	116.000	56.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.10	0.38	0.44
	2	0.04	0.00	0.38	0.43
	3	0.21	0.33	0.00	0.21
	4	0.18	0.39	0.29	0.00
	5	0.05	0.37	0.39	0.19

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.24	2.90	0.3	A	325.75	486.63
2	0.47	3.26	0.9	A	818.51	1227.77
3	0.23	3.19	0.3	A	280.79	421.19
4	0.29	2.80	0.4	A	435.87	653.80
5	0.22	3.17	0.3	A	270.70	406.05

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	267.26	66.82	527.77	1752.58	0.153	266.55	152.41	0.0	0.2	2.421	A
2	671.54	167.89	473.74	2207.20	0.304	669.80	320.57	0.0	0.4	2.340	A
3	230.37	57.59	593.93	1600.34	0.144	229.70	549.61	0.0	0.2	2.625	A
4	357.80	89.40	323.58	1880.77	0.190	356.67	500.06	0.0	0.2	2.361	A
5	222.09	55.52	458.75	1559.98	0.142	221.43	221.49	0.0	0.2	2.688	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	319.14	79.78	631.57	1702.25	0.187	318.94	182.37	0.2	0.2	2.602	A
2	801.89	200.47	566.89	2156.74	0.372	801.28	383.61	0.4	0.6	2.654	A
3	275.09	68.77	710.57	1543.17	0.178	274.89	657.59	0.2	0.2	2.838	A
4	427.02	106.75	387.18	1850.01	0.231	426.76	598.29	0.2	0.3	2.529	A
5	265.20	66.30	548.92	1517.19	0.175	265.02	265.01	0.2	0.2	2.874	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	390.86	97.72	773.34	1633.52	0.239	390.53	223.30	0.2	0.3	2.896	A
2	982.11	245.53	694.15	2087.80	0.470	980.94	469.72	0.6	0.9	3.250	A
3	336.91	84.23	869.95	1465.05	0.230	336.59	805.13	0.2	0.3	3.190	A
4	522.98	130.75	474.04	1807.99	0.289	522.56	732.50	0.3	0.4	2.800	A
5	324.80	81.20	672.13	1458.73	0.223	324.50	324.47	0.2	0.3	3.174	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	390.86	97.72	774.01	1633.19	0.239	390.86	223.51	0.3	0.3	2.897	A
2	982.11	245.53	694.74	2087.48	0.470	982.10	470.13	0.9	0.9	3.256	A
3	336.91	84.23	870.90	1464.59	0.230	336.91	805.94	0.3	0.3	3.191	A
4	522.98	130.75	474.53	1807.76	0.289	522.98	733.27	0.4	0.4	2.801	A
5	324.80	81.20	672.72	1458.45	0.223	324.80	324.80	0.3	0.3	3.174	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	319.14	79.78	632.65	1701.73	0.188	319.47	182.70	0.3	0.2	2.606	A
2	801.89	200.47	567.85	2156.22	0.372	803.05	384.27	0.9	0.6	2.664	A
3	275.09	68.77	712.04	1542.45	0.178	275.41	658.86	0.3	0.2	2.841	A
4	427.02	106.75	387.95	1849.64	0.231	427.43	599.50	0.4	0.3	2.531	A
5	265.20	66.30	549.86	1516.75	0.175	265.49	265.53	0.3	0.2	2.877	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	267.26	66.82	529.67	1751.66	0.153	267.47	152.95	0.2	0.2	2.425	A
2	671.54	167.89	475.42	2206.29	0.304	672.17	321.72	0.6	0.4	2.348	A
3	230.37	57.59	596.03	1599.31	0.144	230.57	551.55	0.2	0.2	2.632	A
4	357.80	89.40	324.76	1880.20	0.190	357.87	501.84	0.3	0.2	2.364	A
5	222.09	55.52	460.35	1559.22	0.142	222.28	222.28	0.2	0.2	2.692	A

DM - DM 2028_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D19	DM 2028_	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	187.00	100.000
2		ONE HOUR	✓	397.00	100.000
3		ONE HOUR	✓	746.00	100.000
4		ONE HOUR	✓	693.00	100.000
5		ONE HOUR	✓	279.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	26.000	33.000	110.000
	2	47.000	0.000	97.000	205.000
	3	122.000	418.000	0.000	98.000
	4	122.000	450.000	76.000	0.000
	5	36.000	82.000	104.000	57.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.14	0.18	0.59
	2	0.12	0.00	0.24	0.52
	3	0.16	0.56	0.00	0.13
	4	0.13	0.65	0.11	0.00
	5	0.13	0.29	0.37	0.20

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.15	3.08	0.2	A	171.59	257.39
2	0.20	2.01	0.2	A	364.29	546.44
3	0.50	4.45	1.0	A	684.54	1026.81
4	0.47	4.14	0.9	A	635.91	953.86
5	0.27	4.36	0.4	A	256.02	384.02

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	140.78	35.20	890.63	1576.65	0.089	140.39	245.40	0.0	0.1	2.506	A
2	298.88	74.72	298.69	2302.04	0.130	298.29	732.34	0.0	0.1	1.796	A
3	561.63	140.41	364.26	1712.91	0.328	559.69	232.71	0.0	0.5	3.116	A
4	521.73	130.43	571.05	1761.07	0.296	520.05	352.90	0.0	0.4	2.897	A
5	210.05	52.51	926.73	1337.92	0.157	209.30	164.38	0.0	0.2	3.188	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	168.11	42.03	1066.01	1491.62	0.113	167.99	293.69	0.1	0.1	2.719	A
2	356.89	89.22	357.48	2270.19	0.157	356.75	876.52	0.1	0.2	1.880	A
3	670.64	167.66	435.76	1677.86	0.400	669.93	278.46	0.5	0.7	3.570	A
4	622.99	155.75	683.46	1706.70	0.365	622.38	422.23	0.4	0.6	3.318	A
5	250.82	62.70	1109.14	1251.36	0.200	250.56	196.71	0.2	0.2	3.597	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	205.89	51.47	1304.82	1375.84	0.150	205.70	359.51	0.1	0.2	3.076	A
2	437.11	109.28	437.63	2226.76	0.196	436.88	1072.88	0.2	0.2	2.011	A
3	821.36	205.34	533.59	1629.92	0.504	819.98	340.92	0.7	1.0	4.438	A
4	763.01	190.75	836.61	1632.62	0.467	761.81	516.97	0.6	0.9	4.128	A
5	307.18	76.80	1357.62	1133.46	0.271	306.71	240.80	0.2	0.4	4.353	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	205.89	51.47	1306.88	1374.84	0.150	205.89	360.03	0.2	0.2	3.078	A
2	437.11	109.28	438.20	2226.46	0.196	437.10	1074.57	0.2	0.2	2.011	A
3	821.36	205.34	533.99	1629.72	0.504	821.34	341.31	1.0	1.0	4.453	A
4	763.01	190.75	837.86	1632.02	0.468	762.99	517.47	0.9	0.9	4.142	A
5	307.18	76.80	1359.73	1132.46	0.271	307.18	241.12	0.4	0.4	4.361	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	168.11	42.03	1069.16	1490.09	0.113	168.30	294.49	0.2	0.1	2.723	A
2	356.89	89.22	358.36	2269.71	0.157	357.12	879.10	0.2	0.2	1.884	A
3	670.64	167.66	436.41	1677.55	0.400	672.00	279.08	1.0	0.7	3.586	A
4	622.99	155.75	685.38	1705.77	0.365	624.17	423.03	0.9	0.6	3.333	A
5	250.82	62.70	1112.36	1249.84	0.201	251.29	197.20	0.4	0.3	3.608	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	140.78	35.20	894.74	1574.66	0.089	140.90	246.46	0.1	0.1	2.512	A
2	298.88	74.72	299.95	2301.35	0.130	299.03	735.68	0.2	0.1	1.799	A
3	561.63	140.41	365.38	1712.36	0.328	562.35	233.61	0.7	0.5	3.194	A
4	521.73	130.43	573.59	1759.84	0.296	522.35	354.13	0.6	0.4	2.909	A
5	210.05	52.51	930.89	1335.94	0.157	210.31	165.05	0.3	0.2	3.198	A

DM - DM 2028_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D20	DM 2028_	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	384.00	100.000
2		ONE HOUR	✓	965.00	100.000
3		ONE HOUR	✓	331.00	100.000
4		ONE HOUR	✓	516.00	100.000
5		ONE HOUR	✓	318.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.00	39.000	146.000	170.000
	2	43.000	0.000	369.000	420.000
	3	89.000	108.000	0.000	70.000
	4	91.000	199.000	152.000	0.000
	5	16.000	117.000	125.000	60.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.10	0.38	0.44
	2	0.04	0.00	0.38	0.44
	3	0.21	0.33	0.00	0.21
	4	0.18	0.39	0.29	0.00
	5	0.05	0.37	0.39	0.19

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.26	3.05	0.4	A	352.37	528.55
2	0.52	3.62	1.1	A	885.50	1328.25
3	0.25	3.38	0.3	A	303.73	455.60
4	0.32	2.95	0.5	A	473.49	710.24
5	0.24	3.33	0.3	A	291.80	437.70

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	289.10	72.27	571.27	1731.49	0.167	288.30	164.41	0.0	0.2	2.493	A
2	726.50	181.63	511.99	2186.48	0.332	724.52	347.57	0.0	0.5	2.459	A
3	249.19	62.30	641.91	1576.82	0.158	248.45	594.60	0.0	0.2	2.708	A
4	388.47	97.12	349.82	1866.08	0.208	387.43	540.54	0.0	0.3	2.430	A
5	239.41	59.85	497.00	1541.83	0.155	238.67	240.24	0.0	0.2	2.761	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	345.21	86.30	683.85	1677.00	0.206	344.97	198.73	0.2	0.3	2.702	A
2	867.52	216.88	612.68	2131.93	0.407	866.77	415.94	0.5	0.7	2.844	A
3	297.56	74.39	768.01	1515.02	0.196	297.34	711.45	0.2	0.2	2.966	A
4	463.87	115.97	418.59	1834.82	0.253	463.57	648.75	0.3	0.3	2.625	A
5	285.88	71.47	594.71	1495.46	0.191	285.67	287.45	0.2	0.2	2.975	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	422.79	105.70	837.08	1602.62	0.264	422.40	240.87	0.3	0.4	3.050	A
2	1062.48	265.62	750.89	2057.06	0.517	1060.98	509.28	0.7	1.1	3.608	A
3	364.44	91.11	940.17	1430.64	0.255	364.05	871.00	0.2	0.3	3.375	A
4	568.13	142.03	512.47	1789.41	0.317	567.62	791.76	0.3	0.5	2.944	A
5	350.12	87.53	728.17	1432.14	0.244	349.78	351.92	0.2	0.3	3.326	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	422.79	105.70	837.87	1602.23	0.264	422.79	241.12	0.4	0.4	3.051	A
2	1062.48	265.62	750.89	2057.06	0.517	1062.47	509.77	1.1	1.1	3.618	A
3	364.44	91.11	941.36	1430.06	0.255	364.43	872.00	0.3	0.3	3.377	A
4	568.13	142.03	513.07	1789.12	0.318	568.12	792.72	0.5	0.5	2.947	A
5	350.12	87.53	728.87	1431.81	0.245	350.12	352.32	0.3	0.3	3.327	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	345.21	86.30	684.91	1676.39	0.206	345.60	197.13	0.4	0.3	2.707	A
2	867.52	216.88	613.80	2131.33	0.407	869.01	416.71	1.1	0.7	2.854	A
3	297.56	74.39	769.82	1514.13	0.197	297.94	712.99	0.3	0.2	2.962	A
4	463.87	115.97	419.53	1834.36	0.253	464.37	648.23	0.5	0.3	2.628	A
5	285.88	71.47	595.82	1494.94	0.191	286.22	288.08	0.3	0.2	2.980	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	289.10	72.27	573.40	1730.45	0.167	289.33	165.02	0.3	0.2	2.499	A
2	726.50	181.63	513.87	2185.46	0.332	727.26	348.86	0.7	0.5	2.471	A
3	249.19	62.30	644.32	1575.64	0.158	249.42	596.81	0.2	0.2	2.716	A
4	388.47	97.12	351.17	1867.43	0.208	388.78	542.58	0.3	0.3	2.436	A
5	239.41	59.85	498.81	1540.97	0.155	239.62	241.14	0.2	0.2	2.768	A



DM - DM 2038_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	4.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D21	DM 2038_	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	202.00	100.000
2		ONE HOUR	✓	427.00	100.000
3		ONE HOUR	✓	802.00	100.000
4		ONE HOUR	✓	745.00	100.000
5		ONE HOUR	✓	300.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	28.000	36.000	118.000
	2	50.000	0.000	105.000	220.000
	3	131.000	450.000	0.000	105.000
	4	131.000	484.000	82.000	0.000
	5	38.000	89.000	112.000	61.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.14	0.18	0.58
	2	0.12	0.00	0.25	0.52
	3	0.16	0.56	0.00	0.13
	4	0.13	0.65	0.11	0.00
	5	0.13	0.30	0.37	0.20

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.17	3.26	0.2	A	185.36	278.04
2	0.21	2.07	0.3	A	391.82	587.73
3	0.55	4.95	1.2	A	735.93	1103.89
4	0.51	4.61	1.0	A	683.63	1025.44
5	0.30	4.78	0.4	A	275.29	412.93

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	152.08	38.02	958.75	1543.63	0.099	151.64	262.63	0.0	0.1	2.586	A
2	321.47	80.37	321.91	2288.46	0.140	320.82	788.48	0.0	0.2	1.828	A
3	603.79	150.95	391.28	1695.67	0.355	601.60	251.45	0.0	0.5	3.271	A
4	560.88	140.22	614.48	1740.06	0.322	558.98	378.39	0.0	0.5	3.042	A
5	225.86	56.46	996.35	1304.88	0.173	225.02	177.11	0.0	0.2	3.332	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	181.59	45.40	1147.59	1452.07	0.125	181.46	314.32	0.1	0.1	2.832	A
2	383.86	95.97	365.29	2255.12	0.170	383.70	943.76	0.2	0.2	1.923	A
3	720.98	180.25	468.09	1662.02	0.434	720.13	300.90	0.5	0.8	3.818	A
4	669.74	167.43	735.47	1681.54	0.398	669.00	452.75	0.5	0.7	3.554	A
5	269.69	67.42	1192.52	1211.80	0.223	269.39	211.96	0.2	0.3	3.820	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	222.41	55.60	1404.44	1327.54	0.168	222.17	384.70	0.1	0.2	3.256	A
2	470.14	117.53	471.63	2208.35	0.213	469.88	1154.99	0.2	0.3	2.070	A
3	883.02	220.75	573.16	1610.52	0.548	881.26	368.35	0.8	1.2	4.924	A
4	820.26	205.07	900.12	1601.90	0.512	818.74	554.29	0.7	1.0	4.586	A
5	330.31	82.58	1459.43	1085.15	0.304	329.71	259.43	0.3	0.4	4.761	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	222.41	55.60	1407.06	1326.27	0.168	222.40	385.35	0.2	0.2	3.280	A
2	470.14	117.53	472.33	2207.97	0.213	470.13	1157.14	0.3	0.3	2.071	A
3	883.02	220.75	573.63	1610.29	0.548	882.99	368.84	1.2	1.2	4.949	A
4	820.26	205.07	901.71	1601.13	0.512	820.24	554.91	1.0	1.0	4.609	A
5	330.31	82.58	1462.11	1083.87	0.305	330.30	259.83	0.4	0.4	4.776	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	181.59	45.40	1151.54	1450.16	0.125	181.82	315.30	0.2	0.1	2.838	A
2	383.86	95.97	366.37	2254.54	0.170	384.12	946.99	0.3	0.2	1.926	A
3	720.98	180.25	468.84	1661.65	0.434	722.72	301.65	1.2	0.8	3.842	A
4	669.74	167.43	737.86	1680.39	0.399	671.25	453.70	1.0	0.7	3.571	A
5	269.69	67.42	1196.55	1209.89	0.223	270.29	212.56	0.4	0.3	3.832	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	152.08	38.02	963.48	1541.33	0.099	152.21	263.83	0.1	0.1	2.591	A
2	321.47	80.37	323.35	2288.67	0.140	321.64	792.34	0.2	0.2	1.832	A
3	603.79	150.95	392.52	1698.06	0.355	604.66	252.47	0.8	0.6	3.291	A
4	560.88	140.22	617.40	1738.65	0.323	561.63	378.78	0.7	0.5	3.059	A
5	225.86	56.46	1001.14	1302.61	0.173	226.17	177.88	0.3	0.2	3.344	A

DM - DM 2038_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3,61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0,00	99999,00		0,00
2	0,00	99999,00		0,00
3	0,00	99999,00		0,00
4	0,00	99999,00		0,00
5	0,00	99999,00		0,00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D22	DM 2038_	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	414.00	100.000
2		ONE HOUR	✓	1038.00	100.000
3		ONE HOUR	✓	355.00	100.000
4		ONE HOUR	✓	555.00	100.000
5		ONE HOUR	✓	343.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.00	42.000	157.000	183.000
	2	46.000	0.000	397.000	452.000
	3	74.000	116.000	0.000	75.000
	4	98.000	214.000	163.000	0.000
	5	17.000	126.000	135.000	65.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.10	0.38	0.44
	2	0.04	0.00	0.38	0.44
	3	0.21	0.33	0.00	0.21
	4	0.18	0.39	0.29	0.00
	5	0.05	0.37	0.39	0.19

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.29	3.23	0.4	A	379.89	569.84
2	0.56	4.08	1.3	A	952.49	1428.73
3	0.28	3.59	0.4	A	325.75	488.63
4	0.35	3.10	0.5	A	509.28	763.92
5	0.27	3.50	0.4	A	314.74	472.11

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	311.68	77.92	614.76	1710.40	0.182	310.79	176.40	0.0	0.2	2.571	A
2	761.46	195.37	551.73	2164.95	0.361	779.21	373.81	0.0	0.6	2.583	A
3	267.26	66.82	691.37	1552.58	0.172	266.43	639.57	0.0	0.2	2.798	A
4	417.83	104.46	376.05	1855.40	0.225	416.67	581.76	0.0	0.3	2.499	A
5	258.23	64.56	533.74	1524.39	0.169	257.42	258.98	0.0	0.2	2.840	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	372.18	93.04	735.72	1851.76	0.225	371.91	211.09	0.2	0.3	2.812	A
2	933.14	233.29	660.26	2106.15	0.443	932.23	447.36	0.6	0.8	3.062	A
3	319.14	79.78	827.21	1486.00	0.215	318.88	765.28	0.2	0.3	3.084	A
4	498.93	124.73	450.00	1819.63	0.274	498.59	696.09	0.3	0.4	2.725	A
5	308.35	77.09	638.70	1474.59	0.209	308.11	309.89	0.2	0.3	3.086	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	455.82	113.96	900.80	1571.72	0.290	455.36	258.43	0.3	0.4	3.222	A
2	1142.86	285.71	808.42	2025.89	0.564	1140.90	547.73	0.8	1.3	4.059	A
3	390.86	97.72	1012.51	1395.18	0.280	390.40	936.81	0.3	0.4	3.580	A
4	611.07	152.77	550.86	1770.84	0.345	610.47	852.06	0.4	0.5	3.100	A
5	377.85	94.41	761.99	1406.60	0.268	377.24	379.34	0.3	0.4	3.495	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	455.82	113.96	901.73	1571.27	0.290	455.82	258.74	0.4	0.4	3.226	A
2	1142.86	285.71	809.24	2025.45	0.564	1142.83	548.30	1.3	1.3	4.078	A
3	390.86	97.72	1014.02	1394.44	0.280	390.86	938.05	0.4	0.4	3.586	A
4	611.07	152.77	551.60	1770.48	0.345	611.06	853.27	0.5	0.5	3.104	A
5	377.65	94.41	762.82	1406.21	0.269	377.65	379.85	0.4	0.4	3.499	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	372.18	93.04	737.19	1851.04	0.225	372.64	211.56	0.4	0.3	2.816	A
2	933.14	233.29	661.57	2105.45	0.443	935.09	448.26	1.3	0.8	3.080	A
3	319.14	79.78	829.48	1484.89	0.215	319.59	767.18	0.4	0.3	3.089	A
4	498.93	124.73	451.14	1819.07	0.274	499.52	697.93	0.5	0.4	2.730	A
5	308.35	77.09	640.00	1473.97	0.209	308.75	310.65	0.4	0.3	3.089	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	311.68	77.92	617.14	1709.25	0.182	311.95	177.09	0.3	0.2	2.576	A
2	761.46	195.37	553.84	2163.81	0.361	782.39	375.26	0.8	0.6	2.609	A
3	267.26	66.82	694.14	1551.22	0.172	267.53	642.09	0.3	0.2	2.804	A
4	417.83	104.46	377.58	1854.65	0.225	418.18	584.09	0.4	0.3	2.508	A
5	258.23	64.56	535.76	1523.44	0.170	258.47	260.00	0.3	0.2	2.848	A

DM - DM 2038 + PFD_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100,000	100,000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	4,40	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0,00	99999,00		0,00
2	0,00	99999,00		0,00
3	0,00	99999,00		0,00
4	0,00	99999,00		0,00
5	0,00	99999,00		0,00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4,70	9,30	16,5	27,9	90,0	54,3	
2	8,50	10,40	2,8	14,5	90,0	55,3	
3	3,69	9,90	12,2	33,4	90,0	26,6	
4	6,30	9,70	5,4	22,9	90,0	59,1	
5	3,80	10,00	8,6	38,4	90,0	27,0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0,485	2008,456
2	0,542	2463,847
3	0,490	1891,444
4	0,484	2037,290
5	0,475	1777,661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D23	DM 2038 + PFD_	AM	ONE-HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2,00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE-HOUR	✓	207,00	100,000
2		ONE-HOUR	✓	437,00	100,000
3		ONE-HOUR	✓	806,00	100,000
4		ONE-HOUR	✓	808,00	100,000
5		ONE-HOUR	✓	300,00	100,000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
1	0.000	28.000	36.000	123.000	20.000
2	50.000	0.000	105.000	230.000	52.000
3	131.000	450.000	0.000	109.000	116.000
4	142.000	526.000	88.000	0.000	52.000
5	38.000	89.000	112.000	61.000	0.000

Proportions

	To				
	1	2	3	4	5
1	0.00	0.14	0.17	0.59	0.10
2	0.11	0.00	0.24	0.53	0.12
3	0.16	0.56	0.00	0.14	0.14
4	0.13	0.65	0.11	0.00	0.06
5	0.13	0.30	0.37	0.20	0.00

Vehicle Mix

Heavy Vehicle proportion

	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

Average PCU Per Veh

	To				
	1	2	3	4	5
1	1.000	1.000	1.000	1.000	1.000
2	1.000	1.000	1.000	1.000	1.000
3	1.000	1.000	1.000	1.000	1.000
4	1.000	1.000	1.000	1.000	1.000
5	1.000	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.18	3.35	0.2	A	189.95	284.92
2	0.22	2.09	0.3	A	401.00	601.50
3	0.55	5.04	1.2	A	739.60	1109.40
4	0.56	5.06	1.2	A	741.43	1112.15
5	0.31	4.98	0.5	A	275.29	412.93

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	155.84	38.96	994.68	1526.21	0.102	155.39	270.86	0.0	0.1	2.626	A
2	329.00	82.25	330.14	2285.00	0.144	328.33	819.92	0.0	0.2	1.839	A
3	606.80	151.70	402.53	1694.15	0.358	604.58	255.93	0.0	0.6	3.297	A
4	608.30	152.08	614.47	1740.07	0.350	606.17	392.65	0.0	0.5	3.170	A
5	225.86	56.46	1040.53	1283.92	0.176	225.01	180.10	0.0	0.2	3.396	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	186.09	46.52	1190.61	1431.21	0.130	185.95	324.17	0.1	0.1	2.890	A
2	392.85	98.21	395.15	2249.78	0.175	392.68	981.41	0.2	0.2	1.938	A
3	724.58	181.14	481.56	1655.42	0.438	723.71	306.27	0.6	0.8	3.861	A
4	726.38	181.59	735.46	1681.55	0.432	725.49	469.81	0.5	0.8	3.762	A
5	269.69	67.42	1245.41	1186.70	0.227	269.37	215.54	0.2	0.3	3.924	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	227.91	56.98	1456.93	1302.09	0.175	227.66	396.72	0.1	0.2	3.350	A
2	481.15	120.29	483.66	2201.83	0.219	480.87	1200.93	0.2	0.3	2.091	A
3	887.42	221.86	589.64	1602.44	0.554	885.61	374.89	0.8	1.2	5.008	A
4	889.62	222.41	900.08	1601.92	0.555	887.71	575.17	0.8	1.2	5.027	A
5	330.31	82.58	1523.99	1054.51	0.313	329.67	263.80	0.3	0.5	4.962	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	227.91	56.98	1459.90	1300.65	0.175	227.91	397.46	0.2	0.2	3.355	A
2	481.15	120.29	484.44	2201.41	0.219	481.14	1203.37	0.3	0.3	2.092	A
3	887.42	221.86	590.14	1602.20	0.554	887.39	375.44	1.2	1.2	5.036	A
4	889.62	222.41	901.71	1601.13	0.556	889.59	575.82	1.2	1.2	5.059	A
5	330.31	82.58	1527.06	1053.06	0.314	330.30	264.24	0.5	0.5	4.980	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	186.09	46.52	1195.05	1429.06	0.130	186.34	325.27	0.2	0.2	2.896	A
2	392.85	98.21	396.34	2249.14	0.175	393.12	985.05	0.3	0.2	1.941	A
3	724.58	181.14	482.36	1655.03	0.438	726.37	307.10	1.2	0.8	3.885	A
4	726.38	181.59	737.90	1680.37	0.432	728.28	470.83	1.2	0.8	3.790	A
5	269.69	67.42	1249.99	1184.53	0.228	270.33	216.19	0.5	0.3	3.940	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	155.84	38.96	999.75	1523.75	0.102	155.98	272.14	0.2	0.1	2.631	A
2	329.00	82.25	331.67	2284.17	0.144	329.17	824.07	0.2	0.2	1.840	A
3	606.80	151.70	403.83	1693.52	0.358	607.69	257.01	0.8	0.6	3.319	A
4	608.30	152.08	617.41	1738.65	0.350	609.21	394.11	0.8	0.5	3.191	A
5	225.86	56.46	1045.71	1281.46	0.176	226.18	180.91	0.3	0.2	3.411	A



DM - DM 2038 + PFD_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D17,D18,D19,D20,D21,D22,D23,D24	100,000	100,000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.77	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0,00	99999,00		0,00
2	0,00	99999,00		0,00
3	0,00	99999,00		0,00
4	0,00	99999,00		0,00
5	0,00	99999,00		0,00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D24	DM 2038 + PFD_	PM	ONE-HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE-HOUR	✓	427.00	100,000
2		ONE-HOUR	✓	1071.00	100,000
3		ONE-HOUR	✓	361.00	100,000
4		ONE-HOUR	✓	589.00	100,000
5		ONE-HOUR	✓	348.00	100,000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	42.000	157.000	196.000
	2	46.000	0.000	397.000	485.000
	3	74.000	116.000	0.000	81.000
	4	104.000	227.000	173.000	0.000
	5	17.000	126.000	135.000	70.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.10	0.37	0.46
	2	0.04	0.00	0.37	0.45
	3	0.20	0.32	0.00	0.22
	4	0.18	0.39	0.29	0.00
	5	0.05	0.36	0.39	0.20

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.30	3.31	0.4	A	391.82	587.73
2	0.59	4.34	1.4	A	982.77	1474.15
3	0.29	3.71	0.4	A	331.26	496.89
4	0.37	3.21	0.6	A	540.48	810.72
5	0.28	3.57	0.4	A	319.33	479.00

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	321.47	80.37	635.75	1700.23	0.189	320.54	180.90	0.0	0.2	2.608	A
2	806.30	201.58	572.73	2153.58	0.374	803.92	383.56	0.0	0.6	2.663	A
3	271.78	67.94	729.61	1533.84	0.177	270.92	647.04	0.0	0.2	2.849	A
4	443.43	110.86	376.02	1855.41	0.239	442.18	624.51	0.0	0.3	2.545	A
5	261.99	65.50	555.49	1514.08	0.173	261.16	262.72	0.0	0.2	2.872	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	383.86	95.97	760.85	1639.57	0.234	383.58	216.47	0.2	0.3	2.866	A
2	962.81	240.70	665.40	2092.54	0.460	961.80	459.02	0.6	0.8	3.180	A
3	324.53	81.13	872.97	1463.57	0.222	324.26	774.23	0.2	0.3	3.159	A
4	529.50	132.37	449.98	1819.64	0.291	529.12	747.25	0.3	0.4	2.789	A
5	312.84	78.21	664.73	1462.24	0.214	312.59	314.36	0.2	0.3	3.131	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	470.14	117.53	931.55	1556.81	0.302	469.63	265.01	0.3	0.4	3.309	A
2	1179.19	294.80	839.18	2009.23	0.587	1176.96	562.00	0.8	1.4	4.314	A
3	397.47	99.37	1068.43	1367.77	0.291	396.97	947.71	0.3	0.4	3.706	A
4	648.50	162.13	550.80	1770.87	0.366	647.84	914.61	0.4	0.6	3.204	A
5	383.16	95.79	813.83	1391.49	0.275	382.73	384.80	0.3	0.4	3.566	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	470.14	117.53	932.55	1556.33	0.302	470.13	265.34	0.4	0.4	3.313	A
2	1179.19	294.80	840.07	2008.75	0.587	1179.16	562.61	1.4	1.4	4.339	A
3	397.47	99.37	1070.17	1366.92	0.291	397.46	949.06	0.4	0.4	3.712	A
4	648.50	162.13	551.60	1770.48	0.366	648.49	916.03	0.6	0.6	3.207	A
5	383.16	95.79	814.74	1391.06	0.275	383.15	385.35	0.4	0.4	3.570	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	383.86	95.97	762.44	1638.80	0.234	384.36	216.99	0.4	0.3	2.870	A
2	962.81	240.70	666.81	2091.77	0.460	965.03	459.99	1.4	0.9	3.203	A
3	324.53	81.13	875.56	1462.31	0.222	325.02	776.28	0.4	0.3	3.166	A
4	529.50	132.37	451.20	1819.05	0.291	530.15	749.38	0.6	0.4	2.796	A
5	312.84	78.21	666.16	1461.56	0.214	313.27	315.19	0.4	0.3	3.137	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	321.47	80.37	638.26	1699.01	0.189	321.76	181.62	0.3	0.2	2.615	A
2	806.30	201.58	574.95	2152.37	0.375	807.33	385.07	0.9	0.6	2.680	A
3	271.78	67.94	732.63	1532.36	0.177	272.06	649.66	0.3	0.2	2.856	A
4	443.43	110.86	377.60	1854.64	0.239	443.82	627.09	0.4	0.3	2.551	A
5	261.99	65.50	557.63	1513.06	0.173	262.25	263.78	0.3	0.2	2.878	A

DS - DS 2023_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.52	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D25	DS 2023_	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	171.00	100.000
2		ONE HOUR	✓	361.00	100.000
3		ONE HOUR	✓	687.00	100.000
4		ONE HOUR	✓	656.00	100.000
5		ONE HOUR	✓	258.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	24.000	31.000	99.000
	2	43.000	0.000	90.000	17.000
	3	113.000	386.000	0.000	88.000
	4	116.000	426.000	72.000	0.000
	5	33.000	76.000	97.000	52.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.14	0.18	0.58
	2	0.12	0.00	0.25	0.51
	3	0.16	0.56	0.00	0.13
	4	0.18	0.65	0.11	0.00
	5	0.13	0.29	0.38	0.20

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.13	2.93	0.2	A	156.91	235.37
2	0.18	1.95	0.2	A	331.26	496.89
3	0.46	4.01	0.8	A	630.40	945.60
4	0.43	3.83	0.8	A	601.96	902.94
5	0.24	4.05	0.3	A	236.75	355.12

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	128.74	32.18	832.22	1604.97	0.080	128.39	228.92	0.0	0.1	2.438	A
2	271.78	67.94	276.20	2314.22	0.117	271.25	684.41	0.0	0.1	1.761	A
3	517.21	129.30	329.73	1729.83	0.299	515.51	217.72	0.0	0.4	2.961	A
4	493.87	123.47	527.61	1782.08	0.277	492.34	317.63	0.0	0.4	2.787	A
5	194.24	48.56	867.57	1365.99	0.142	193.58	152.38	0.0	0.2	3.069	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	153.73	38.43	996.06	1525.54	0.101	153.63	273.96	0.1	0.1	2.623	A
2	324.53	81.13	330.56	2284.77	0.142	324.40	818.13	0.1	0.2	1.835	A
3	617.60	154.40	394.44	1698.11	0.364	617.02	260.51	0.4	0.6	3.328	A
4	589.73	147.43	631.44	1731.86	0.341	589.20	380.03	0.4	0.5	3.148	A
5	231.94	57.98	1038.29	1284.98	0.181	231.72	182.35	0.2	0.2	3.417	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	188.27	47.07	1219.34	1417.29	0.133	188.11	335.39	0.1	0.2	2.928	A
2	397.47	99.37	404.70	2244.60	0.177	397.27	1002.75	0.2	0.2	1.948	A
3	756.40	189.10	483.01	1654.71	0.457	755.33	318.96	0.6	0.8	3.997	A
4	722.27	180.57	773.02	1663.38	0.434	721.28	465.32	0.5	0.8	3.818	A
5	284.06	71.02	1271.05	1174.53	0.242	283.67	223.25	0.2	0.3	4.039	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	188.27	47.07	1221.01	1416.47	0.133	188.27	335.81	0.2	0.2	2.930	A
2	397.47	99.37	405.17	2244.35	0.177	397.47	1004.11	0.2	0.2	1.948	A
3	756.40	189.10	483.35	1654.54	0.457	756.39	319.29	0.8	0.8	4.008	A
4	722.27	180.57	774.01	1662.90	0.434	722.26	465.73	0.8	0.8	3.826	A
5	284.06	71.02	1272.76	1173.72	0.242	284.06	223.50	0.3	0.3	4.046	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	153.73	38.43	998.64	1524.28	0.101	153.89	274.61	0.2	0.1	2.626	A
2	324.53	81.13	331.29	2284.37	0.142	324.73	821.24	0.2	0.2	1.836	A
3	617.60	154.40	394.99	1697.85	0.364	618.65	261.04	0.8	0.6	3.338	A
4	589.73	147.43	632.97	1731.12	0.341	590.71	380.67	0.8	0.5	3.158	A
5	231.94	57.98	1040.93	1283.73	0.181	232.32	182.75	0.3	0.2	3.424	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	128.74	32.18	835.84	1603.22	0.080	128.84	229.85	0.1	0.1	2.441	A
2	271.78	67.94	277.32	2313.61	0.117	271.91	687.36	0.2	0.1	1.765	A
3	517.21	129.30	330.71	1729.35	0.299	517.79	218.52	0.6	0.4	2.972	A
4	493.87	123.47	529.81	1781.02	0.277	494.41	318.70	0.5	0.4	2.800	A
5	194.24	48.56	871.24	1364.25	0.142	194.46	152.97	0.2	0.2	3.077	A

DS - DS 2023_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D26	DS 2023_	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	360.00	100.000
2		ONE HOUR	✓	904.00	100.000
3		ONE HOUR	✓	308.00	100.000
4		ONE HOUR	✓	488.00	100.000
5		ONE HOUR	✓	296.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.00	36.000	135.000	162.000
	2	40.000	0.000	341.000	400.000
	3	64.000	100.000	0.000	67.000
	4	86.000	188.000	144.000	0.000
	5	15.000	108.000	116.000	57.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.10	0.38	0.45
	2	0.04	0.00	0.38	0.44
	3	0.21	0.32	0.00	0.22
	4	0.18	0.39	0.30	0.00
	5	0.05	0.36	0.39	0.19

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.24	2.92	0.3	A	330.34	495.51
2	0.48	3.31	0.9	A	829.53	1244.29
3	0.23	3.23	0.3	A	282.63	423.94
4	0.30	2.83	0.4	A	447.80	671.70
5	0.22	3.19	0.3	A	271.61	407.42

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	271.03	67.76	535.27	1748.94	0.155	270.30	153.91	0.0	0.2	2.433	A
2	680.58	170.14	481.25	2203.14	0.309	678.80	324.32	0.0	0.4	2.360	A
3	231.88	57.97	607.44	1593.72	0.146	231.20	552.61	0.0	0.2	2.640	A
4	367.39	91.85	323.57	1880.78	0.195	366.42	515.06	0.0	0.2	2.376	A
5	222.84	55.71	467.00	1556.06	0.143	222.18	222.99	0.0	0.2	2.697	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	323.63	80.91	640.55	1697.90	0.191	323.43	184.16	0.2	0.2	2.619	A
2	812.68	203.17	575.87	2151.87	0.378	812.04	388.10	0.4	0.6	2.685	A
3	276.89	69.22	726.73	1535.25	0.180	276.69	661.18	0.2	0.2	2.860	A
4	438.70	109.68	387.18	1850.01	0.237	438.43	616.25	0.2	0.3	2.550	A
5	286.10	66.52	558.80	1512.50	0.176	285.91	266.81	0.2	0.2	2.887	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	396.37	99.09	764.33	1628.19	0.243	396.02	225.49	0.2	0.3	2.921	A
2	995.32	248.83	705.14	2081.85	0.478	994.10	475.22	0.6	0.9	3.307	A
3	339.11	84.78	889.73	1455.36	0.233	338.78	809.51	0.2	0.3	3.224	A
4	537.30	134.32	474.03	1808.00	0.297	536.85	754.47	0.3	0.4	2.832	A
5	325.90	81.48	684.22	1452.99	0.224	325.60	326.66	0.2	0.3	3.193	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	396.37	99.09	785.02	1627.85	0.243	396.36	225.71	0.3	0.3	2.922	A
2	995.32	248.83	705.75	2081.51	0.478	995.31	475.64	0.9	0.9	3.313	A
3	339.11	84.78	890.72	1454.88	0.233	339.11	810.34	0.3	0.3	3.225	A
4	537.30	134.32	474.53	1807.76	0.297	537.29	755.29	0.4	0.4	2.833	A
5	325.90	81.48	684.83	1452.70	0.224	325.90	327.00	0.3	0.3	3.194	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	323.63	80.91	641.66	1697.36	0.191	323.97	184.51	0.3	0.2	2.621	A
2	812.68	203.17	576.85	2151.34	0.378	813.89	388.78	0.9	0.6	2.693	A
3	276.89	69.22	728.26	1534.50	0.180	277.21	662.48	0.3	0.2	2.863	A
4	438.70	109.68	387.96	1849.63	0.237	439.14	617.52	0.4	0.3	2.554	A
5	286.10	66.52	559.77	1512.04	0.176	286.39	267.33	0.3	0.2	2.892	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	271.03	67.76	537.21	1748.00	0.155	271.24	154.46	0.2	0.2	2.437	A
2	680.58	170.14	482.96	2202.21	0.309	681.22	325.49	0.6	0.4	2.367	A
3	231.88	57.97	609.80	1592.66	0.146	232.06	554.57	0.2	0.2	2.647	A
4	367.39	91.85	324.77	1880.20	0.195	367.67	516.92	0.3	0.2	2.381	A
5	222.84	55.71	468.64	1555.28	0.143	223.03	223.79	0.2	0.2	2.702	A

DS - DS 2028_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	4,25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0,00	99999,00		0,00
2	0,00	99999,00		0,00
3	0,00	99999,00		0,00
4	0,00	99999,00		0,00
5	0,00	99999,00		0,00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D27	DS 2028_	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	199.00	100.000
2		ONE HOUR	✓	418.00	100.000
3		ONE HOUR	✓	764.00	100.000
4		ONE HOUR	✓	824.00	100.000
5		ONE HOUR	✓	286.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	26.000	34.000	121.000
	2	47.000	0.000	96.000	225.000
	3	123.000	423.000	0.000	108.000
	4	145.000	537.000	89.000	0.000
	5	36.000	82.000	106.000	62.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.13	0.17	0.61
	2	0.11	0.00	0.23	0.54
	3	0.16	0.55	0.00	0.14
	4	0.13	0.65	0.11	0.00
	5	0.13	0.29	0.37	0.00

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.17	3.26	0.2	A	182.61	273.91
2	0.21	2.06	0.3	A	383.56	575.35
3	0.52	4.68	1.1	A	701.06	1051.59
4	0.56	5.00	1.3	A	756.12	1134.18
5	0.30	4.80	0.4	A	262.44	393.66

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	149.82	37.45	974.48	1536.00	0.098	149.39	263.37	0.0	0.1	2.596	A
2	314.89	78.67	322.85	2288.05	0.137	314.06	801.22	0.0	0.2	1.822	A
3	575.18	143.79	391.28	1695.67	0.338	573.14	245.43	0.0	0.5	3.190	A
4	620.35	155.09	577.01	1758.19	0.353	618.18	387.41	0.0	0.5	3.153	A
5	215.32	53.83	1023.34	1292.08	0.167	214.52	171.86	0.0	0.2	3.339	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	178.90	44.72	1166.42	1442.94	0.124	178.76	315.21	0.1	0.1	2.847	A
2	375.77	93.94	366.18	2254.64	0.167	375.61	959.01	0.2	0.2	1.915	A
3	686.82	171.71	468.09	1662.02	0.413	686.06	293.70	0.5	0.7	3.684	A
4	740.76	185.19	690.61	1703.24	0.435	739.87	463.53	0.5	0.8	3.733	A
5	257.11	64.28	1224.81	1196.47	0.215	256.82	205.67	0.2	0.3	3.831	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	219.10	54.78	1427.42	1316.40	0.166	218.87	385.77	0.1	0.2	3.280	A
2	460.23	115.06	472.69	2207.77	0.208	459.97	1173.60	0.2	0.3	2.059	A
3	841.18	210.29	573.15	1610.52	0.522	839.65	359.52	0.7	1.1	4.660	A
4	907.24	226.81	845.29	1628.42	0.557	905.33	567.51	0.8	1.2	4.965	A
5	314.89	78.72	1498.88	1066.43	0.295	314.32	251.74	0.3	0.4	4.784	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	219.10	54.78	1430.18	1315.06	0.167	219.10	386.45	0.2	0.2	3.284	A
2	460.23	115.06	473.43	2207.37	0.209	460.22	1175.85	0.3	0.3	2.060	A
3	841.18	210.29	573.63	1610.29	0.522	841.16	360.03	1.1	1.1	4.680	A
4	907.24	226.81	846.66	1627.76	0.557	907.21	568.12	1.2	1.3	4.995	A
5	314.89	78.72	1501.74	1065.07	0.296	314.88	252.13	0.4	0.4	4.798	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	178.90	44.72	1170.55	1440.94	0.124	179.13	316.22	0.2	0.1	2.862	A
2	375.77	93.94	367.30	2254.03	0.167	376.02	962.38	0.3	0.2	1.919	A
3	686.82	171.71	468.84	1661.65	0.413	688.33	294.48	1.1	0.7	3.706	A
4	740.76	185.19	692.69	1702.23	0.435	742.66	464.48	1.3	0.8	3.758	A
5	257.11	64.28	1229.10	1194.44	0.215	257.68	206.26	0.4	0.3	3.846	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	149.82	37.45	979.34	1533.64	0.098	149.95	264.59	0.1	0.1	2.603	A
2	314.89	78.67	324.12	2288.26	0.138	314.86	805.17	0.2	0.2	1.823	A
3	575.18	143.79	392.52	1698.06	0.339	575.96	246.45	0.7	0.5	3.206	A
4	620.35	155.09	579.66	1756.91	0.353	621.26	388.82	0.8	0.5	3.174	A
5	215.32	53.83	1028.32	1289.71	0.167	215.61	172.60	0.3	0.2	3.351	A

DS - DS 2028_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D28	DS 2028_	PM	ONE-HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE-HOUR	✓	413.00	100.000
2		ONE-HOUR	✓	1039.00	100.000
3		ONE-HOUR	✓	348.00	100.000
4		ONE-HOUR	✓	590.00	100.000
5		ONE-HOUR	✓	330.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	39.000	148.000	197.000
	2	43.000	0.000	373.000	490.000
	3	70.000	110.000	0.000	83.000
	4	104.000	227.000	175.000	0.000
	5	16.000	117.000	127.000	70.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.09	0.36	0.48
	2	0.04	0.00	0.36	0.47
	3	0.20	0.32	0.00	0.24
	4	0.13	0.38	0.30	0.14
	5	0.05	0.35	0.38	0.21

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.29	3.23	0.4	A	375.98	568.46
2	0.57	4.11	1.3	A	953.40	1430.11
3	0.28	3.64	0.4	A	319.33	479.00
4	0.36	3.16	0.6	A	541.39	812.09
5	0.26	3.48	0.4	A	302.81	454.22

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	310.93	77.73	620.01	1707.86	0.182	310.04	174.90	0.0	0.2	2.574	A
2	782.21	195.55	559.99	2160.48	0.362	779.95	370.06	0.0	0.6	2.603	A
3	261.99	65.50	722.14	1537.50	0.170	261.17	617.80	0.0	0.2	2.819	A
4	444.18	111.05	352.77	1866.65	0.238	442.94	630.55	0.0	0.3	2.526	A
5	248.44	62.11	547.25	1517.99	0.164	247.66	248.47	0.0	0.2	2.832	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	371.28	92.82	742.00	1648.71	0.225	371.01	208.29	0.2	0.3	2.817	A
2	934.04	233.51	670.14	2100.80	0.445	933.12	442.86	0.6	0.8	3.079	A
3	312.84	78.21	864.03	1467.96	0.213	312.58	739.23	0.2	0.3	3.115	A
4	530.40	132.60	422.15	1833.10	0.289	530.02	754.47	0.3	0.4	2.762	A
5	296.66	74.17	654.86	1466.92	0.202	296.43	297.31	0.2	0.3	3.075	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	454.72	113.68	908.48	1568.00	0.290	454.25	256.23	0.3	0.4	3.230	A
2	1143.96	285.99	820.51	2019.34	0.567	1141.97	542.23	0.8	1.3	4.094	A
3	383.16	95.79	1057.57	1373.10	0.279	382.89	904.92	0.3	0.4	3.632	A
4	649.60	162.40	516.76	1787.33	0.363	648.95	923.50	0.4	0.6	3.160	A
5	363.34	90.83	801.77	1397.21	0.260	362.95	363.94	0.3	0.3	3.481	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	454.72	113.68	909.43	1567.54	0.290	454.72	256.53	0.4	0.4	3.234	A
2	1143.96	285.99	821.35	2018.89	0.567	1143.93	542.80	1.3	1.3	4.114	A
3	383.16	95.79	1059.16	1372.32	0.279	383.15	906.12	0.4	0.4	3.638	A
4	649.60	162.40	517.47	1786.99	0.364	649.60	924.84	0.6	0.6	3.164	A
5	363.34	90.83	802.63	1396.80	0.260	363.33	364.43	0.3	0.4	3.482	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	371.28	92.82	743.50	1647.98	0.225	371.74	208.77	0.4	0.3	2.823	A
2	934.04	233.51	671.48	2100.08	0.445	936.02	443.77	1.3	0.8	3.099	A
3	312.84	78.21	866.42	1466.78	0.213	313.30	741.07	0.4	0.3	3.121	A
4	530.40	132.60	423.23	1832.57	0.289	531.04	756.49	0.6	0.4	2.766	A
5	296.66	74.17	656.22	1466.28	0.202	297.05	298.05	0.4	0.3	3.081	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	310.93	77.73	622.42	1706.69	0.182	311.20	175.59	0.3	0.2	2.581	A
2	782.21	195.55	562.13	2159.32	0.362	783.16	371.49	0.8	0.6	2.617	A
3	261.99	65.50	725.05	1536.08	0.171	262.26	620.24	0.3	0.2	2.828	A
4	444.18	111.05	354.22	1865.95	0.238	444.56	633.08	0.4	0.3	2.532	A
5	248.44	62.11	549.33	1517.00	0.164	248.67	248.45	0.3	0.2	2.838	A

DS - DS 2038_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	4.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D29	DS 2038_	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	213.00	100.000
2		ONE HOUR	✓	448.00	100.000
3		ONE HOUR	✓	821.00	100.000
4		ONE HOUR	✓	876.00	100.000
5		ONE HOUR	✓	308.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	28.000	36.000	129.000
	2	50.000	0.000	106.000	240.000
	3	133.000	455.000	0.000	115.000
	4	154.000	571.000	95.000	0.000
	5	38.000	89.000	114.000	67.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.13	0.17	0.61
	2	0.11	0.00	0.24	0.54
	3	0.16	0.55	0.00	0.14
	4	0.13	0.65	0.11	0.00
	5	0.12	0.29	0.37	0.00

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.19	3.49	0.2	A	195.45	293.18
2	0.23	2.12	0.3	A	411.09	616.64
3	0.57	5.24	1.3	A	753.36	1130.05
4	0.60	5.70	1.5	A	803.83	1205.75
5	0.33	5.32	0.5	A	282.63	423.94

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	160.36	40.09	1043.30	1502.63	0.107	159.88	281.33	0.0	0.1	2.681	A
2	337.28	84.32	345.86	2276.48	0.148	336.58	857.33	0.0	0.2	1.855	A
3	618.09	154.52	419.03	1686.06	0.367	615.79	263.41	0.0	0.6	3.356	A
4	659.50	164.87	621.18	1736.82	0.380	657.06	413.64	0.0	0.6	3.327	A
5	231.88	57.97	1093.65	1258.71	0.184	230.98	184.59	0.0	0.2	3.499	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	191.48	47.87	1248.84	1402.98	0.136	191.33	336.71	0.1	0.2	2.970	A
2	402.74	100.69	413.97	2239.58	0.180	402.56	1026.20	0.2	0.2	1.959	A
3	738.06	184.52	501.31	1645.74	0.448	737.14	315.23	0.6	0.8	3.958	A
4	787.51	196.88	743.50	1677.66	0.469	786.43	494.94	0.6	0.9	4.034	A
5	276.89	69.22	1309.02	1156.52	0.239	276.53	220.91	0.2	0.3	4.089	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	234.52	58.63	1527.89	1267.69	0.185	234.24	412.00	0.2	0.2	3.483	A
2	493.26	123.31	506.63	2189.38	0.225	492.97	1255.50	0.2	0.3	2.122	A
3	903.94	225.98	613.80	1590.60	0.568	901.97	385.80	0.8	1.3	5.213	A
4	964.49	241.12	909.86	1597.19	0.604	962.00	605.91	0.9	1.5	5.644	A
5	339.11	84.78	1601.51	1017.73	0.333	338.38	270.35	0.3	0.5	5.284	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	234.52	58.63	1531.45	1265.96	0.185	234.51	412.87	0.2	0.2	3.489	A
2	493.26	123.31	507.55	2188.88	0.225	493.26	1258.41	0.3	0.3	2.122	A
3	903.94	225.98	614.36	1590.33	0.568	903.90	386.45	1.3	1.3	5.244	A
4	964.49	241.12	911.61	1596.34	0.604	964.44	606.65	1.5	1.5	5.686	A
5	339.11	84.78	1605.21	1015.97	0.334	339.10	270.84	0.5	0.5	5.318	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	191.48	47.87	1254.08	1400.44	0.137	191.75	337.99	0.2	0.2	2.980	A
2	402.74	100.69	415.36	2238.83	0.180	403.02	1030.48	0.3	0.2	1.962	A
3	738.06	184.52	502.19	1645.30	0.449	740.01	316.19	1.3	0.8	3.984	A
4	787.51	196.88	746.12	1676.39	0.470	789.99	496.08	1.5	0.9	4.073	A
5	276.89	69.22	1314.47	1153.93	0.240	277.61	221.65	0.5	0.3	4.111	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	160.36	40.09	1048.90	1499.92	0.107	160.51	282.73	0.2	0.1	2.689	A
2	337.28	84.32	347.53	2275.57	0.148	337.46	861.88	0.2	0.2	1.859	A
3	618.09	154.52	420.42	1685.38	0.367	619.04	264.57	0.8	0.6	3.378	A
4	659.50	164.87	624.23	1735.35	0.380	660.61	415.22	0.9	0.6	3.354	A
5	231.88	57.97	1099.40	1255.99	0.185	232.24	185.44	0.3	0.2	3.516	A



DS - DS 2038_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	3.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D30	DS 2038_	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source HV Percentages	PCU Factor for a HV (PCU)
✓	✓		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	443.00	100.000
2		ONE HOUR	✓	1112.00	100.000
3		ONE HOUR	✓	372.00	100.000
4		ONE HOUR	✓	629.00	100.000
5		ONE HOUR	✓	354.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	42.000	159.000	210.000
	2	46.000	0.000	401.000	522.000
	3	75.000	118.000	0.000	88.000
	4	111.000	242.000	186.000	0.000
	5	17.000	126.000	136.000	75.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.09	0.36	0.47
	2	0.04	0.00	0.36	0.47
	3	0.20	0.32	0.00	0.24
	4	0.18	0.38	0.30	0.00
	5	0.05	0.36	0.38	0.21

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.32	3.43	0.5	A	406.50	609.76
2	0.62	4.71	1.6	A	1020.39	1530.59
3	0.31	3.88	0.4	A	341.35	512.03
4	0.39	3.35	0.6	A	577.18	865.77
5	0.28	3.67	0.4	A	324.84	487.25

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	333.51	83.38	662.73	1687.14	0.198	332.53	186.89	0.0	0.2	2.656	A
2	837.17	209.29	598.97	2196.36	0.391	834.61	396.29	0.0	0.6	2.755	A
3	280.06	70.02	771.58	1513.27	0.185	279.16	662.01	0.0	0.2	2.916	A
4	473.54	118.39	378.99	1853.97	0.255	472.18	671.74	0.0	0.3	2.603	A
5	266.51	66.63	563.97	1500.56	0.178	265.65	267.20	0.0	0.2	2.914	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	398.25	99.56	793.16	1623.91	0.245	397.94	223.65	0.2	0.3	2.936	A
2	999.67	249.92	716.82	2075.52	0.482	998.53	474.28	0.6	0.9	3.340	A
3	334.42	83.61	923.20	1438.96	0.232	334.12	792.15	0.2	0.3	3.258	A
4	565.46	141.36	453.54	1817.91	0.311	565.03	803.78	0.3	0.4	2.873	A
5	318.24	79.56	698.83	1446.06	0.220	317.98	318.73	0.2	0.3	3.191	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	487.75	121.94	971.08	1537.65	0.317	487.20	273.78	0.3	0.5	3.425	A
2	1224.33	306.08	877.62	1988.41	0.616	1221.70	580.66	0.9	1.6	4.679	A
3	409.58	102.39	1129.77	1337.71	0.306	409.03	968.55	0.3	0.4	3.873	A
4	692.54	173.14	555.11	1768.78	0.392	691.78	983.69	0.4	0.6	3.341	A
5	389.76	97.44	855.55	1371.69	0.284	389.31	391.34	0.3	0.4	3.662	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	487.75	121.94	972.19	1537.11	0.317	487.75	274.15	0.5	0.5	3.429	A
2	1224.33	306.08	878.60	1987.87	0.616	1224.29	581.33	1.6	1.6	4.714	A
3	409.58	102.39	1131.82	1336.71	0.306	409.57	971.08	0.4	0.4	3.882	A
4	692.54	173.14	556.00	1768.35	0.392	692.53	985.39	0.6	0.6	3.345	A
5	389.76	97.44	856.58	1371.20	0.284	389.76	391.95	0.4	0.4	3.667	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	398.25	99.56	794.91	1623.06	0.245	398.80	224.22	0.5	0.3	2.943	A
2	999.67	249.92	718.37	2074.68	0.482	1002.29	475.33	1.6	0.9	3.366	A
3	334.42	83.61	926.22	1437.47	0.233	334.96	794.44	0.4	0.3	3.268	A
4	565.46	141.36	454.88	1817.26	0.311	566.21	806.30	0.6	0.5	2.878	A
5	318.24	79.56	700.44	1445.29	0.220	318.69	320.65	0.4	0.3	3.195	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	333.51	83.38	665.42	1685.84	0.198	333.83	187.66	0.3	0.2	2.662	A
2	837.17	209.29	601.35	2138.07	0.392	838.33	397.90	0.9	0.6	2.773	A
3	280.06	70.02	774.90	1511.64	0.185	280.37	664.78	0.3	0.2	2.926	A
4	473.54	118.39	380.84	1853.17	0.256	473.98	674.63	0.5	0.3	2.610	A
5	266.51	66.63	566.30	1499.46	0.178	266.76	268.32	0.3	0.2	2.922	A



DS - DS 2038 + PFD_, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	5.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D31	DS 2038 + PFD_	AM	ONE-HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE-HOUR	✓	218.00	100.000
2		ONE-HOUR	✓	457.00	100.000
3		ONE-HOUR	✓	826.00	100.000
4		ONE-HOUR	✓	938.00	100.000
5		ONE-HOUR	✓	308.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	28.000	36.000	134.000
	2	50.000	0.000	106.000	249.000
	3	133.000	455.000	0.000	120.000
	4	165.000	612.000	101.000	0.000
	5	38.000	89.000	114.000	67.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.13	0.17	0.61
	2	0.11	0.00	0.23	0.54
	3	0.16	0.55	0.00	0.15
	4	0.13	0.65	0.11	0.00
	5	0.12	0.29	0.37	0.22

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.19	3.60	0.2	A	200.04	300.06
2	0.23	2.14	0.3	A	419.35	629.03
3	0.57	5.35	1.3	A	757.95	1136.93
4	0.65	6.38	1.8	A	860.73	1291.09
5	0.34	5.57	0.5	A	282.63	423.94

Main Results for each time segment

Main results: (07:45-08:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	164.12	41.03	1078.44	1485.60	0.110	163.63	289.56	0.0	0.1	2.723	A
2	344.05	86.01	354.08	2272.03	0.151	343.34	887.99	0.0	0.2	1.866	A
3	621.86	155.46	429.54	1680.92	0.370	619.52	267.89	0.0	0.6	3.365	A
4	706.18	176.54	621.16	1736.83	0.407	703.45	427.89	0.0	0.7	3.475	A
5	231.88	57.97	1137.04	1238.13	0.187	230.96	187.58	0.0	0.2	3.571	A

Main results: (08:00-08:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	195.98	48.99	1290.91	1382.58	0.142	195.81	346.56	0.1	0.2	3.033	A
2	410.83	102.71	423.82	2234.25	0.184	410.65	1062.90	0.2	0.2	1.974	A
3	742.56	185.64	513.88	1639.58	0.453	741.61	320.59	0.6	0.8	4.005	A
4	843.24	210.81	743.49	1677.67	0.503	841.96	512.00	0.7	1.0	4.302	A
5	276.89	69.22	1360.96	1131.87	0.245	276.52	224.49	0.2	0.3	4.206	A

Main results: (08:15-08:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	240.02	60.01	1579.04	1242.89	0.193	239.73	423.98	0.2	0.2	3.588	A
2	503.17	125.79	518.62	2182.89	0.231	502.87	1300.15	0.2	0.3	2.142	A
3	909.44	227.36	629.18	1583.06	0.574	907.40	392.31	0.8	1.3	5.312	A
4	1032.76	258.19	909.81	1597.22	0.647	1029.58	626.77	1.0	1.8	6.307	A
5	339.11	84.78	1664.69	987.75	0.343	338.33	274.70	0.3	0.5	5.536	A

Main results: (08:30-08:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	240.02	60.01	1583.18	1240.89	0.193	240.02	424.97	0.2	0.2	3.595	A
2	503.17	125.79	519.66	2182.33	0.231	503.16	1303.53	0.3	0.3	2.143	A
3	909.44	227.36	629.78	1582.77	0.575	909.41	393.05	1.3	1.3	5.346	A
4	1032.76	258.19	911.61	1596.34	0.647	1032.68	627.57	1.8	1.8	6.384	A
5	339.11	84.78	1669.05	985.68	0.344	339.10	275.24	0.5	0.5	5.567	A

Main results: (08:45-09:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	195.98	48.99	1296.94	1379.66	0.142	196.27	348.02	0.2	0.2	3.042	A
2	410.83	102.71	425.37	2233.41	0.184	411.13	1067.84	0.3	0.2	1.975	A
3	742.56	185.64	514.82	1639.12	0.453	744.56	321.68	1.3	0.8	4.034	A
4	843.24	210.81	746.18	1676.36	0.503	846.41	513.22	1.8	1.0	4.355	A
5	276.89	69.22	1387.29	1128.87	0.245	277.66	225.30	0.5	0.3	4.232	A

Main results: (09:00-09:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	164.12	41.03	1084.48	1482.67	0.111	164.29	291.06	0.2	0.1	2.732	A
2	344.05	86.01	355.98	2271.07	0.151	344.24	892.91	0.2	0.2	1.867	A
3	621.86	155.46	430.98	1680.21	0.370	622.83	269.12	0.8	0.6	3.406	A
4	706.18	176.54	624.25	1735.34	0.407	707.50	429.55	1.0	0.7	3.508	A
5	231.88	57.97	1143.28	1235.16	0.188	232.26	188.47	0.3	0.2	3.592	A



DS - DS 2038 + PFD_, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D25,D26,D27,D28,D29,D30,D31,D32	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	unfilled	Standard Roundabout	1,2,3,4,5	4.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	R135	
2	M2	
3	Raboath Rd R125	
4	Dublin Rd R135	
5	R125	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00



Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict angle (deg)	Exit only
1	4.70	9.30	16.5	27.9	90.0	54.3	
2	8.50	10.40	2.8	14.5	90.0	55.3	
3	3.69	9.90	12.2	33.4	90.0	26.6	
4	6.30	9.70	5.4	22.9	90.0	59.1	
5	3.80	10.00	8.6	38.4	90.0	27.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.485	2008.456
2	0.542	2463.847
3	0.490	1891.444
4	0.484	2037.290
5	0.475	1777.661

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D32	DS 2038 + PFD_	PM	ONE-HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE-HOUR	✓	456.00	100.000
2		ONE-HOUR	✓	1146.00	100.000
3		ONE-HOUR	✓	378.00	100.000
4		ONE-HOUR	✓	664.00	100.000
5		ONE-HOUR	✓	359.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	0.000	42.000	159.000	223.000
	2	46.000	0.000	401.000	556.000
	3	75.000	118.000	0.000	94.000
	4	117.000	256.000	196.000	0.000
	5	17.000	126.000	136.000	80.000

Proportions

	To				
	1	2	3	4	5
From	1	0.00	0.09	0.35	0.49
	2	0.04	0.00	0.35	0.49
	3	0.20	0.31	0.00	0.25
	4	0.18	0.39	0.30	0.00
	5	0.05	0.35	0.38	0.22

Vehicle Mix

Heavy Vehicle proportion

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

Average PCU Per Veh

	To				
	1	2	3	4	5
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.33	3.53	0.5	A	418.43	627.65
2	0.64	5.07	1.8	A	1051.59	1577.38
3	0.32	4.03	0.5	A	346.86	520.29
4	0.41	3.47	0.7	A	609.30	913.95
5	0.29	3.75	0.4	A	329.42	494.14

Main Results for each time segment

Main results: (16:30-16:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	343.30	85.83	684.47	1676.61	0.205	342.27	191.38	0.0	0.3	2.697	A
2	862.77	215.69	619.96	2127.99	0.405	860.06	406.78	0.0	0.7	2.833	A
3	284.58	71.14	810.55	1494.17	0.190	283.64	669.47	0.0	0.2	2.973	A
4	499.89	124.97	378.97	1853.98	0.270	498.42	715.22	0.0	0.4	2.653	A
5	270.27	67.57	606.46	1489.89	0.181	269.39	270.93	0.0	0.2	2.948	A

Main results: (16:45-17:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	409.93	102.48	819.18	1611.29	0.254	409.60	229.03	0.3	0.3	2.985	A
2	1030.23	257.56	741.95	2061.90	0.500	1028.98	486.84	0.7	1.0	3.480	A
3	339.81	84.95	969.84	1416.10	0.240	339.49	801.09	0.2	0.3	3.344	A
4	596.92	149.23	453.51	1817.92	0.328	596.45	855.82	0.4	0.5	2.945	A
5	322.73	80.68	725.75	1433.28	0.225	322.46	324.21	0.2	0.3	3.240	A

Main results: (17:00-17:15)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	502.07	125.52	1002.91	1522.22	0.330	501.47	280.35	0.3	0.5	3.525	A
2	1261.77	315.44	908.36	1971.75	0.640	1258.73	596.02	1.0	1.8	5.028	A
3	416.19	104.05	1186.69	1309.81	0.318	415.59	980.41	0.3	0.5	4.023	A
4	731.08	182.77	555.03	1768.82	0.413	730.22	1047.25	0.5	0.7	3.462	A
5	395.27	98.82	888.47	1356.07	0.291	394.79	396.78	0.3	0.4	3.742	A

Main results: (17:15-17:30)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	502.07	125.52	1004.12	1521.63	0.330	502.06	280.75	0.5	0.5	3.530	A
2	1261.77	315.44	909.43	1971.17	0.640	1261.71	596.74	1.8	1.8	5.074	A
3	416.19	104.05	1189.06	1308.65	0.318	416.18	982.08	0.5	0.5	4.033	A
4	731.08	182.77	556.00	1768.35	0.413	731.07	1049.24	0.7	0.7	3.469	A
5	395.27	98.82	889.61	1355.53	0.292	395.26	397.46	0.4	0.4	3.748	A

Main results: (17:30-17:45)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	409.93	102.48	821.08	1610.37	0.255	410.53	229.65	0.5	0.3	3.003	A
2	1030.23	257.56	743.63	2060.99	0.500	1033.26	487.98	1.8	1.0	3.512	A
3	339.81	84.95	973.30	1414.40	0.240	340.40	803.58	0.5	0.3	3.355	A
4	596.92	149.23	454.97	1817.22	0.328	597.77	858.74	0.7	0.5	2.953	A
5	322.73	80.68	727.52	1432.45	0.225	323.21	325.21	0.4	0.3	3.246	A

Main results: (17:45-18:00)

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	343.30	85.83	687.30	1675.23	0.205	343.64	192.19	0.3	0.3	2.705	A
2	862.77	215.69	622.47	2126.63	0.406	864.05	408.46	1.0	0.7	2.853	A
3	284.58	71.14	814.17	1492.40	0.191	284.90	672.36	0.3	0.2	2.981	A
4	499.89	124.97	380.67	1853.16	0.270	500.38	718.40	0.5	0.4	2.663	A
5	270.27	67.57	608.94	1488.71	0.182	270.55	272.11	0.3	0.2	2.957	A

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.0.0.4211 [] © Copyright TRL Limited, 2022	
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Filename: Hickey's Lane_R135 Site Access.j9
Path: G:\2020\p2000059\calcs\Picady
Report generation date: 16/08/2022 10:41:21

»DM - DM 2023, AM
»DM - DM 2023, PM
»DM - DM 2028, AM
»DM - DM 2028, PM
»DM - DM 2038, AM
»DM - DM 2038, PM
»DM - DM 2038 + PFD, AM
»DM - DM 2038 + PFD, PM
»DS - DS 2023, AM
»DS - DS 2023, PM
»DS - DS 2028, AM
»DS - DS 2028, PM
»DS - DS 2038, AM
»DS - DS 2038, PM
»DS - DS 2038 + PFD, AM
»DS - DS 2038 + PFD, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	DM - DM 2023							
Stream B-AC	0.1	9.67	0.08	A	0.1	10.57	0.09	B
Stream C-AB	0.0	7.38	0.02	A	0.0	8.59	0.03	A
Stream C-A								
Stream A-B								
Stream A-C								
DM - DM 2028								
Stream B-AC	0.1	9.34	0.09	A	0.1	9.61	0.09	A
Stream C-AB	0.0	6.91	0.02	A	0.0	7.81	0.03	A
Stream C-A								
Stream A-B								
Stream A-C								
DM - DM 2038								
Stream B-AC	0.1	9.83	0.10	A	0.1	10.23	0.10	B
Stream C-AB	0.0	7.04	0.03	A	0.0	8.06	0.04	A
Stream C-A								
Stream A-B								
Stream A-C								

DM - DM 2038 + PFD								
Stream B-AC	0.1	10.14	0.0	B	0.1	10.74	0.11	B
Stream C-AB	0.0	7.12	0.03	A	0.0	8.32	0.04	A
Stream C-A								
Stream A-B								
Stream A-C								

	AM			PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	DS - DS 2023							
Stream B-AC	0.1	8.88	0.08	A	0.1	9.38	0.08	A
Stream C-AB	0.0	6.74	0.02	A	0.0	7.65	0.03	A
Stream C-A								
Stream A-B								
Stream A-C								
	DS - DS 2028							
Stream B-AC	0.3	12.59	0.21	B	0.2	12.96	0.17	B
Stream C-AB	0.0	7.12	0.03	A	0.1	8.58	0.06	A
Stream C-A								
Stream A-B								
Stream A-C								
	DS - DS 2038							
Stream B-AC	0.3	13.40	0.22	B	0.2	13.80	0.19	B
Stream C-AB	0.0	7.26	0.03	A	0.1	8.88	0.07	A
Stream C-A								
Stream A-B								
Stream A-C								
	DS - DS 2038 + PFD							
Stream B-AC	0.3	14.08	0.23	B	0.2	14.84	0.20	B
Stream C-AB	0.0	7.34	0.03	A	0.1	9.20	0.07	A
Stream C-A								
Stream A-B								
Stream A-C								

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	Site at Cherry Lane
Location	Ashbourne
Site number	2000059
Date	03/12/2021
Version	
Status	(new file)
Identifier	SAS
Client	
Jobnumber	
Enumerator	HEADOFFICE\saeds
Description	Hickey's Lane/R135 Site Access Junction



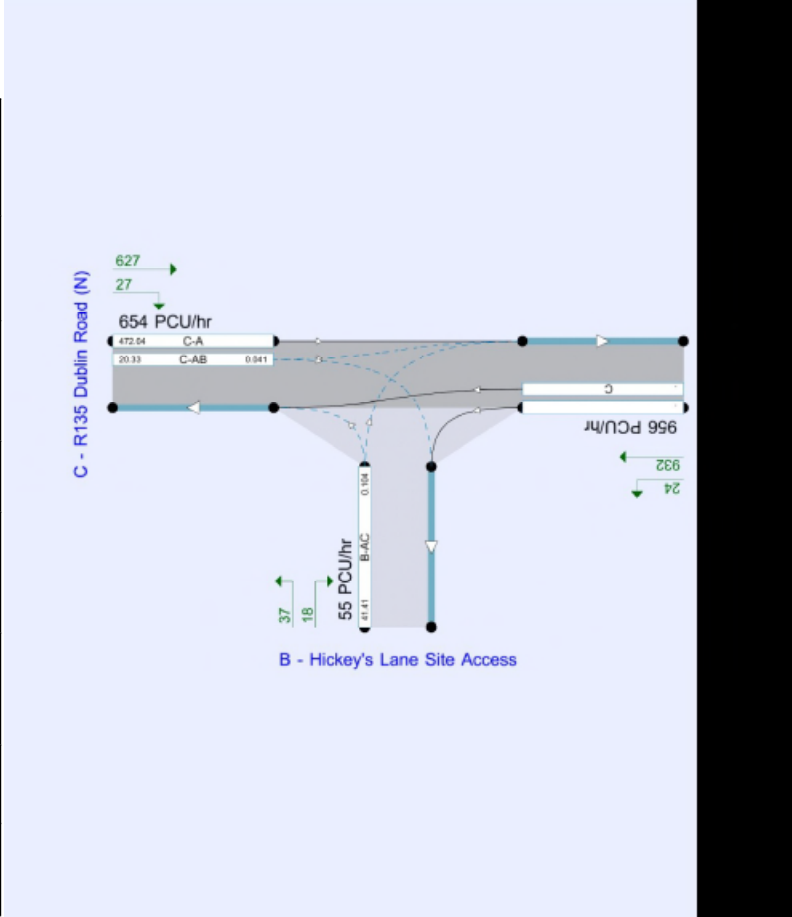
Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:MM)	Model finish time (HH:MM)	Time segment length (min)	Run automatically
DM 2023	AM	ONE HOUR	07:45	09:15	15	✓
DM 2023	PM	ONE HOUR	16:30	18:00	15	✓
DS 2023	AM	ONE HOUR	07:45	09:15	15	✓
DS 2023	PM	ONE HOUR	16:30	18:00	15	✓
DM 2028	AM	ONE HOUR	07:45	09:15	15	✓
DM 2028	PM	ONE HOUR	16:30	18:00	15	✓
DS 2028	AM	ONE HOUR	07:45	09:15	15	✓
DS 2028	PM	ONE HOUR	16:30	18:00	15	✓
DM 2038	AM	ONE HOUR	07:45	09:15	15	✓
DM 2038	PM	ONE HOUR	16:30	18:00	15	✓
DS 2038	AM	ONE HOUR	07:45	09:15	15	✓
DS 2038	PM	ONE HOUR	16:30	18:00	15	✓
DM 2038 + PFD	AM	ONE HOUR	07:45	09:15	15	✓
DM 2038 + PFD	PM	ONE HOUR	16:30	18:00	15	✓
DS 2038 + PFD	AM	ONE HOUR	07:45	09:15	15	✓
DS 2038 + PFD	PM	ONE HOUR	16:30	18:00	15	✓



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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00



DM - DM 2023, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13/Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135/Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135/Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D1	DM 2023	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13/Dublin Road (S)		ONE HOUR	✓	435.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	32.00	100.000
C - R135/Dublin Road (N)		ONE HOUR	✓	642.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
	0.000	2.000	433.000
	B - Hickey's Lane Site Access	0.000	23.000
	C - R135/Dublin Road (N)	632.000	0.000

Proportions

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
	0.00	0.00	1.00
	B - Hickey's Lane Site Access	0.28	0.72
	C - R135/Dublin Road (N)	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
From	A - R13 Dublin Road (S)	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	
	A - R13 Dublin Road (S)	10	10	10	10
	B - Hickey's Lane Site Access	10	10	10	10
	C - R135 Dublin Road (N)	10	10	10	10

Average PCU Per Veh

		To			
From	A - R13 Dublin Road (S)	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	
	A - R13 Dublin Road (S)	1.100	1.100	1.100	1.100
	B - Hickey's Lane Site Access	1.100	1.100	1.100	1.100
	C - R135 Dublin Road (N)	1.100	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.03	9.67	0.1	A	29.36	44.05
C-A-B	0.02	7.38	0.0	A	9.18	13.76
C-A					579.93	869.90
A-B					1.84	2.75
A-C					397.33	595.99

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	24.09	24.09	6.02	0.00	492.87	0.049	23.87	0.0	0.1	8.440	A
C-A-B	7.53	7.53	1.88	0.00	580.52	0.013	7.47	0.0	0.0	6.910	A
C-A	475.80	475.80	118.95	0.00			475.80				
A-B	1.51	1.51	0.38	0.00			1.51				
A-C	325.99	325.99	81.50	0.00			325.99				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	28.77	28.77	7.19	0.00	472.87	0.061	28.71	0.1	0.1	8.912	A
C-A-B	8.99	8.99	2.25	0.00	566.54	0.016	8.98	0.0	0.0	7.101	A
C-A	568.16	568.16	142.04	0.00			568.16				
A-B	1.80	1.80	0.45	0.00			1.80				
A-C	389.26	389.26	97.31	0.00			389.26				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	35.23	35.23	8.81	0.00	444.63	0.079	35.14	0.1	0.1	9.668	A
C-A-B	11.01	11.01	2.75	0.00	547.22	0.020	10.99	0.0	0.0	7.384	A
C-A	695.84	695.84	173.96	0.00			695.84				
A-B	2.20	2.20	0.55	0.00			2.20				
A-C	476.74	476.74	119.19	0.00			476.74				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	35.23	35.23	8.81	0.00	444.63	0.079	35.23	0.1	0.1	9.672	A
C-A-B	11.01	11.01	2.75	0.00	547.22	0.020	11.01	0.0	0.0	7.384	A
C-A	695.84	695.84	173.96	0.00			695.84				
A-B	2.20	2.20	0.55	0.00			2.20				
A-C	476.74	476.74	119.19	0.00			476.74				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	28.77	28.77	7.19	0.00	472.96	0.061	28.86	0.1	0.1	8.918	A
C-A-B	8.99	8.99	2.25	0.00	566.54	0.016	9.01	0.0	0.0	7.102	A
C-A	568.16	568.16	142.04	0.00			568.16				
A-B	1.80	1.80	0.45	0.00			1.80				
A-C	389.26	389.26	97.31	0.00			389.26				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	24.09	24.09	6.02	0.00	492.86	0.049	24.15	0.1	0.1	8.451	A
C-A-B	7.53	7.53	1.88	0.00	580.52	0.013	7.54	0.0	0.0	6.913	A
C-A	475.80	475.80	118.95	0.00			475.80				
A-B	1.51	1.51	0.38	0.00			1.51				
A-C	325.99	325.99	81.50	0.00			325.99				



DM - DM 2023, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D2	DM 2023	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	723.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	34.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	507.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.000	5.000
	B - Hickey's Lane Site Access	0.000	28.000
	C - R135 Dublin Road (N)	492.000	15.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.01
	B - Hickey's Lane Site Access	0.18	0.82
	C - R135 Dublin Road (N)	0.97	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	10	10
	B - Hickey's Lane Site Access	10	10
	C - R135 Dublin Road (N)	10	10

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,100	1,100
	B - Hickey's Lane Site Access	1,100	1,100
	C - R135 Dublin Road (N)	1,100	1,100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
BAC	0.09	10.57	0.1	B	31.20	46.30
C-AB	0.03	8.59	0.0	A	13.76	20.85
C-A					451.47	677.20
A-B					4.59	6.88
A-C					658.85	988.27

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	25.60	25.60	6.40	0.00	475.84	0.054	25.35	0.0	0.1	8.786	A
C-AB	11.29	11.29	2.82	0.00	532.86	0.021	11.20	0.0	0.0	7.591	A
C-A	370.40	370.40	92.80	0.00			370.40				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	540.55	540.55	135.14	0.00			540.55				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	30.57	30.57	7.64	0.00	449.48	0.068	30.49	0.1	0.1	9.450	A
C-AB	13.48	13.48	3.37	0.00	509.63	0.026	13.46	0.0	0.0	7.981	A
C-A	442.30	442.30	110.57	0.00			442.30				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	645.47	645.47	161.37	0.00			645.47				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	37.43	37.43	9.36	0.00	412.20	0.091	37.32	0.1	0.1	10.559	B
C-AB	16.52	16.52	4.13	0.00	477.52	0.035	16.48	0.0	0.0	8.589	A
C-A	541.70	541.70	135.43	0.00			541.70				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	790.53	790.53	197.63	0.00			790.53				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	37.43	37.43	9.36	0.00	412.20	0.091	37.43	0.1	0.1	10.566	B
C-AB	16.52	16.52	4.13	0.00	477.52	0.035	16.51	0.0	0.0	8.589	A
C-A	541.70	541.70	135.43	0.00			541.70				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	790.53	790.53	197.63	0.00			790.53				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	30.57	30.57	7.64	0.00	449.48	0.068	30.68	0.1	0.1	9.457	A
C-AB	13.48	13.48	3.37	0.00	509.63	0.026	13.52	0.0	0.0	7.982	A
C-A	442.30	442.30	110.57	0.00			442.30				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	645.47	645.47	161.37	0.00			645.47				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	25.60	25.60	6.40	0.00	475.83	0.054	25.67	0.1	0.1	8.799	A
C-AB	11.29	11.29	2.82	0.00	532.86	0.021	11.32	0.0	0.0	7.595	A
C-A	370.40	370.40	92.80	0.00			370.40				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	540.55	540.55	135.14	0.00			540.55				



DM - DM 2028, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13/Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135/Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135/Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D5	DM 2028	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13/Dublin Road (S)		ONE HOUR	✓	493.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	35.00	100.000
C - R135/Dublin Road (N)		ONE HOUR	✓	704.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	2.000	491.000
	B - Hickey's Lane Site Access	0.000	25.000
	C - R135/Dublin Road (N)	693.000	0.000

Proportions

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	0.00	1.00
	B - Hickey's Lane Site Access	0.29	0.71
	C - R135/Dublin Road (N)	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max	RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.09	9.34	32.12	0.1	A	48.17	
C-A-B	0.02	6.91	10.09	0.0	A	15.14	
C-A			635.91			953.86	
A-B			1.84			2.75	
A-C			450.55			675.83	

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	26.35	26.35	6.59	0.00	479.34	0.055	26.12	0.0	0.1	7.939	A
C-A-B	8.28	8.28	2.07	0.00	570.92	0.015	8.22	0.0	0.0	6.397	A
C-A	521.73	521.73	130.43	0.00			521.73				
A-B	1.51	1.51	0.38	0.00			1.51				
A-C	369.65	369.65	92.41	0.00			369.65				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	31.46	31.46	7.87	0.00	456.61	0.069	31.40	0.1	0.1	8.465	A
C-A-B	9.89	9.89	2.47	0.00	555.08	0.018	9.88	0.0	0.0	6.602	A
C-A	622.99	622.99	155.75	0.00			622.99				
A-B	1.80	1.80	0.45	0.00			1.80				
A-C	441.40	441.40	110.35	0.00			441.40				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	38.54	38.54	9.63	0.00	424.06	0.091	38.43	0.1	0.1	9.333	A
C-A-B	12.11	12.11	3.03	0.00	533.19	0.023	12.09	0.0	0.0	6.907	A
C-A	763.01	763.01	190.75	0.00			763.01				
A-B	2.20	2.20	0.55	0.00			2.20				
A-C	540.60	540.60	135.15	0.00			540.60				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	38.54	38.54	9.63	0.00	424.06	0.091	38.53	0.1	0.1	9.337	A
C-A-B	12.11	12.11	3.03	0.00	533.19	0.023	12.11	0.0	0.0	6.907	A
C-A	763.01	763.01	190.75	0.00			763.01				
A-B	2.20	2.20	0.55	0.00			2.20				
A-C	540.60	540.60	135.15	0.00			540.60				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	31.46	31.46	7.87	0.00	456.60	0.069	31.56	0.1	0.1	8.473	A
C-A-B	9.89	9.89	2.47	0.00	555.08	0.018	9.91	0.0	0.0	6.605	A
C-A	622.99	622.99	155.75	0.00			622.99				
A-B	1.80	1.80	0.45	0.00			1.80				
A-C	441.40	441.40	110.35	0.00			441.40				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	26.35	26.35	6.59	0.00	479.33	0.055	26.41	0.1	0.1	7.949	A
C-A-B	8.28	8.28	2.07	0.00	570.92	0.015	8.30	0.0	0.0	6.400	A
C-A	521.73	521.73	130.43	0.00			521.73				
A-B	1.51	1.51	0.38	0.00			1.51				
A-C	369.65	369.65	92.41	0.00			369.65				



DM - DM 2028, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D6	DM 2028	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	723.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	34.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	507.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	5.000	718.000
	B - Hickey's Lane Site Access	0.000	28.000
	C - R135 Dublin Road (N)	492.000	0.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.01
	B - Hickey's Lane Site Access	0.18	0.82
	C - R135 Dublin Road (N)	0.97	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
C - R135 Dublin Road (N)		0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
C - R135 Dublin Road (N)		1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.09	9.61	0.1	A	31.20	46.80
C-A-B	0.03	7.81	0.0	A	13.76	20.85
C-A					451.47	677.20
A-B					4.59	6.88
A-C					658.85	988.27

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	25.60	25.60	6.40	0.00	475.84	0.054	25.37	0.0	0.1	7.987	A
C-A-B	11.29	11.29	2.82	0.00	532.86	0.021	11.21	0.0	0.0	6.901	A
C-A	370.40	370.40	92.80	0.00			370.40				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	540.55	540.55	135.14	0.00			540.55				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	30.57	30.57	7.64	0.00	449.48	0.068	30.50	0.1	0.1	8.591	A
C-A-B	13.48	13.48	3.37	0.00	509.63	0.026	13.46	0.0	0.0	7.255	A
C-A	442.30	442.30	110.57	0.00			442.30				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	645.47	645.47	161.37	0.00			645.47				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	37.43	37.43	9.36	0.00	412.20	0.091	37.33	0.1	0.1	9.601	A
C-A-B	16.52	16.52	4.13	0.00	477.52	0.035	16.48	0.0	0.0	7.808	A
C-A	541.70	541.70	135.43	0.00			541.70				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	790.53	790.53	197.63	0.00			790.53				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	37.43	37.43	9.36	0.00	412.20	0.091	37.43	0.1	0.1	9.605	A
C-A-B	16.52	16.52	4.13	0.00	477.52	0.035	16.51	0.0	0.0	7.808	A
C-A	541.70	541.70	135.43	0.00			541.70				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	790.53	790.53	197.63	0.00			790.53				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	30.57	30.57	7.64	0.00	449.48	0.068	30.67	0.1	0.1	8.599	A
C-A-B	13.48	13.48	3.37	0.00	509.63	0.026	13.52	0.0	0.0	7.255	A
C-A	442.30	442.30	110.57	0.00			442.30				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	645.47	645.47	161.37	0.00			645.47				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	25.60	25.60	6.40	0.00	475.83	0.054	25.66	0.1	0.1	7.999	A
C-A-B	11.29	11.29	2.82	0.00	532.86	0.021	11.32	0.0	0.0	6.904	A
C-A	370.40	370.40	92.80	0.00			370.40				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	540.55	540.55	135.14	0.00			540.55				



DM - DM 2038, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13/Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135/Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135/Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D9	DM 2038	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13/Dublin Road (S)		ONE HOUR	✓	530.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	37.00	100.000
C - R135/Dublin Road (N)		ONE HOUR	✓	758.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	0.000	3.000
	B - Hickey's Lane Site Access	0.000	26.000
	C - R135/Dublin Road (N)	746.000	12.000

Proportions

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	0.00	0.01
	B - Hickey's Lane Site Access	0.30	0.00
	C - R135/Dublin Road (N)	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.10	9.83	0.1	A	33.95	50.93
C-A-B	0.03	7.04	0.0	A	11.01	16.52
C-A					684.54	1026.81
A-B					2.75	4.13
A-C					483.58	725.38

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	487.83	0.060	27.60	0.0	0.1	8.173	A
C-A-B	9.03	9.03	2.26	0.00	564.80	0.016	8.97	0.0	0.0	6.476	A
C-A	561.63	561.63	140.41	0.00			561.63				
A-B	2.26	2.26	0.56	0.00			2.26				
A-C	396.75	396.75	99.19	0.00			396.75				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	442.80	0.075	33.19	0.1	0.1	8.786	A
C-A-B	10.79	10.79	2.70	0.00	547.77	0.020	10.77	0.0	0.0	6.703	A
C-A	670.64	670.64	167.66	0.00			670.64				
A-B	2.70	2.70	0.67	0.00			2.70				
A-C	473.76	473.76	118.44	0.00			473.76				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	407.01	0.100	40.62	0.1	0.1	9.822	A
C-A-B	13.21	13.21	3.30	0.00	524.23	0.025	13.19	0.0	0.0	7.043	A
C-A	821.36	821.36	205.34	0.00			821.36				
A-B	3.30	3.30	0.83	0.00			3.30				
A-C	580.24	580.24	145.06	0.00			580.24				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	407.00	0.100	40.74	0.1	0.1	9.828	A
C-A-B	13.21	13.21	3.30	0.00	524.23	0.025	13.21	0.0	0.0	7.043	A
C-A	821.36	821.36	205.34	0.00			821.36				
A-B	3.30	3.30	0.83	0.00			3.30				
A-C	580.24	580.24	145.06	0.00			580.24				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	442.89	0.075	33.38	0.1	0.1	8.794	A
C-A-B	10.79	10.79	2.70	0.00	547.77	0.020	10.81	0.0	0.0	6.703	A
C-A	670.64	670.64	167.66	0.00			670.64				
A-B	2.70	2.70	0.67	0.00			2.70				
A-C	473.76	473.76	118.44	0.00			473.76				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	467.82	0.060	27.93	0.1	0.1	8.186	A
C-A-B	9.03	9.03	2.26	0.00	564.80	0.016	9.05	0.0	0.0	6.479	A
C-A	561.63	561.63	140.41	0.00			561.63				
A-B	2.26	2.26	0.56	0.00			2.26				
A-C	396.75	396.75	99.19	0.00			396.75				



DM - DM 2038, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13/Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135/Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135/Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D10	DM 2038	PM	ONE-HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13/Dublin Road (S)		ONE HOUR	✓	778.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	37.00	100.000
C - R135/Dublin Road (N)		ONE HOUR	✓	546.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
	773.000	773.000	773.000
	7.000	0.000	30.000
	530.000	16.000	0.000

Proportions

	To		
	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
From	A - R13/Dublin Road (S)	B - Hickey's Lane Site Access	C - R135/Dublin Road (N)
	0.00	0.01	0.99
	0.19	0.00	0.81
	0.97	0.03	0.00

Vehicle Mix

Heavy Vehicle proportion

To			
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	0	0	0

Average PCU Per Veh

To			
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	1,000	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.10	10.23	0.1	B	33.95	50.93
C-A-B	0.04	8.06	0.0	A	14.68	22.02
C-A					486.34	729.51
A-B					4.59	6.88
A-C					709.32	1063.98

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	482.47	0.060	27.60	0.0	0.1	8.275	A
C-A-B	12.05	12.05	3.01	0.00	523.75	0.023	11.95	0.0	0.0	7.034	A
C-A	399.01	399.01	99.75	0.00			399.01				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	581.95	581.95	145.49	0.00			581.95				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	433.66	0.077	33.19	0.1	0.1	8.989	A
C-A-B	14.38	14.38	3.60	0.00	498.76	0.029	14.36	0.0	0.0	7.431	A
C-A	476.46	476.46	119.11	0.00			476.46				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	694.91	694.91	173.73	0.00			694.91				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	392.68	0.104	40.61	0.1	0.1	10.222	B
C-A-B	17.62	17.62	4.40	0.00	464.21	0.038	17.59	0.0	0.0	8.060	A
C-A	583.54	583.54	145.69	0.00			583.54				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	851.09	851.09	212.77	0.00			851.09				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	392.67	0.104	40.74	0.1	0.1	10.228	B
C-A-B	17.62	17.62	4.40	0.00	464.21	0.038	17.62	0.0	0.0	8.060	A
C-A	583.54	583.54	145.69	0.00			583.54				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	851.09	851.09	212.77	0.00			851.09				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	433.65	0.077	33.39	0.1	0.1	8.998	A
C-A-B	14.38	14.38	3.60	0.00	498.76	0.029	14.42	0.0	0.0	7.435	A
C-A	476.46	476.46	119.11	0.00			476.46				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	694.91	694.91	173.73	0.00			694.91				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	462.46	0.060	27.93	0.1	0.1	8.287	A
C-A-B	12.05	12.05	3.01	0.00	523.75	0.023	12.07	0.0	0.0	7.037	A
C-A	399.01	399.01	99.75	0.00			399.01				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	581.95	581.95	145.49	0.00			581.95				



DM - DM 2038 + PFD, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D13	DM 2038 + PFD	AM	ONE HOUR	07:45	08:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	552.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	37.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	820.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.000	3.000
	B - Hickey's Lane Site Access	0.000	26.000
	C - R135 Dublin Road (N)	808.000	12.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.01
	B - Hickey's Lane Site Access	0.30	0.70
	C - R135 Dublin Road (N)	0.99	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
From	A - R13 Dublin Road (S)	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	
	A - R13 Dublin Road (S)	0	0	0	
	B - Hickey's Lane Site Access	0	0	0	
	C - R135 Dublin Road (N)	0	0	0	

Average PCU Per Veh

		To			
From	A - R13 Dublin Road (S)	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	
	A - R13 Dublin Road (S)	1,000	1,000	1,000	
	B - Hickey's Lane Site Access	1,000	1,000	1,000	
	C - R135 Dublin Road (N)	1,000	1,000	1,000	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.10	10.14	0.1	B	33.95	50.93
C-A-B	0.03	7.12	0.0	A	11.01	16.52
C-A					741.43	1112.15
A-B					2.75	4.13
A-C					503.77	755.66

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	480.98	0.060	27.60	0.0	0.1	8.304	A
C-A-B	9.03	9.03	2.26	0.00	561.15	0.016	8.97	0.0	0.0	6.519	A
C-A	608.30	608.30	152.08	0.00			608.30				
A-B	2.26	2.26	0.56	0.00			2.26				
A-C	413.32	413.32	103.33	0.00			413.32				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	434.36	0.077	33.19	0.1	0.1	8.974	A
C-A-B	10.79	10.79	2.70	0.00	543.42	0.020	10.77	0.0	0.0	6.758	A
C-A	726.38	726.38	181.59	0.00			726.38				
A-B	2.70	2.70	0.67	0.00			2.70				
A-C	493.54	493.54	123.38	0.00			493.54				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	395.79	0.103	40.61	0.1	0.1	10.132	B
C-A-B	13.21	13.21	3.30	0.00	518.91	0.025	13.19	0.0	0.0	7.118	A
C-A	889.62	889.62	222.41	0.00			889.62				
A-B	3.30	3.30	0.83	0.00			3.30				
A-C	604.46	604.46	151.12	0.00			604.46				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	395.79	0.103	40.74	0.1	0.1	10.138	B
C-A-B	13.21	13.21	3.30	0.00	518.91	0.025	13.21	0.0	0.0	7.118	A
C-A	889.62	889.62	222.41	0.00			889.62				
A-B	3.30	3.30	0.83	0.00			3.30				
A-C	604.46	604.46	151.12	0.00			604.46				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	434.36	0.077	33.38	0.1	0.1	8.980	A
C-A-B	10.79	10.79	2.70	0.00	543.42	0.020	10.81	0.0	0.0	6.761	A
C-A	726.38	726.38	181.59	0.00			726.38				
A-B	2.70	2.70	0.67	0.00			2.70				
A-C	493.54	493.54	123.38	0.00			493.54				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	480.98	0.060	27.93	0.1	0.1	8.314	A
C-A-B	9.03	9.03	2.26	0.00	561.15	0.016	9.05	0.0	0.0	6.522	A
C-A	608.30	608.30	152.08	0.00			608.30				
A-B	2.26	2.26	0.56	0.00			2.26				
A-C	413.32	413.32	103.33	0.00			413.32				



DM - DM 2038 + PFD, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	DM	✓	✓	D1,D2,D5,D6,D9,D10,D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D14	DM 2038 + PFD	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	836.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	37.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	580.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0.000	831.000
B - Hickey's Lane Site Access	7.000	0.000	30.000
C - R135 Dublin Road (N)	564.000	16.000	0.000

Proportions

From	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0.00	0.99
B - Hickey's Lane Site Access	0.19	0.00	0.81
C - R135 Dublin Road (N)	0.97	0.03	0.00

Vehicle Mix

Heavy Vehicle proportion

To			
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

To			
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.11	10.74	0.1	B	33.95	50.93
C-A-B	0.04	8.32	0.0	A	14.68	22.02
C-A					517.54	776.30
A-B					4.59	6.88
A-C					762.54	1143.81

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	451.74	0.062	27.60	0.0	0.1	8.482	A
C-A-B	12.05	12.05	3.01	0.00	514.16	0.023	11.95	0.0	0.0	7.168	A
C-A	424.61	424.61	106.15	0.00			424.61				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	625.62	625.62	156.41	0.00			625.62				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	420.59	0.079	33.18	0.1	0.1	9.290	A
C-A-B	14.38	14.38	3.60	0.00	487.30	0.030	14.36	0.0	0.0	7.611	A
C-A	507.02	507.02	126.76	0.00			507.02				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	747.05	747.05	186.76	0.00			747.05				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	376.03	0.108	40.60	0.1	0.1	10.728	B
C-A-B	17.62	17.62	4.40	0.00	450.17	0.039	17.59	0.0	0.0	8.322	A
C-A	620.98	620.98	155.24	0.00			620.98				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	914.95	914.95	228.74	0.00			914.95				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	40.74	40.74	10.18	0.00	376.02	0.108	40.73	0.1	0.1	10.738	B
C-A-B	17.62	17.62	4.40	0.00	450.17	0.039	17.62	0.0	0.0	8.322	A
C-A	620.98	620.98	155.24	0.00			620.98				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	914.95	914.95	228.74	0.00			914.95				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	33.26	33.26	8.32	0.00	420.58	0.079	33.40	0.1	0.1	9.302	A
C-A-B	14.38	14.38	3.60	0.00	487.30	0.030	14.42	0.0	0.0	7.615	A
C-A	507.02	507.02	126.76	0.00			507.02				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	747.05	747.05	186.76	0.00			747.05				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	27.86	27.86	6.96	0.00	451.73	0.062	27.94	0.1	0.1	8.497	A
C-A-B	12.05	12.05	3.01	0.00	514.16	0.023	12.07	0.0	0.0	7.189	A
C-A	424.61	424.61	106.15	0.00			424.61				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	625.62	625.62	156.41	0.00			625.62				



DS - DS 2023, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	DS,D4,D7,D8,D11,D12,D15,D16	100,000	100,000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for C-A	Slope for C-B
1	B-A	494,900	0.078	0.198	0.125
1	B-C	637,786	0.085	0.215	-
1	C-B	652,505	0.220	0.220	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
DS	DS 2023	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	443.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	32.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	666.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.000	2.000
	B - Hickey's Lane Site Access	9.000	0.000
	C - R135 Dublin Road (N)	656.000	10.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.00
	B - Hickey's Lane Site Access	0.28	0.00
	C - R135 Dublin Road (N)	0.98	0.02

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.03	8.88	0.1	A	29.36	44.05
C-A-B	0.02	6.74	0.0	A	9.18	13.76
C-A					601.96	902.94
A-B					1.84	2.75
A-C					404.67	607.00

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	24.09	24.09	6.02	0.00	490.44	0.049	23.89	0.0	0.1	7.713	A
C-A-B	7.53	7.53	1.88	0.00	579.19	0.013	7.48	0.0	0.0	6.286	A
C-A	493.87	493.87	123.47	0.00			493.87				
A-B	1.51	1.51	0.38	0.00			1.51				
A-C	332.01	332.01	83.00	0.00			332.01				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	28.77	28.77	7.19	0.00	469.96	0.061	28.71	0.1	0.1	8.157	A
C-A-B	8.99	8.99	2.25	0.00	564.96	0.016	8.98	0.0	0.0	6.474	A
C-A	589.73	589.73	147.43	0.00			589.73				
A-B	1.80	1.80	0.45	0.00			1.80				
A-C	396.45	396.45	99.11	0.00			396.45				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	35.23	35.23	8.81	0.00	440.77	0.080	35.15	0.1	0.1	8.873	A
C-A-B	11.01	11.01	2.75	0.00	545.29	0.020	10.99	0.0	0.0	6.737	A
C-A	722.27	722.27	180.57	0.00			722.27				
A-B	2.20	2.20	0.55	0.00			2.20				
A-C	485.55	485.55	121.39	0.00			485.55				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	35.23	35.23	8.81	0.00	440.77	0.080	35.23	0.1	0.1	8.876	A
C-A-B	11.01	11.01	2.75	0.00	545.29	0.020	11.01	0.0	0.0	6.737	A
C-A	722.27	722.27	180.57	0.00			722.27				
A-B	2.20	2.20	0.55	0.00			2.20				
A-C	485.55	485.55	121.39	0.00			485.55				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	28.77	28.77	7.19	0.00	469.96	0.061	28.85	0.1	0.1	8.162	A
C-A-B	8.99	8.99	2.25	0.00	564.96	0.016	9.01	0.0	0.0	6.477	A
C-A	589.73	589.73	147.43	0.00			589.73				
A-B	1.80	1.80	0.45	0.00			1.80				
A-C	396.45	396.45	99.11	0.00			396.45				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	24.09	24.09	6.02	0.00	490.43	0.049	24.15	0.1	0.1	7.721	A
C-A-B	7.53	7.53	1.88	0.00	579.19	0.013	7.54	0.0	0.0	6.299	A
C-A	493.87	493.87	123.47	0.00			493.87				
A-B	1.51	1.51	0.38	0.00			1.51				
A-C	332.01	332.01	83.00	0.00			332.01				



DS - DS 2023, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D3,D4,D7,D8,D11,D12,D15,D16	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D4	DS 2023	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	689.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	32.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	480.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	5.000	684.000
	B - Hickey's Lane Site Access	0.000	26.000
	C - R135 Dublin Road (N)	466.000	0.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.99
	B - Hickey's Lane Site Access	0.19	0.81
	C - R135 Dublin Road (N)	0.97	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.03	9.38	0.1	A	29.36	44.05
C-A-B	0.03	7.65	0.0	A	12.85	19.27
C-A					427.61	641.41
A-B					4.59	6.88
A-C					627.65	941.48

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	24.09	24.09	6.02	0.00	479.77	0.050	23.88	0.0	0.1	7.893	A
C-A-B	10.54	10.54	2.63	0.00	538.48	0.020	10.46	0.0	0.0	6.818	A
C-A	350.83	350.83	87.71	0.00			350.83				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	514.95	514.95	128.74	0.00			514.95				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	28.77	28.77	7.19	0.00	454.63	0.063	28.71	0.1	0.1	8.451	A
C-A-B	12.59	12.59	3.15	0.00	516.35	0.024	12.57	0.0	0.0	7.145	A
C-A	418.92	418.92	104.73	0.00			418.92				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	614.90	614.90	153.73	0.00			614.90				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	35.23	35.23	8.81	0.00	419.16	0.084	35.14	0.1	0.1	9.372	A
C-A-B	15.41	15.41	3.85	0.00	485.75	0.032	15.38	0.0	0.0	7.653	A
C-A	513.08	513.08	128.27	0.00			513.08				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	753.10	753.10	188.27	0.00			753.10				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	35.23	35.23	8.81	0.00	419.16	0.084	35.23	0.1	0.1	9.376	A
C-A-B	15.41	15.41	3.85	0.00	485.75	0.032	15.41	0.0	0.0	7.653	A
C-A	513.08	513.08	128.27	0.00			513.08				
A-B	5.51	5.51	1.38	0.00			5.51				
A-C	753.10	753.10	188.27	0.00			753.10				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	28.77	28.77	7.19	0.00	454.62	0.063	28.86	0.1	0.1	8.458	A
C-A-B	12.59	12.59	3.15	0.00	516.35	0.024	12.62	0.0	0.0	7.146	A
C-A	418.92	418.92	104.73	0.00			418.92				
A-B	4.49	4.49	1.12	0.00			4.49				
A-C	614.90	614.90	153.73	0.00			614.90				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	24.09	24.09	6.02	0.00	479.76	0.050	24.15	0.1	0.1	7.903	A
C-A-B	10.54	10.54	2.63	0.00	538.48	0.020	10.56	0.0	0.0	6.818	A
C-A	350.83	350.83	87.71	0.00			350.83				
A-B	3.76	3.76	0.94	0.00			3.76				
A-C	514.95	514.95	128.74	0.00			514.95				



DS - DS 2028, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	DS,D4,D7,D8,D11,D12,D15,D16	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D7	DS 2028	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	540.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	67.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	819.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	10.000	530.000
	B - Hickey's Lane Site Access	0.000	37.000
	C - R135 Dublin Road (N)	804.000	0.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.98
	B - Hickey's Lane Site Access	0.45	0.55
	C - R135 Dublin Road (N)	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
C - R135 Dublin Road (N)		0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
C - R135 Dublin Road (N)		1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.21	12.59	0.3	B	61.48	92.22
C-A-B	0.03	7.12	0.0	A	13.76	20.85
C-A					737.76	1106.65
A-B					9.18	13.76
A-C					486.34	729.51

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	50.44	50.44	12.61	0.00	428.89	0.118	49.91	0.0	0.1	9.485	A
C-A-B	11.29	11.29	2.82	0.00	563.14	0.020	11.21	0.0	0.0	6.522	A
C-A	605.29	605.29	151.32	0.00			605.29				
A-B	7.53	7.53	1.88	0.00			7.53				
A-C	399.01	399.01	99.75	0.00			399.01				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	60.23	60.23	15.06	0.00	400.53	0.150	60.06	0.1	0.2	10.568	B
C-A-B	13.48	13.48	3.37	0.00	545.79	0.025	13.47	0.0	0.0	6.762	A
C-A	722.78	722.78	180.69	0.00			722.78				
A-B	8.99	8.99	2.25	0.00			8.99				
A-C	476.46	476.46	119.11	0.00			476.46				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	73.77	73.77	18.44	0.00	359.77	0.205	73.45	0.2	0.3	12.559	B
C-A-B	16.52	16.52	4.13	0.00	521.81	0.032	16.49	0.0	0.0	7.123	A
C-A	885.22	885.22	221.31	0.00			885.22				
A-B	11.01	11.01	2.75	0.00			11.01				
A-C	583.54	583.54	145.89	0.00			583.54				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	73.77	73.77	18.44	0.00	359.76	0.205	73.76	0.3	0.3	12.586	B
C-A-B	16.52	16.52	4.13	0.00	521.81	0.032	16.51	0.0	0.0	7.123	A
C-A	885.22	885.22	221.31	0.00			885.22				
A-B	11.01	11.01	2.75	0.00			11.01				
A-C	583.54	583.54	145.89	0.00			583.54				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	60.23	60.23	15.06	0.00	400.52	0.150	60.54	0.3	0.2	10.599	B
C-A-B	13.48	13.48	3.37	0.00	545.79	0.025	13.51	0.0	0.0	6.762	A
C-A	722.78	722.78	180.69	0.00			722.78				
A-B	8.99	8.99	2.25	0.00			8.99				
A-C	476.46	476.46	119.11	0.00			476.46				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	50.44	50.44	12.61	0.00	428.87	0.118	50.62	0.2	0.1	9.521	A
C-A-B	11.29	11.29	2.82	0.00	563.14	0.020	11.31	0.0	0.0	6.525	A
C-A	605.29	605.29	151.32	0.00			605.29				
A-B	7.53	7.53	1.88	0.00			7.53				
A-C	399.01	399.01	99.75	0.00			399.01				



DS - DS 2028, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D3,D4,D7,D8,D11,D12,D15,D16	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D6	DS 2028	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	844.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	53.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	581.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	24.000	820.000
	B - Hickey's Lane Site Access	0.000	35.000
	C - R135 Dublin Road (N)	555.000	0.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.97
	B - Hickey's Lane Site Access	0.34	0.66
	C - R135 Dublin Road (N)	0.96	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	To
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	
	0	0	0	
	0	0	0	
	0	0	0	

Average PCU Per Veh

		To		
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	To
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)	
	1,000	1,000	1,000	
	1,000	1,000	1,000	
	1,000	1,000	1,000	

Results

Results Summary for whole modelled period

Stream	Max	RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.17	12.96	8.58	0.2	B	48.63	72.95
C-A-B	0.06	8.58	23.86	0.1	A	23.86	35.79
C-A			509.28			509.28	763.92
A-B			22.02			22.02	33.03
A-C			752.45			752.45	1128.67

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	39.90	39.90	9.98	0.00	417.65	0.096	39.48	0.0	0.1	9.509	A
C-A-B	19.57	19.57	4.89	0.00	512.83	0.038	19.42	0.0	0.0	7.294	A
C-A	417.83	417.83	104.46	0.00			417.83				
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	617.34	617.34	154.33	0.00			617.34				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	47.65	47.65	11.91	0.00	384.17	0.124	47.50	0.1	0.1	10.688	B
C-A-B	23.37	23.37	5.84	0.00	485.72	0.048	23.33	0.0	0.1	7.786	A
C-A	498.93	498.93	124.73	0.00			498.93				
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	737.16	737.16	184.29	0.00			737.16				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	58.35	58.35	14.59	0.00	336.21	0.174	58.09	0.1	0.2	12.934	B
C-A-B	28.63	28.63	7.16	0.00	448.24	0.064	28.56	0.1	0.1	8.577	A
C-A	611.07	611.07	152.77	0.00			611.07				
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	902.84	902.84	225.71	0.00			902.84				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	58.35	58.35	14.59	0.00	336.19	0.174	58.35	0.2	0.2	12.966	B
C-A-B	28.63	28.63	7.16	0.00	448.24	0.064	28.63	0.1	0.1	8.579	A
C-A	611.07	611.07	152.77	0.00			611.07				
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	902.84	902.84	225.71	0.00			902.84				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	47.65	47.65	11.91	0.00	384.15	0.124	47.91	0.2	0.1	10.716	B
C-A-B	23.37	23.37	5.84	0.00	485.72	0.048	23.44	0.1	0.1	7.769	A
C-A	498.93	498.93	124.73	0.00			498.93				
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	737.16	737.16	184.29	0.00			737.16				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	39.90	39.90	9.98	0.00	417.61	0.096	40.05	0.1	0.1	9.539	A
C-A-B	19.57	19.57	4.89	0.00	512.83	0.038	19.62	0.1	0.0	7.298	A
C-A	417.83	417.83	104.46	0.00			417.83				
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	617.34	617.34	154.33	0.00			617.34				



DS - DS 2038, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	DS,D4,D7,D8,D11,D12,D15,D16	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125
1	B-C	637.786	0.085	0.215	-
1	C-B	652.505	0.220	0.220	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D11	DS 2038	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	576.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	70.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	872.00	100.000

Origin-Destination Data

Demand (PCU/hr)

To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access
	C - R135 Dublin Road (N)	
From	A - R13 Dublin Road (S)	566.000
	B - Hickey's Lane Site Access	39.000
	C - R135 Dublin Road (N)	0.000

Proportions

To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access
	C - R135 Dublin Road (N)	
From	A - R13 Dublin Road (S)	0.02
	B - Hickey's Lane Site Access	0.44
	C - R135 Dublin Road (N)	0.98

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.22	13.40	0.3	B	64.23	96.35
C-A-B	0.03	7.26	0.0	A	14.68	22.02
C-A					785.48	1178.22
A-B					9.18	13.76
A-C					519.37	779.06

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	52.70	52.70	13.17	0.00	420.36	0.125	52.13	0.0	0.1	9.762	A
C-A-B	12.05	12.05	3.01	0.00	557.18	0.022	11.96	0.0	0.0	6.603	A
C-A	644.44	644.44	181.11	0.00			644.44				
A-B	7.53	7.53	1.88	0.00			7.53				
A-C	426.11	426.11	106.53	0.00			426.11				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	62.93	62.93	15.73	0.00	389.83	0.161	62.74	0.1	0.2	10.998	B
C-A-B	14.38	14.38	3.60	0.00	538.68	0.027	14.36	0.0	0.0	6.865	A
C-A	769.53	769.53	192.38	0.00			769.53				
A-B	8.99	8.99	2.25	0.00			8.99				
A-C	508.82	508.82	127.21	0.00			508.82				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	77.07	77.07	19.27	0.00	345.70	0.223	76.70	0.2	0.3	13.363	B
C-A-B	17.62	17.62	4.40	0.00	513.10	0.034	17.58	0.0	0.0	7.264	A
C-A	942.47	942.47	235.62	0.00			942.47				
A-B	11.01	11.01	2.75	0.00			11.01				
A-C	623.18	623.18	155.79	0.00			623.18				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	77.07	77.07	19.27	0.00	345.69	0.223	77.06	0.3	0.3	13.400	B
C-A-B	17.62	17.62	4.40	0.00	513.10	0.034	17.62	0.0	0.0	7.264	A
C-A	942.47	942.47	235.62	0.00			942.47				
A-B	11.01	11.01	2.75	0.00			11.01				
A-C	623.18	623.18	155.79	0.00			623.18				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	62.93	62.93	15.73	0.00	389.82	0.161	63.28	0.3	0.2	11.038	B
C-A-B	14.38	14.38	3.60	0.00	538.68	0.027	14.41	0.0	0.0	6.869	A
C-A	769.53	769.53	192.38	0.00			769.53				
A-B	8.99	8.99	2.25	0.00			8.99				
A-C	508.82	508.82	127.21	0.00			508.82				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	52.70	52.70	13.17	0.00	420.34	0.125	52.90	0.2	0.1	9.804	A
C-A-B	12.05	12.05	3.01	0.00	557.18	0.022	12.07	0.0	0.0	6.603	A
C-A	644.44	644.44	161.11	0.00			644.44				
A-B	7.53	7.53	1.88	0.00			7.53				
A-C	426.11	426.11	106.53	0.00			426.11				



DS - DS 2038, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	DS,D4,D7,D8,D11,D12,D15,D16	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D12	DS 2038	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	899.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	55.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	619.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	875.000	875.000	875.000
	B - Hickey's Lane Site Access	37.000	37.000
	C - R135 Dublin Road (N)	592.000	0.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	0.00	0.03	0.97
	0.33	0.00	0.67
	0.96	0.04	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
C - R135 Dublin Road (N)		0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
C - R135 Dublin Road (N)		1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.19	13.80	0.2	B	50.47	75.70
C-A-B	0.07	8.88	0.1	A	24.78	37.16
C-A					543.23	814.84
A-B					22.02	33.03
A-C					802.92	1204.37

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	41.41	41.41	10.35	0.00	409.06	0.101	40.96	0.0	0.1	9.768	A
C-A-B	20.33	20.33	5.08	0.00	503.73	0.040	20.16	0.0	0.0	7.443	A
C-A	445.69	445.69	111.42	0.00			445.69				
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	658.75	658.75	164.69	0.00			658.75				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	49.44	49.44	12.36	0.00	373.17	0.133	49.29	0.1	0.2	11.108	B
C-A-B	24.27	24.27	6.07	0.00	474.85	0.051	24.23	0.0	0.1	7.987	A
C-A	532.20	532.20	133.05	0.00			532.20				
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	786.61	786.61	196.65	0.00			786.61				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	60.56	60.56	15.14	0.00	321.38	0.188	60.25	0.2	0.2	13.769	B
C-A-B	29.73	29.73	7.43	0.00	434.93	0.068	29.65	0.1	0.1	8.883	A
C-A	651.80	651.80	162.95	0.00			651.80				
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	963.39	963.39	240.85	0.00			963.39				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	60.56	60.56	15.14	0.00	321.37	0.188	60.55	0.2	0.2	13.802	B
C-A-B	29.73	29.73	7.43	0.00	434.93	0.068	29.73	0.1	0.1	8.884	A
C-A	651.80	651.80	162.95	0.00			651.80				
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	963.39	963.39	240.85	0.00			963.39				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	49.44	49.44	12.36	0.00	373.15	0.133	49.74	0.2	0.2	11.141	B
C-A-B	24.27	24.27	6.07	0.00	474.85	0.051	24.35	0.1	0.1	7.993	A
C-A	532.20	532.20	133.05	0.00			532.20				
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	786.61	786.61	196.65	0.00			786.61				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	41.41	41.41	10.35	0.00	409.02	0.101	41.57	0.2	0.1	9.803	A
C-A-B	20.33	20.33	5.08	0.00	503.73	0.040	20.37	0.1	0.0	7.450	A
C-A	445.69	445.69	111.42	0.00			445.69				
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	658.75	658.75	164.69	0.00			658.75				



DS - DS 2038 + PFD, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D3,D4,D7,D8,D11,D12,D15,D16	100,000	100,000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494,900	0.078	0.198	0.125	0.283
1	B-C	637,786	0.085	0.215	-	-
1	C-B	652,505	0.220	0.220	-	-

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D15	DS 2038 + PFD	AM	ONE HOUR	07:45	08:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	598.00	100,000
B - Hickey's Lane Site Access		ONE HOUR	✓	70.00	100,000
C - R135 Dublin Road (N)		ONE HOUR	✓	934.00	100,000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.000	10.000
	B - Hickey's Lane Site Access	0.000	39.000
	C - R135 Dublin Road (N)	918.000	0.000

Proportions

	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
From	A - R13 Dublin Road (S)	0.00	0.02
	B - Hickey's Lane Site Access	0.44	0.56
	C - R135 Dublin Road (N)	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
C - R135 Dublin Road (N)	0	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
C - R135 Dublin Road (N)	1,000	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-A-C	0.23	14.08	0.3	B	64.23	96.35
C-A-B	0.03	7.34	0.0	A	14.68	22.02
C-A					842.37	1263.56
A-B					9.18	13.76
A-C					539.56	809.34

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	52.70	52.70	13.17	0.00	412.44	0.128	52.12	0.0	0.1	9.975	A
C-A-B	12.05	12.05	3.01	0.00	553.54	0.022	11.96	0.0	0.0	6.647	A
C-A	691.12	691.12	172.78	0.00			691.12				
A-B	7.53	7.53	1.88	0.00			7.53				
A-C	442.68	442.68	110.67	0.00			442.68				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	62.93	62.93	15.73	0.00	379.96	0.166	62.72	0.1	0.2	11.341	B
C-A-B	14.38	14.38	3.60	0.00	534.33	0.027	14.36	0.0	0.0	6.922	A
C-A	825.26	825.26	206.32	0.00			825.26				
A-B	8.99	8.99	2.25	0.00			8.99				
A-C	528.60	528.60	132.15	0.00			528.60				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	77.07	77.07	19.27	0.00	332.73	0.232	76.67	0.2	0.3	14.036	B
C-A-B	17.62	17.62	4.40	0.00	507.77	0.035	17.59	0.0	0.0	7.343	A
C-A	1010.74	1010.74	252.68	0.00			1010.74				
A-B	11.01	11.01	2.75	0.00			11.01				
A-C	647.40	647.40	161.85	0.00			647.40				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	77.07	77.07	19.27	0.00	332.73	0.232	77.06	0.3	0.3	14.080	B
C-A-B	17.62	17.62	4.40	0.00	507.77	0.035	17.62	0.0	0.0	7.343	A
C-A	1010.74	1010.74	252.68	0.00			1010.74				
A-B	11.01	11.01	2.75	0.00			11.01				
A-C	647.40	647.40	161.85	0.00			647.40				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	62.93	62.93	15.73	0.00	379.95	0.166	63.32	0.3	0.2	11.385	B
C-A-B	14.38	14.38	3.60	0.00	534.33	0.027	14.42	0.0	0.0	6.923	A
C-A	825.26	825.26	206.32	0.00			825.26				
A-B	8.99	8.99	2.25	0.00			8.99				
A-C	528.60	528.60	132.15	0.00			528.60				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-A-C	52.70	52.70	13.17	0.00	412.42	0.128	52.91	0.2	0.1	10.019	B
C-A-B	12.05	12.05	3.01	0.00	553.54	0.022	12.07	0.0	0.0	6.647	A
C-A	691.12	691.12	172.78	0.00			691.12				
A-B	7.53	7.53	1.88	0.00			7.53				
A-C	442.68	442.68	110.67	0.00			442.68				



DS - DS 2038 + PFD, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	DS	✓	✓	D3,D4,D7,D8,D11,D12,D15,D16	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R13 Dublin Road (S)		Major
B	Hickey's Lane Site Access		Minor
C	R135 Dublin Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R135 Dublin Road (N)	9.00		✓	2.50	100.0	✓	5.00

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 - Hickey's Lane Site Access	One lane	3.00	20	22



Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	494.900	0.078	0.198	0.125	0.283
1	B-C	637.786	0.085	0.215	-	-
1	C-B	652.505	0.220	0.220	-	-

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
Df6	DS 2038 + PFD	PM	ONE HOUR	16:30	18:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R13 Dublin Road (S)		ONE HOUR	✓	956.00	100.000
B - Hickey's Lane Site Access		ONE HOUR	✓	55.00	100.000
C - R135 Dublin Road (N)		ONE HOUR	✓	654.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	24.000	932.000
B - Hickey's Lane Site Access	18.000	0.000	37.000
C - R135 Dublin Road (N)	627.000	27.000	0.000

Proportions

From	To		
	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0.00	0.03
B - Hickey's Lane Site Access	0.33	0.00	0.67
C - R135 Dublin Road (N)	0.96	0.04	0.00

Vehicle Mix

Heavy Vehicle proportion

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	0	0
	B - Hickey's Lane Site Access	0	0
	C - R135 Dublin Road (N)	0	0

Average PCU Per Veh

		To	
From	A - R13 Dublin Road (S)	B - Hickey's Lane Site Access	C - R135 Dublin Road (N)
	A - R13 Dublin Road (S)	1,000	1,000
	B - Hickey's Lane Site Access	1,000	1,000
	C - R135 Dublin Road (N)	1,000	1,000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
BAC	0.20	14.84	0.2	B	50.47	75.70
C-AB	0.07	9.20	0.1	A	24.78	37.16
C-A					575.35	863.02
A-B					22.02	33.03
A-C					855.22	1282.83

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	41.41	41.41	10.35	0.00	397.68	0.104	40.85	0.0	0.1	10.078	B
C-AB	20.33	20.33	5.08	0.00	494.30	0.041	20.16	0.0	0.0	7.591	A
C-A	472.04	472.04	118.01	0.00			472.04				
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	701.66	701.66	175.41	0.00			701.66				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	49.44	49.44	12.36	0.00	359.16	0.138	49.27	0.1	0.2	11.611	B
C-AB	24.27	24.27	6.07	0.00	463.59	0.052	24.22	0.0	0.1	8.192	A
C-A	563.66	563.66	140.92	0.00			563.66				
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	837.85	837.85	209.46	0.00			837.85				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	60.56	60.56	15.14	0.00	303.14	0.200	60.21	0.2	0.2	14.798	B
C-AB	29.73	29.73	7.43	0.00	421.13	0.071	29.65	0.1	0.1	9.193	A
C-A	690.34	690.34	172.58	0.00			690.34				
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	1026.15	1026.15	256.54	0.00			1026.15				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	60.56	60.56	15.14	0.00	303.12	0.200	60.55	0.2	0.2	14.840	B
C-AB	29.73	29.73	7.43	0.00	421.13	0.071	29.73	0.1	0.1	9.197	A
C-A	690.34	690.34	172.58	0.00			690.34				
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	1026.15	1026.15	256.54	0.00			1026.15				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	49.44	49.44	12.36	0.00	359.14	0.138	49.78	0.2	0.2	11.651	B
C-AB	24.27	24.27	6.07	0.00	463.59	0.052	24.35	0.1	0.1	8.198	A
C-A	563.66	563.66	140.92	0.00			563.66				
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	837.85	837.85	209.46	0.00			837.85				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
BAC	41.41	41.41	10.35	0.00	397.64	0.104	41.58	0.2	0.1	10.115	B
C-AB	20.33	20.33	5.08	0.00	494.30	0.041	20.38	0.1	0.0	7.596	A
C-A	472.04	472.04	118.01	0.00			472.04				
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	701.66	701.66	175.41	0.00			701.66				

APPENDIX E

GoCar Letter of Intent



Aspect Homes,
Dublin Road,
Archerstown,
Co. Meath,
A84 A893

Arnub Limited,
Unit 702,
Northwest Business Park,
Ballycoolin, Dublin,
D15 E670

20/12/2021

To Whom It May Concern,

This is a letter to confirm that GoCar intends to provide a service of 2 (two) shared GoCar vehicles in the residential development at Cherry Lane, Ashbourne, Co. Meath. GoCar representatives have discussed the project with representatives of Aspect Homes (ADC) Ltd. and Arnub Ltd., who are jointly planning this development, and are excited to provide a car sharing service at this location.

It is understood that the vehicles at this development will be positioned in two spaces above ground, amongst the total of 373 no. car parking spaces to allow for ease of access for all residents. While it is the intention for most of these vehicles to be used exclusively by the residents of the development, GoCar may agree with the eventual managers of the site to allow some vehicles to be open for access to other GoCar members nearby. This will depend on usership levels and will be reviewed at various periods to ensure adequate supply for the residents of the development.

GoCar is Ireland's leading car sharing service with over 60,000 members and over 850 cars and vans on fleet. Each GoCar which is placed in a community has the potential to replace the journeys of up to 15 private cars. The Department of Housing's Design Standards for New Apartments - Guidelines for Planning Authorities 2018 outline: "For all types of location, where it is sought to eliminate or reduce car parking provision, it is necessary to ensure... provision is also to be made for alternative mobility solutions including facilities for car sharing club vehicles."

Carsharing is a sustainable service. By allowing multiple people to use the same vehicle at different times, car sharing reduces car ownership, car dependency, congestion, noise, and air pollution. It frees up land which would otherwise be used for additional parking spaces. Most GoCar users only use a car when necessary and walk and use public transport more often than car owners.

By having GoCar car sharing vehicles in a development such as this, the residents therein will have access to pay-as-you-go driving, in close proximity to their homes, which will increase usership of the service.

I trust that this information is satisfactory. For any queries, please do not hesitate to contact me.

A handwritten signature in black ink, appearing to read 'Robert Montgomery'.

Rob Montgomery
Revenue and Growth Manager
GoCar Carsharing Ltd
Mobile: 086 609 7096
E: robert.montgomery@gocar.ie