Project

Newcastle South

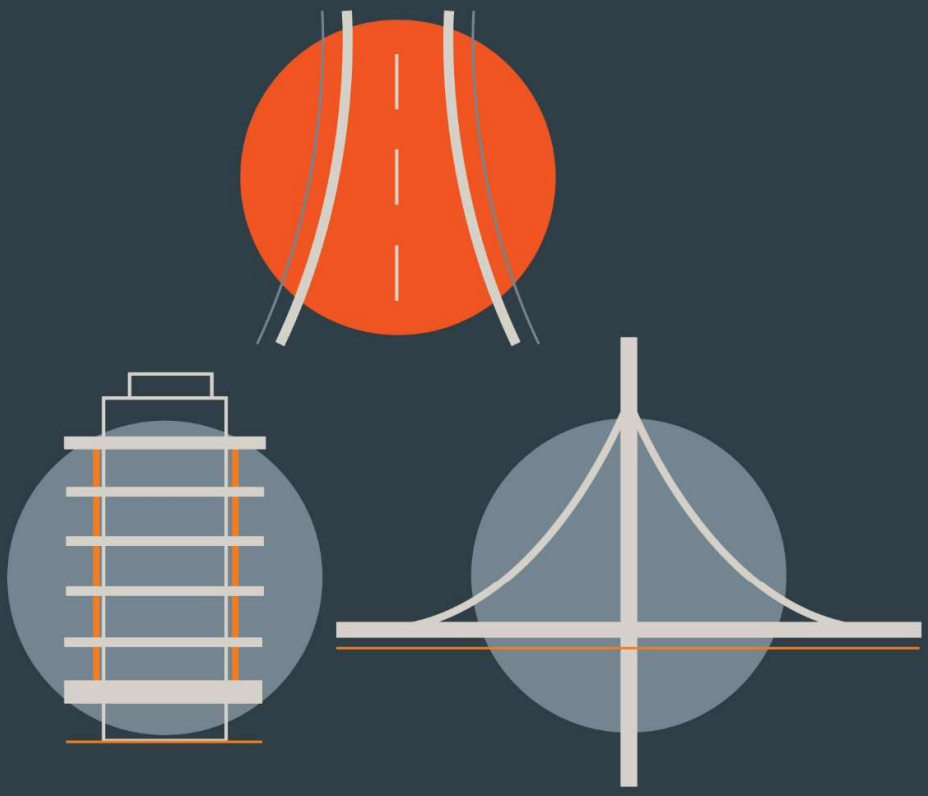
Report Title

TRAFFIC AND TRANSPORT ASSESSMENT REPORT

Client

Cairn Homes Properties Ltd.

TRANSPORTATION



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1.0 INTRODUCTION

1.1 BACKGROUND

1.1.1 DBFL Consulting Engineers (DBFL) has been commissioned by Cairn Homes Properties Ltd to compile a Traffic and Transport Assessment (TTA) for a proposed residential development on a greenfield site located within the Newcastle Local Area Plan (LAP) lands at Newcastle, Co. Dublin.

1.1.2 The development proposes the provision of 280 residential units including 128 no. houses (8 no. 2-bed units, 94 no. 3-bed units, 25 no. 4-bed units, 1 no. 5-bed unit) and 152 apartments / duplexes (54 no. 1-bed units, 80 no. 2-bed units, 18 no. 3-bed units) along with a creche facility. The adjoining permitted Graydon Residential Development is currently under construction.

1.1.3 The report has been produced to assess and evaluate the likely impact of the proposed development upon the local transportation system.

1.1.4 During the development of this report, traffic turning count surveys have been assessed with the objective of providing background information relating to existing traffic movement patterns across the local road network. This information has been supplemented with data obtained from site audits of the local road network, subsequently enabling the identification of existing local travel characteristics and an appreciation of the local receiving environment from a transportation perspective.

1.2 SCOPE

1.2.1 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 any transport impact generated as a result of the proposed residential development. The scope of the assessment covers transport and related sustainability issues including means of vehicular access, pedestrian, cyclist and local public transport connections. The principal objective of the report is to quantify any level of impact across the local road network and subsequently ascertain both the existing and future operational performance of the local road network.

1.3 METHODOLOGY

1.3.1 Our approach to the study accords with policy and guidance both at a national and local level. 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 inter alia;

- '*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;
- Newcastle Local Area Plan 2012;
- South Dublin County Development Plan 2016-2022;
- Draft South Dublin County Development Plan 2022-2028);
- Design Manual for Urban Roads and Streets (DTTS, DHPLG 2013)
- National Cycle Manual (NTA, 2011)
- Design Standards for New Apartments – Guidelines for Planning Authorities (DHPLG, March 2018)

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

- **Background Review:** This important exercise incorporated three parallel tasks which included (a) an examination of the local regulatory and development management documentation; (b) an analysis of previous 'transport' related, strategic and site specific studies of development and transport infrastructure proposals across the Newcastle area, and (c) a review of planning applications to establish the status of various third party development schemes that were either considered within the strategic 'transport' studies or which have emerged and received full planning permission since.

- **Site Audit**: A site audit was undertaken to quantify existing road network issues and identify local infrastructure characteristics, in addition to establishing the level of accessibility to the site in terms of walking, cycling and public transport. An inventory of the local road network was also developed during this stage of the assessment.

- **Traffic Counts**: Junction traffic counts were analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed residential development.

- **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 and future network characteristics (i.e. with future through route via the subject lands an therefore new routing opportunities), 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 2024, 2029 and 2039 development scenarios.

1.4 REPORT STRUCTURE

1.4.1 As introduced above, this TTA seeks to clarify the potential level of influence generated by the proposed development upon the local road network and subsequently ascertain the existing and future operational performance of the local transport system. The structure of the report responds to the various stages of this exercise including the key tasks summarised below.

1.4.2 **Chapter 2** of this report describes the existing conditions at the proposed development location and surrounding area, whilst **Chapter 3** provides a summary of the relevant transport policies that influence the design and appraisal of the subject residential proposals.

1.4.3 A description of the proposed development scheme is described in **Chapter 4** whilst **Chapter 5** outlines the trip generation exercise carried out and the adopted methodology for applying growth factors to establish design year network traffic flows.

1.4.4 The predicted scale of impact upon the local road network is outlined in **Chapter 6**.

1.4.5 The operational performance of key local junctions are assessed for the 2024 Opening Year and the 2029 (Opening Year +5 years) and the 2039 (Opening Year +15 years) Design Years are summarised within **Chapter 7**.

1.4.6 **Chapter 8** incorporates a sensitivity analysis undertaken to consider the impact of a potential future 3rd Party development and associated vehicle trip generation on the key local junctions.

1.4.7 The main conclusions and recommendations derived from the analysis are summarised in **Chapter 9**.

2.0 RECEIVING ENVIRONMENT

2.1 LAND USE

2.1.1 The application 'greenfield' site comprises of a development site area of approximately 8.47 hectares, located to the south of Main Street and is zoned RES-N *"To provide for new residential communities in accordance with approved area plans"* within the 2016-2022 South Dublin County Development Plan.

2.2 LOCATION

2.2.1 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** indicatively shows the extent of the subject site boundary and neighbouring lands. The subject Newcastle site is located approximately 4km north west of Rathcoole and 10km northwest of Tallaght whilst Dublin City Centre lies approximately 18km to the northeast.

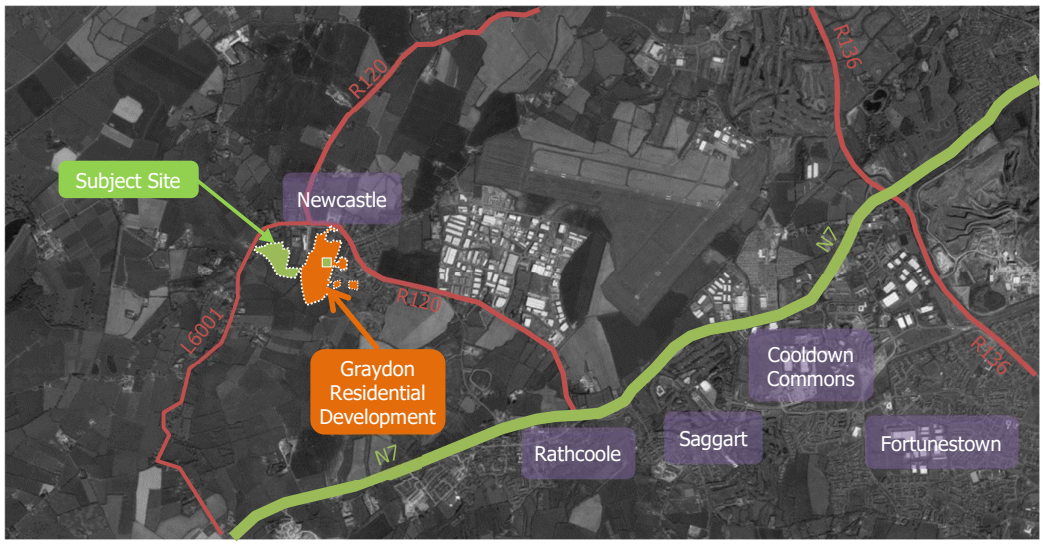


Figure 2.1: Site Location (Source Google Maps)

2.2.2 The development site is bounded by the R120 road corridor to the north in addition to the St. Finian's Way residential development. The Graydon Residential Development forms the eastern boundary whilst the Athgoe Road (L6001) corridor forms western site boundary. The southern boundary is formed by Agricultural lands.

Figure 2.2: Indicative Site Boundary (Source Google Maps)

2.3 LOCAL AMENTIES

2.3.1 The proposed development site is well placed in terms of the availability of local amenities including St. Finian's NS and local retail amenities.

Figure 2.3: Subject Site Local Amenities

2.3.2 Furthermore, the subject site benefits from access to employment opportunities including the Aerodrome / Greenogue business Parks located approximately 1.5km to

the east, Grange Castle business Park approximately 5km to the north and the Baldonnell Business Park and Citywest Business Campus located approximately 5km and 6.5km to the east respectively. **Figure 2.3** above shows indicatively the subject site's location in relation to the aforementioned local amenities.

2.4 EXISTING TRANSPORTATION INFRASTRUCTURE

Road Network

2.4.1 The subject lands are bounded to the north by Newcastle Main Street (R120) and existing / emerging residential dwellings. Travelling west and north along the R120 leads to Lucan (8km) and the N4 corridor (J4). Continuing west along Newcastle Main Street leads to the R405 corridor which provides access to Celbridge (6km), Maynooth (12km) and the strategic M4 Motorway.

2.4.2 The N7 national road corridor is located approximately 3.5km to the south east and is accessed along the R210 via the Rathcoole Interchange. Travelling northbound on the N7 leads to the M50 motorway and Dublin City Centre. The strategic M7 motorway is accessible by travelling southbound on the N7.

2.4.3 The proposed site location relative to the aforementioned road infrastructure is illustrated in **Figure 2.1** above.

Existing Cycling and Pedestrian Facilities

2.4.4 Currently there are cycle lanes on both sides of both the Burgage Crescent, Newcastle Boulevard corridors (**Figure 2.4**) and along the emerging sections of the Principal Access Road (as identified within the Newcastle LAP) being implemented as part of the Graydon Residential Development located to the east of the subject site.

Figure 2.4: Pedestrian & Cycle Facilities on Newcastle Boulevard and Burgage Crescent

2.4.5 To the northeast of the subject site lands, a 2-way cycle track is located on the western side of the St. Finian's school access road (**Figure 2.5**) which also serves the recently constructed (Pl. Ref. SD17A/0378) 40 unit residential development located to the east of St. Finian's NS access road.

Figure 2.5: Pedestrian & Cycle Facilities on St. Finian's Access Road

2.4.6 Along the R120 (north of the subject site) a footway is currently provided along both sides of the carriageway with street lighting on the southern side of the corridor (**Figure 2.6**).

Figure 2.6: Pedestrian Facilities Along R120

Public Transport – Bus

2.4.7 Dublin Bus operates two routes (one of which is an express route) that serve the subject site locale including the number 68/a and 68x (Newcastle – Greenogue Business Park Towards Dublin City Centre). These routes provide links from the Newcastle Town Centre to the city centre and intermediate destinations. The associated bus stops are all within convenient walking distance (approx. 500m) of the subject site. The scheduled frequency for buses to and from the city centre are

outlined in **Table 2.1** below. During peak frequency, the 68/A operates every 30-45 minutes.

Bus Route	Weekdays		Saturdays		Sundays & Bank Holidays	
	To City Centre	From City Centre	To City Centre	From City Centre	To City Centre	From City Centre
68/a	22	20	19	17	13	13
68x	1	-	-	-	-	-

Table 2.1: Dublin Bus Service Frequency (No. of services per day)

Figure 2.7: Existing Bus Stop Locations

Public Transport – Rail / LUAS Services

2.4.8 The subject development site is located approximately 4km away from the Hazelhatch and Celbridge rail station where services between Dublin City Centre and various destinations including Portlaoise, Kilkenny, Carlow and Waterford. The Hazelhatch and Celbridge rail station benefits from a Park & Ride facility incorporating 400 no. car parking spaces making travel by rail a feasible alternative to future residents of the subject development. In addition, 30 no. sheltered cycle parking spaces are available in addition to bike lockers.

2.4.9 Furthermore, the Saggart LUAS station and Cheeverstown LUAS Park & Ride station are located approximately 5.5km and 8.0km respectively to the east of the subject site providing access to LUAS Red Line services operating between Saggart and Connolly Station / The Point via Dublin City Centre. In addition, Dublin Bus Route 68 provides access to LUAS services at the Kylemore LUAS stop by way of bus stops located approx. 70m from this LUAS interchange. At the Kylemore interchange, LUAS

Red line services operate between 05:33-00:16 Monday to Friday, 06:12-00:16 on Saturday's and 07:02-23:16 on Sunday's (and Bank Holiday's). A summary of the average LUAS frequency by day of the week is presented in **Table 2.2** below.

Time	Monday – Friday	Saturday	Sunday
Earlier than 07:00	7	-	-
07:00 – 10:00	4	9	9-12
10:00-16:00	4	6	
16:00-19:00	4	6	
Later than 19:00	11	11	11

Table 2.2: LUAS Red Line Service Frequency (Minutes)

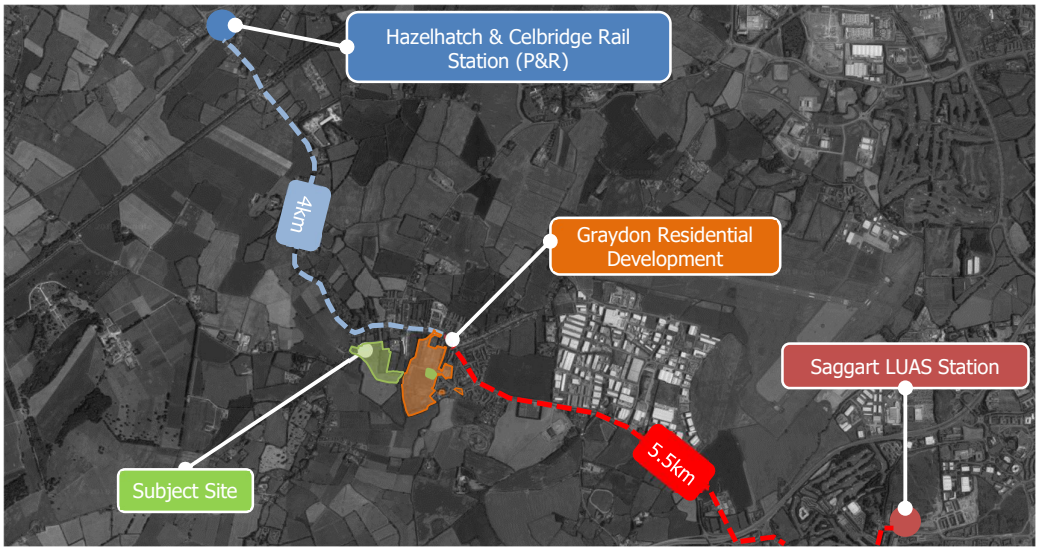


Figure 2.8: Rail & Park & Ride Accessibility

2.5 EXISTING PUBLIC TRANSPORT CAPACITY

2.5.1 A Public Transport Network Capacity report ha been produced by Derry O'Leary and is submitted as part of this planning application.

2.5.2 In concludes that, in terms of existing bus network capacity, both the 68/A and 68X currently operate with 76% spare capacity at the Main Street bus stop.

2.5.3 With the inclusion of the proposed development and associated additional bus patronage, assuming a worst case scenario that all additional bus trips occur within the busiest 30 minute AM peak period, there is predicted to remain spare seated capacity of 66% for a 67 seater bus. Accordingly, the the current level of spare seated

capacity would cater for this increase even during the busiest period in the AM peak hour.

2.6 ROAD SAFETY REVIEW

2.6.1 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.

2.6.2 The RSA database records details where collision events has been officially recorded such as the when the Garda being present to formally record details of the incident.

2.6.3 In reference to **Figure 2.13** and **Table 2.3** below, incident numbers 1, 3, 5, 6, 9, 10 and 11 resulted in minor casualties involving a car.

Ref	Severity	Year	Vehicle	Circumstances	Day	Time	Casualty
1	Minor	2009	Car	Single Vehicle Only	Wed	1700-1000	3
2	Minor	2008	Good Vehicle	Head On Conflict	Sat	1000-1600	1
3	Minor	2013	Car	Other	Tues	1600-1900	2
4	Minor	2014	Bicycle	Other	Sat	1600-1900	1
5	Minor	2012	Car	Rear End, Striaght	Mon	1600-1900	2
6	Minor	2011	Car	Rear End, Striaght	Sat	1000-1600	1
7	Serious	2012	Car	Rear End, Straight	Mon	1600-1900	5
8	Minor	2009	Bus	Single Vehicle Only	Fri	0300-0700	2
9	Minor	2011	Car	Other	Sun	1900-2300	5
10	Minor	2014	Car	Angle, Both Straight	Fri	1000-1600	1
11	Minor	2016	Car	Rear End, Left Turn	Sat	1000-1600	2

Table 2.3: Collision Records - (source www.rsa.ie)

2.6.4 Incident number 2 resulted in a minor casualty and involved a goods vehicle whilst incident 4 was recorded as involving a bicycle resulting in a minor casualty and incident 8 resulted in a minor casualty and involved a bus. Finally, incident number 7 resulted in a serious casualty and involved a car.

2.6.5 The review of the RSA data available reveals that there are no apparent trends in collisions which have occurred in the vicinity of the subject site during the most recent 12-year period (2005-2016). The analysis demonstrates that there are currently no road safety issues across in the immediate vicinity of the proposed subject site access location points.

Figure 2.9: Collision Records - (source www.rsa.ie)

2.7 PROPOSED TRANSPORT INFRASTRUCTURE

Cycle Network Proposals

2.7.1 The subject site lies within the "South Meath / North Kildare sector" as outlined within the Dublin Greater Area Cycle Network Plan (2013). **Figure 2.10** below illustrates the cycle network proposals in the vicinity of the subject site as outlined within the Plan. In the vicinity of the subject site the Plan includes proposals for an Inter-urban cycle route along the R120 corridor (Newcastle Main Street) located just to the north of the subject site.

2.7.2 The Newcastle LAP 2012 (Extended 2017) proposes a series of 'Green Links' through the LAP area which will provide pedestrian / cycle links between future development within the LAP lands and the existing transport network via dedicated pedestrian / cycle facilities segregated from vehicular traffic. **Figure 2.11** below presents the indicative location of the 'Green Links' as per the LAP.

Figure 2.10: GDA Cycle Network Plan Proposals (Extract of Sheet RN5)

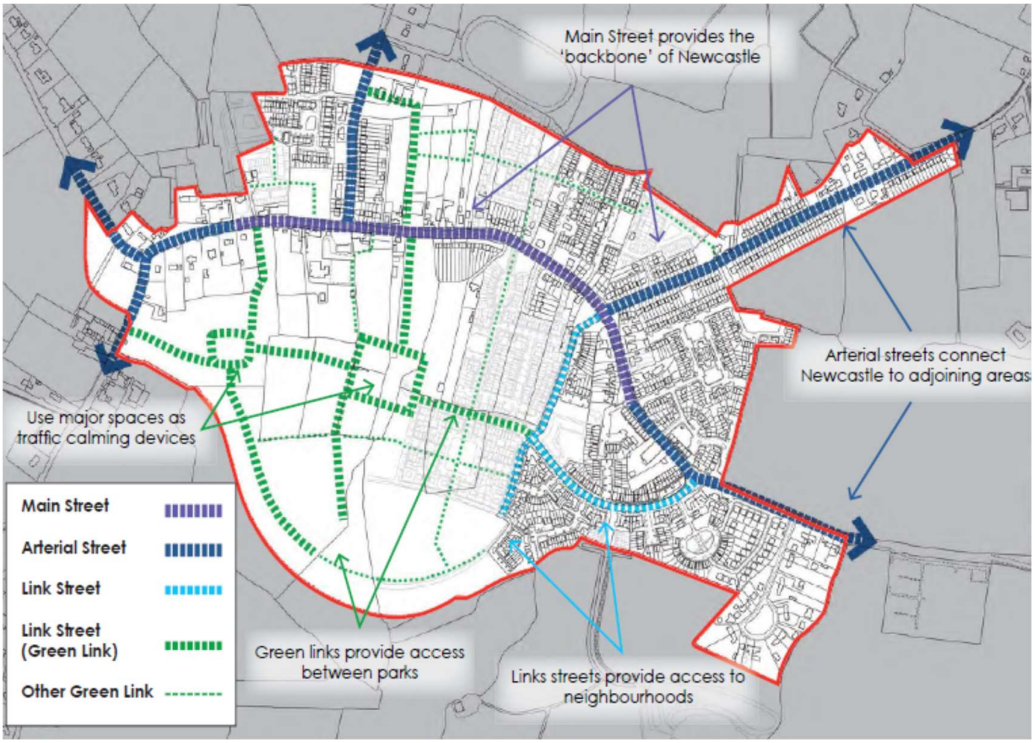


Figure 2.11: Newcastle LAP Movement Framework (Source: Fig 5.6 Newcastle LAP 2012)

Road Infrastructure Proposals

2.7.3 The South Dublin County Development Plan 2016-2022 proposes a *"strategic road network consisting of national and regional routes"*. Newcastle is located along / adjoining a route designated as a *"New Major regional Route"* as presented in **Figure 2.12** below. Table 6.5 of the Development Plan lists a total of sixteen 6-year roads objectives of which 2 will, once complete, improve road infrastructure within and / or travelling to Newcastle and include;

- Newcastle Street Network – includes various streets within the Newcastle LAP lands; and

- Newcastle Road (R120) – comprises junction upgrades at Supervalu roundabout, Hillcrest Road and N4 overbridge.

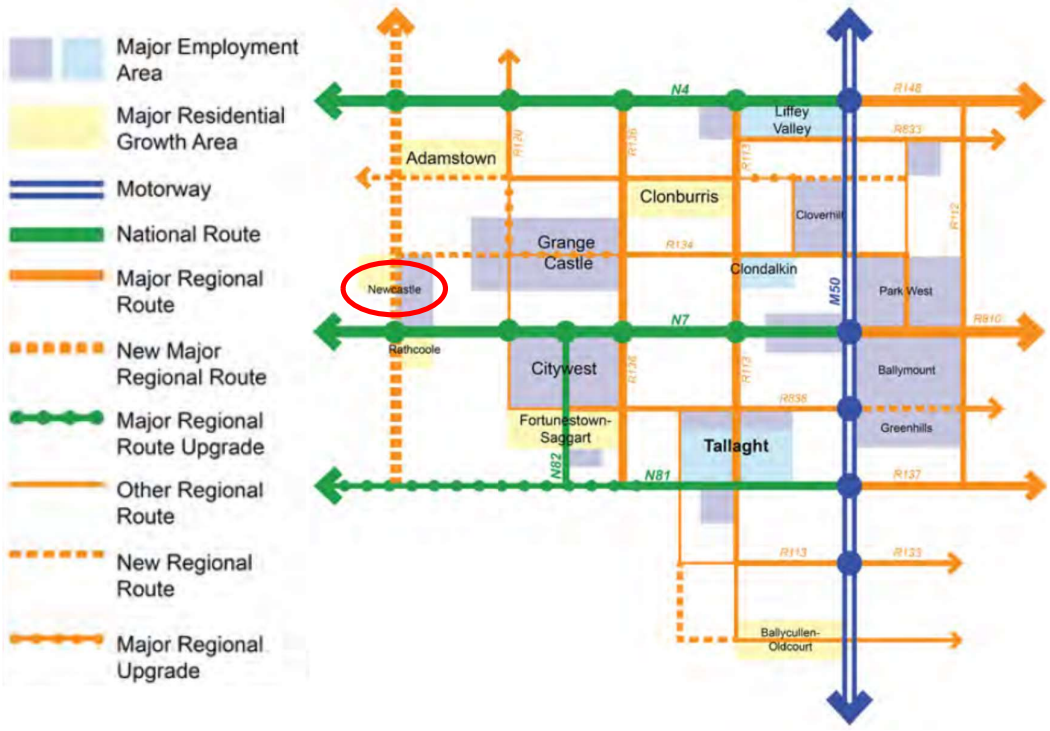


Figure 2.12: SDCC Strategic Road Network (Source: Fig 6.3 SDCC Development Plan 2016-2022)

2.7.4 A medium to long term objective in the current development plan (but 6 year objective in the draft development plan), , promotes the provision of the Western Dublin Orbital Route (North) which is a "New high capacity road from Tootenhill to the Leixlip Interchange (with a provision to make a further connection to the N3)". This roads objective will form a "Major regional link between the N7 to N4". Furthermore, of the Western Dublin Orbital Route (South) is proposed also as a medium to long term objective and is described as a "New road from Boherboy to Tootenhill" which will act as a "link between the N81 and the N4 with a by-pass function around Rathcoole and Saggart". **Figure 2.13** below presents the location of these SDCC road infrastructure proposals relative to the subject development site lands.

2.7.5 The future delivery of the Western Dublin Orbital Route will transform Newcastle by removing all through traffic. Accordingly, the quantum of vehicle movements along the R120 and through the busy N7 Rathcoole Interchange (Junction 4) will reduce significantly in time.

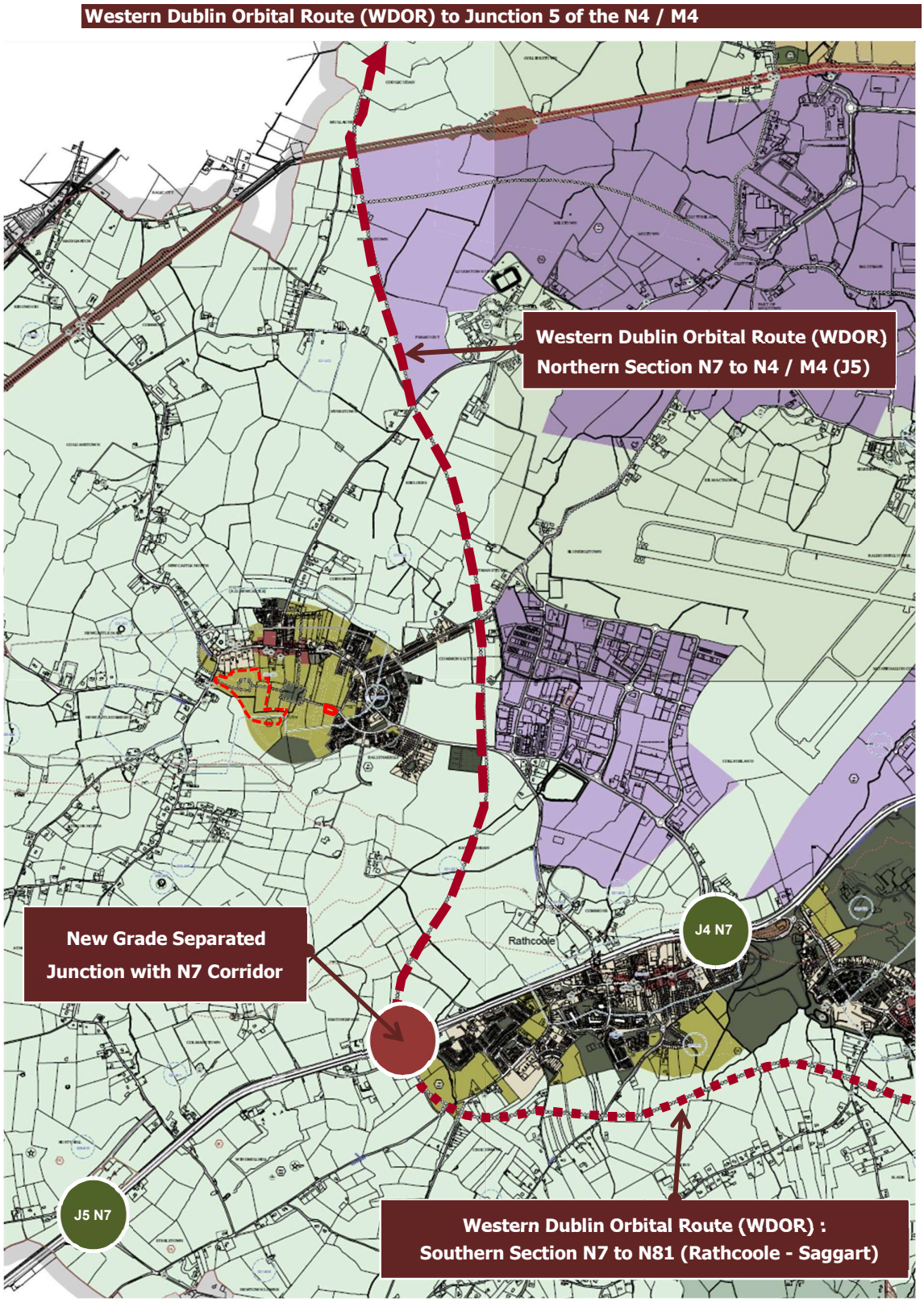


Figure 2.13: Western Dublin Orbital Route Proposal (Source: SDCC Dev. Plan Maps)

2.7.6 The subject development site is located within the Newcastle LAP lands. The Newcastle LAP 2012 (Extended to December 2022) includes a movement framework map which indicatively shows the proposed road network and green links within the LAP lands (**Figure 2.14**).

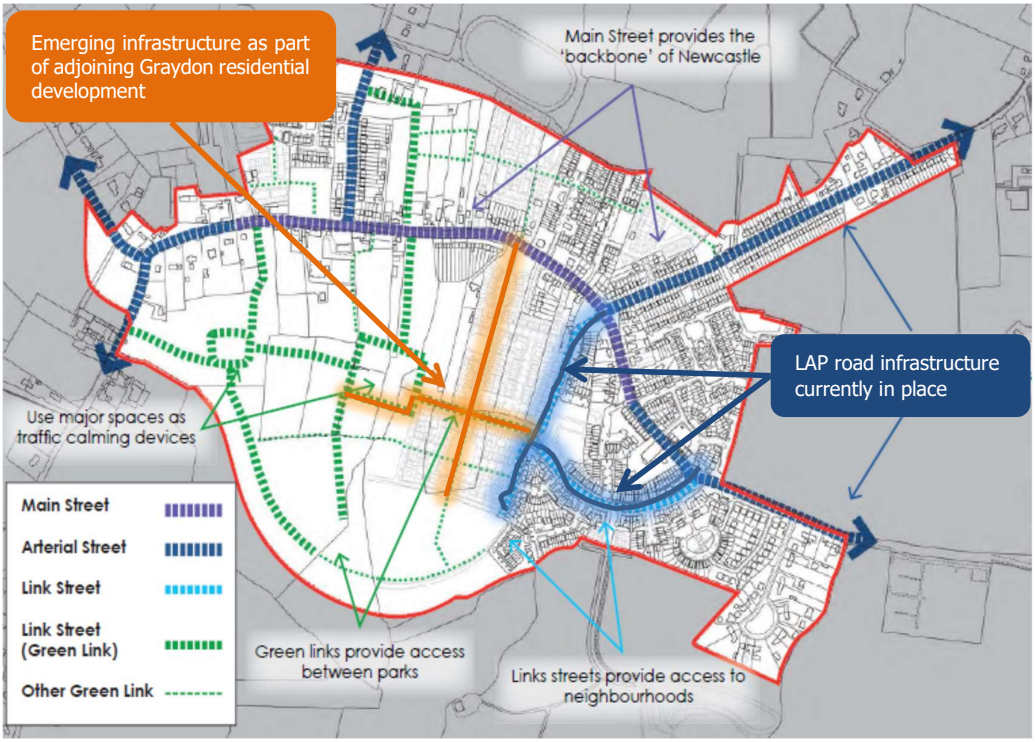


Figure 2.14: Newcastle LAP Overall Strategy Map (Source: Fig 5.6 Newcastle LAP 2012)

Public Transport Proposals

2.7.7 BusConnects is an initiative launched by the National Transport Authority with the aim of overhauling the bus system in the Dublin Region. This initiative includes review of bus services, the definition core bus network which comprises radial, orbital and regional core bus corridors. It also includes enhancements to ticketing and fare systems as well as transition to a new low emission vehicle fleet.

2.7.8 This initiative proposes to implement a redesign of the existing bus network. The fundamental changes to the network include:

- Increasing the overall amount of bus services. Providing new and frequent orbital services connecting more outer parts of the city together;
- Simplifying the bus services on the key radial into "spines" where all buses will operate under a common letter system and buses will run very frequently and be more evenly spaced;

- Increasing the number of routes where buses will come every 15 minutes or less all day;
- The frequent network would become a web-shaped grid, with many interchange opportunities to reach more destinations. Everywhere that two frequent routes cross, a fast interchange is possible; and
- Additional service would be provided at peak hours to limit overcrowding.

2.7.9 In relation to the subject site, following this redesign of the bus network, the proposed development will be located in close proximity to the new BusConnects 'Local' route 56 (Newcastle-Clondalkin-Red Cow) which will replace the existing DublinBus Route 68/a and new 'Peak' route X56 (Newcastle-Peamount-Dublin City Centre) which replaces the existing DublinBus Route 68x. In addition, a new 'Radial' route W6 is proposed which will provide public transport connections to locations including Maynooth, Celbridge, Citywest and Tallaght. A summary of the aforementioned new routes are summarised in **Table 2.4** below.

Route	Route Type	Areas Serviced	Frequency*
L56	Local	Newcastle-Clondalkin-Red Cow	60 mins
X56	Peak	Newcastle-Peamount-Dublin City Centre	1 / peak hr
W6	Orbital	Maynooth-Celbridge-Citywest-Tallaght	30 mins

* Weekday frequency shown in table. Services may be less frequent at weekends/evenings

Table 2.4: Bus Connects Proposals (source: busconnects.ie)

2.7.10 **Figure 2.15** illustrates potential future bus service opportunities in the area as detailed within the BusConnects redesign.

2.7.1 The Bus Network Redesign is the first step in a series of transformative changes to Dublin's bus network over the coming years. However, the next steps in this initiative are the improvements to the infrastructure and operation of the proposed bus network which include:

- building a network of "next generation" bus corridors on the busiest bus lines to make bus journeys faster, predictable and reliable;
- developing a state-of-the-art ticketing system using credit and debit cards or mobile phones to link with payment accounts and making payment much more convenient;
- implementing a cashless payment system to vastly speed up passenger boarding times;
- a simpler fare structure, allowing seamless movement between different bus services without financial penalty;

- new bus stops with better signage and information and increasing the provision of additional bus shelters; and
- transitioning to a new bus fleet using low-emission vehicle technologies.

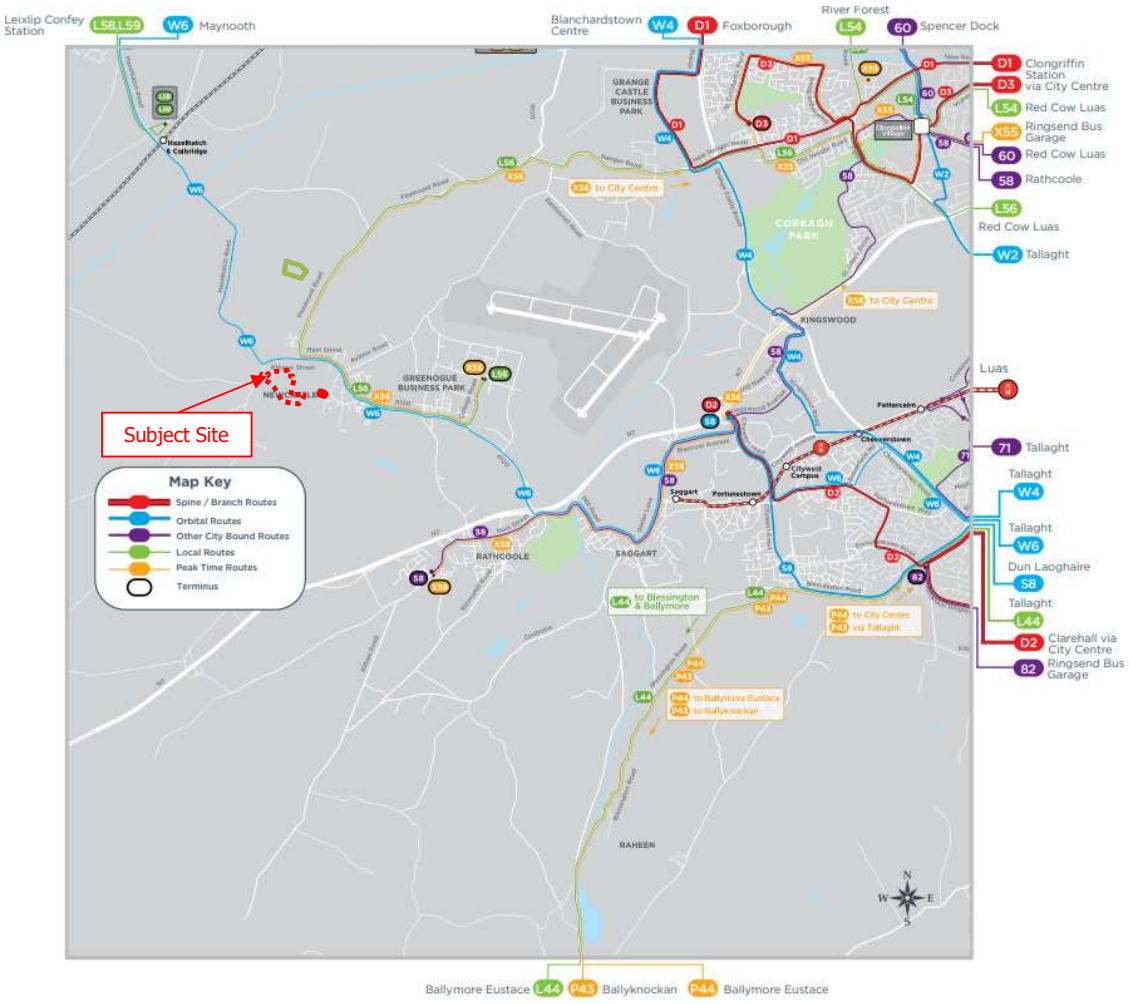


Figure 2.15: Dublin Area Bus Network Redesign (Source: busconnects.ie)

3.0 POLICY FRAMEWORK

3.1 SOUTH DUBLIN COUNTY DEVELOPMENT PLAN 2016-2022

3.1.1 The South Dublin County Development Plan 2016-2022 sets the broad development framework for the county and the development areas within its administrative boundary. In the context of the subject proposals, the following are the relevant transport and development objectives set out in the plan: -

Housing Policy

*"**Policy 6 – Sustainable Communities:** It is the policy of the Council to support the development of sustainable communities and to ensure that new housing development is carried out in accordance with Government policy in relation to the development of housing and residential communities."*

Housing Objective

***"H2 Objective 1:** To ensure that sufficient zoned land, which could be serviced by sufficient public transport and road capacity, continues to be available at appropriate locations to satisfy the housing requirements of the County and to support and facilitate the development of housing lands based on the Settlement Strategy outlined in Chapter 1 Introduction and Core Strategy."*

Transport & Mobility Policies

*"**Policy 1 – Overarching:** It is the policy of the Council to promote the sustainable development of the County through the creation of an integrated transport network that services the needs of communities and businesses."*

*"**Policy 2 – Public Transport:** It is the policy of the Council to promote the sustainable development of the County by supporting and guiding national agencies in delivering major improvements to the public transport network and to ensure existing and planned public transport services provide an attractive and convenient alternative to the car."*

*"**Policy 3 – Walking and Cycling:** It is the policy of the Council to re-balance movement priorities towards more sustainable modes of transportation by prioritising the development of walking and cycling facilities within a safe and traffic calmed street environment."*

*"**Policy 4 – Strategic Road and Street Network:** It is the policy of the Council to improve and expand the County-wide strategic road and street network to support economic development and provide access to new communities and development."*

Transport & Mobility Objectives

***"TM1 Objective 4:** To prioritise new road construction that provides access to new communities and development areas and supports the economic development of the County."*

***"TM1 Objective 4:** To support the delivery of sufficient public transport and road capacity to facilitate sustainable new development in the County."*

***"TM2 Objective 3:** To generate additional demand for public transport services through integrated land use planning and maximising access to existing and planned public transport services throughout the network."*

***"TM2 Objective 4:** To create an interlinked network that maximises the efficiency of existing services, reduces overall journey times and facilitates easy exchanges between modes and/or routes."*

***"TM3 Objective 2:** To ensure that connectivity for pedestrians and cyclists is maximised in new communities and improved within existing areas in order to maximise access to local shops, schools, public transport services and other amenities, while seeking to minimise opportunities for anti-social behaviour and respecting the wishes of local communities."*

Strategic Road and Street Network

3.1.2 Table 6.6 of the Development Plan presents a list of medium to long term roads objectives in the Plan area. Included in this table is the Western Dublin Orbital Route (North) which is a "New high capacity road from Tootenhill to the Leixlip Interchange (with a provision to make a further connection to the N3)". This roads objective will form a "Major regional link between the N7 to N4". Furthermore, the Western Dublin Orbital Route (South) is proposed also as a medium to long term objective and is described as a"New road from Boherboy to Tootenhill" which will act as a "link between the N81 and the N4 with a by-pass function around Rathcoole and Saggart".

3.2 DRAFT SOUTH DUBLIN COUNTY DEVELOPMENT PLAN 2022-2028

3.2.1 The draft South Dublin County Development Plan 2022-2028 sets the broad development framework for the county and the development areas within its administrative boundary. In the context of the subject proposals, the following are the relevant transport and development objectives set out in the plan: -

*"**SM1 Objective 1:** To achieve and monitor a transition to more sustainable travel modes including walking, cycling and public transport over the lifetime of the County Development Plan, in line with the County mode share targets of 15% Walk; 10% Cycle; 20% Bus; 5% Rail; and 50% Private (Car/Van/HGV/Motorcycle)."*

*"**SM1 Objective 3:** To support the delivery of key sustainable transport projects including DART and Luas expansion programmes, BusConnects and the Greater Dublin Metropolitan Cycle Network in accordance with RPO 5.2 of the RSES/MASP."*

*"**SM1Objective 4:** To ensure that future development is planned and designed in a manner that facilitates sustainable travel patterns, with a particular focus on increasing the share of active modes (walking and cycling) and public transport use and creating a safe and attractive street environment for pedestrians and cyclists, in accordance with RPO 5.3 of the RSES/MASP."*

*"**SM1 Objective 6:** To safeguard the County's strategic road network and to improve the local road and street network in a manner that will better utilise existing road space and encourage a transition towards more sustainable modes of transport."*

***"SM2 Objective 3:** To ensure that connectivity for pedestrians and cyclists is maximised and walking and cycling distances are reduced by promoting compact growth and permeability in the design and layout of new development areas."*

***"SM2 Objective 6:** To ensure that facilities for pedestrians and cyclists are designed in accordance with the principles, approaches and standards contained in the National Cycle Manual or any updated guidance and to promote off-road cycle infrastructure where feasible, subject to any design having regard to environmental sensitivities."*

***"SM4 Objective 7:** To implement the 6-year Roads Programme set out under Tables 7.5 and 7.6 and to work towards the implementation of the medium-longer roads programme where feasible and subject to funding."*

Newcastle Street Network	Various streets within the Newcastle LAP lands.	Formation of a strategic street network providing access throughout the LAP lands.
Newcastle Road (R120)	Junction upgrades at SuperValu roundabout, Hillcrest Road.	Enhance the efficiency and safety of these junctions for all users.
Western Dublin Orbital Route	New road from N81 to the Leixlip Interchange.	New road from N81 to the Link between the N81, N7 and the N4 with a route Leixlip Interchange by-pass function around Rathcoole and Saggart. The need for this route, further connections and possible alternative routes will be determined through the review of the NTA's GDA Strategy and in consultation with TII and relevant local authorities. In any such route a primary objective of South Dublin County Council shall be to protect the scenic Liffey Valley parklands, and amenities at Lucan Demesne and St Catherine's Park and Lucan Village and no proposals to continue a road over these lands will be considered.

Figure 3.1: 6 Year Road Progtamme (Extract from Table 7.5 of Draft South Dublin County Development Plan 2022-2026)

3.3 NEWCASTLE LOCAL AREA PLAN MAY 2012

3.3.1 The subject site lies within the Newcastle Local Area Plan (LAP) lands (**Figure 3.1**) and as such is governed by the specific policies and objectives outlined with the Newcastle Local Area Plan 2012 (Extended until December 2022). In the context of the subject proposals, the following are the relevant transport and development objectives set out in the plan:

Local Area Plan Objective AM2

"Development proposals shall offer choices of routes and help to dissipate vehicular traffic throughout the Plan Lands. This will include a design speed of 30 kilometres per hour for Access Streets."

Local Area Plan Objective AM3

"All Neighbourhoods shall be afforded direct vehicular, pedestrian and cyclist access to Main Street. Access routes and streets shall be safe, barrier free and overlooked by development."

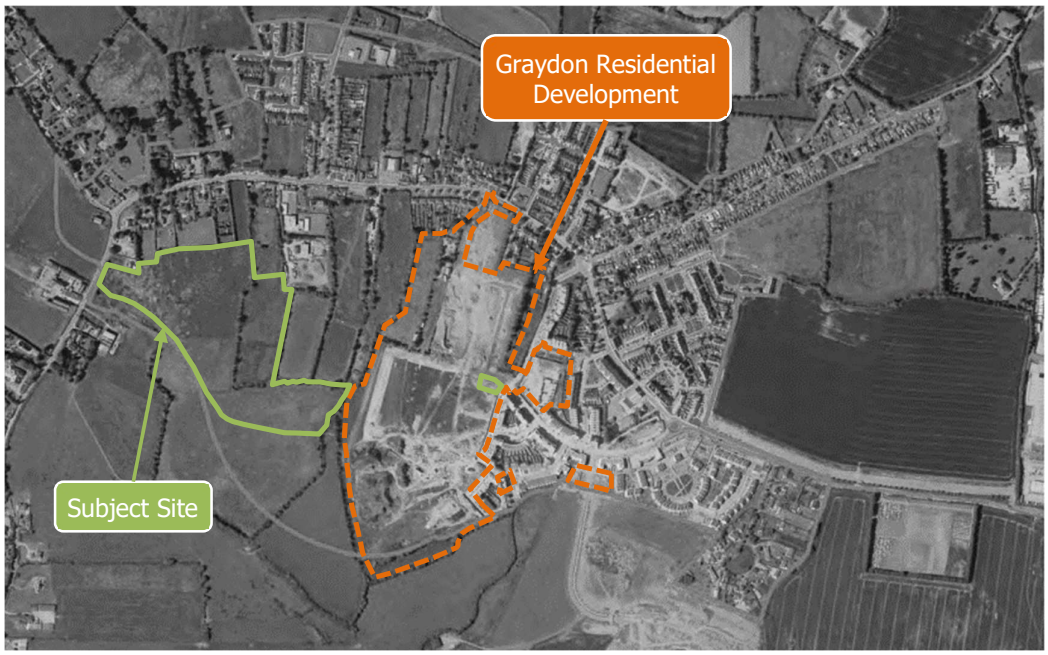


Figure 3.2: Newcastle LAP Area (Extract of Fig 2.4 Newcastle LAP 2012)

Local Area Plan Objective AM4

"Cycling and walking shall be encouraged within and through the Plan Lands by creating an open ended and integrated network of safe and accessible pedestrian and cycle routes that serve all streets and spaces including existing streets. All existing and new Neighbourhoods shall be afforded direct pedestrian and cyclist access to Main Street and direct or indirect links to each other and community facilities especially schools."

Local Area Plan Objective AM6

"Signalised junctions shall be provided as opposed to roundabouts in order to encourage cyclist and pedestrian safety and movement. Roundabout junctions are prohibited."

Local Area Plan Objective AM7

"Planning applications for residential, commercial and employment development are required to provide for or integrate with direct, safe and attractive pedestrian and cyclist routes to public transport stops especially bus stops along Main Street."

Local Area Plan Objective AM16

"Support the provision of pedestrian and cyclist routes at a wider level outside of the Plan Lands that will integrate with Newcastle's planned cycle and pedestrian network and link Newcastle with Hazelhatch, Rathcoole and Saggart to include for access to Greenogue (with street lighting) and routes towards the Luas terminus in Saggart and the railway station in Hazelhatch."

Land Use Zoning

3.3.2 As set out within the South Dublin County Development Plan 2016-2022 and draft South Dublin County Development Plan 2022-2028, the subject site has been zoned as RES-N *"To provide for new residential communities in accordance with approved area plans",*

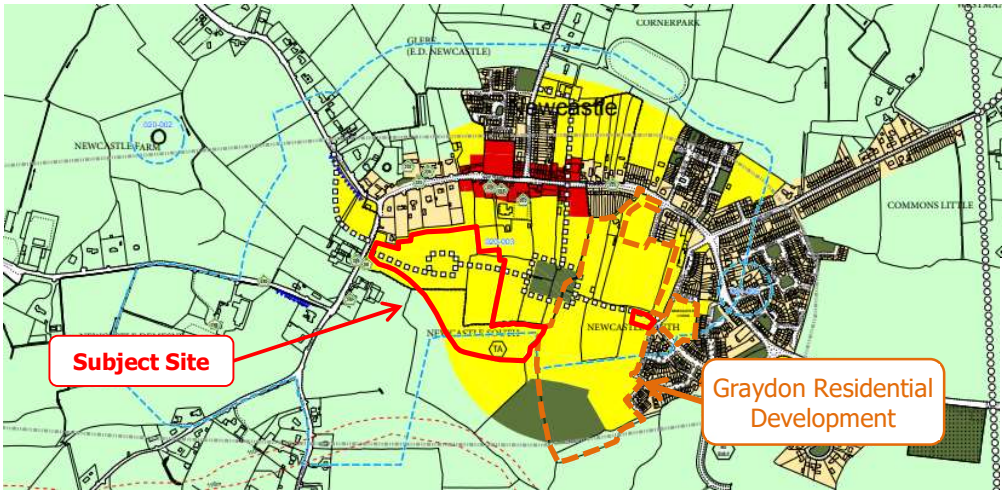


Figure 3.3: Land Use Zoning (Extract from Maps 3 & 7 of the SDCC Development Plan 2016-2022)

3.4 DEVELOPMENT CONTROL

Car Parking Standards

3.4.1 Reference has been made to Table 11.24 of the South Dublin County Council Development Plan (2016-2022) which outlines the maximum car parking standards for the county and Section 4.22 of the Department of Housing, planning and Local Government (DHPLG) "Sustainable Urban Housing: Design Standards for New Apartments".

3.4.2 With regard to the proposed development schedule, the associated car parking requirements are outlined in **Table 3.1** below.

3.4.3 In response to the above local development management standards the scheme is permitted to provide up to a maximum of 434 on-site car parking spaces based on the Development Plan requirements and 190-203 based on the apartment guidelines.

3.4.4 A review of the draft SDCC Development Plan development management standards (expected to be adopted in August 2022) has been undertaken. This review reveals that there are currently no changes proposed to the car parking standards compared to the current development plan.

Unit Type		SDCC Development Standard	DHPLG Standards	No. of Units / Size (GFA)	SDCC Development Plan Requirement		DHPLG Requirement
Apartment	1-bed	1 / 1 unit	1 / unit plus 1 visitor / 3-4 units	54	54	132	Residents: 116 Visitor: 29-39
	2-bed	1.25 / unit		62	78		
Duplex	2-bed	1.25 / unit	1 / unit plus 1 visitor / 3-4 units	18	23	50	Residents: 36 Visitor: 9-12
	3-bed	1.5 / unit		18	27		
Houses	2-bed	1.5 / unit	-	8	12	252	-
	3-bed	2 / unit	-	94	188		
	4-bed			25	50		
	5-bed			1	2		
Total						434	190-203

* N/A Corresponding SDCC requirements stated

Table 3.1: Car Parking Standards (Maximums)

Disabled Car Parking

3.4.5 The SDD development plan does not specify a rate of disabled car parking provision however the note within Table 11.23 references Part M of the Building Regulations 2010 (as amended). Accordingly, disabled car parking spaces is required at a rate of 5% of total car parking provision.

Electrical Vehicles

3.4.6 Section 11.4.3 of the development plan requires that, *"all developments shall provide facilities for the charging of battery operated cars at a rate of up to 10% of the total car parking spaces"*. Nevertheless, the draft SDCC Development Plan (2022-2028) requires a high provision of EV parking provision in new developments of 15-20%.

Cycle Parking Standards

3.4.7 Reference has been made to the South Dublin County Council Development Plan (2016-2022) which outlines the minimum cycle parking provision sought for new

developments within the area governed by SDCC and Section 4.17 of the Department of Housing, planning and Local Government (DHPLG) "Sustainable Urban Housing: Design Standards for New Apartments".

3.4.8 The cycle parking standards stated within the development plan refer to Residential Apartments only specifying 1 no. long stay parking space per 5 apartments, and 1 no. short stay (visitor) parking space per 10 apartments. In the absence of a residential house cycle parking standard, it is proposed to incorporate the cycle parking standards as set out in the development plan for apartment units.

Dwelling Type	Development Plan Standards		DHPLG Standards		No. of Units	Development Plan Requirement		DHPLG Requirements	
	Long Stay	Short Stay	Long Stay	Short Stay		Long Stay	Short Stay	Long Stay	Short Stay
Apartment	1/5 apts	1/10 apts	1 / bed	1/2 apts	1 bed – 54 2 bed – 62	23	12	178	58
Duplex	1/5 apts	1/10 apts	1 / bed	1/2 apts	2 bed - 18 3 bed - 18	7	4	90	18
House[1]	1/5 units	1/10 units	-	-	128 (33[2])	7	3	-	-
Creche	1/5 staff	1/10 children	-	-	8 staff / 50 children	2	5	-	-
Sub-Total						**39**	**24**	**268**	**76**
Total						**63**		**344**	

1 – Development Plan Apartment Cycle Parking Standard, 2 – Long Stay cycle parking 33 Houses with no side access (remaining houses can utilise rear gardens for long stay parking)

Table 3.2: Cycle Parking Standards

3.4.9 In response to the local Development Plan requirements the scheme is required to provide at least 63 on-site cycle parking spaces comprising at minimum 39 long stay and 24 short stay bicycle parking spaces as part of the proposed residential development. With reference to the DHPLG requirements, the subject scheme is required to provide a minimum of 344 cycle parking spaces for the apartment / duplex units comprising 268 long stay and 76 short stay.

3.4.10 A review of the draft SDCC Development Plan development management standards (expected to be adopted in August 2022) has been undertaken. This review reveals that the requirements for cycle parking at new residential development has increased as follows:-

- Long Stay – Increased to 1 space per apartment
- Short Stay - Increased to 1 apace per 2 apartments

3.4.11 Accordingly, based on these requirements, the subject development is required to provide at least 152 no. long stay cycle parking spaces and 76 no. short stay cycle parking spaces for the apartment / duplex units.

4.0 CHARACTERISTICS OF PROPOSALS

4.1 PROPOSED DEVELOPMENT

4.1.1 The subject proposals seek permission for the provision of 280 no. residential units comprising 152 no. apartments / duplexes and 128 no. houses in addition to a creche facility. A summary of the proposed development are presented in **Table 4.1** and **Figure 4.1**. Further details of the subject development proposals are illustrated in the architects' drawings as submitted with this planning application.

Unit Type	1 Bed	2 Bed	3 Bed	4 Bed	5 Bed	Total
Apartment Block	54	62	-	-	-	116
Duplex	-	18	18	-	-	36
House	-	8	94	25	1	128
Total	54	88	112	25	1	280

Table 4.1: Proposed Development Schedule

4.1.2 The 3rd party Taobh Chnoic Extension and parcel of land within Burgage South development has been incorporated into this assessment by way of an additional Sensitivity Analysis summarised in **Section 7** of this report. For the purposes of this assessment, it is assumed that these lands could accommodate circa. 111 no. residential houses based on the site area and density allocation.

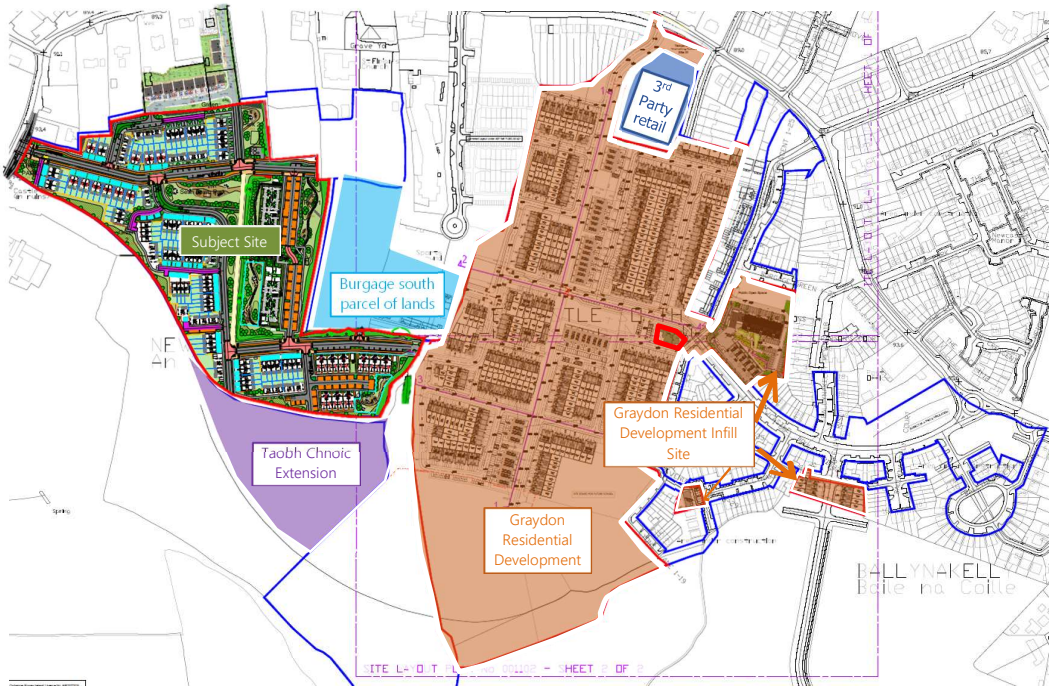


Figure 4.1: Proposed Development Layout

4.2 ROAD INFRASTRUCTURE

4.2.1 The subject proposals include for the provision of the continuation of the east-west Principal Access Road, as per the Newcastle LAP, between the Graydon Residential Development site boundary westwards to Athgoe Road as presented in **Figure 4.2**.

4.2.2 The design of the road infrastructure has sought to fully respect the LAP objectives in addition to the Design Manual for Urban Roads and Streets (DMURS) design objectives.

4.2.3 As per the LAP, the proposed infrastructure allows for additional vehicular and cycle / pedestrian connections to the north via St. Finian's Way and permeable connections to adjacent future potential development lands surrounding the subject site.

4.2.4 Rather than a continuous link through the subject site that could encourage speeds, the alignment of the Principal Access Road includes for 2 no. priority controlled junctions along the route and tighter corner radii which differs from the LAP Principal Access Road alignment but adheres more closely to the principles of DMURS which seek to reduce vehicular speeds and create a more pedestrian / cycle friendly environment.

4.2.5 The road infrastructure within the subject site has been designed taking cognisance of further LAP objectives which can be easily achieved as part of future development schemes within the LAP boundary by tie-ing into the subject proposed road infrastructure.

4.2.6 Further information, including geometric details, of the road infrastructure proposed as part of the subject scheme within the subject site boundary can be seen in **DBFL Drawing 210026-DBFL-RD-SP-DR-C-1101** as submitted with this planning application.

4.2.7 In addition, a new footpath facility is proposed as part of the subject development which will be implemented on the eastern side of Athgoe Road between the subject site access and the existing pedestrian facilities to the north. The design of the external works on Athgoe Road was informed by consultation with SDCC Roads department.

Pedestrian / Cycle Infrastructure

4.2.8 A series of 'green' links are proposed as part of the subject scheme comprising: -

- 2m wide footpaths and cycle tracks on both sides of the main spine road for the initial 220m from the Graydon Residential development section;
- 4m wide off-road shared pedestrian / cycle facility in a north / south direction through the subject site lands; and
- 2m wide footpath and cycle track on both sides of the east-west section of the main spine road extending back from Athgoe Road and continuing to the eastern boundary.

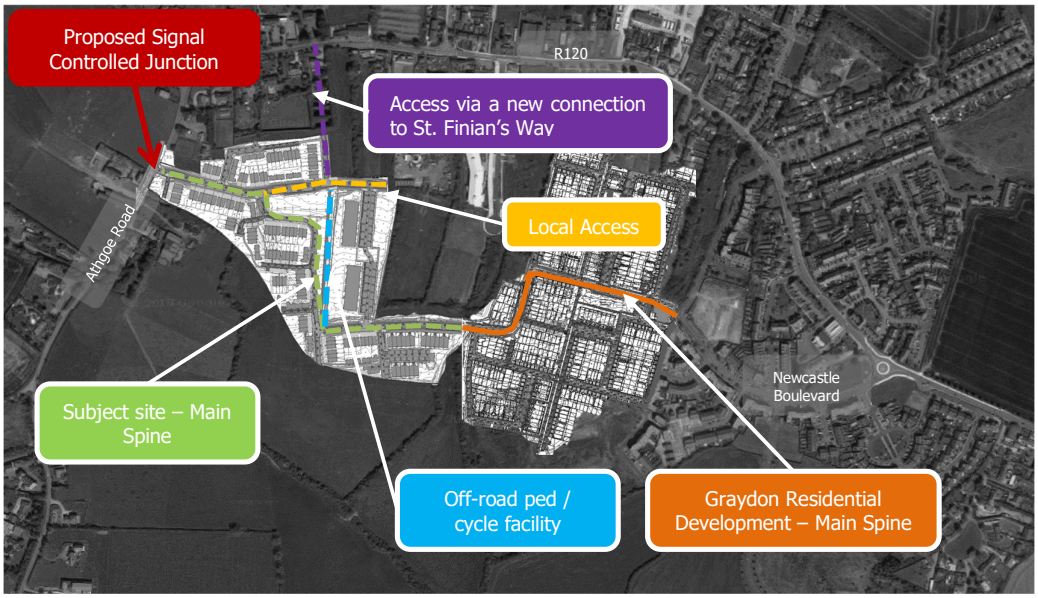


Figure 4.2: Proposed Road Infrastructure

4.3 SITE ACCESS

Vehicle Access

4.3.1 The proposed development site is proposed to be accessible from 3 no. vehicular access points. The first will be located to the east where the subject site lands connect with the Graydon Residential Development lands. The second is via a proposed new signal controlled junction located on Athgoe Road. The third vehicular access is proposed to the north with the R120 Main Street corridor via St. Finian's Way. **Figure 4.3** below presents the aforementioned site access locations.

4.3.2 The proposed new site access junction on Athgoe Road will take the form of a three-arm signal controlled junction comprising the following key characteristics: -

- Right turn lane on the southern approach so that right turning vehicles do not delay ahead moving traffic;

- Pedestrian crossings across the northern and western arms to ensure convenient access / egress for non-vehicular modes; and
- Right turn set back to facilitate any left turning HGV's exiting the site. This set back allows for the provision of 'tight' corner radii (6m) compliant with DMURS to minimise crossing widths for pedestrians and control vehicle speeds.

Figure 4.3: Proposed Site Access Locations

Pedestrian / Cycle Access and Permeability

4.3.3 The proposed vehicular site access locations introduced above will also facilitate access to the subject site lands for cyclists and pedestrians. Furthermore, a number of permeable links that allow access for pedestrians and cyclists have been facilitated which will accommodate accessibility to existing / future 3rd party developments as presented in **Figure 4.4** below.

4.3.4 Further details of linkages ad connectivity is provided within **DBFL Drawing 210026-DBFL-TR-SP-DR-C-1001** as submitted as part of this planning application.

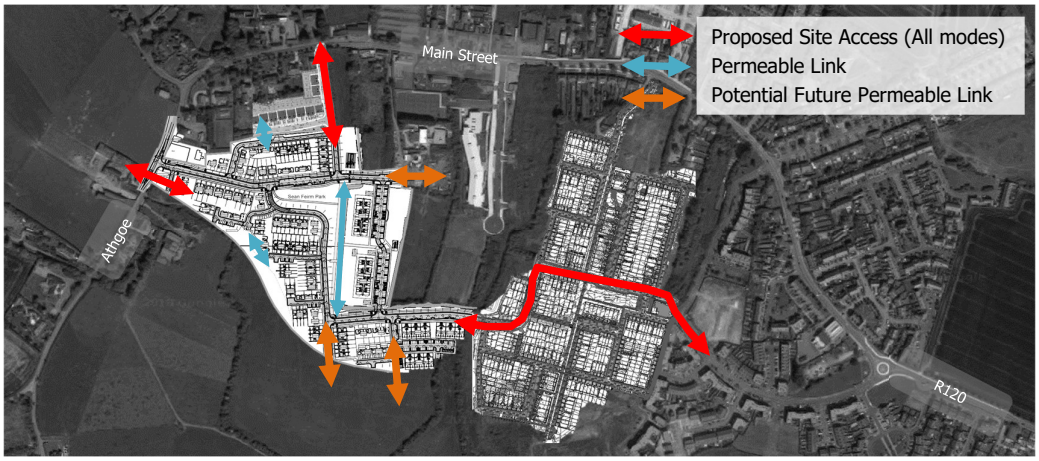


Figure 4.4: Proposed /Potential Cycle & Pedestrian Access and Permeability

4.4 PARKING

Car Parking

4.4.1 The proposed development layout design provides a total of 423 no. car parking spaces comprising 251 no. for the houses and 172 for the apartment / duplex units (13 no. car parking spaces assigned to the creche as permitted within the Graydon development and outside of the subject application site boundary). **Table 4.2** below provides a summary of the proposed vehicle parking provision.

Land Use	General	Visitor	Disabled	Electric Vehicles	Car Share	Total
Apartments	84	6	5*	16	1	112
Duplexes	36	8	5*	10	1	60
Houses	227	10	2	10	2	251
Creche	9	-	1	2	1	13
Subtotal	356	24	13	38	5	436
Total	436					

* Includes 1 no. drop off space

Table 4.2: Proposed Car Parking Provision

4.4.2 The provision of 423 no. residential car parking spaces is comparable to the development plan standards requirement of and the DHPLG standards for apartments which requires a maximum car parking requirement of 434 no. spaces. The proposals include for a total of 172 no. apartment / duplex car parking spaces which is slightly lower than the DHPLG requirement of between 190 to 203 no. car parking spaces respectively. Nevertheless, this level of car parking provision is considered appropriate due to the following:-

- A car parking management regime will be implemented by the management company for the apartment and duplex units. All of the proposed development's on-site apartment / duplex car parking facilities whilst accessible via public roads will not be located within public areas (i.e., areas adopted by the local roads authority). Accordingly, the proposed developments on-site apartment / duplex car parking spaces will remain within the control of the appointed management company. A management regime will be implemented by the development's management company to control access to these on-site apartment car parking bays thereby actively managing the availability of on-site car parking for residents / visitors. The residents within one of the proposed residential apartments / duplexes will NOT include the ownership of a designated parking space. Nevertheless, all residents of the proposed apartments / duplexes will have the opportunity to apply to the management company for both a (i) residents car parking permit (updated annually or upon return of same permit) to the management company to gain access to a dedicated (assigned) on-site car parking space or (ii) a visitor's car parking permit (which will be issued electronically and subject to time restrictions). A nominal charge will be applied to obtain a permit with the objective of covering the associated management and enforcement costs. Each permit will enable the resident (or visitor) to park a vehicle within a specific assigned parking bay within the car park for a defined period of time. This management regime will enhance the availability of on-site car parking, ensure that every resident who needs car parking can avail of an on-site car parking space whilst residents that do not own a car are not unnecessarily assigned a car parking space;
- 5 no. car share spaces are proposed. The benefits of providing car share spaces are discussed further below; and
- A much higher cycle parking provision is proposed compared to the development plan minimum requirement (as discussed in more detail below) thereby ensuring travel by bicycle to / from the subject development site is a viable mode of travel.

Mobility Impaired Car Parking

4.4.3 Whilst the SDCC Development Plan does not specify a specific quantum of mobility impaired car parking provision, however the note within Table 11.23 references Part

M of the Building Regulations 2010 (as amended). Accordingly, disabled car parking spaces are required at a rate of 5% of total car parking provision for the apartment / duplex units which equates to a total of 8 no. dedicated mobility impaired car parking spaces. 13 no. mobility impaired parking spaces are proposed, with 10 to serve the residential units and 1 for the creche, and 2 no. drop off universal access bays. Accordingly, this level of provision complies fully with the local development management requirements.

Electrical Vehicles

4.4.4 A total of 38 no. electrical vehicle car parking spaces are proposed which equates to 21% of the apartment / duplex car parking provision. It is assumed that residents of the housing units can utilise their private power supply to charge electric vehicles parked in-curtilage. Accordingly, the proposed electric vehicle parking provision is considered to be well above the development plan standards which requires electric vehicle car parking up to 10% of car parking spaces and complies with the draft development plan which requires at least 15%. An additional 2 no. electric vehicle charging spaces are provided at the creche facility.

Car Share

4.4.5 5 no. car share spaces are proposed within the development site boundary including 2no. located in close proximity to the houses, 1 no. located at the apartment blocks, 1 no. located at the duplex units and 1 no. located at the creche. Residents / visitors of the subject development can book cars online or via the app for as little as an hour, then unlock with their phone; the keys are in the car, with fuel, insurance and city parking all included. As outlined above, the benefits of such car sharing services include, (i) the reduction of the number of cars on the road and therefore traffic congestion, noise and air pollution; (ii) frees up land traditionally used for private parking spaces but which may not be used, (iii) increases use of public transport, walking and cycling as the need for car ownership is reduced and (iv) Car sharing allows those who cannot afford a car the opportunity to drive, encouraging social inclusivity.

Cycle Parking

4.4.6 A total of 364 number residential bicycle parking spaces are proposed as part of the development scheme comprising 252 no. long stay secured / sheltered spaces for the residential units and 112 no. short stay parking spaces for the residential units. 6 no. long stay cycle parking spaces are proposed for the creche comprising in addition to

the short stay provision permitted as part of the Graydon development located outside the subject application site boundary. **Table 4.3** below provides a summary of the cycle parking provision proposed.

Land Use	Proposed Development		SDCC Requirement		DHPLG Requirement	
	Long Term	Short Term	Long Term	Short Term	Long Term	Short Stay
Apartment Blocks	176	66	27 (116)	14 (58)	178	58
Duplex / GF Apts	64	28	7 (36)	4 (18)	90	18
Houses	-	-	-	-	-	-
Creche	6	22	2	5	-	-
Sub-Total	**246**	**116**	**36 (154)**	**18 (81)**	**268**	**76**
Total	**362**		**54 (235)**		**344**	

- Majority of houses can utilise rear gardens with side access for cycle parking
- Values in brackets represent draft development plan requirements

Table 4.3: Proposed Bicycle Parking Provision

4.4.7 The proposed overall cycle parking provision of 370 spaces is 321 (or over 655%) higher than the current Development Plan minimum requirement and 140 (or 61%) higher than the draft Development Plan minimum requirement. The proposed apartment / duplex cycle parking provision of 330 spaces represents approximately 96% of the DHPLG requirement (344 no. spaces).

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 CURRENT TRANSPORT MODAL SPLIT

5.1.1 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. 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.

5.1.2 A number of residential developments close to the subject site were analysed to establish current commuter trends in the Newcastle area. This analysis will form the basis of the initial travel characteristics that could be generated by the proposed residential development.

5.1.3 **Figure 5.1** below illustrates the areas selected for this analysis. These residential sites were selected due to their proximity to the subject site and as such best represents the development's future travel trends (at least in the short term).

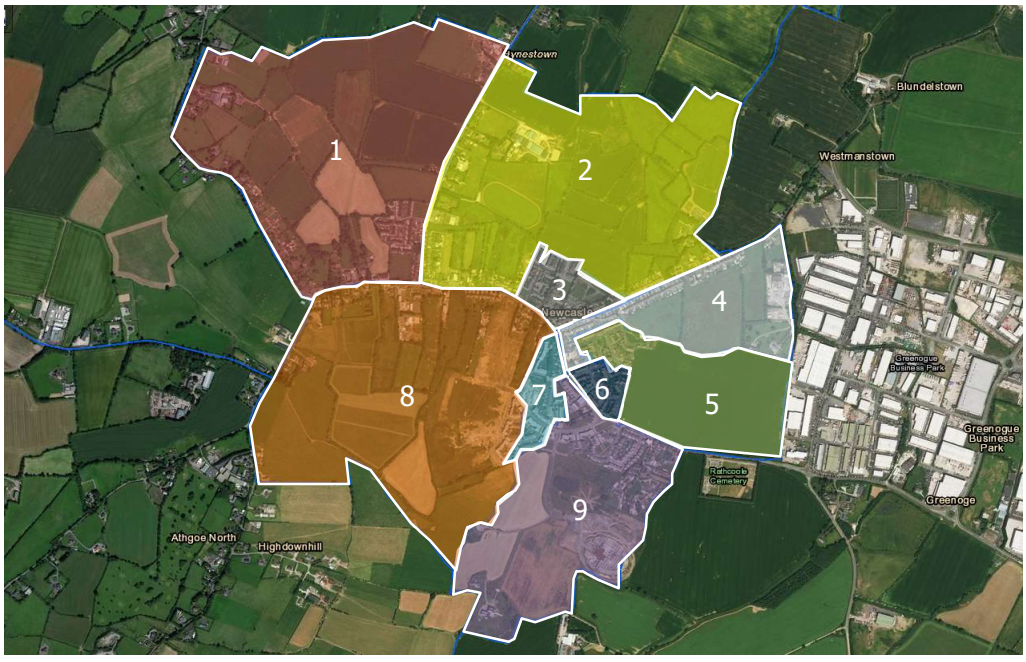


Figure 5.1: Residential Areas of Interest for Trend Analysis
(Source : http://census.cso.ie/sapmap/)

5.1.4 The local residential areas analysed included the following:

1) Newcastle North,
2) Cornerpark,
3) Castlelyon,
4) Commons Little,

5) Newcastle Manor Square / Newcastle Manor Green,
6) Newcastle Manor Park / Newcastle Manor Rise / Newcastle Manor Crescent,
7) Burgage Green / Ballynakelly Edge / Ballynakelly Mews,
8) Newcastle South, and
9) Ballynakelly

5.1.5 The analysis highlights the existing trend in modes used by the residents when travelling to work, school / College from their homes. The summary of the 2016 data for the aforementioned 9 selected sites are illustrated in **Figure 5.2** below.

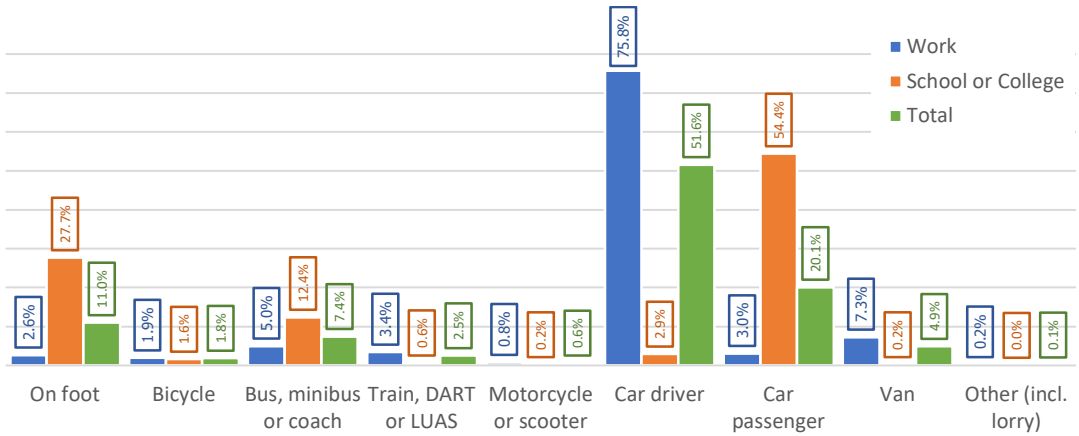


Figure 5.2: 2016 Modal Split for Existing Residential Developments (Newcastle Area)

5.1.6 The above graph indicates that travel by car is the primary mode of transportation in the study area with 75.8% of residents travelling to work as a car driver and 51.6% travelling to school / college as a car passenger.

5.1.7 8.4% of residents travelling to work use public transport (5.0% by bus, 3.4% by rail) whilst 13% of residents travelling for educational purposes do so using public transport (12.4% by bus, 0.6% by rail).

5.1.8 The analysis reveals that 4.5% of work trips are undertaken using active modes of travel whilst active travel trips to school / college account for a 29.3% mode share.

5.2 TRAFFIC SURVEYS

Junction Turning Counts

5.2.1 With the objective of quantifying the existing traffic movements across the local road network vehicle turning counts were undertaken at a number of local junctions.

Weekday traffic counts (classified junction turning counts) were conducted by Irish Traffic Surveys LTD over a 13-hour period from 07:00 to 20:00 on Thursday 31st March 2022 (i.e. a neutral weekday) at the following eleven junctions:

- **Junction 1** – Athgoe / L6001 / Lyons Rd
- **Junction 2** – Athgoe / Western Site Access / Athgoe
- **Junction 3** – Athgoe / Hazelhatch Rd (R405) / Athgoe
- **Junction 4** – Peamount Rd / Main St / Athgoe
- **Junction 5** – Main St / Graydon Rd / Main St
- **Junction 6** – Main St / Aylmer Rd / Main St / Burgage St
- **Junction 7** – R120 / Newcastle Blvd / R120
- **Junction 8** – Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave
- **Junction 9** – Hazelhatch Rd / Grand Canal Way
- **Junction 10** – R120 / N7 Interchange
- **Junction 11** – R120 / Rathcoole Junction

5.2.2 The analysis of the survey results established that the local weekday AM and PM peak hours currently occur between 08:00 – 09:00 and 17:00 – 18:00 respectively.

5.2.3 In order to analyse and assess the predicted traffic generation from the proposed residential development upon the local road network, an area wide traffic model incorporating the aforementioned local junctions has been created.

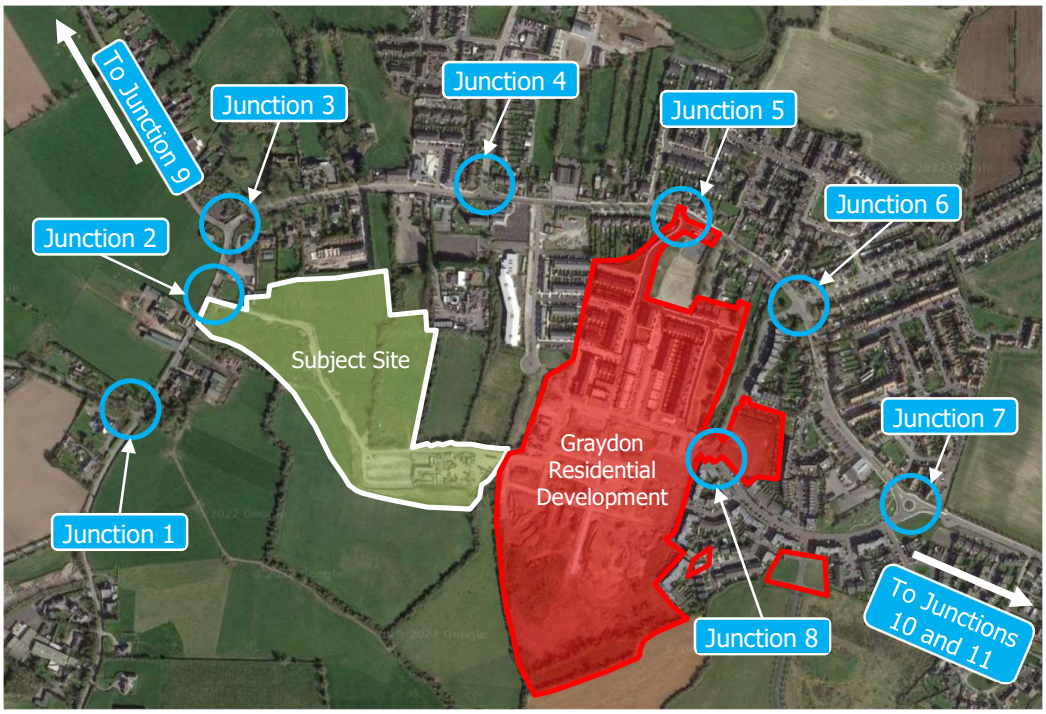


Figure 5.3: Junctions 1 – 8 Surveyed (March 2022)

Figure 5.4 Junctions 9, 10 and 11 Surveyed (March 2022)

5.3 TRIP GENERATION

5.3.1 It is predicted, particularly in the 2024 Opening Year, that the residents travel mode share will be similar to that illustrated in **Figure 5.2** which is based on similar resident travel trends obtained from 2016 Census data in the local area. Nevertheless, with the objective of investigating the long term vehicle trip demand that could potentially be generated by the proposed development, trip rates have been derived from the TRICS database for residential developments with similar site and land use characteristics to the subject development site. These vehicle trip rates as predicted by TRICS (which is a trip generation database) are presented in **Table 5.3** and **5.4** below.

Person Trips

5.3.2 Based on the mode share proportions derived from the Census 2016 data in **Section 5.1** above, the total person trips (i.e. trips by all modes of travel and not exclusively vehicle trips) can be estimated. It has been assumed that the predicted vehicle trips generated by the subject residential development correspond to the proportion of vehicle trips derived within the Census mode share data.

5.3.3 **Table 5.1** below presents the predicted person trips generated by the subject residential development during the AM and PM peak hours.

Mode of Travel	Average Mode Share (%)	AM Peak Hour		PM Peak Hour	
		Arr	Dep	Arr	Dep
On Foot	11.0%	4	11	16	8
Bicycle	1.8%	1	2	3	1
Bus, minibus or coach	7.4%	3	8	11	6
Train, DART or LUAS	2.5%	1	3	4	2
Motorcycle or scooter	0.6%	0	1	1	0
Car driver	51.6%	19	53	74	40
Car Passenger	20.1%	7	21	29	16
Van	4.9%	2	5	7	4
Total Person Trips		37	104	144	77

Table 5.1: Proposed Residential Predicted Person Trips

Sustainable Travel Based Trips

5.3.4 In reference to the baseline modal split data presented in **Table 5.1** (Census Data) for the local Newcastle area adjoining the subject Newcastle South site, it has been possible to estimate the number of trips undertaken by sustainable modes of travel that the proposed development could generate in the peak travel periods i.e. (0600-1000 in the AM and 1600-2000 in the PM). The predicted AM and PM peak period trips are presented in **Table 5.2** below.

Peak Period	PT Rail Trips	PT Bus Trips	Cycling	Walking
AM (06:00-10:00)	11	33	8	49
PM (16:00-20:00)	15	46	11	68

Table 5.2: Potential Two-Way Development Trips by Sustainable Modes of Travel

Vehicle Trip Generation

5.3.5 **Table 5.3** presents the predicted trip generation and the estimated traffic flows arriving and departing the proposed development during the morning and evening peak hour periods. The TRICs output data can be found in **Appendix B** of this TTA report.

Land Use	Unit	AM Peak Hour		PM Peak Hour	
		Arr	Dep	Arr	Dep
Houses	Per Unit	0.081	0.267	0.309	0.168
Apartments	Per Unit	0.056	0.130	0.120	0.347

Table 5.3: Proposed Residential Development Trip Rates

5.3.6 Based on the above trip rates, potential peak hour vehicle traffic flow has been calculated based on the total development quantities (i.e. 280 residential units). **Table 5.4** summarises the predicted AM and PM peak hour traffic generated by the

proposed development. The trip generation exercise predicts that the subject scheme could generate 73 no. and 115 no. two-way vehicle trips in the AM (08:00-09:00) and PM (17:00-18:00) peak hours respectively.

Unit Type	AM Peak Hour			PM Peak Hour		
	Arr	Dep	2-way	Arr	Dep	2-way
Apartment / Duplex	9	20	**29**	35	18	**53**
House	10	34	**44**	40	22	**62**
Total	**19**	**54**	**73**	**75**	**40**	**115**

Table 5.4: Proposed Residential Development Trips Per Design Year

Construction Rate

5.3.7 For the purpose of this assessment it is assumed that all 128 houses will be constructed by the adopted 2024 Opening Year and the remaining 152 no. apartment / duplex units could be constructed and occupied sometime before the adopted 2029 Future Design Year. In addition, for the purpose of a worst case sensitivity test (**Section 7.0**) it has been assumed that all future zoned lands development units could potentially be constructed by the adopted 2039 Future Design Year.

5.4 COMMITTED DEVELOPMENT

5.4.1 With the objective of providing a robust appraisal we have included third party committed developments that have the potential to generate additional vehicle movements across the local road network above.

5.4.2 A total of seven number third party committed developments have been identified, which being located in close proximity to the proposed residential development, may generate an impact upon the local road networks existing traffic characteristics. These committed developments, as introduced below comprise different development land uses including residential and commercial.

- **Site 1** – Residential Development (Planning Ref: SD17A/0378) – 46 no. houses
- **Site 2** – Residential Development (Planning Ref: SD15A/0193 - SD17A/0288) – 77 no. houses
- **Site 3** – Residential Development (Planning Ref: SD16A/0117) – 49 no. houses
- **Site 4 and 5** – Residential Development (Planning Ref: SD17A/0010 – SD18A/0363) – 45 residential houses, 4 apartments and 346 sqm of retail units

- **Site 6** – Graydon Residential Development (Planning Ref: ABP-305343-19) including – The demolition of 5 structures on site, total area measuring 359sq.m, comprising 2 habitable dwellings and 3 associated outbuildings/sheds located to the northwest of the site; (2) development of 406 residential homes; (3) a childcare facility (518sq.m GFA); (4) 1 commercial unit (67.7sq.m GFA); (5) reservation of a school site (1.5ha); (6) new vehicular, cycle and pedestrain access from Main Street; (7) continuation of Newcastle Boulevard forming part of a new east-west link street; (8) a new Public Park (2ha); (9) pocket parks and greenway together with associated internal access roads, pedestrain and cycle paths and linkages; (10) 1 single storey marketing suite (81sqm)
- **Site 7** – A mixed use development (SD20A/0037) comprising, 1 habitable house and 2 associated outbuildings/sheds, and the construction of 1 double storey (c.9.2m overall height) retail development in the form of a convenience supermarket (GFA c.1,759sq.m); 1 two storey mixed-use building (c.10.7m overall height) comprising of a café (c.225sq.m) at ground floor and a community centre at the first floor (c.140sq.m) with associated ground floor access (total GFA c.468sq.m)

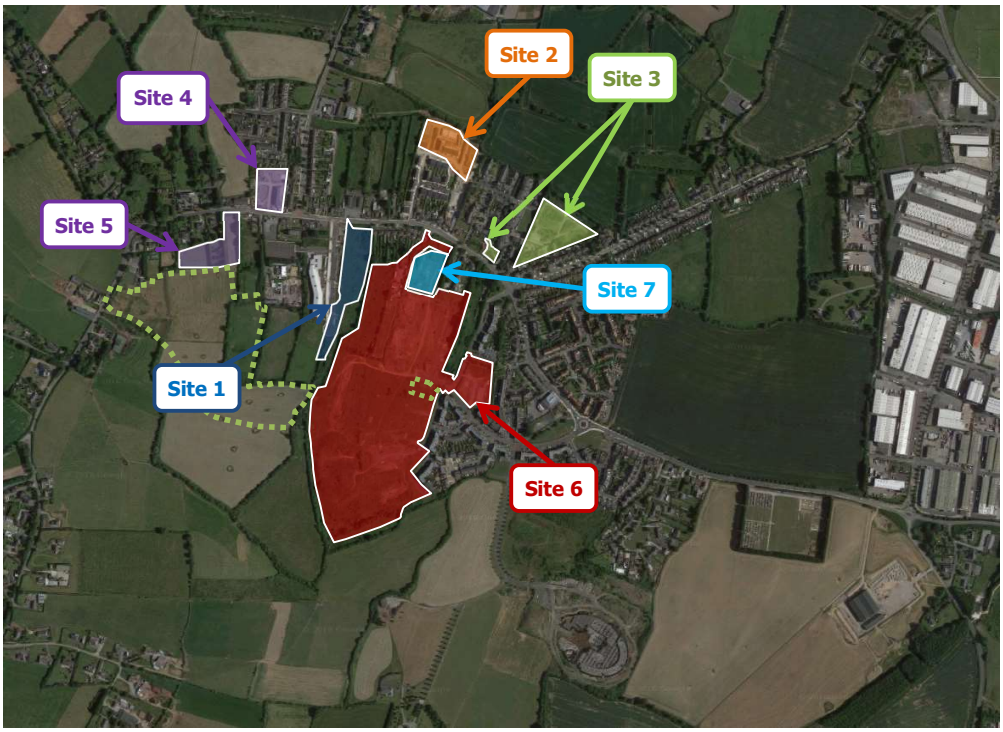


Figure 5.4: Committed Development Locations

Committed Development Trip Generation

5.4.3 In order to establish the potential quantum of vehicle traffic generated by the 6 no. third party development trips, the South Dublin County Council's online planning system has been referenced and each third-party scheme's corresponding TTA report (where applicable) was obtained and reviewed. The vehicle trips derived from this exercise have been incorporated as committed development within the Excel based network traffic assignment model developed by DBFL for the subject development proposals. For those committed developments which did not include a TTA, vehicle trip rates have been derived from the TRICS database.

5.5 TRIP DISTRIBUTION & ASSIGNMENT

5.5.1 The distribution of proposed development traffic as proposed by DBFL are presented in **Figure 17** as included in **Appendix A** of this report. The associated residential vehicle trips have been assigned to the network based on the available routes to / from key destinations. Accordingly, five major strategic cordon points have been identified where the majority of vehicular traffic will be coming from/ going to the subject site (**Figure 5.5**).

Figure 5.5: Strategic Vehicle Movements

5.6 REDISTRIBUTION OF NETWORK TRAFFIC FLOWS

5.6.1 The subject Newcastle South development proposals include for the extension of the Principal Access Road (as per the LAP objective) through the site from the Graydon Residential Development section to Athgoe Road. Whilst the proposed internal roads layout will be designed in such a way as to deter potential 'rat running' through the subject lands, it is expected that a small proportion of existing traffic may divert through the subject site in order to avoid Newcastle village centre. DBFL have assumed that 15% of existing traffic entering / exiting the network at the Athgoe / Hazelhatch Road will be reassigned to the new Principal Access Road in the 2024 Opening Year. These redistributed traffic flows are presented on Figures 18 to 21 in **Appendix A**.

5.7 TRAFFIC GROWTH

5.7.1 The TTA adopts an Opening Design year of 2024 and accordingly Future Design Years of 2029 (Opening Year +5 years) and 2039 (Opening Year + 15 years) as per TII guidelines. 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) traffic projections. Table 6.1 (Unit 5.3 – Travel Demand Projections) within the TII Project Appraisal Guidelines provides Annual Growth Factors for the different regions within Ireland. The subject site lies within 'Dublin Metropolitan Area' with the growth factors as outlined within **Table 5.7** below.

County	Low Sensitivity Growth				Central Growth				High Sensitivity Growth			
	2016-2030		2030-2040		2016-2030		2030-2040		2016-2030		2030-2040	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0146	1.0280	1.0034	1.0116	1.0162	1.0295	1.0051	1.0136	1.0191	1.0328	1.0087	1.0172

LV-Light Vehicle, HV – Heavy Vehicle

Table 5.7: National Traffic Growth Forecasts: Annual Growth Factors (Extract from Table 6.1PAG)

5.7.2 Applying the 'Central Growth' annual factors as outlined in **Table 5.8** above for the adopted Opening Year of 2024 and Future Design Years of 2029 (Opening Year +5 years) and 2039 (Opening Year +15 years), the following growth rates have been adopted to establish corresponding 2024, 2029 and 2039 baseline network flows.

5.7.3 It is noted that the TII Project Appraisal Guidelines states that: -

"the central growth rates are intended for use in project appraisal with the low and high growth rates to be used as sensitivity tests for economic and environmental impacts."

	2022 to 2024	2022 to 2029	2022 to 2039
Central Growth	1.0327	1.1191	1.1775
	3.27%	11.91%	17.75%

Table 5.8: Growth Rates

6.0 NETWORK IMPACT ASSESSMENT

6.1 ASSESSMENT SCOPE

Assessment Scenarios

6.1.1 Three different traffic scenarios have been assessed, namely (a) the 'Base' (Do-Nothing) traffic characteristics, (b) Do-Minimum (introduction of the Principal Access Road with a connection with Athgoe Road and subsequent redistribution of traffic) and (c) the 'Post Development' (Do-Something).

6.1.2 The 'Do-Nothing' traffic scenario takes into account the potential level of traffic that could be generated by the 'committed development' including the adjoining Graydon Residential Development traffic in addition to the existing flows travelling across the network.

6.1.3 The 'Do-Minimum' traffic scenario takes into account the potential level of traffic that could be generated by the 'committed development' including the adjoining Graydon Residential Development traffic in addition to the existing 'redistributed' traffic flows as a result of the extension of the Principal Access Road to Athgoe Road.

6.1.4 The proposed development traffic flows are then added to the network's 'Do-Minimum traffic flows to establish the new 'Post Development' traffic flows.

6.1.5 In summary the following scenarios are considered: -

Do Nothing

- A1 – 2024 Base Flows + Committed Developments (including Graydon Residential Development)
- A2 – 2029 Base Flows + Committed Developments (including Graydon Residential Development)
- A3 – 2039 Base Flows + Committed Developments (including Graydon Residential Development)

Do Minimum

- B1 – 2024 Do-Nothing (A1) + Redistribution
- B2 – 2029 Do-Nothing (A2) + Redistribution
- B3 – 2039 Do-Nothing (A3) + Redistribution

Do Something

- C1 – 2024 Do-Minimum (B1) + Proposed Development Flows

- C2 – 2029 Do-Minimum (B2) + Proposed Development Flows
- C3 – 2039 Do-Minimum (B3) + Proposed Development Flows

Assessment Period

6.1.6 The AM and PM peak hour flows have been identified as occurring between 08:00 - 09:00 and 17:00 – 18:00 respectively. These peak hour periods form the basis of the 2024, 2029 and 2039 network assessments.

Network Vehicle Flows

6.1.7 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 14** – 2024 Do Nothing
- **Figure 24** – 2024 Do Minimum
- **Figure 29** – 2024 Do Something
- **Figure 15** – 2029 Do Nothing
- **Figure 25** – 2029 Do Minimum
- **Figure 30** – 2029 Do Something
- **Figure 16** – 2039 Do Nothing
- **Figure 26** – 2039 Do Minimum
- **Figure 31** – 2039 Do Something

6.2 ROAD NETWORK IMPACT

6.2.1 There are currently no definitive criteria for assessing "significance of effects" ratings against the seven generalised degrees of effect significance as set out in the EIAR Guidelines (2022) for traffic impacts. TII guidance does provide thresholds for determining when to carry out a traffic assessment for a planning application: if a proposed development is likely to increase traffic by 10% (or 5% in traffic sensitive or congested areas), the planning application should be accompanied by a traffic assessment. It should be noted that the TII guidance does not provide criteria for assessing significance of impacts for EIA purposes. Nevertheless, the prevailing traffic levels local to the proposed development and professional judgement, a significance effect rating has been assigned to the different levels of potential traffic increases (see **Table 6.1**). This is intended to guide the assessment of the potential impact of the proposed development.

Significance of Effects	Traffic Increase
Imperceptible	0-2.5%
Not Significant	2.5-5%
Slight	5-10%
Moderate	10-20%
Significant	20-30%
Very Significant	30%-50%
Profound	50%+

Table 6.1: Rating of Impacts based on Traffic Contribution

6.2.2 **Table 6.2** details the specific scale of network impact predicted at each of the key local junctions during the 2024, 2029 and 2039 design years as a result of the subject Newcastle South development proposals. This table reveals that, with the exception of the eastern and western site access junctions, the impact on the surrounding road network is predicted to be sub threshold at all key off-site junctions with the introduction of the subject development traffic. With the introduction of the subject development and associated through route, a reduction in traffic flows within the Town Centre is predicted as signified by the negative values in **Table 6.2** below.

Ref	Junction	Design Year	AM Peak Hour	PM Peak Hour
1	Athgoe / L6001 / Lyons Rd	2024	0.8%	0.1%
		2029	1.1%	0.4%
		2039	1.0%	0.3%
2	Athgoe / Western Site Access / Athgoe	2024	17.2%	18.2%
		2029	17.0%	18.0%
		2039	16.2%	17.2%
3	Athgoe / Hazelhatch Rd (R405) / Athgoe	2024	- 5.2%	- 4.2%
		2029	- 4.3%	- 3.2%
		2039	- 4.1%	- 3.0%
4	Peamount Rd / Main St / Athgoe	2024	- 10.2%	- 8.6%
		2029	- 9.0%	- 8.6%
		2039	- 8.6%	- 8.2%
5	Main St / Graydon Rd / Main St	2024	- 10.0%	- 7.9%
		2029	- 9.2%	- 8.4%
		2039	- 8.8%	- 8.0%
6	Main St / Aylmer Rd / Main St / Burgage St	2024	- 8.5%	- 7.7%
		2029	- 7.2%	- 6.2%
		2039	- 6.9%	- 5.9%
7	R120 / Newcastle Blvd / R120	2024	2.2%	2.7%
		2029	3.2%	4.4%
		2039	3.0%	4.2%
8		2024	107.4%	73.6%

Ref	Junction	Design Year	AM Peak Hour	PM Peak Hour
	Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave	2029	116.2%	87.6%
		2039	113.1%	85.7%
9	Hazelhatch Rd / Grand Canal Way	2024	0.6%	0.4%
		2029	1.3%	2.1%
		2039	0.8%	1.1%
10	R120 / N7 Interchange	2024	0.9%	1.4%
		2029	1.3%	2.2%
		2039	1.2%	2.1%
11	R120 / Rathcoole Junction	2024	1.3%	1.8%
		2029	1.5%	2.4%
		2039	1.4%	2.3%

Table 6.2: Proposed Developments Network Impact

6.2.3 The predicted above threshold impacts at the western site access (on Athgoe Rd) and eastern site access (on Burgage Street) are a result of a cumulation of factors including :-

- Existing low flows at these locations;
- Diverted base traffic flow which will re-route through these junctions following the introduction of a through route that avoids the Town Centre; and
- Vehicles entering / exiting the future site access arms of these junction comprise construction traffic associated with the emerging Graydon residential development only.

6.2.4 In **Table 6.3** (AM Peak Hour) and **Table 6.4** (PM Peak Hour) the predicted impacts have been categorised for the 2039 future design year.

6.2.5 **Table 6.3** reveals that, during the AM peak hour, the impact significance of the subject proposals are categorised as ***Imperceptible*** to ***Slight*** at all key off-site junctions. At the future site access locations, the impacts are classified as ***Moderate*** to ***Very Significant***.

6.2.6 Similarly, during the PM peak hour, the impact significance of the subject proposals are categorised as ***Imperceptible*** to ***Slight*** at all key off-site junctions. At the future site access locations, the impacts are classified as ***Moderate*** to ***Very Significant***.

	Junction - Nature of Impact (Additional Vehicular Traffic on key Junctions)	Impact Scale	Impact Significance	Impact Effect
1	Athgoe / L6001 / Lyons Rd	1.0%	Imperceptible	Negative
2	Athgoe / Western Site Access / Athgoe	16.2%	Moderate	Negative
3	Athgoe / Hazelhatch Rd (R405) / Athgoe	- 4.1%	Not Significant	Positive
4	Peamount Rd / Main St / Athgoe	- 8.6%	Slight	Positive
5	Main St / Graydon Rd / Main St	- 8.8%	Slight	Positive
6	Main St / Aylmer Rd / Main St / Burgage St	- 6.9%	Slight	Positive
7	R120 / Newcastle Blvd / R120	3.0%	Not Significant	Negative
8	Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave	113.1%	Very Significant	Negative
9	Hazelhatch Rd / Grand Canal Way	0.8%	Imperceptible	Negative
10	R120 / N7 Interchange	1.2%	Imperceptible	Negative
11	R120 / Rathcoole Junction	1.4%	Imperceptible	Negative

Table 6.3: Network Impact Categorisation 2039 AM Peak Hour

	Junction - Nature of Impact (Additional Vehicular Traffic on key Junctions)	Impact Scale	Impact Significance	Impact Effect
1	Athgoe / L6001 / Lyons Rd	0.3%	Imperceptible	Negative
2	Athgoe / Western Site Access / Athgoe	17.2%	Moderate	Negative
3	Athgoe / Hazelhatch Rd (R405) / Athgoe	- 3.0%	Not Significant	Positive
4	Peamount Rd / Main St / Athgoe	- 8.2%	Slight	Positive
5	Main St / Graydon Rd / Main St	- 8.0%	Slight	Positive
6	Main St / Aylmer Rd / Main St / Burgage St	- 5.9%	Slight	Positive
7	R120 / Newcastle Blvd / R120	4.2%	Not Significant	Negative
8	Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave	85.7%	Very Significant	Negative

9	Hazelhatch Rd / Grand Canal Way	1.1%	Imperceptible	Negative
10	R120 / N7 Interchange	2.1%	Imperceptible	Negative
11	R120 / Rathcoole Junction	2.3%	Imperceptible	Negative

Table 6.4: Network Impact Categorisation 2039 PM Peak Hour

6.2.7 **Figures 6.1** & **6.2** below details the total amount of two-way vehicle trips that will pass through the key off-site junctions in the 2039 Future Design Year and the resulting percentage increase in traffic flows as a result of the traffic generated by the proposed Newcastle South development.

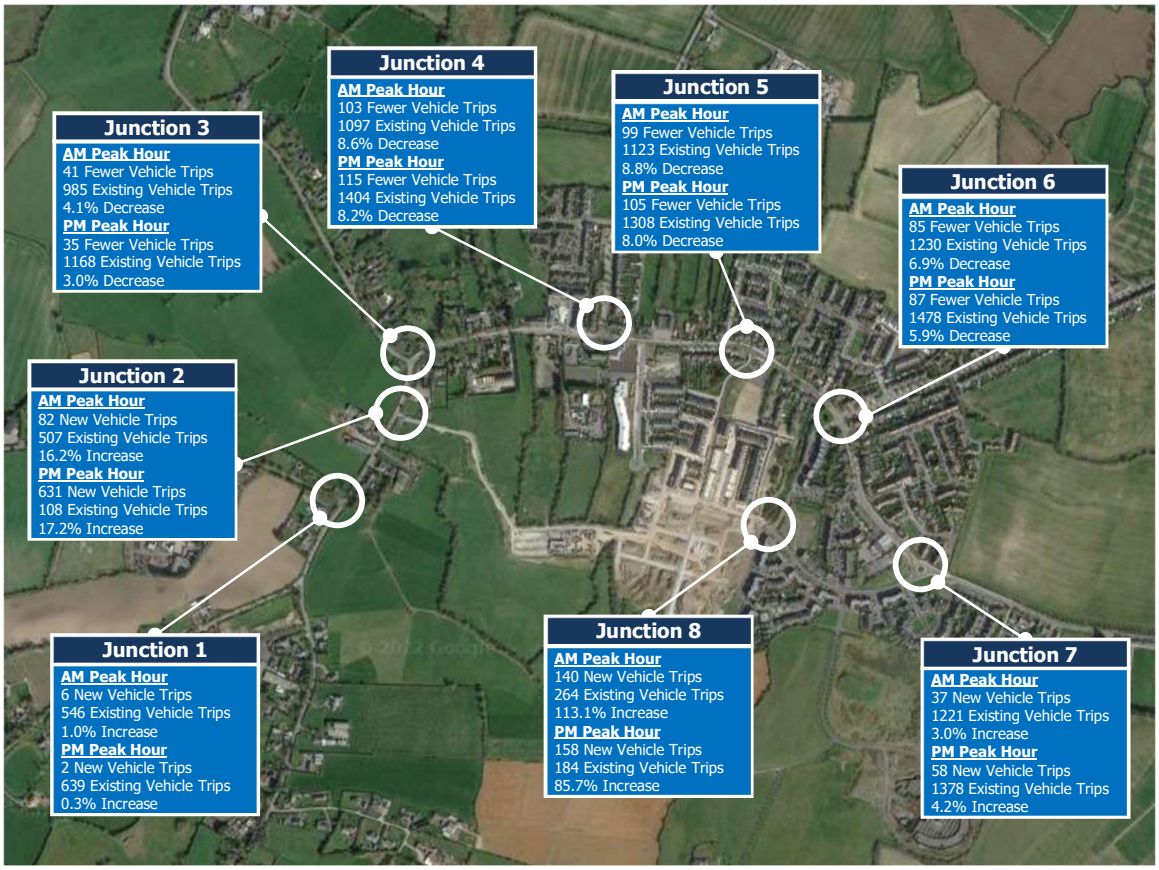


Figure 6.1: Increase in Vehicle Trips Generated Through Junctions 1-8 (2039 Future Design Year)

Figure 6.2: Increase in Vehicle Trips Generated Through Junctions 9-11 (2039 Future Design Year)

6.2.8 Based on the network impact assessment above, and the subthreshold impact predicted at all junctions considered, two of the junctions are required to be subjected to further detailed assessment as outlined in Section 7 of this TTA report. These include:

- Junction 2 - Athgoe / Western Site Access / Athgoe
- Junction 8 - Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave

6.2.9 Additional analysis (see Section 7) has also been carried out at Junction 7 - R120 / Newcastle Blvd / R120 roundabout due to the projected alterations to traffic movements through this junction following the implementation of a through route via the subject development and Graydon residential development lands.

6.3 MITIGATION STRATEGY

6.3.1 A package of integrated mitigation measures has been identified to off-set the additional local demand that the proposed residential development on the subject zoned lands could potentially generate as a result of the forecast increase in vehicle movements by residents of the scheme. The strategy includes specific measures for both the construction and operational stages of the proposed development.

Construction Stage

6.3.2 The Construction & Environmental Management Plan (an outline CEMP accompanies the application) and the associated Construction Traffic Management Plan (CTMP) in addition to the applications accompanying Construction and Waste Management Plan will incorporate a range of integrated control measures and associated management initiatives with the objective of mitigating the impact of the proposed developments on-site construction activities.

6.3.3 In general, the impact of the construction period will be short-term in nature and less significant than the operational stage of the proposed development due to the reduced traffic volumes generated during the construction stage compared to the operational stage. In addition, the peak construction arrivals / departures will be outside of the road network peak hours and therefore will not exacerbate any existing delays encountered during peak times. It is anticipated that the generation of HGV's during the construction period will be evenly spread throughout the day and such will not impact significantly during the peak traffic period.

6.3.4 The main construction access will be via the existing construction access located on Athgoe Road which currently facilitates access to construction vehicles at the adjacent Graydon residential development currently under construction as introduced in Section 10.6.1.

6.3.5 Construction traffic will continue to enter the site via the Athgoe Road for the construction phase of the development with construction traffic diverted to internal, temporary haul routes to access construction areas.

6.3.6 All construction related parking will be provided on site. Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff. The proposed on-site car parking area will be designed to have the capacity to accommodate this parking demand in addition to an element of visitor parking spaces.
- Excavation plant and dumper trucks involved in site development works and material delivery vehicles for the following: granular fill materials, concrete pipes, manholes, reinforcement steel, ready mix concrete and mortar, concrete blocks, miscellaneous building materials, etc.

6.3.7 It is anticipated that the generation of HGV's during the construction period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic periods.

6.3.8 On-site employees will generally arrive before 08:00, thus avoiding morning peak hour traffic. These employees will generally depart after 18:00 and avoid the PM peak hour.

6.3.9 To minimise disruption to the surrounding environment, the following mitigation measures will be implemented:

- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads.
- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- A dedicated 'construction' site access / egress junction will be provided during all construction phases. This will be via the existing accesses constructed on Athgoe Road as introduced in Section 10.6.1.
- Provision of sufficient on-site parking for staff and visitors (as described above) and compounding through the construction of temporary hardstanding areas to ensure no potential overflow of construction generated traffic onto the local network.
- A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.
- A series of 'way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.
- A dedicated construction haul route has been identified and will be agreed with the local authority prior to the commencement of constructions activities on-site.
- Truck wheel washes will be installed at construction and discharge from wheel wash area will be directed to on-site settlement ponds.
- On completion of the works all construction materials, debris, temporary hardstands etc. from the site compound will be removed off site and the site compound area reinstated in full on completion of the works.

- Measures will be put in place to minimise the risk of road traffic accidents during the construction phase including;
    - appropriate temporary traffic management as required,
    - strict adherence to the proposed construction vehicle haul route, and
    - Wayfinding signage so all visitors can navigate to the designated visitor parking and sign in areas.

Operational Stage

6.3.10 With the objective of mitigating the potential impact of the proposed development as predicted in **Section 6.1** above during its operational stage, the following initiatives and associated timescale for their implementation have been identified and subsequently form an integral part of the subject development proposals.

6.3.11 Management – A Mobility Management Plan (MMP) is to be compiled with the aim of guiding the delivery and management of coordinated initiatives by the scheme promotor. The MMP ultimately seeks to encourage sustainable travel practices for all journeys to and from the proposed development. The measures in the MMP comprise an number of different categories including;

- Management & Monitoring
- Walking Strategy
- Cycling Strategy
- Public Transport Strategy
- Private Car Strategy
- Marketing & Promotion Strategy.

6.3.12 Infrastructure - The proposed scheme design incorporates the LAP objectives of 'Green Links' through the site for the benefits of pedestrians and cyclists. The implementation of dedicated infrastructure along an integrated area wide catchment provides an attractive, convenient, seamless 'green' corridor providing a permeable, safe connection between existing (and future) residential neighbouring's and key community facilities including schools, shops and local service centres.

6.3.13 Infrastructure (Through Road) – The delivery of a through route between the eastern access point at Burgage Crescent and the western access location on Athgoe Road will provide an alternative routing option between origins / destinations to the east /

west negating the need to travel via Newcastle Town Centre. This will help improve the operational performance of junctions along Main Street and create a more pedestrian / cyclist friendly environment in the Town Centre.

6.3.14 Infrastructure (Permeability) – The subject development will be highly accessible to both pedestrians and cyclists via a range of convenient connection points and internal linkages. New dedicated pedestrian / bicycle facilities have been provided as part of the aforementioned new road infrastructure through the site. Pedestrians and cyclists will also be well provided for through the provision of dedicated (i.e., non-vehicular) connections onto Newcastle Main Street. Furthermore, the design of the proposed development has sought to provide for the opportunity for pedestrian / cycle connection to be provided in the future to adjoining third party lands. The provision of these internal linkages safeguards the ability for the local authority to deliver in the future a viable, convenient and permeable network of cycle / pedestrian links thereby increasing the attractiveness of these modes of travel for all local trips. Furthermore, the proposals also provide for the provision of a total of 370 no. bicycle parking spaces on-site comprising 112 no. short stay spaces and 258 no. long stay spaces. This level of cycle parking provision is 321 no. spaces higher than the current development plan requirement and 140 no. spaces higher than the draft development plan requirement.

6.3.15 Service (Car Sharing) – 5 no. Car Share spaces are proposed within the development site boundary including 2no. located in close proximity to the houses, 1 no. located at the apartment blocks, 1 no. located at the duplex units and 1 no. located at the creche. GoCar members can book cars online or via the app for as little as an hour, then unlock with their phone or GoCar; the keys are in the car, with fuel, insurance and city parking all included. The benefits of such car sharing services include, (i) the reduction of the number of cars on the road and therefore traffic congestion, noise and air pollution; (ii) frees up land traditionally used for private parking spaces but which may not be used, (iii) increases use of public transport, walking and cycling as the need for car ownership is reduced and (iv) Car sharing allows those who cannot afford a car the opportunity to drive, encouraging social inclusivity.

7.0 NETWORK ANALYSIS

7.1 INTRODUCTION

7.1.1 This network assessment considers the impact of the subject development's predicted traffic generation on the surrounding road network. An additional yet separate assessment (Sensitivity Test) considers the potential effect of the additional vehicle trips generated by the potential future of the 3rd Party Taobh Chnoic Extension in order to test if sufficient capacity is available at the proposed and existing junctions included in the subject network assessment. This additional assessment is summarised in **Section 8** of this report.

7.1.2 The operational assessment of the local road network has been undertaken using the Transport Research Laboratory (TRL) junction modelling software TRANSYT for signal-controlled junctions, ARCADY for roundabouts and PICADY for priority junctions.

7.1.3 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 roundabout junctions and priority 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.

7.1.4 For the TRANSYT analysis a one-hour AM and PM period has been simulated from 08:00 to 09:00 and 17:00 to 18:00. Additionally, for the ARCADY and PICADY analyses a 90-minute AM period and PM period has been simulated; from 07:45 to 09:15 and 16:45 to 18:15 respectively. For the ARCADY, PICADY and TRANSYT analyses, traffic flows were entered using an Origin-Destination table for the peak hours.

7.1.5 In order to analyse and assess the impact of the proposed development on the surrounding road network, a traffic model of the key junctions were analysed for the schemes following opening and design years:

- 2024 Opening Year
- 2029 Future Design Year (Opening Year +5 years)
- 2039 Future Design Year (Opening Year +15 years)

7.1.6 As discussed in **Section 6**, the subject development proposals are predicted to have subthreshold impacts upon the majority of off-site key junctions across the

surrounding road network with the exception of the two site access junctions. Accordingly, the following junctions (**Figure 7.1**) have been considered for further analysis due to their function as main vehicular access points. In addition, Junction 7 has been included due to the predicted alterations in traffic movements through this junction following the availability of a through route to Athgoe Road via the subject development lands.

- **Junction 2** – Athgoe / Western Site Access / Athgoe
- **Junction 8** – Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave

Junction 7 - R120 / Newcastle Blvd / R120 has also been analysed due to it's location on along Newcastle Boulevard.

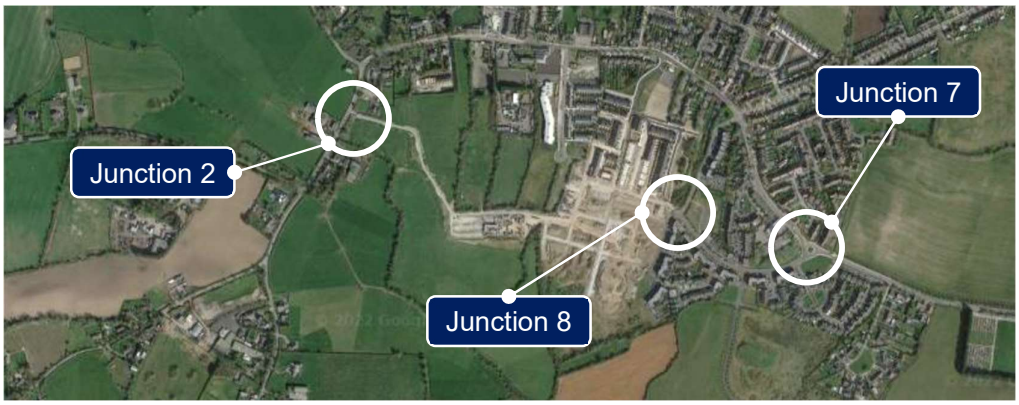


Figure 7.1: Junctions included within the Detailed Network Analysis

7.2 JUNCTION 2: ATHGOE / WESTERN SITE ACCESS / ATHGOE

7.2.1 The results of the operational assessment of this proposed signal controlled off-site junction during the weekday morning and evening peaks are summarised in **Tables 7.1** to **7.3** below. The arms were labelled as follows within the TRANSYT model:

Arm A: Athgoe (N)

Arm B: Site Access

Arm C: Athgoe (S)

2024 Opening Year

7.2.2 The TRANSYT results summarised in **Table 7.1** indicate that the proposed Athgoe / Western Site Access / Athgoe Junction three arm signalised junction will operate within capacity for both the 2024 "Do Minimum" (DM) and "Do Something" (DS) AM & PM peak hours. A maximum Degree of Saturation (DoS) value of 24% and a maximum Mean Max Queue (MMQ) of 2.29 pcu's was recorded during the DM AM

peak hour and similarly a DoS value of 28% and a maximum MMQ of 2.29 pcu's was recorded during the DS AM peak hour.

7.2.3 In the 2024 DM PM peak hour scenario, a max DoS of 32% with a corresponding MMQ of 4.83 pcu's was recorded whilst a DoS value of 33% and a maximum MMQ of 4.92 pcu's was recorded during the DS PM peak hour. A copy of the TRANSYT output data is provided in **Appendix C** of this TTA report.

Scenario		Arm	Arm Name	Degree of Saturation (%)	Mean Delay per Veh (s)	Mean Max Queue (pcu)
Do-Minimum	AM Peak Hour	A	Athgoe (N)	16	7.91	2.06
		B	Site Access	24	45.93	1.02
		C	Athgoe (S) - Ahead	18	5.43	2.29
			Athgoe (S) – Right Turn	4	6.83	0.39
	PM Peak Hour	A	Athgoe (N)	32	13.15	4.83
		B	Site Access	32	34.06	3.02
		C	Athgoe (S) - Ahead	16	10.94	2.34
			Athgoe (S) – Right Turn	4	16.03	0.32
Do-Something	AM Peak Hour	A	Athgoe (N)	16	7.92	2.08
		B	Site Access	28	46.91	1.19
		C	Athgoe (S) - Ahead	18	5.43	2.29
			Athgoe (S) – Right Turn	4	6.85	0.39
	PM Peak Hour	A	Athgoe (N)	33	13.22	4.92
		B	Site Access	33	34.24	3.12
		C	Athgoe (S) - Ahead	16	10.94	2.34
			Athgoe (S) – Right Turn	4	16.10	0.34

Table 7.1: 2024 Peak Hour TRANSYT Analysis

2029 Future Design Year

7.2.4 The TRANSYT results summarised in **Table 7.2** indicate that the proposed Athgoe / Western Site Access / Athgoe Junction three arm signalised junction will operate within capacity for both the 2029 DM and DS AM & PM peak hours.

7.2.5 A maximum Degree of Saturation (DoS) value of 24% and a maximum Mean Max Queue (MMQ) of 2.92 pcu's was recorded during the DM AM peak hour and similarly a DoS value of 30% and a maximum MMQ of 2.92 pcu's was recorded during the DS AM peak hour.

7.2.6 In the 2029 DM PM peak hour scenario, a max DoS of 35% with a corresponding MMQ of 5.33 pcu's was recorded whilst a DoS value of 36% and a maximum MMQ of 5.61 pcu's was recorded during the DS PM peak hour.

Scenario		Arm	Arm Name	Degree of Saturation (%)	Mean Delay per Veh (s)	Mean Max Queue (pcu)
Do-Minimum	AM Peak Hour	A	Athgoe (N)	17	8.00	2.20
		B	Site Access	24	45.93	1.02
		C	Athgoe (S) - Ahead	20	5.54	2.92
			Athgoe (S) – Right Turn	4	7.02	0.39
	PM Peak Hour	A	Athgoe (N)	35	13.48	5.33
		B	Site Access	32	34.06	3.02
		C	Athgoe (S) - Ahead	17	11.06	2.92
			Athgoe (S) – Right Turn	4	16.61	0.33
Do-Something	AM Peak Hour	A	Athgoe (N)	17	8.02	2.24
		B	Site Access	30	47.58	1.31
		C	Athgoe (S) - Ahead	20	5.54	2.92
			Athgoe (S) – Right Turn	4	7.05	0.40
	PM Peak Hour	A	Athgoe (N)	36	13.61	5.61
		B	Site Access	34	34.42	3.22
		C	Athgoe (S) - Ahead	17	11.06	2.92
			Athgoe (S) – Right Turn	5	16.86	0.38

Table 7.2: 2029 Peak Hour TRANSYT Analysis

2039 Future Design Year

7.2.7 The TRANSYT results summarised in **Table 7.3** indicate that the proposed Athgoe / Western Site Access / Athgoe Junction three arm signalised junction will operate within capacity for both the 2039 DM and DS AM & PM peak hours.

Scenario		Arm	Arm Name	Degree of Saturation (%)	Mean Delay per Veh (s)	Mean Max Queue (pcu)
Do-Minimum	AM Peak Hour	A	Athgoe (N)	18	8.06	2.31
		B	Site Access	27	48.01	1.04
		C	Athgoe (S) - Ahead	20	5.26	2.92
			Athgoe (S) – Right Turn	4	6.71	0.38
	PM Peak Hour	A	Athgoe (N)	36	13.71	5.72
		B	Site Access	32	34.06	3.02
		C	Athgoe (S) - Ahead	18	11.17	2.92
			Athgoe (S) – Right Turn	4	17.06	0.33
Do-Something	AM Peak Hour	A	Athgoe (N)	18	8.08	2.34
		B	Site Access	34	50.18	1.34
		C	Athgoe (S) - Ahead	20	5.26	2.92
			Athgoe (S) – Right Turn	4	6.72	0.39
	PM Peak Hour	A	Athgoe (N)	38	13.86	5.90
		B	Site Access	34	34.42	3.22
		C	Athgoe (S) - Ahead	18	11.17	2.92
			Athgoe (S) – Right Turn	5	17.39	0.38

Table 7.3: 2039 Peak Hour TRANSYT Analysis

7.2.8 A maximum Degree of Saturation (DoS) value of 27% and a maximum Mean Max

Queue (MMQ) of 2.92 pcu's was recorded during the DM AM peak hour and similarly a DoS value of 34% and a maximum MMQ of 2.92 pcu's was recorded during the DS AM peak hour.

7.2.9 In the 2039 DM PM peak hour scenario, a max DoS of 36% with a corresponding MMQ of 5.72 pcu's was recorded whilst a DoS value of 38% and a maximum MMQ of 5.90 pcu's was recorded during the DS PM peak hour.

7.3 JUNCTION 7: R120 / NEWCASTLE BOULEVARD / R120 ROUNDABOUT JUNCTION

7.3.1 The principal results of the operational assessment of this three-arm roundabout junction during the weekday morning and evening peaks are summarised in **Tables 7.4** to **7.6** below. The three arms were labelled as follows within the ARCADY model:

Arm A: R120 (SE)

Arm B: Newcastle Boulevard

Arm C: R120 (NW)

2024 Opening Year

7.3.2 The ARCADY results summarised in **Table 7.4** indicate that the R120 / Newcastle Boulevard three arm roundabout junction will operate within capacity for both the 2024 "Do Minimum" (DM) and "Do Something" (DS) AM & PM peak hours. A maximum Ratio of Flow to Capacity (RFC) value of 0.51 and a corresponding queue length of 1.0 pcu's was recorded during the DM AM peak hour and a maximum RFC value of 0.52 and a corresponding queue length of 1.1 pcu's was recorded during the DS AM peak hour.

7.3.3 In the 2024 DN PM peak hour scenario, a max RFC of 0.59 with a corresponding queue length of 1.4 pcu's was recorded whilst a max RFC value of 0.61 and a corresponding queue length of 1.5 pcu's was recorded during the DS PM peak hour. A copy of the ARCADY output data is provided in **Appendix D** of this TTA report.

Scenario		Arm	Arm Name	Queue (pcu)	Delay (s)	RFC
Do-Minimum	AM Peak Hour	A	R120 (SE)	0.3	3.30	0.23
		B	Newcastle Boulevard	0.2	3.34	0.17
		C	R120 (NW)	1.0	5.77	0.51
	PM Peak Hour	A	R120 (SE)	1.4	6.36	0.59
		B	Newcastle Boulevard	0.2	3.94	0.15
		C	R120 (NW)	0.4	3.79	0.28
Do-Something	AM Peak Hour	A	R120 (SE)	0.3	3.31	0.23
		B	Newcastle Boulevard	0.2	3.39	0.18
		C	R120 (NW)	1.1	5.87	0.52
	PM Peak Hour	A	R120 (SE)	1.5	6.59	0.61
		B	Newcastle Boulevard	0.2	3.99	0.16
		C	R120 (NW)	0.4	3.82	0.28

Table 7.4: 2024 ARCADY Analysis

2029 Future Design Year

7.3.4 In the 2029 DM AM peak hour, this existing roundabout junction is predicted to be operating well within capacity with a maximum RFC value of 0.56 and a corresponding queue length of 6.39 pcu's recorded. During the DS AM peak hour the junction is predicted to continue to operate well within capacity with a maximum RFC value of 0.57 and a corresponding queue length of 6.60 pcu's recorded.

Scenario		Arm	Arm Name	Queue (pcu)	Delay (s)	RFC
Do-Minimum	AM Peak Hour	A	R120 (SE)	0.3	3.37	0.24
		B	Newcastle Boulevard	0.2	3.41	0.18
		C	R120 (NW)	1.3	6.39	0.56
	PM Peak Hour	A	R120 (SE)	1.7	7.15	0.64
		B	Newcastle Boulevard	0.2	4.13	0.16
		C	R120 (NW)	0.4	3.93	0.30
Do-Something	AM Peak Hour	A	R120 (SE)	0.3	3.40	0.25
		B	Newcastle Boulevard	0.2	3.49	0.20
		C	R120 (NW)	1.3	6.60	0.57
	PM Peak Hour	A	R120 (SE)	2.0	7.72	0.67
		B	Newcastle Boulevard	0.2	4.23	0.18
		C	R120 (NW)	0.4	3.98	0.31

Table 7.5: 2029 ARCADY Analysis

7.3.5 In the 2029 DM PM peak hour, this existing roundabout junction is predicted to be operating within capacity with a maximum RFC value of 0.64 and a corresponding queue length of 7.15 pcu's recorded. During the DS PM peak hour the junction is predicted to operate within capacity with a maximum RFC value of 0.67 and a corresponding queue length of 7.72 pcu's recorded.

2039 Future Design Year

7.3.6 In the 2039 DM AM peak hour, this existing roundabout junction is predicted to be operating within capacity with a maximum RFC value of 0.59 and a corresponding queue length of 1.4 pcu's recorded. During the DS AM peak hour the junction is predicted to continue to operate within capacity with an RFC value of 0.60 and a corresponding queue length of 1.5 pcu's recorded.

7.3.7 In the 2029 DM PM peak hour, this existing roundabout junction is predicted to be operating within capacity with a maximum RFC value of 0.67 and a corresponding queue length of 2.0 pcu's recorded. During the DS PM peak hour the junction is predicted to continue to operate within capacity with a maximum RFC value of 0.70 and a corresponding queue length of 2.3 pcu's recorded.

Scenario		Arm	Arm Name	Queue (pcu)	Delay (s)	RFC
Do-Nothing	AM Peak Hour	A	R120 (SE)	0.3	3.43	0.25
		B	Newcastle Boulevard	0.2	3.46	0.18
		C	R120 (NW)	1.4	6.90	0.59
	PM Peak Hour	A	R120 (SE)	2.0	7.86	0.67
		B	Newcastle Boulevard	0.2	4.28	0.17
		C	R120 (NW)	0.5	4.03	0.32
Do-Something	AM Peak Hour	A	R120 (SE)	0.4	3.46	0.26
		B	Newcastle Boulevard	0.3	3.54	0.20
		C	R120 (NW)	1.5	7.14	0.60
	PM Peak Hour	A	R120 (SE)	2.3	8.53	0.70
		B	Newcastle Boulevard	0.2	4.38	0.19
		C	R120 (NW)	0.5	4.09	0.32

Table 7.6: 2039 ARCADY Analysis

7.4 JUNCTION 8: EASTERN SITE ACCESS / BURGAGE ST / NEWCASTLE BLVD / LYONS AVE

7.4.1 The principal results of the operational assessment of this four-arm priority junction during the weekday morning and evening peaks are summarised in **Tables 7.7** to **7.9** below. The four arms were labelled as follows within the PICADY model:

Arm A: Newcastle Blvd (NW)

Arm B: Burgage St

Arm C: Newcastle Blvd (SE)

Arm D: Lyons Ave

2024 Opening Year

7.4.2 The PICADY results summarised in **Table 7.7** indicate that the Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave four arm priority junction will operate within capacity for both the 2024 "Do Minimum" (DM) and "Do Something" (DS) AM & PM peak hours. A maximum Ratio of Flow to Capacity (RFC) value of 0.06 and a corresponding queue length of 0.1 pcu's was recorded during the DM AM peak hour and a maximum RFC value of 0.06 and a corresponding queue length of 0.1 pcu's was recorded during the DS AM peak hour.

7.4.3 In the 2024 DN PM peak hour scenario, a max RFC of 0.09 with a corresponding queue length of 0.1 pcu's was recorded whilst a max RFC value of 0.10 and a corresponding queue length of 0.1 pcu's was recorded during the DS PM peak hour. A copy of the PICADY output data is provided in **Appendix E** of this TTA report.

Scenario		Stream	Queue (pcu)	Delay (s)	RFC
Do-Minimum	AM Peak Hour	B-ACD	0.0	7.53	0.03
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.40	0.04
		C-ABD	0.1	6.64	0.06
	PM Peak Hour	B-ACD	0.1	7.50	0.09
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.62	0.04
		C-ABD	0.0	5.86	0.04
Do-Something	AM Peak Hour	B-ACD	0.0	7.76	0.04
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.47	0.04
		C-ABD	0.1	6.65	0.06
	PM Peak Hour	B-ACD	0.1	7.87	0.10
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.70	0.03
		C-ABD	0.1	5.80	0.04

Table 7.7: 2024 PICADY Analysis

2029 Future Year

7.4.4 The PICADY results indicate that the Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave four arm priority junction will operate within capacity for both the 2029 "Do Minimum" (DM) and "Do Something" (DS) AM & PM peak hours.

Scenario		Stream	Queue (pcu)	Delay (s)	RFC
Do-Minimum	AM Peak Hour	B-ACD	0.0	7.47	0.03
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.46	0.04
		C-ABD	0.1	6.68	0.07
	PM Peak Hour	B-ACD	0.1	7.53	0.09
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.63	0.03
		C-ABD	0.1	5.86	0.04
Do-Something	AM Peak Hour	B-ACD	0.0	7.82	0.04
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.58	0.05
		C-ABD	0.1	6.69	0.07
	PM Peak Hour	B-ACD	0.1	8.21	0.12
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.84	0.03
		C-ABD	0.1	5.75	0.04

Table 7.8: 2029 PICADY Analysis

7.4.5 A maximum Ratio of Flow to Capacity (RFC) value of 0.07 and a corresponding queue length of 0.1 pcu's was recorded during the DM AM peak hour and a maximum RFC value of 0.07 and a corresponding queue length of 0.1 pcu's was recorded during the DS AM peak hour.

7.4.6 In the 2029 DN PM peak hour scenario, a max RFC of 0.09 with a corresponding queue length of 0.1 pcu's was recorded whilst a max RFC value of 0.12 and a corresponding queue length of 0.1 pcu's was recorded during the DS PM peak hour.

2039 Future Year

7.4.7 The PICADY results indicate that the Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave four arm priority junction will operate within capacity for both the 2039 "Do Minimum" (DM) and "Do Something" (DS) AM & PM peak hours. A maximum Ratio of Flow to Capacity (RFC) value of 0.07 and a corresponding queue length of 0.1 pcu's was recorded during the DM AM peak hour and a maximum RFC value of 0.07 and a corresponding queue length of 0.1 pcu's was recorded during the DS AM peak hour.

7.4.8 In the 2039 DN PM peak hour scenario, a max RFC of 0.10 with a corresponding queue length of 0.1 pcu's was recorded whilst a max RFC value of 0.13 and a corresponding queue length of 0.1 pcu's was recorded during the DS PM peak hour.

Scenario		Stream	Queue (pcu)	Delay (s)	RFC
Do-Minimum	AM Peak Hour	B-ACD	0.0	7.56	0.04
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.49	0.05
		C-ABD	0.1	6.70	0.07
	PM Peak Hour	B-ACD	0.1	7.53	0.10
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.65	0.04
		C-ABD	0.1	5.86	0.04
Do-Something	AM Peak Hour	B-ACD	0.0	7.90	0.04
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.60	0.05
		C-ABD	0.1	6.71	0.07
	PM Peak Hour	B-ACD	0.1	8.21	0.13
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	8.86	0.04
		C-ABD	0.1	5.75	0.04

Table 7.9: 2039 PICADY Analysis

7.5 NETWORK ANALYSIS CONCLUSION

7.5.1 The analysis reveals that the three local junctions will operate within acceptable parameters during all design year scenarios. There is sufficient capacity at these junctions to support the proposed development without causing a deterioration of the local road network.

8.0 SENSITIVITY ANALYSIS

8.1 INTRODUCTION

8.1.1 As introduced previously in **Section 4.1** (and **Figure 4.1**), the Taobh Chnoic Extension 3rd party lands / parcel of Burgage South lands have the potential to accommodate somewhere in the region of 111 residential units. This sensitivity analysis incorporates this potential 3rd party development into the projected network traffic flows. It is envisioned that this scheme will not be constructed until sometime after the 2029 Future Design Year and therefore only the 2039 Future Design Year is assessed in this sensitivity analysis. Whilst not part of the subject proposals, this scheme has been considered to test the junctions included in the assessment outlined in Section 7 to ensure sufficient capacity exists to accommodate potential future traffic from development on the Taobh Chnoic Extension lands. The following three local junctions have again been investigated;

- **Junction 2** – Athgoe / Western Site Access / Athgoe
- **Junction 7** – R120 / Newcastle Blvd / R120
- **Junction 8 -** Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave

8.2 SENSITIVITY ANALYSIS

8.2.1 The results of the operational assessment of the 3 no. junctions assessed in **Section 7** above are as follows.

Athgoe / Western Site Access / Athgoe Signalised Junction

8.2.2 The TRANSYT results indicate with the introduction of this 3rd Party development, that the proposed Athgoe / Western Site Access / Athgoe Signal Controlled Junction will operate within capacity for both the 2039 AM & PM peak hours.

8.2.3 A maximum DoS value of 41% and a maximum Mean Max Queue (MMQ) of 2.92 pcu's was recorded during the AM peak hour whilst a DoS value of 38% and a maximum MMQ of 6.15 pcu's was recorded during the PM peak hour.

Scenario		Arm	Arm Name	Degree of Saturation (%)	Mean Delay per Veh (s)	Mean Max Queue (pcu)
Sensitivity Analysis	AM Peak Hour	A	Athgoe (N)	18	8.09	2.37
		B	Site Access	41	52.73	1.67
		C	Athgoe (S) – Ahead	20	5.26	2.92
			Athgoe (S) – Right Turn	4	6.73	0.39
	PM Peak Hour	A	Athgoe (N)	38	13.98	6.15
		B	Site Access	35	34.69	3.37
		C	Athgoe (S) – Ahead	18	11.17	2.92
			Athgoe (S) – Right Turn	6	17.62	0.42

Table 8.1: Athgoe / Western Site Access / Athgoe Sensitivity Analysis

R120 / Newcastle Blvd / R120 Roundabout Junction

8.2.4 In the 2039 Future Design Year scenario, a maximum RFC value of 0.61 and a corresponding queue length of 1.5 pcu's was recorded during the AM peak hour whilst an RFC value of 0.72 and a corresponding queue length of 2.5 pcu's was recorded during the PM peak hour indicating that the junction will operate within capacity in this scenario.

Scenario		Arm	Arm Name	Queue (pcu)	Delay (s)	RFC
Sensitivity Analysis	AM Peak Hour	A	R120 (SE)	0.4	3.48	0.27
		B	Newcastle Boulevard	0.3	3.63	0.22
		C	R120 (NW)	1.5	7.39	0.61
	PM Peak Hour	A	R120 (SE)	2.5	9.23	0.72
		B	Newcastle Boulevard	0.3	4.47	0.21
		C	R120 (NW)	0.5	4.13	0.33

Table 8.2: R120 / Newcastle Blvd / R120 Sensitivity Analysis

Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave Priority Controlled Junction

8.2.5 In the 2039 Future Design Year scenario, a maximum RFC value of 0.07 and a corresponding queue length of 0.1 pcu's was recorded during the AM peak hour whilst an RFC value of 0.15 and a corresponding queue length of 0.2 pcu's was recorded during the PM peak hour indicating that the junction will operate within capacity in this scenario.

Scenario		Stream	Queue (pcu)	Delay (s)	RFC
Sensitivity Analysis	AM Peak Hour	B-ACD	0.1	8.14	0.05
		A-BCD	0.0	0.00	0.00
		D-ABD	0.1	8.70	0.05
		C-ABD	0.1	6.77	0.07
	PM Peak Hour	B-ACD	0.2	8.75	0.15
		A-BCD	0.0	0.00	0.00
		D-ABD	0.0	9.05	0.04
		C-ABD	0.1	5.67	0.04

Table 8.3: Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave Sensitivity Analysis

9.0 SUMMARY AND CONCLUSION

9.1 OVERVIEW

9.1.1 DBFL Consulting Engineers (DBFL) has been commissioned by Cairn Homes Properties Ltd to compile a Traffic and Transport Assessment (TTA) for a proposed residential development on a greenfield site located within the Newcastle Local Area Plan (LAP) lands at Newcastle, Co. Dublin.

9.1.2 The development proposes the provision of 280 residential units including 128 no. houses (8 no. 2-bed units, 94 no. 3-bed units, 25 no. 4-bed units, 1 no. 5-bed unit) and 152 apartments / duplexes (54 no. 1-bed units, 80 no. 2-bed units, 18 no. 3-bed units) along with a creche facility. The adjoining permitted Graydon Residential Development is currently under construction.

9.1.3 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 residential 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.

9.1.4 As per best practice guidance this TTA has carried out a range of network assessments investigating different traffic conditions for an Opening Year of 2024, and Future Design Year assessments of 2029 and 2039.

9.2 SUMMARY

9.2.1 Based upon the information and analysis detailed within this Traffic and Transport Assessment it has been demonstrated that: -

- The development site benefits from the appropriate land use zoning in both the Newcastle LAP (2012) and the South Dublin County Development Plan (2016-2022).

- The review of the RSA road collision data demonstrated that the local road network benefits from having a very good road safety record.
- The subject site is accessible to pedestrians and cyclists from Burgage Crescent and Newcastle Boulevard to the east in the short term and from the north via St. Finian's Way and west following completion of the Principal Access Road through the subject lands proposed as part of the subject scheme.
- In the vicinity of the subject site the GDA Cycle Network Plan includes proposals for an Inter-urban cycle route along the R120 corridor located immediately to the north of the subject site.
- The design of the scheme proposals has sought to maximise the ability to provide attractive safe permeable connections to the adjoining third-party lands surrounding the subject development site thereby encouraging walking, cycling and public transport as a viable and preferred mode of travel.
- A series of 'green' links are proposed as part of the subject scheme comprising:-
    - 2m wide footpath and cycle on both sides of the main spine road for the initial 220m from the Graydon Residential Development section;
    - 4m wide off-road shared pedestrian / cycle facility in a north / south direction through the Newcastle South lands; and
    - 2m wide footpath and cycle on both sides of the east-west section of the main spine road extending back from Athgoe Road and continuing to the eastern boundary.
- The subject proposals include for the provision of the Principal Access Road, via a continuation of the eastern section being implemented as part of the Graydon Residential Development, as per the Newcastle LAP, between the Newcastle Boulevard / Burgage Crescent junction as far as the Athgoe Road corridor. A new signal controlled junction is proposed to be implemented on Athgoe Road where the proposed access road commences. In addition, a new footpath facility is proposed as part of the subject development which will be implemented on the eastern side of Athgoe Road between the subject site access and the existing pedestrian facilities to the north.
- The design of the proposals fully respect the guidance outlined in DMURS.
- The provision 423 no. residential car parking spaces is comparable to the development plan standards requirement of and the DHPLG standards for apartments which requires a maximum car parking requirement of 434 no.

spaces. The proposals include for a total of 172 no. apartment / duplex car parking spaces which is slightly lower than the DHPLG requirement of between 190 to 203 no. car parking spaces respectively. Nevertheless, this level of car parking provision is considered appropriate due to the following:-

- A car parking management regime will be implemented by the management company for the apartment and duplex units. All of the proposed development's on-site apartment / duplex car parking facilities whilst accessible via public roads will not be located within public areas (i.e., areas adopted by the local roads authority). Accordingly, the proposed developments on-site apartment / duplex car parking spaces will remain within the control of the appointed management company. A management regime will be implemented by the development's management company to control access to these on-site apartment car parking bays thereby actively managing the availability of on-site car parking for residents / visitors. The residents within one of the proposed residential apartments / duplexes will NOT include the ownership of a designated parking space. Nevertheless, all residents of the proposed apartments / duplexes will have the opportunity to apply to the management company for both a (i) residents car parking permit (updated annually or upon return of same permit) to the management company to gain access to a dedicated (assigned) on-site car parking space or (ii) a visitor's car parking permit (which will be issued electronically and subject to time restrictions). A nominal charge will be applied to obtain a permit with the objective of covering the associated management and enforcement costs. Each permit will enable the resident (or visitor) to park a vehicle within a specific assigned parking bay within the car park for a defined period of time. This management regime will enhance the availability of on-site car parking, ensure that every resident who needs car parking can avail of an on-site car parking space whilst residents that do not own a car are not unnecessarily assigned a car parking space;
- 5 no. car share spaces are proposed. The benefits of providing car share spaces are discussed further below; and
- A much higher cycle parking provision is proposed compared to the

development plan minimum requirement (as discussed in more detail below) thereby ensuring travel by bicycle to / from the subject development site is a viable mode of travel.

- A total of 364 number residential bicycle parking spaces are proposed as part of the development scheme comprising 252 no. long stay secured / sheltered spaces for the residential units and 112 no. short stay parking spaces for the residential units. 6 no. long stay cycle parking spaces are proposed for the creche in addition to the short stay provision permitted as part of the Graydon development located outside the subject application site boundary. Whilst the development plan does not specify a cycle parking requirement for the residential housing units, 8 long stay (for houses with no external rear access) and 18 short stay cycle parking spaces are provided for houses within the subject scheme proposals. Cycle parking opportunities are available within rear gardens for residential house units with an external side access. The proposed overall cycle parking provision of 370 spaces is 321 (or over 655%) higher than the current Development Plan minimum requirement and 140 (or 61%) higher than the draft Development Plan minimum requirement. The proposed apartment / duplex cycle parking provision of 330 spaces represents approximately 96% of the DHPLG requirement (344 no. spaces).
- A total of seven number third party committed developments have been identified and included within the reported network assessment.
- A junction impact analysis was undertaken and has demonstrated that the proposals will generate a subthreshold impact upon all local key off-site junctions during the 2039 Future Design Year scenario with above threshold impacts predicted at the eastern and western site access locations only.
- The following junctions have been considered for further analysis due to their function as main vehicular access points. Additional analysis has also been carried out at Junction 7 - R120 / Newcastle Blvd / R120 roundabout due to the projected alterations to traffic movements through this junction following the implementation of a through route via the subject development and Graydon residential development lands
    - **Junction 2** – Athgoe / Western Site Access / Athgoe
    - **Junction 7** – R120 / Newcastle Blvd / R120

- **Junction 8 -** Eastern Site Access / Burgage St / Newcastle Blvd / Lyons Ave

- The junction analysis undertaken at the aforementioned junctions reveals that the proposals will not have a notable impact on the above three junction's operational performance compared to the Do-Minimum scenario.
- The long term (beyond 2039) capacity of the local road network is safeguarded by the delivery of the Western Dublin Orbital Route infrastructure objectives of SDCC which will result in a significant reduction in vehicle movements in Newcastle following the removal of all existing 'rat-running' traffic flows.

9.3 CONCLUSION

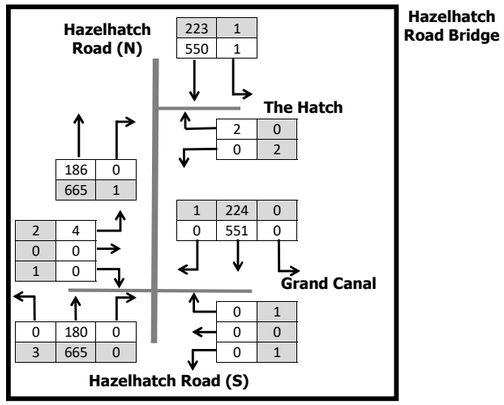
9.3.1 In conclusion, it is considered that the impact on the surrounding road network, as a result of the proposed development will be negligible. This is based on the anticipated levels of traffic generated by the proposed development and the information and analysis summarised in the above report.

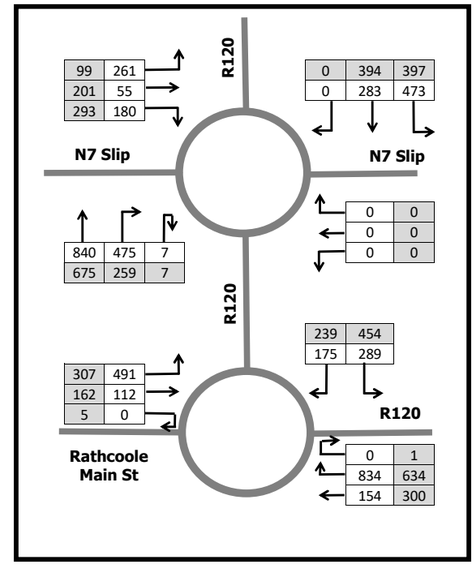
9.3.2 It is concluded that the proposals represent a sustainable and practical approach to development on the subject zoned lands and with no material traffic or road safety related reasons that should prevent the granting of planning permission for the proposed residential development.

APPENDICES

APPENDIX A

Traffic Flow Diagrams





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	email: info@dbfl.ie **website:** www.dbfl.ie		

Project :
Proposed Residential Development
Newcastle Sotuh, Dublin

DRG. Title :
Network Traffic Flows - PCU's
2022 Base Flows

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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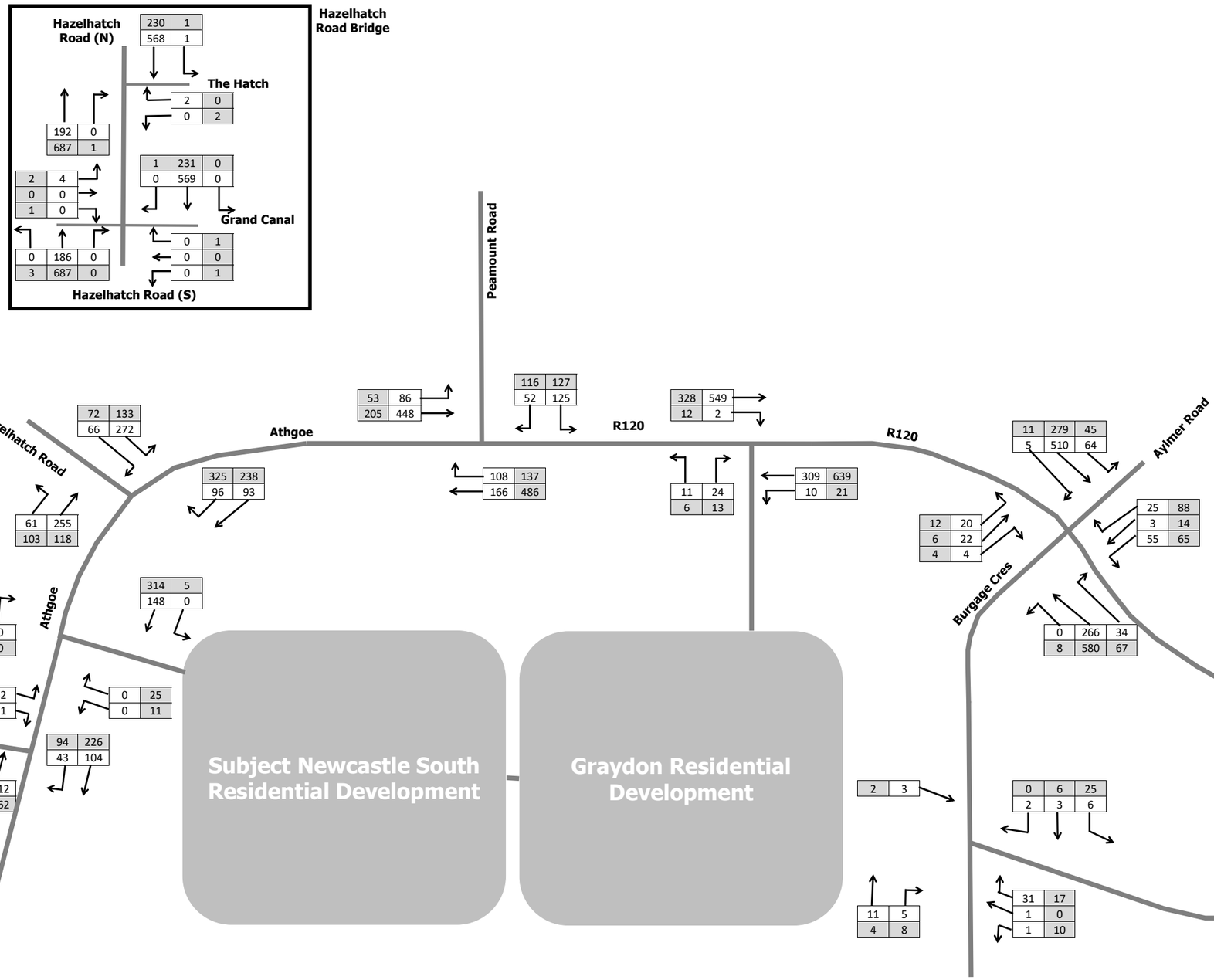

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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
2024 Base Flows

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800

GF= 1.03

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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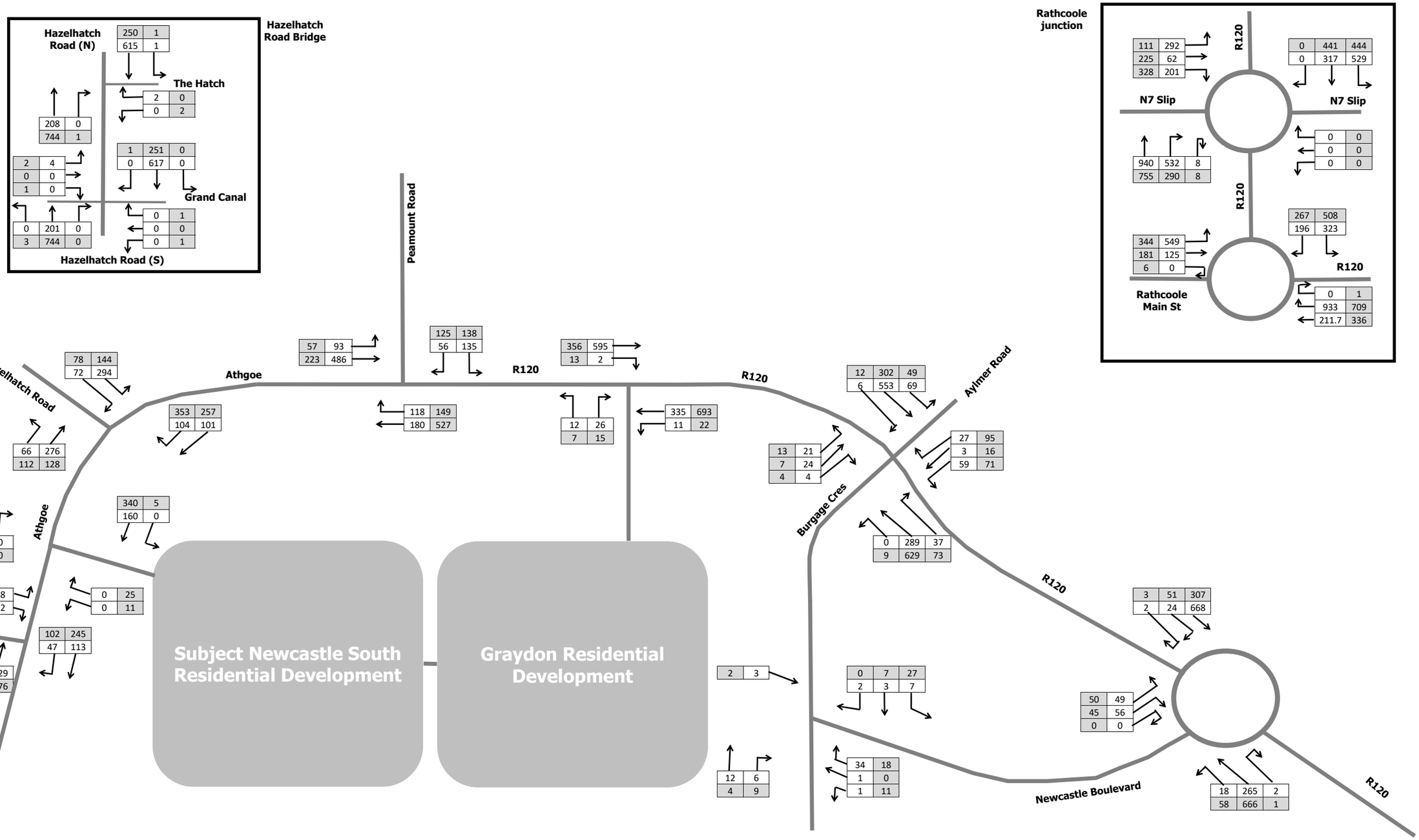
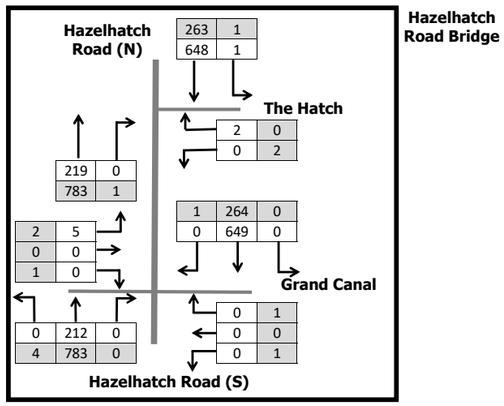
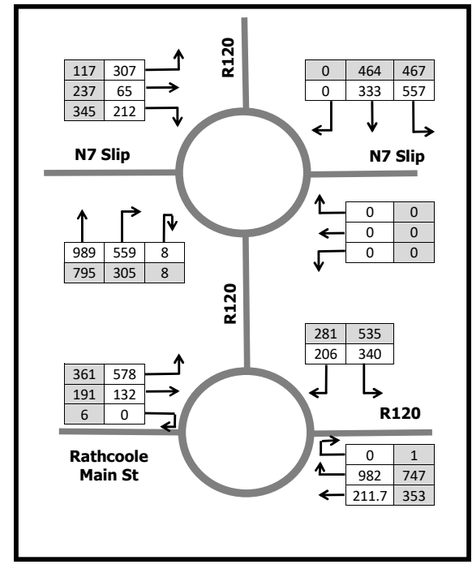


DBFL Consulting Engineers	**Project :** Proposed Residential Development, Newcastle South, Dublin	**Key:** AM Peak Hour (0800-0900); PM Peak Hour (1700-1800); GF= 1.12
Dublin Office Ormond House, Upper Ormond Quay, Dublin 7 Ph: +353 1 400 4000	**DRG. Title :** Network Traffic Flows - PCU's, 2029 Base Flows	**Dwn:** SK **Ckd:** MMK **Date:** 09/05/2022
Cork Office 14 South Mall, Cork Ph: +353 21 4538		**Ref:** p210026\calcs\excel\Traffic\210026-Traffic Model-001
Waterford Office Suite 8b The Atrium Maritana Gate, Canada Street Waterford Ph: +353 51 309 500		**Figure:** 3 **Rev:**
email: info@dbfl.ie **website:** www.dbfl.ie		





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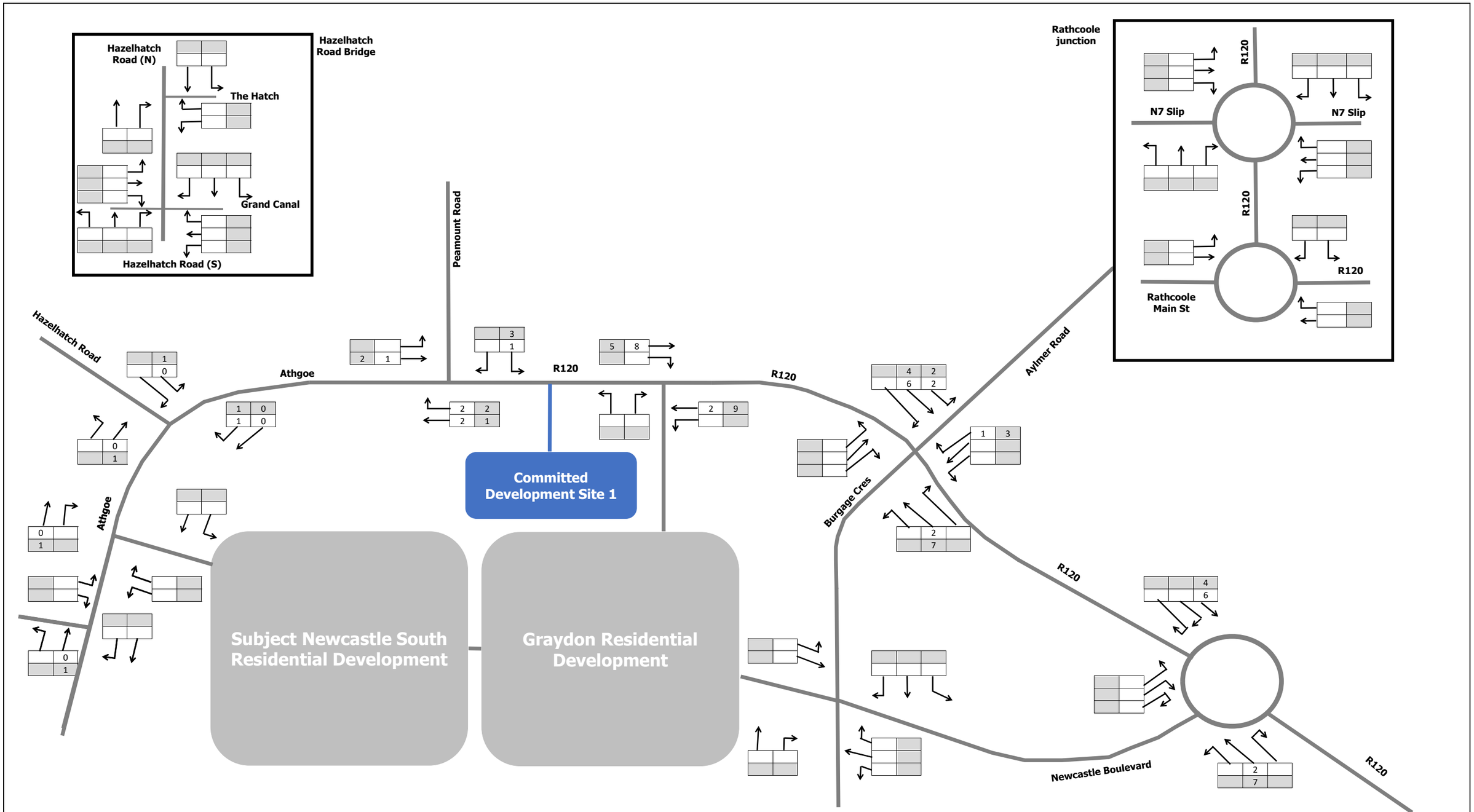
Key: AM Peak Hour (0800-0900) PM Peak Hour (1700-1800) GF= 1.18	**Dwn:** SK **Ckd:** MMK **Date:** 09/05/2022 **Ref:** p210026\calcs\excel\Traffic\210026-Traffic Model-001 **Figure:** 4 **Rev:**	



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Project :
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Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
Committed Development Flows (Site 1)

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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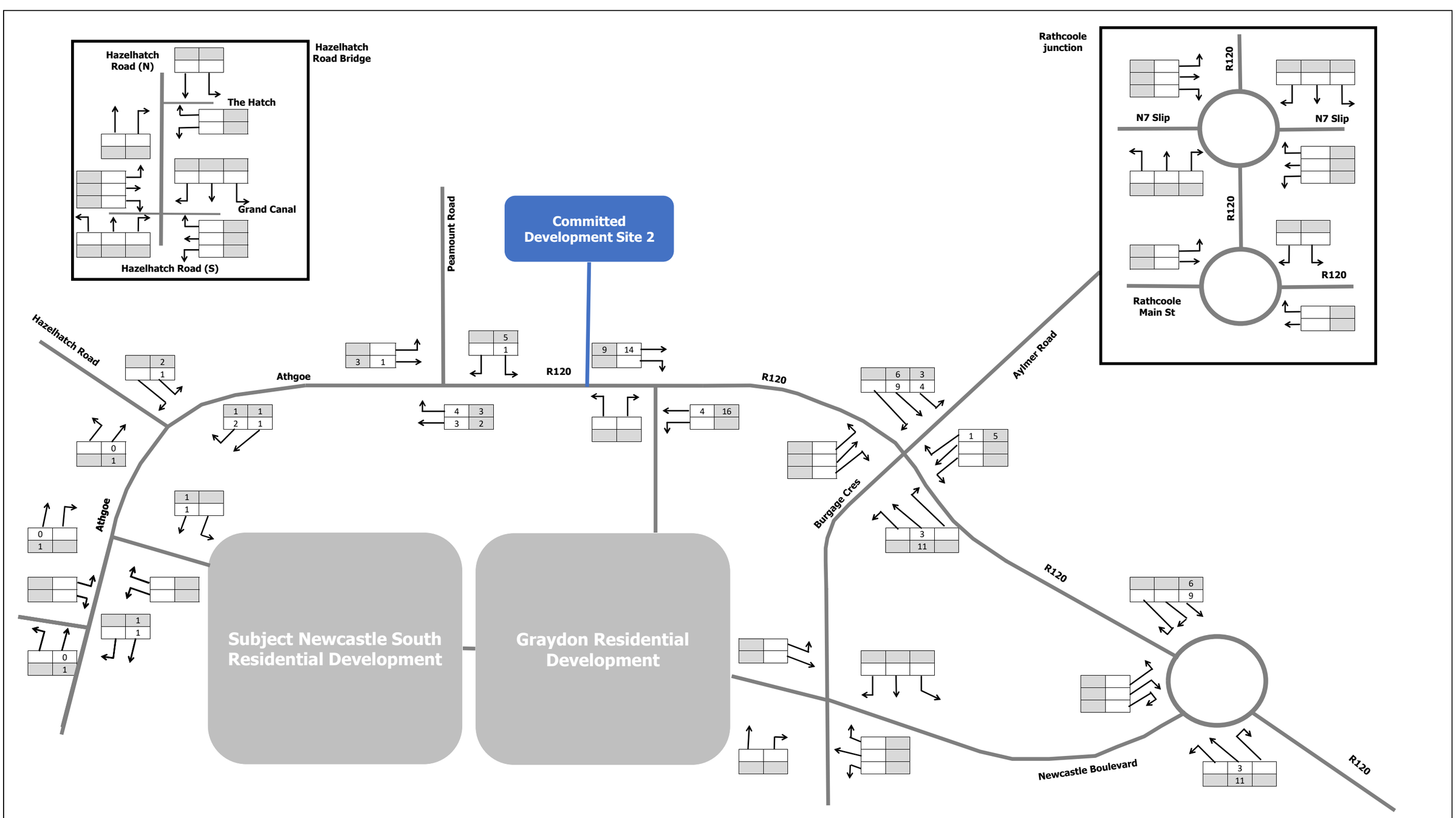

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website: www.dbfl.ie

Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
Committed Development Flows (Site 2)

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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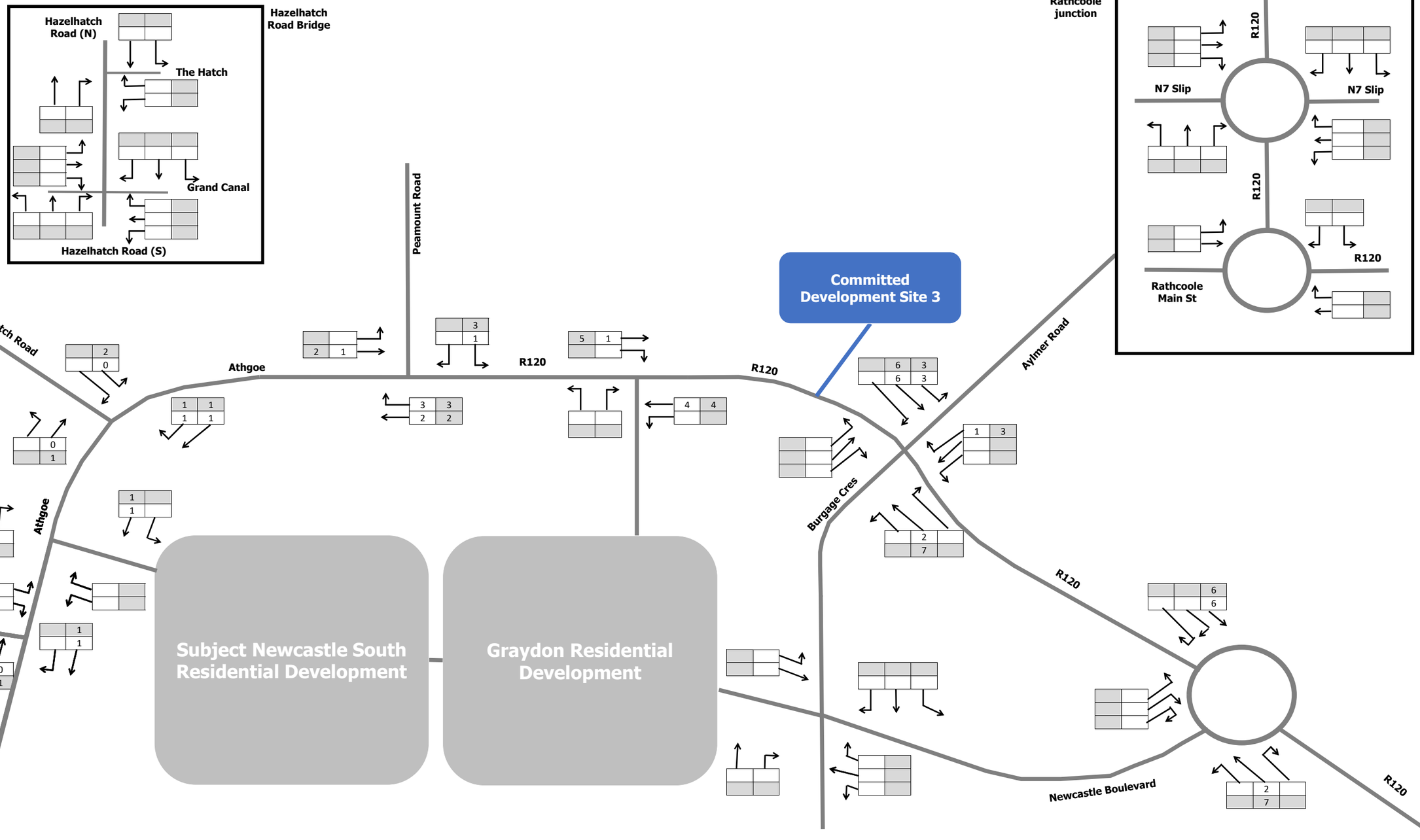

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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
Committed Development Flows (Site 3)

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
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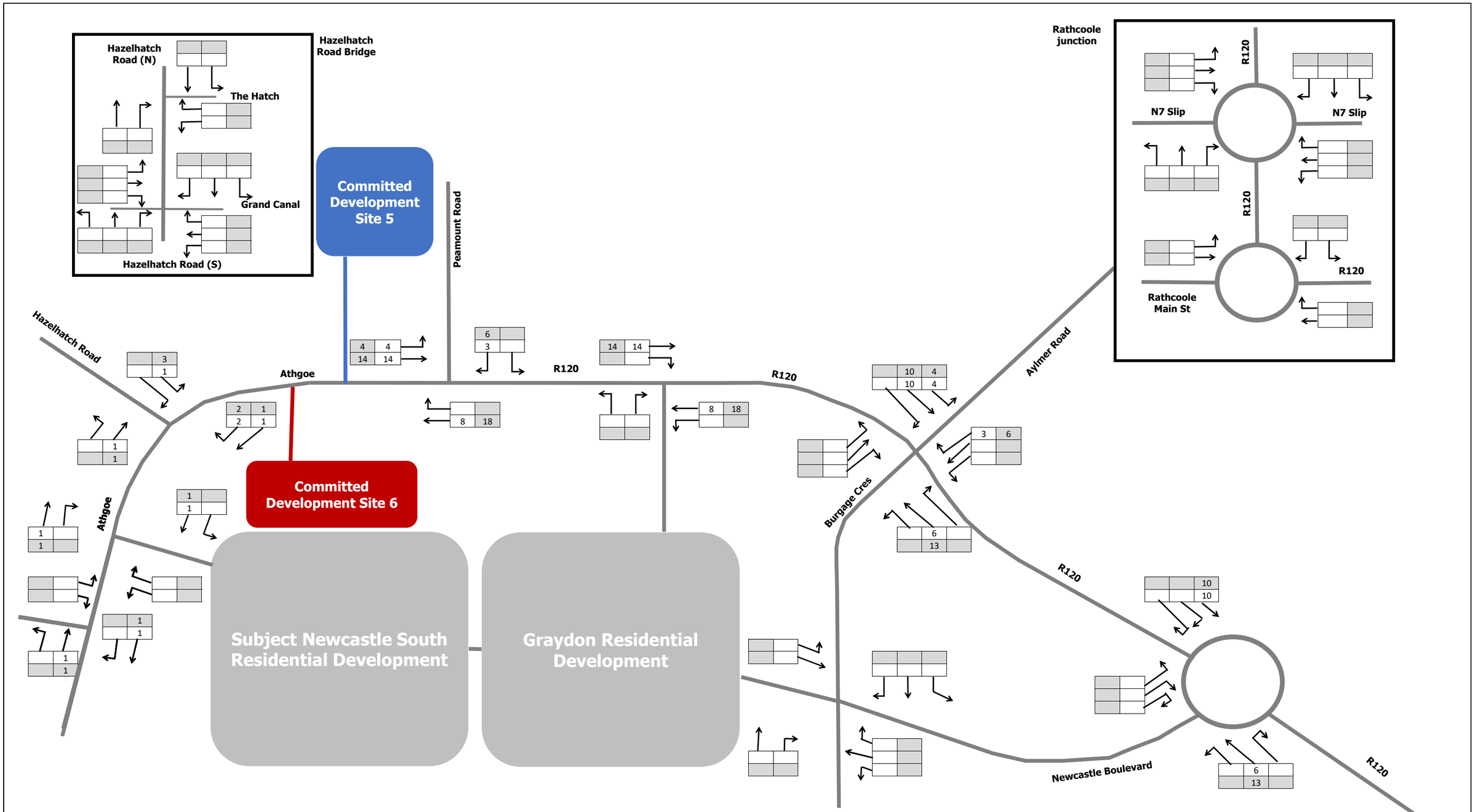

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email: info@dbfl.ie
website: www.dbfl.ie

Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
Committed Development Flows (Site 4 & 5)

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

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SK	MMK	09/05/2022

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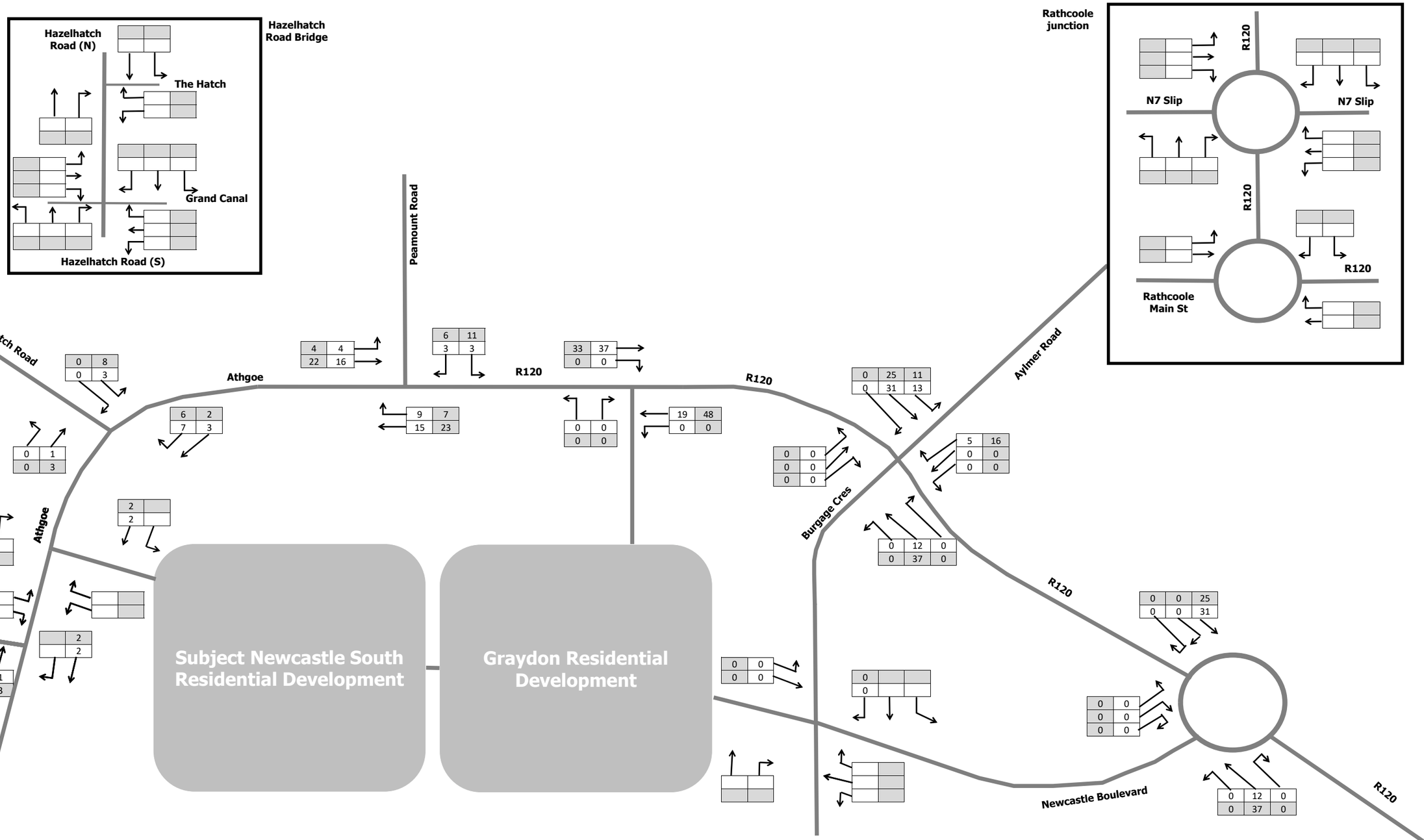

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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
Total Committed Development Flows - No Through Road

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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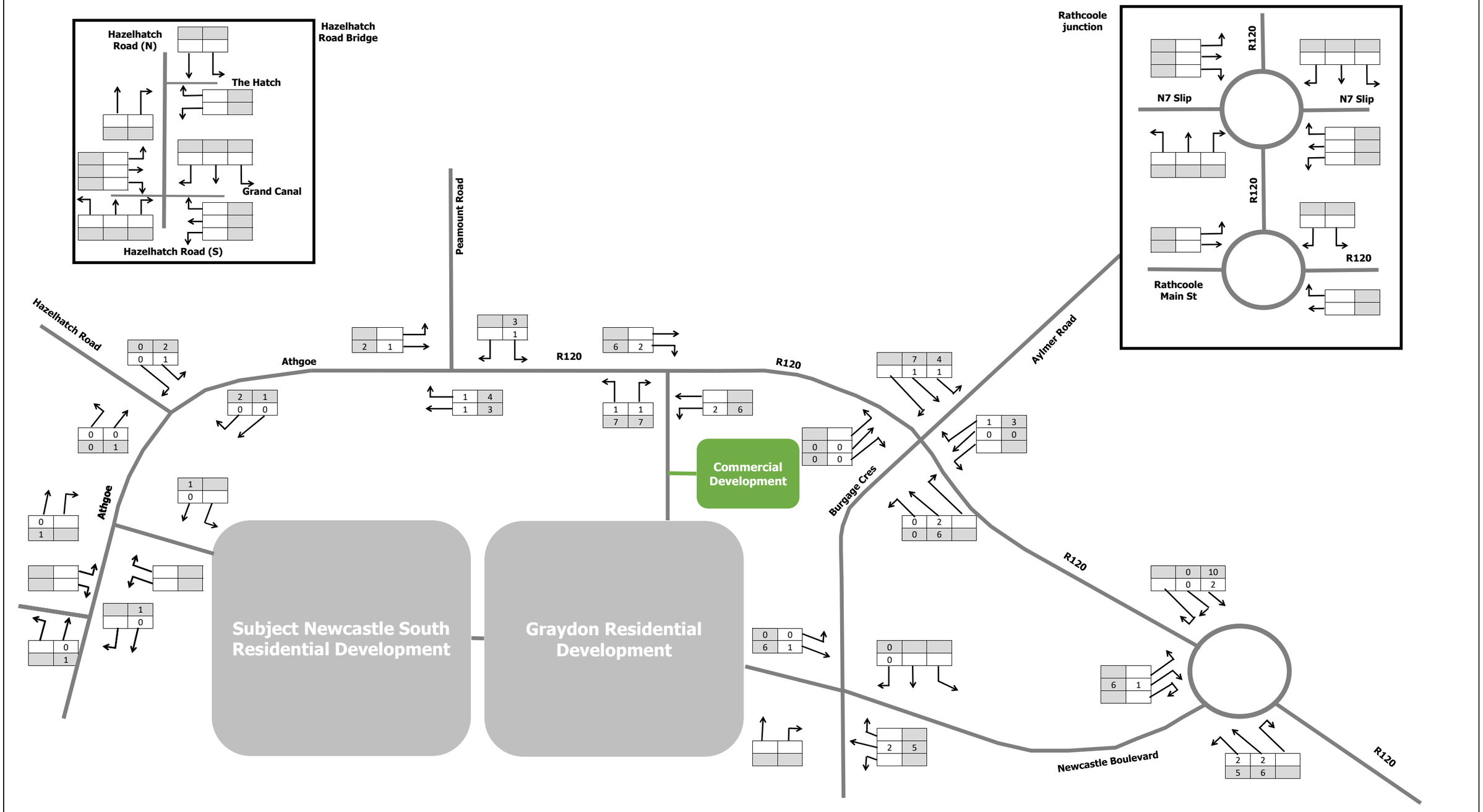

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	email: info@dbfl.ie **website:** www.dbfl.ie		

Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Commercial Development
2035 Retaill Trips

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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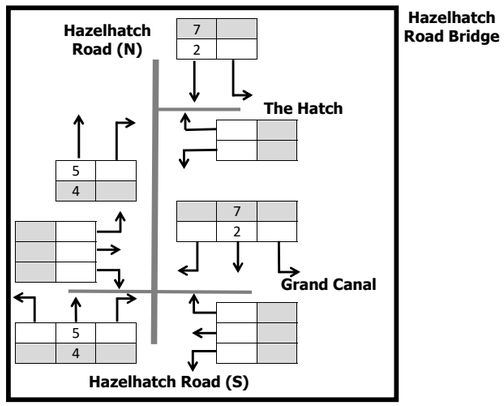

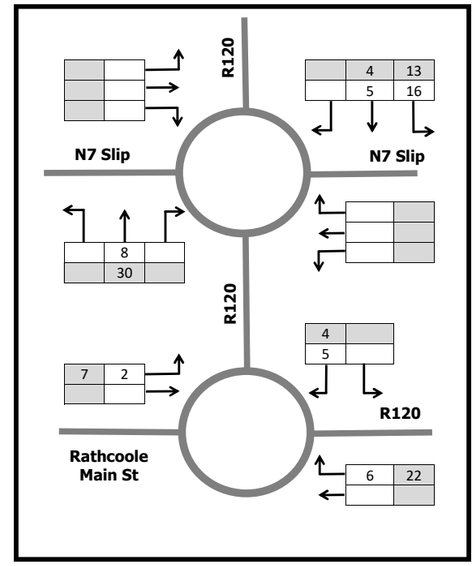

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Project : Proposed Residential Development
Newcastle South, Dublin

DRG. Title : Graydon Residential Development Trips
No Through Road

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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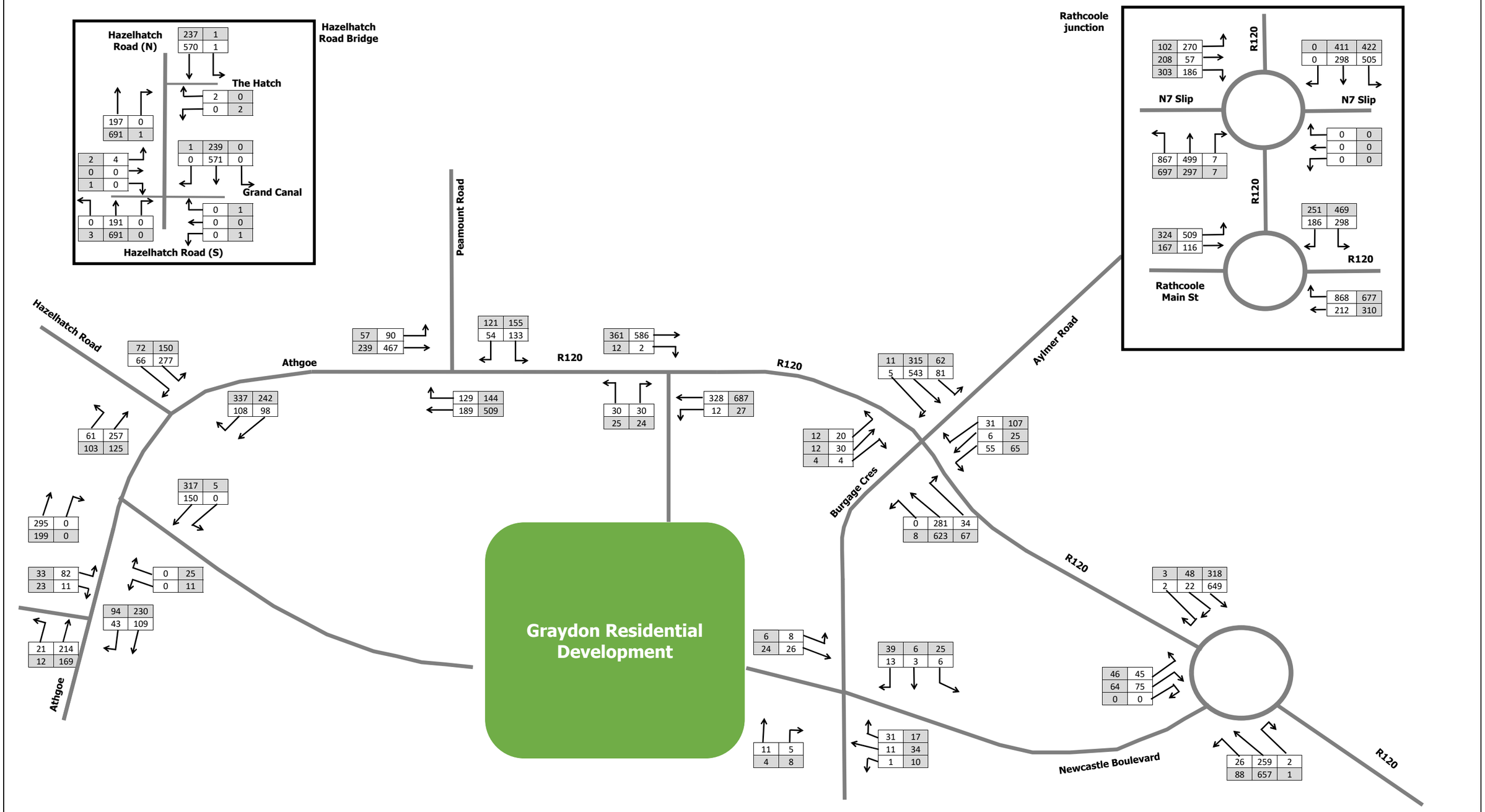

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email: info@dbfl.ie
website: www.dbfl.ie

Project : Proposed Residential Development, Newcastle South, Dublin

DRG. Title : 2024 Do-Nothing

Key: AM Peak Hour (0800-0900), PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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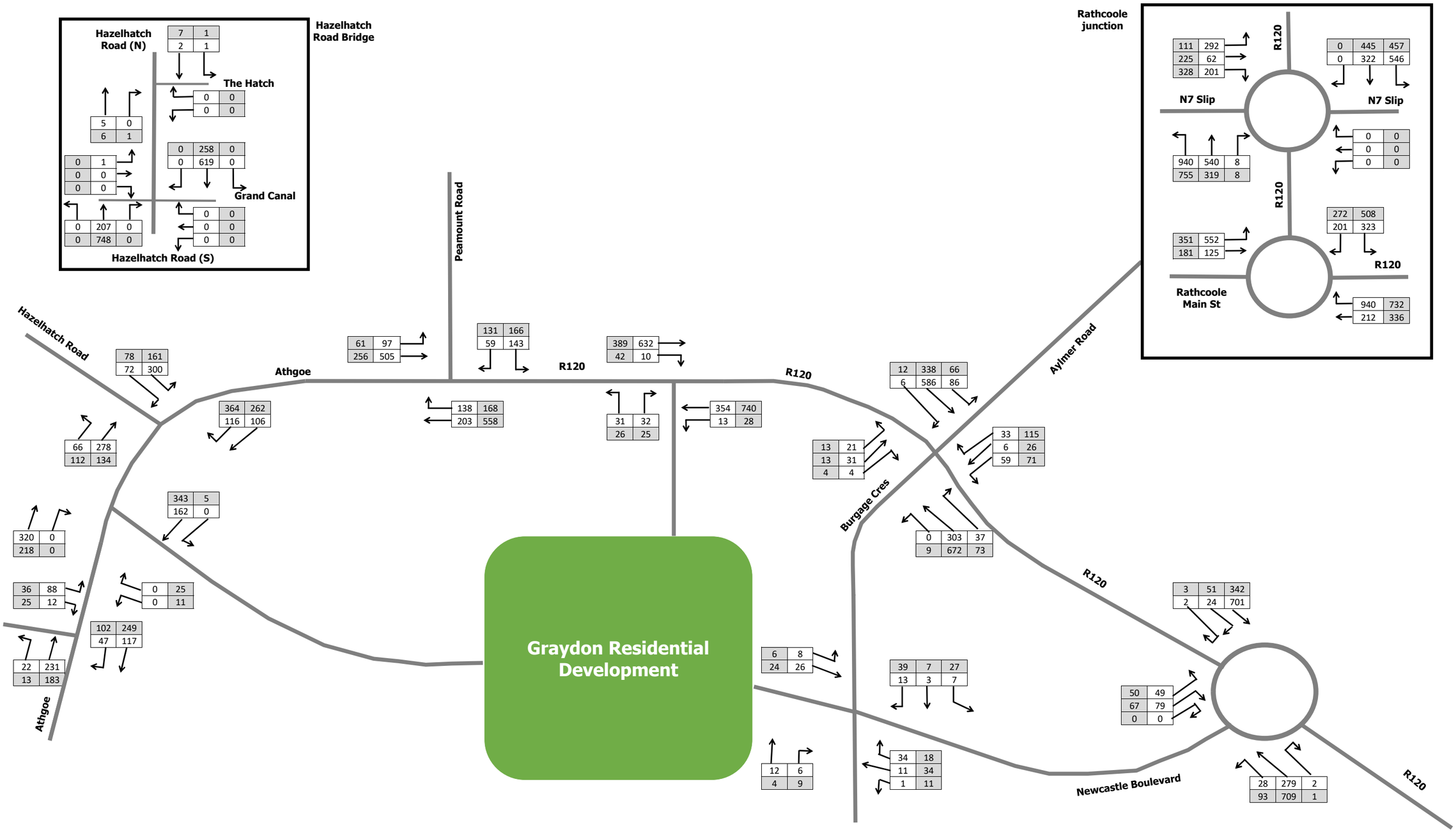

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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
2029 Do-Nothing

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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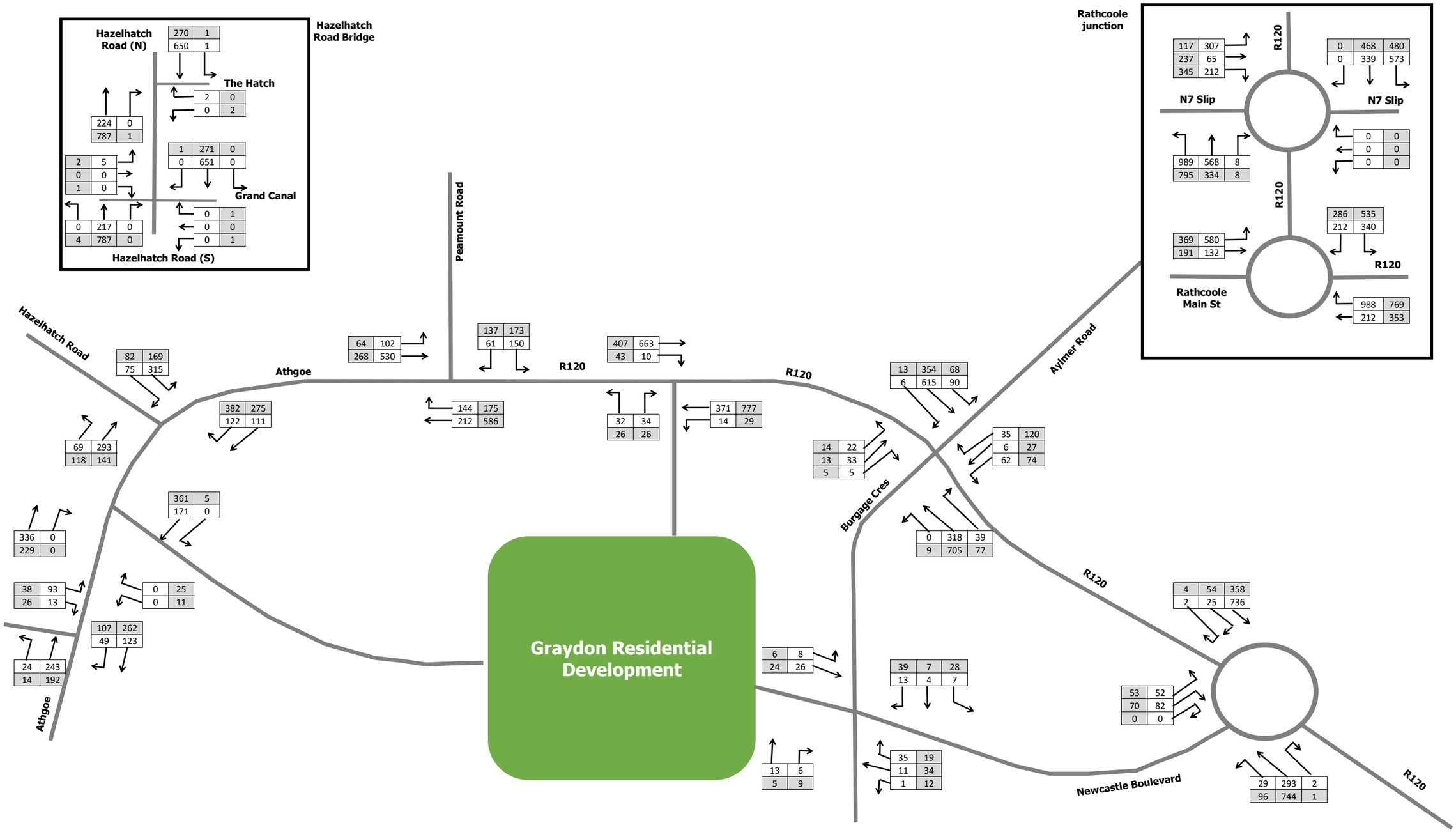

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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
2039 Do-Nothing

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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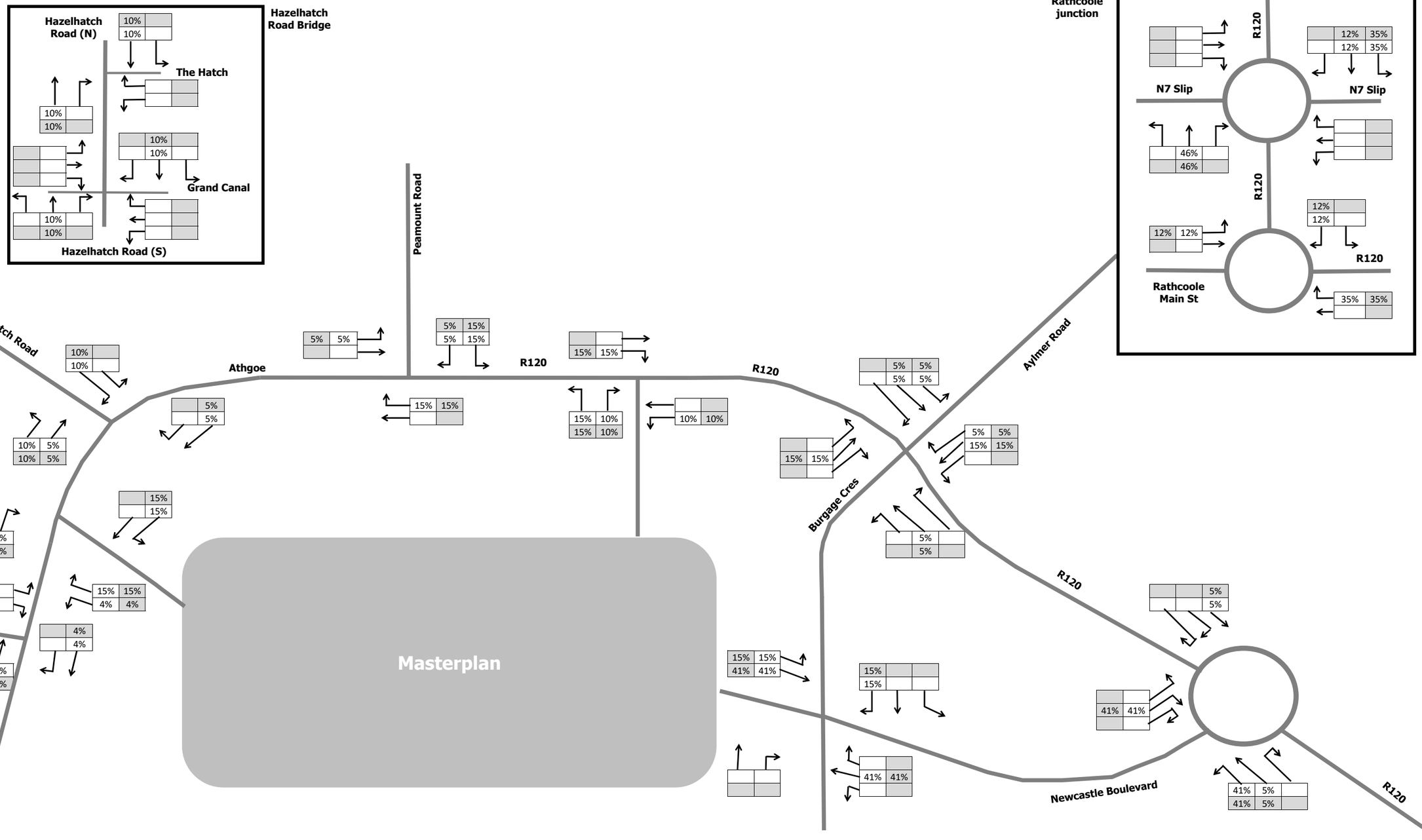

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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Trip Distibution
Masterplan Lands

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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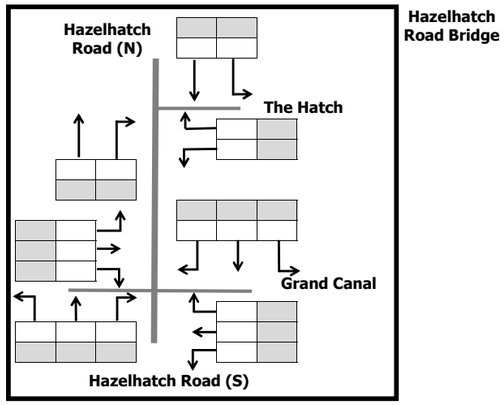

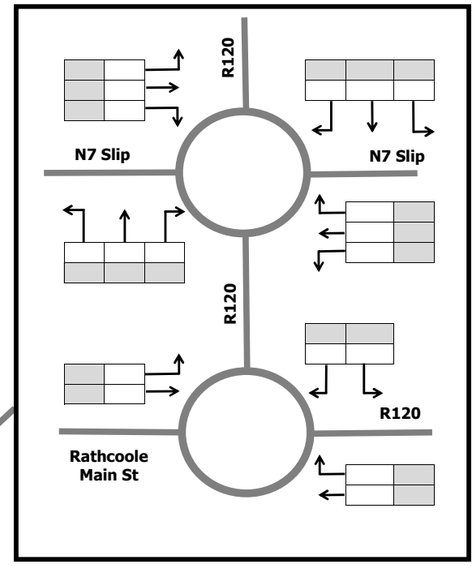

Subject Newcastle South Residential Development

Graydon Residential Development

DBFL Consulting Engineers

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website: www.dbfl.ie

Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Diverted Trips

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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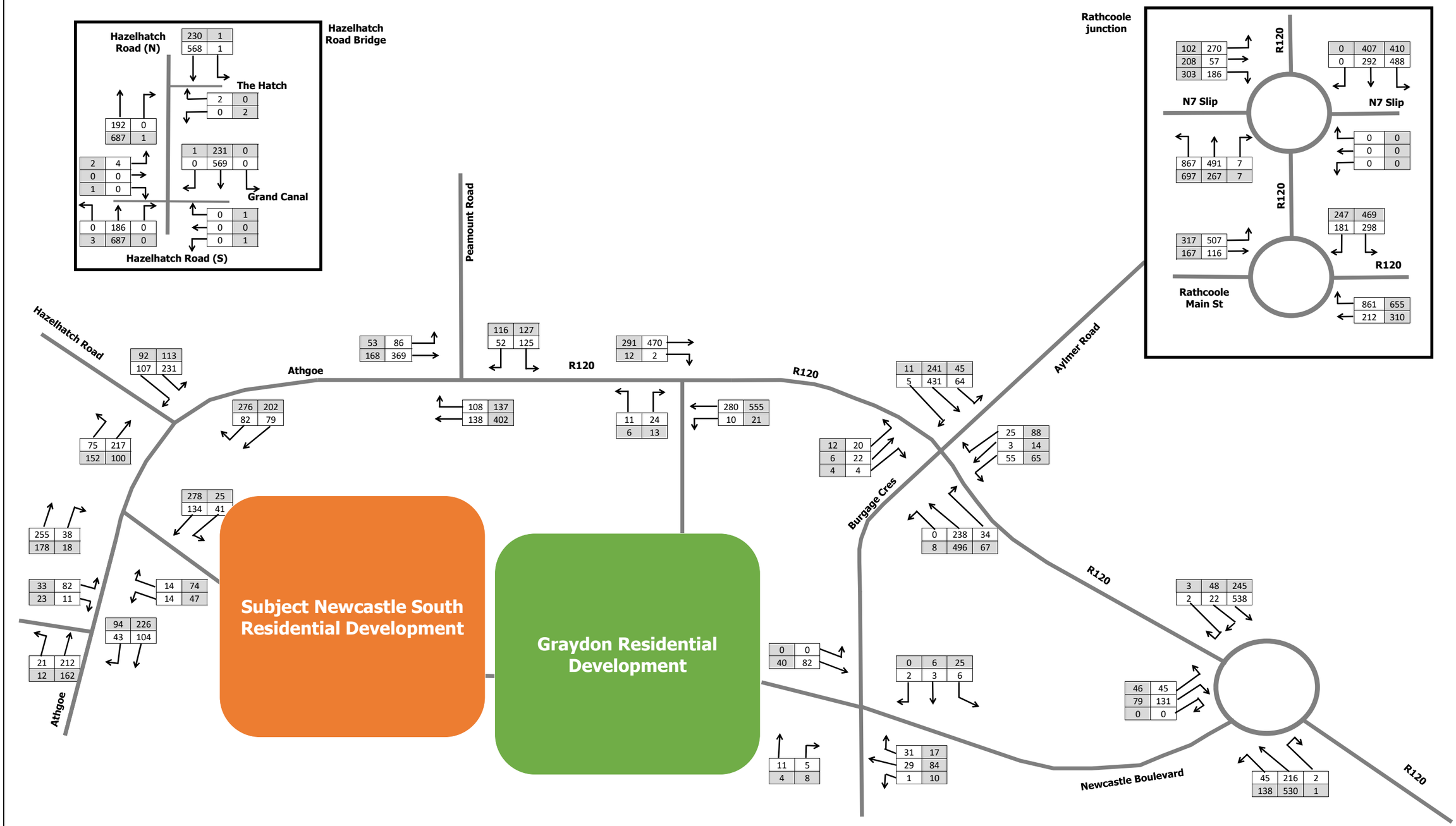

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DBFL Consulting Engineers

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Project : Proposed Residential Development, Newcastle South, Dublin

DRG. Title : Adjusted Base 2024 Opening Year

Key: AM Peak Hour (0800-0900); PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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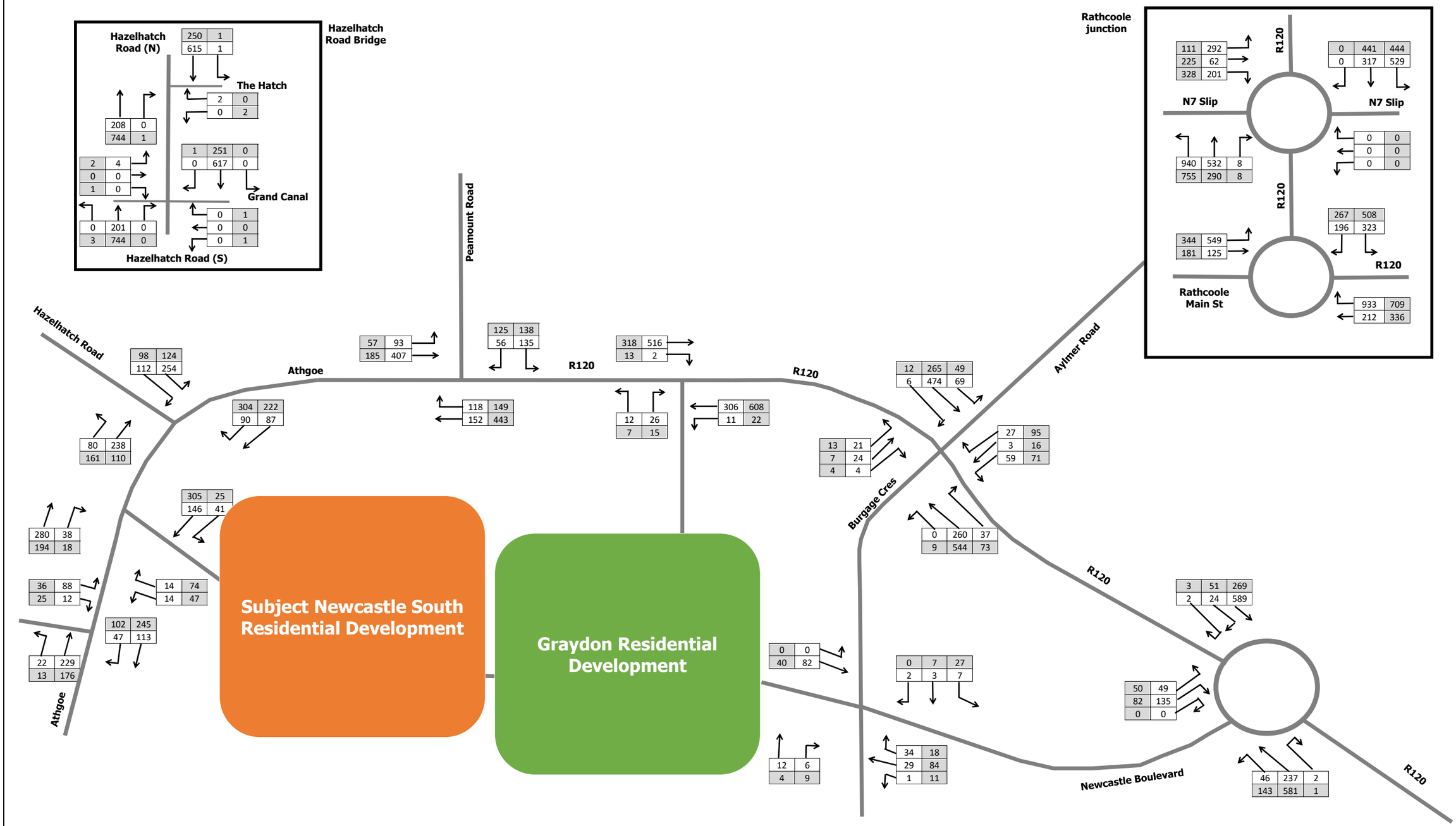

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Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

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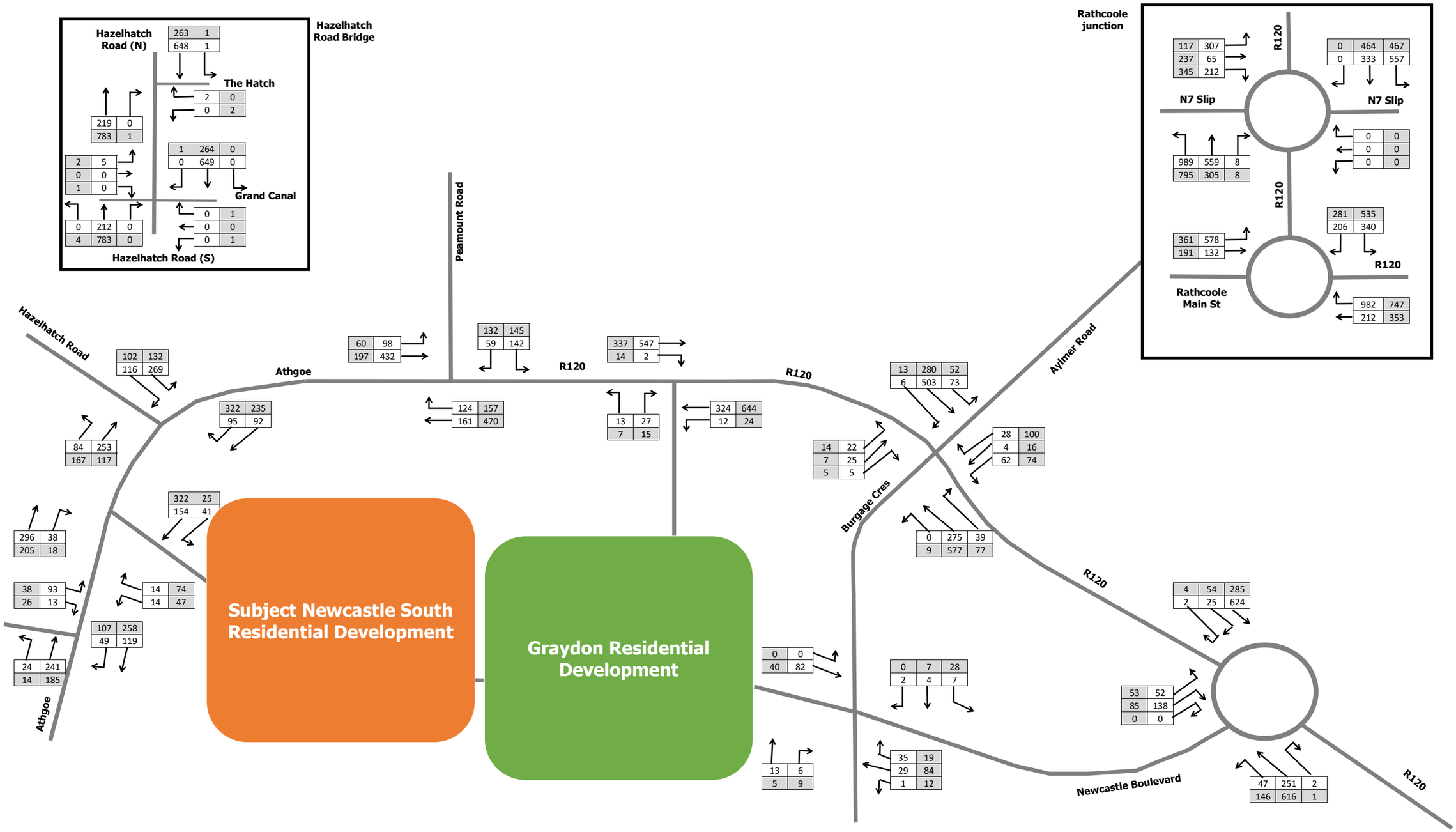

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website: www.dbfl.ie

Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Adjusted Base
2039 Future Design Year

Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

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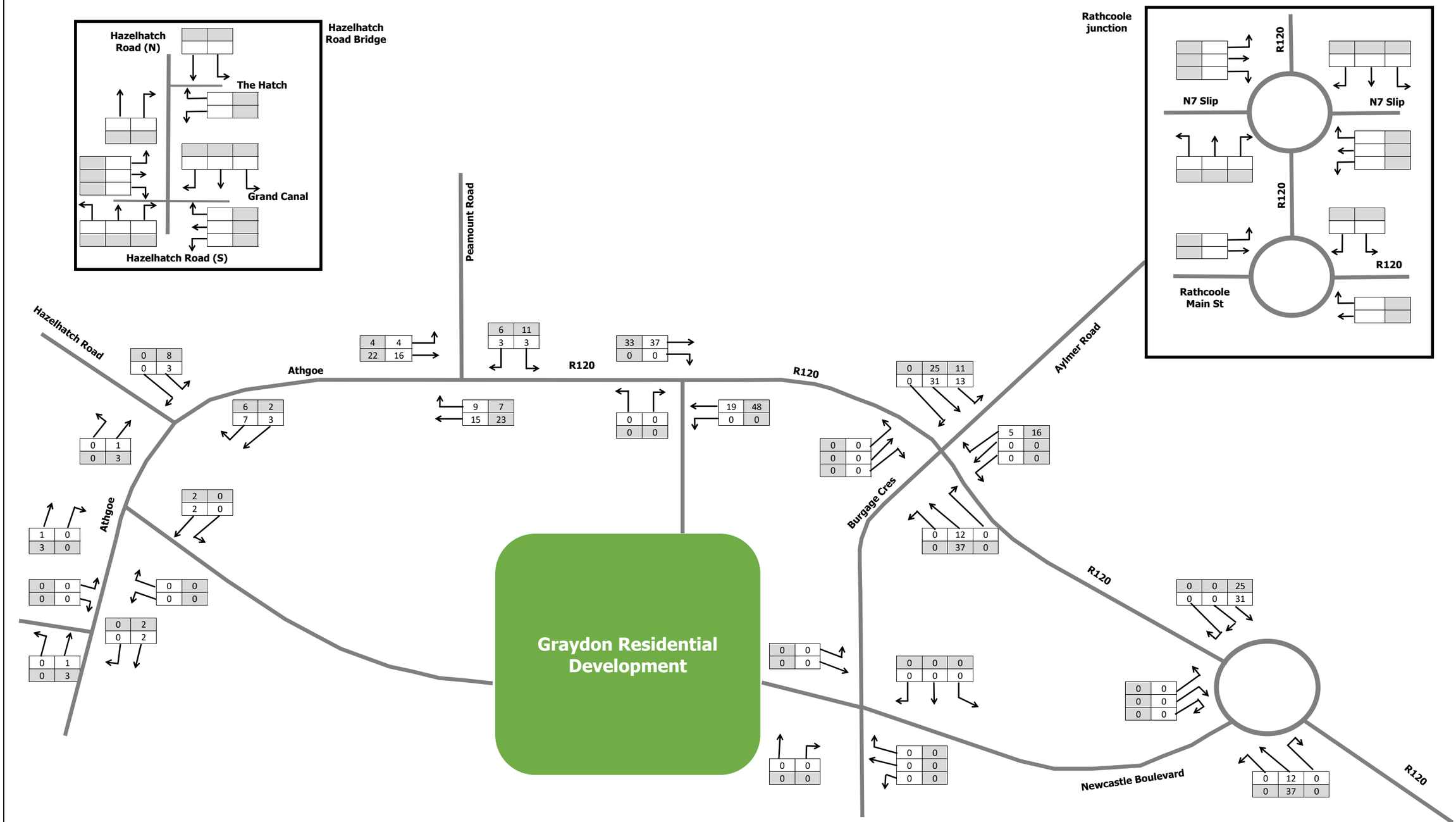

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Project :
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Newcastle South, Dublin

DRG. Title :
Network Traffic Flows - PCU's
Total Committed Development Flows - with through road

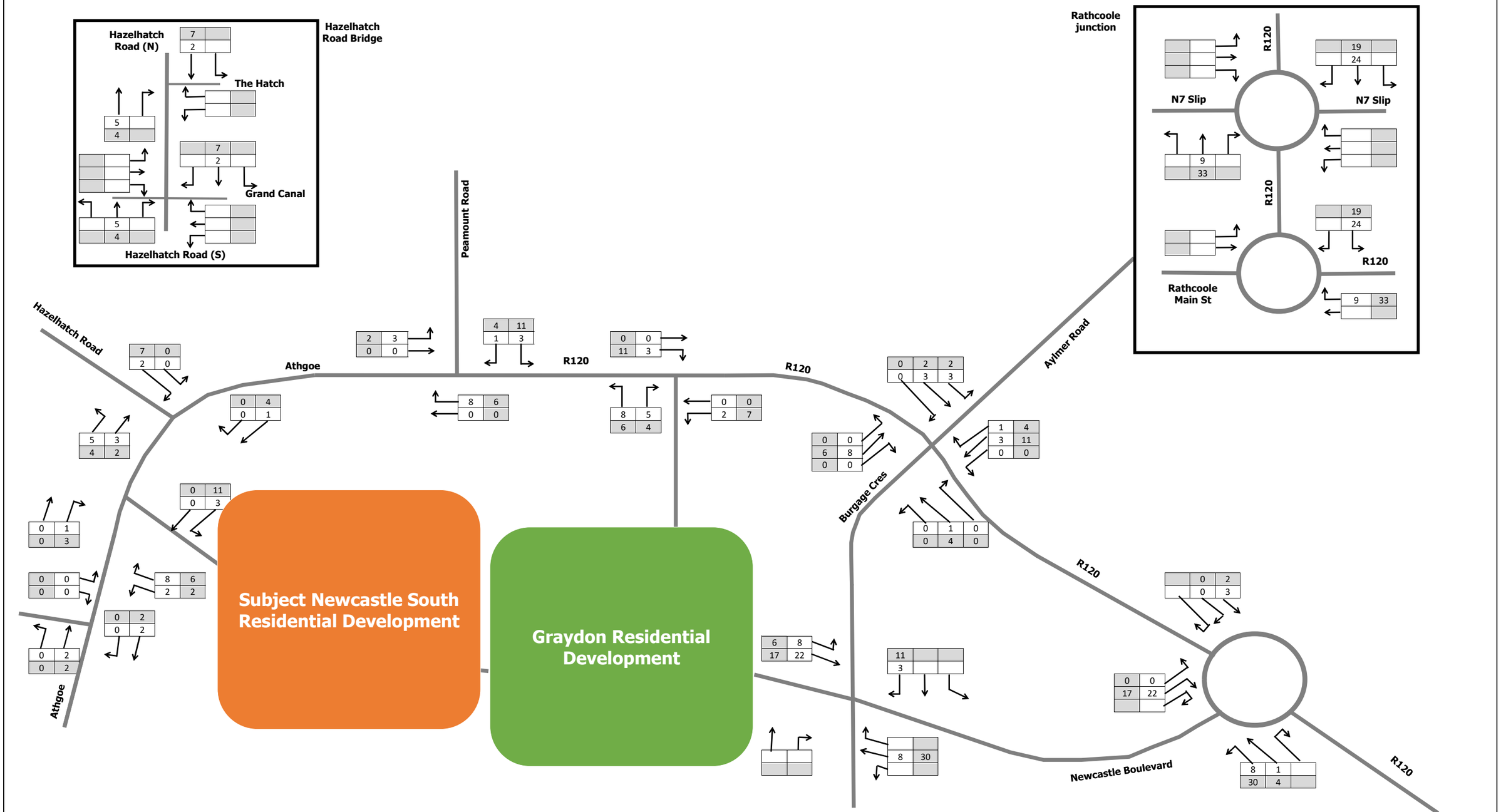
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 22

Rev:



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Ph: +353 51 309 500

email: info@dbfl.ie
website: www.dbfl.ie

Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Diverted Graydon Residential development Trips

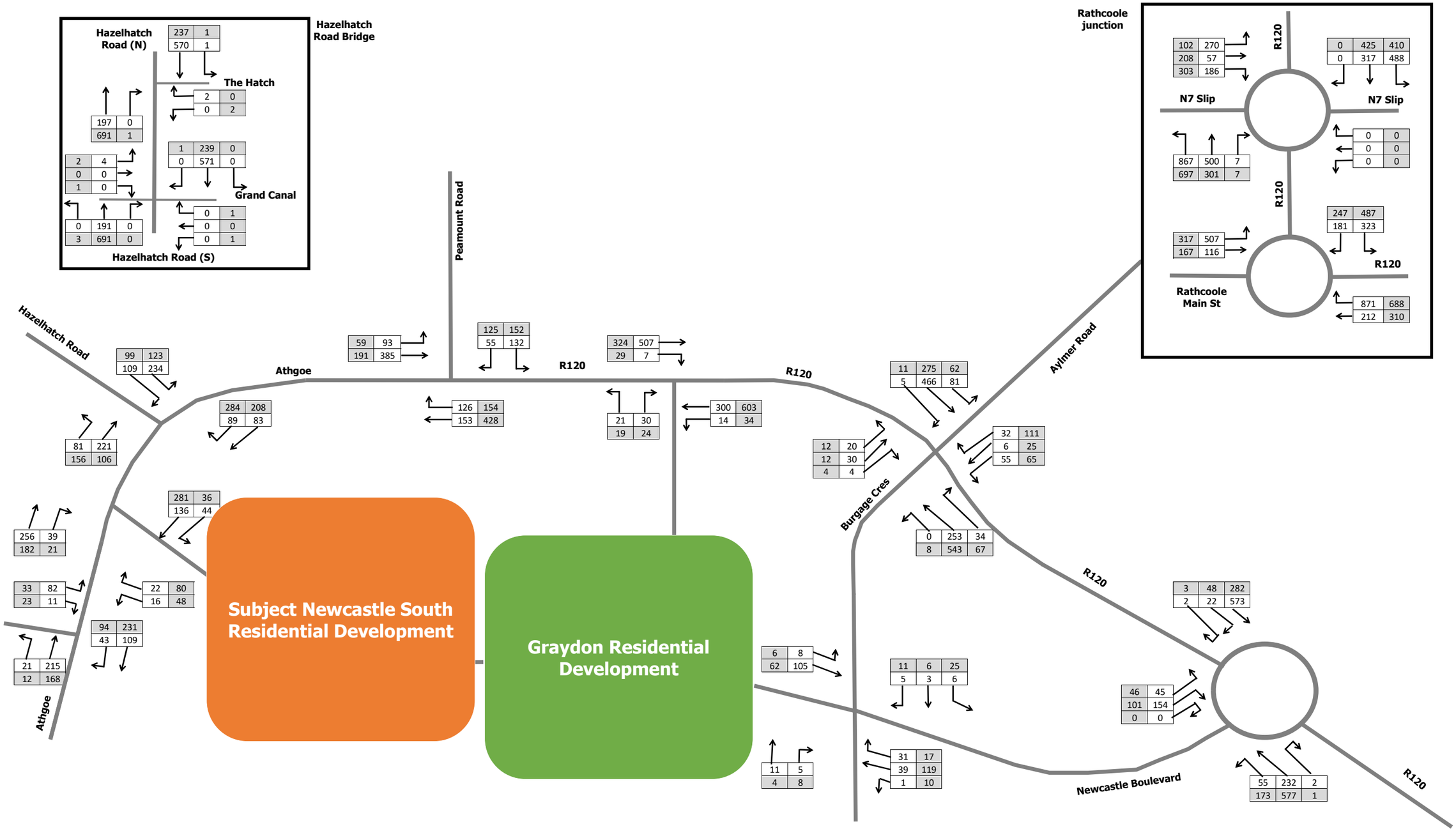
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

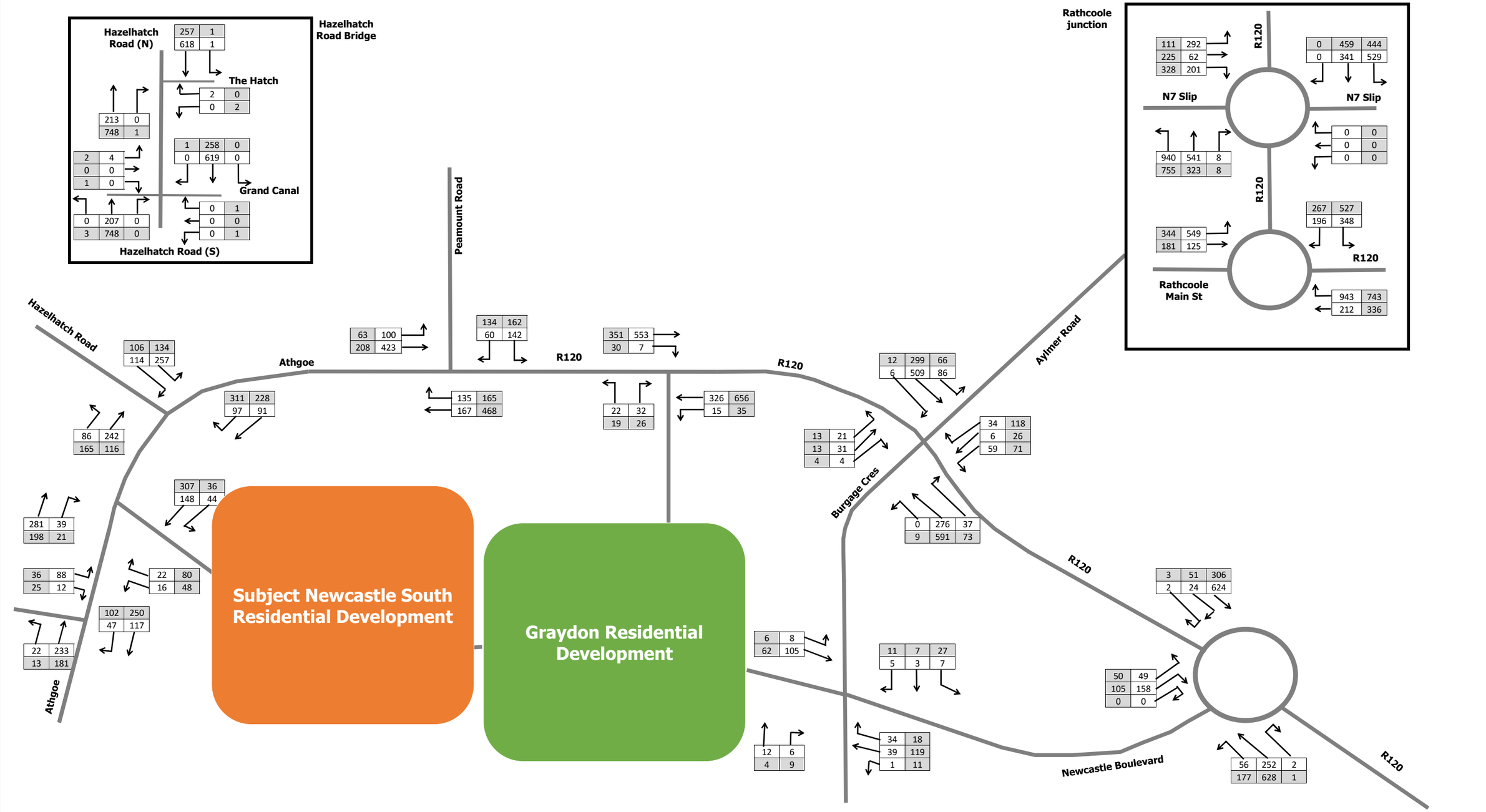
Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 23

Rev:



DBFL Consulting Engineers	**Project :** Proposed Residential Development, Newcastle South, Dublin	**Key:** AM Peak Hour (0800-0900), PM Peak Hour (1700-1800)
Dublin Office Ormond House, Upper Ormond Quay, Dublin 7, Ph: +353 1 400 4000	**DRG. Title :** Do Minimum, 2024 Opening Year	**Dwn:** SK; **Ckd:** MMK; **Date:** 09/05/2022
Cork Office 14 South Mall, Cork, Ph: +353 21 4538		**Ref:** p210026\calcs\excel\Traffic\210026-Traffic Model-001
Waterford Office Suite 8b The Atrium Maritana Gate, Canada Street Waterford, Ph: +353 51 309 500		**Figure:** 24; **Rev:**
email: info@dbfl.ie **website:** www.dbfl.ie		



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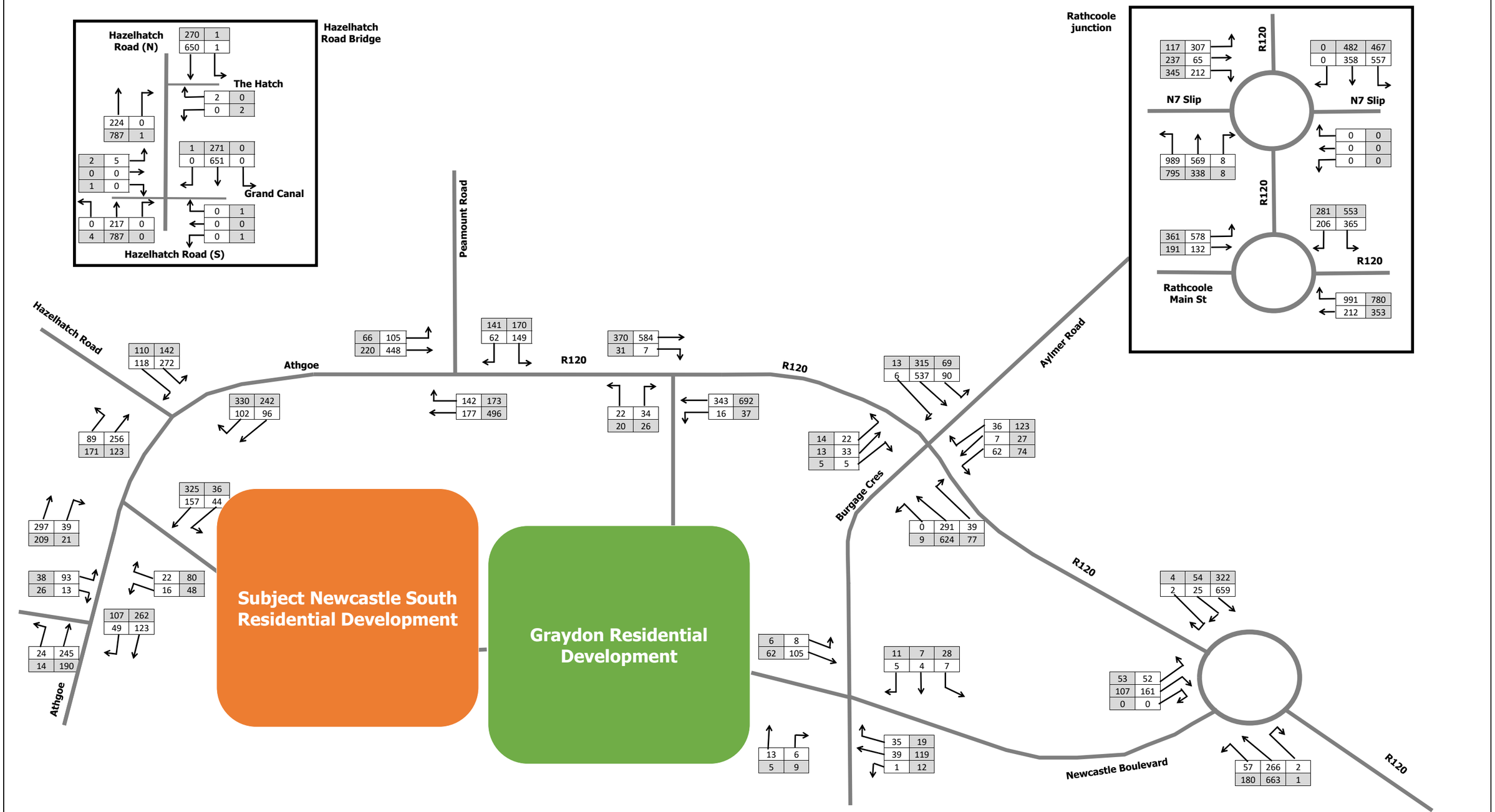
Project : Proposed Residential Development Newcastle South, Dublin		**Key:** AM Peak Hour (0800-0900) PM Peak Hour (1700-1800)
DRG. Title : Do Minimum 2029 Future Design Year		

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022
Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001		
Figure: 25		**Rev:**



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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Do Minimum
2039 Future Design Year

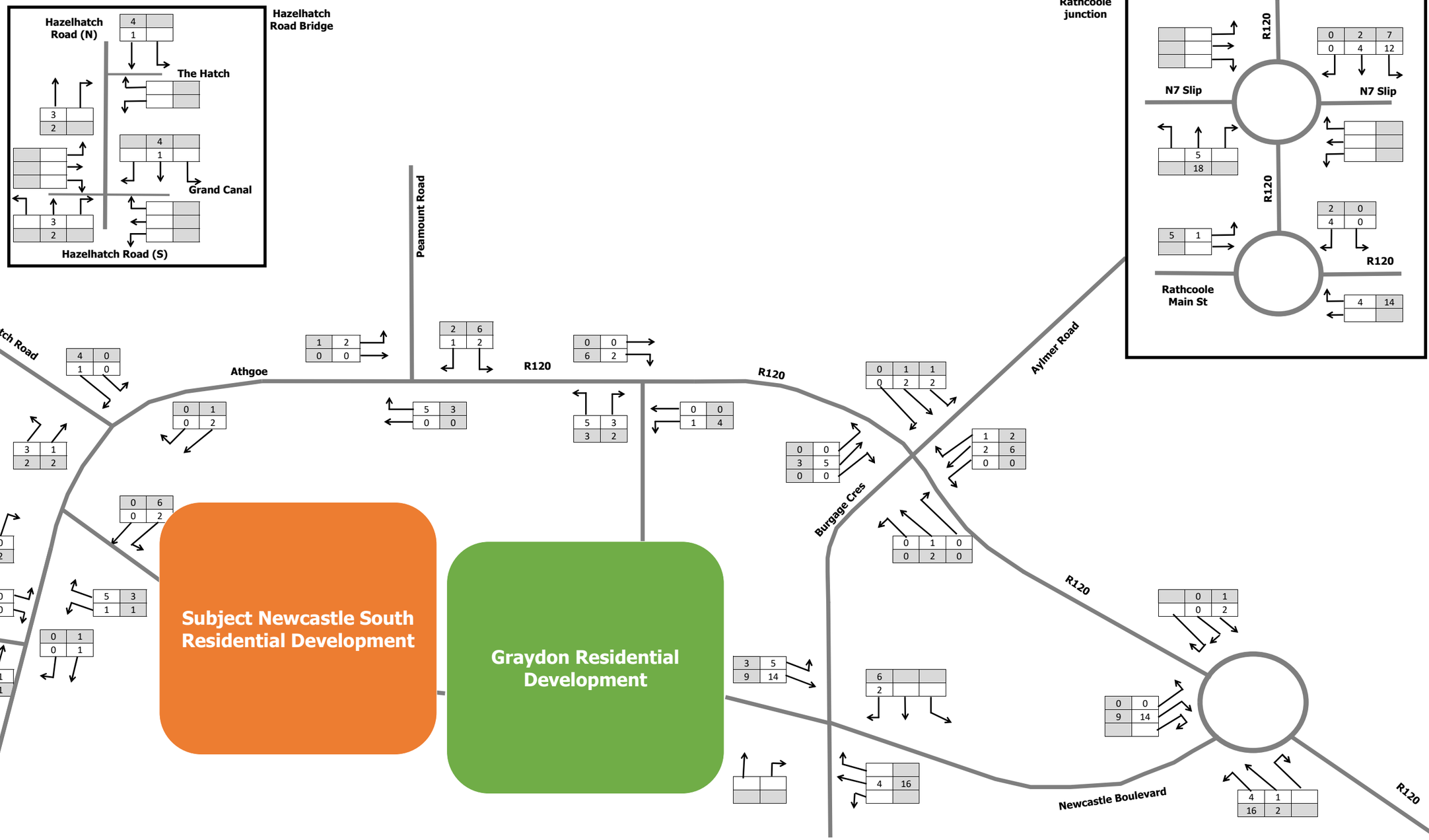
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 26

Rev:



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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Subject Newcastle South Development Trips
2024 Opening Year

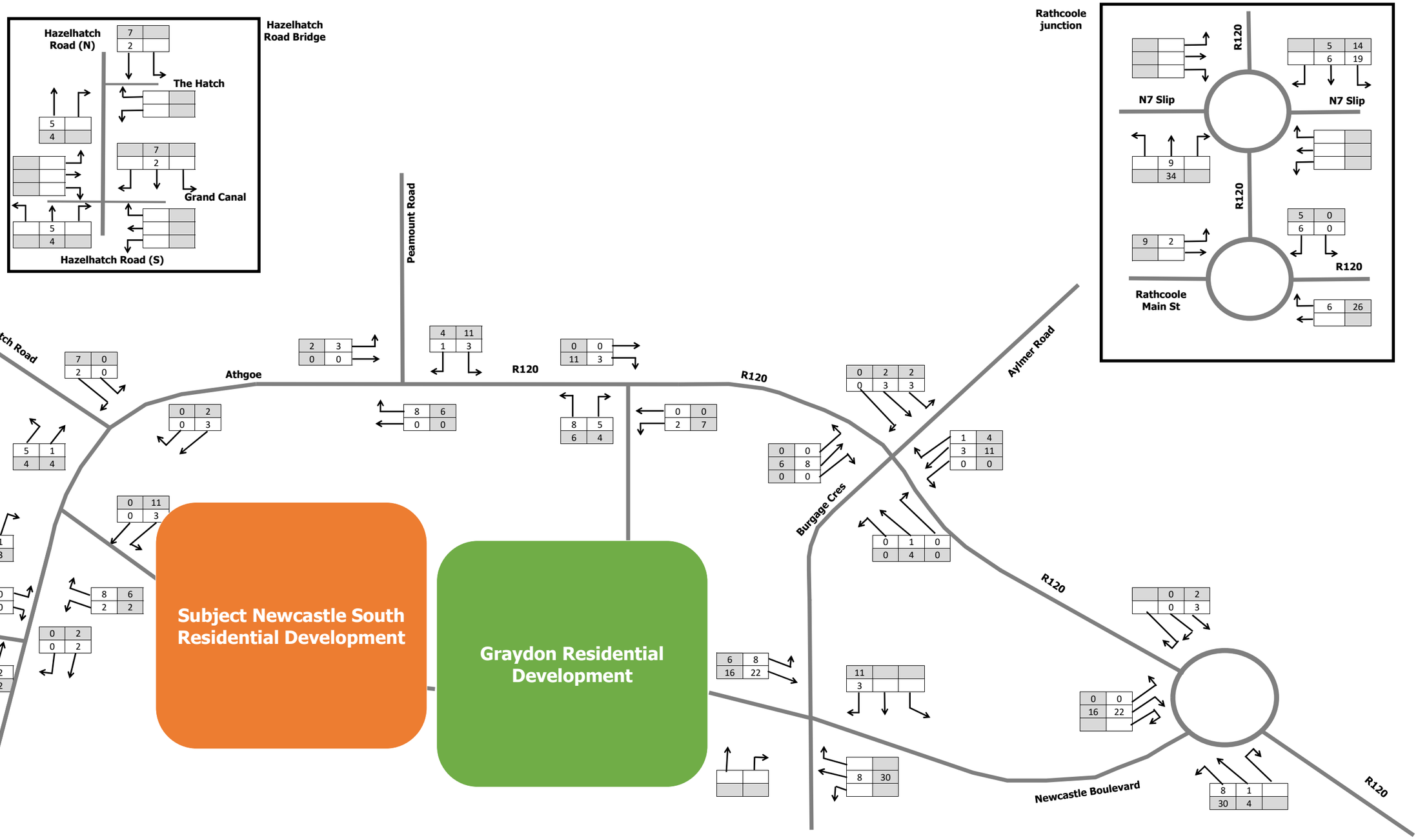
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 27

Rev:



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Key:

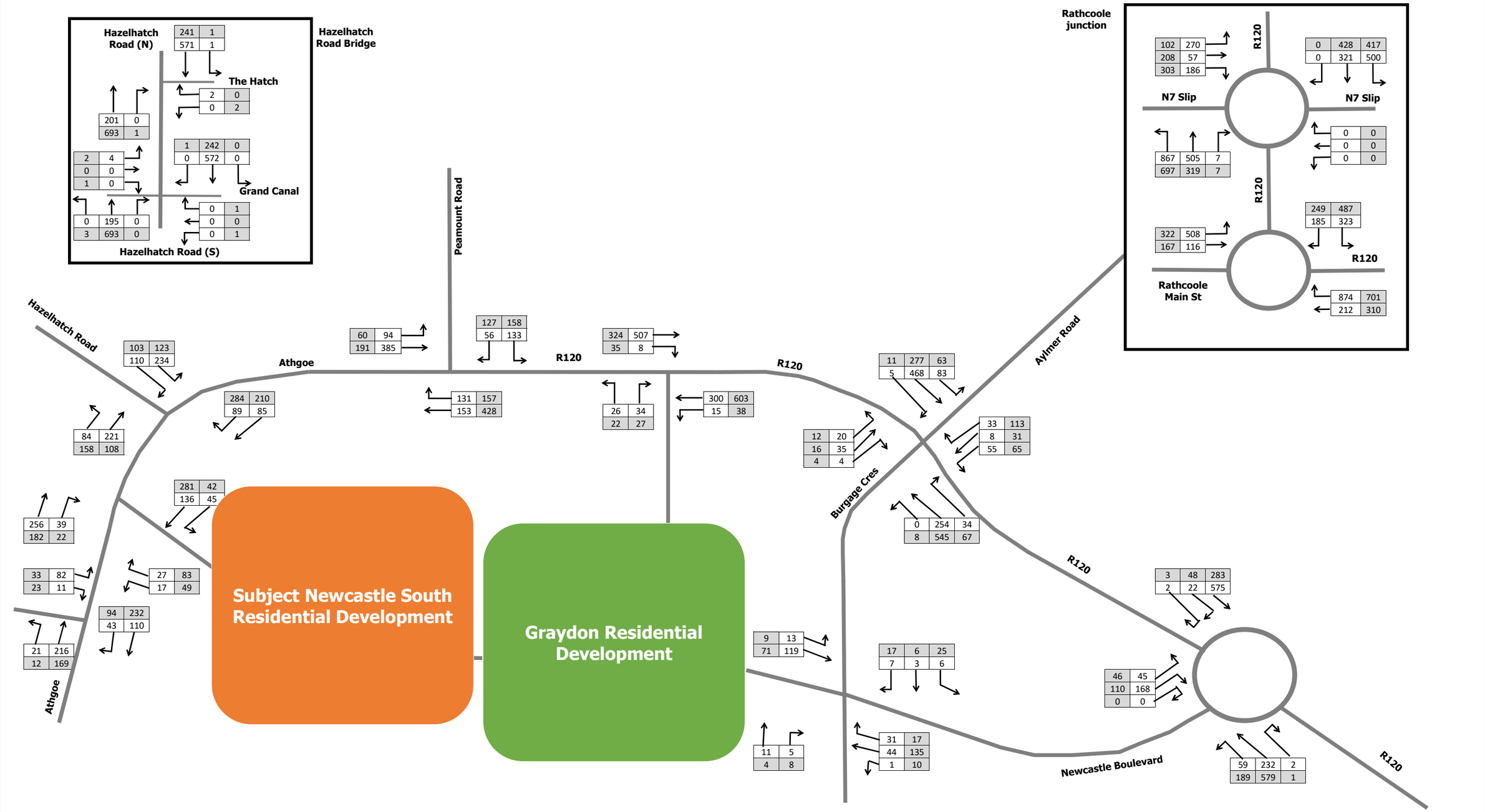
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 28

Rev:



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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Do-Something
2024 Opening Year

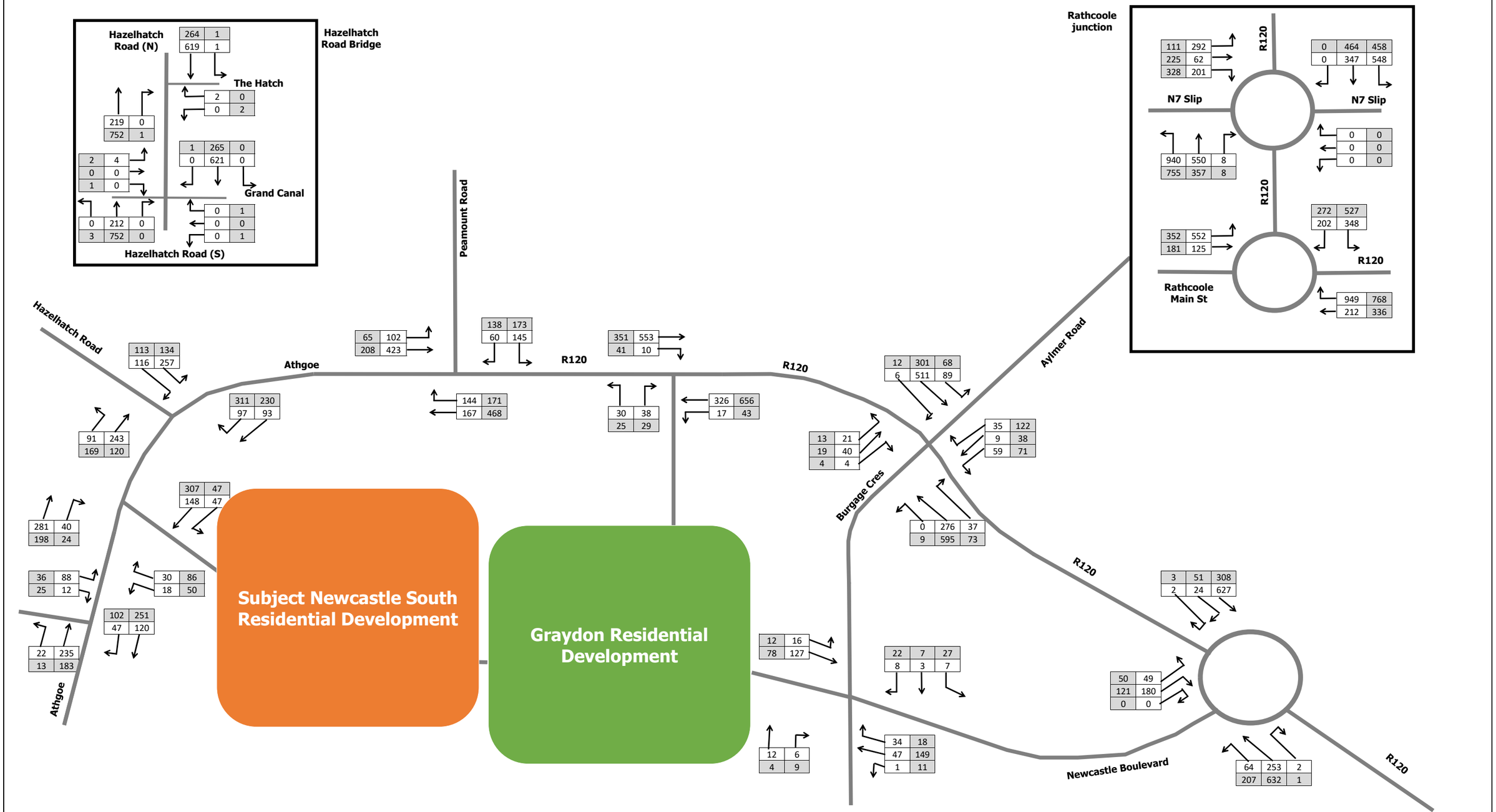
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 29

Rev:



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Project :
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Newcastle South, Dublin

DRG. Title :
Do-Something
2029 Future Design Year

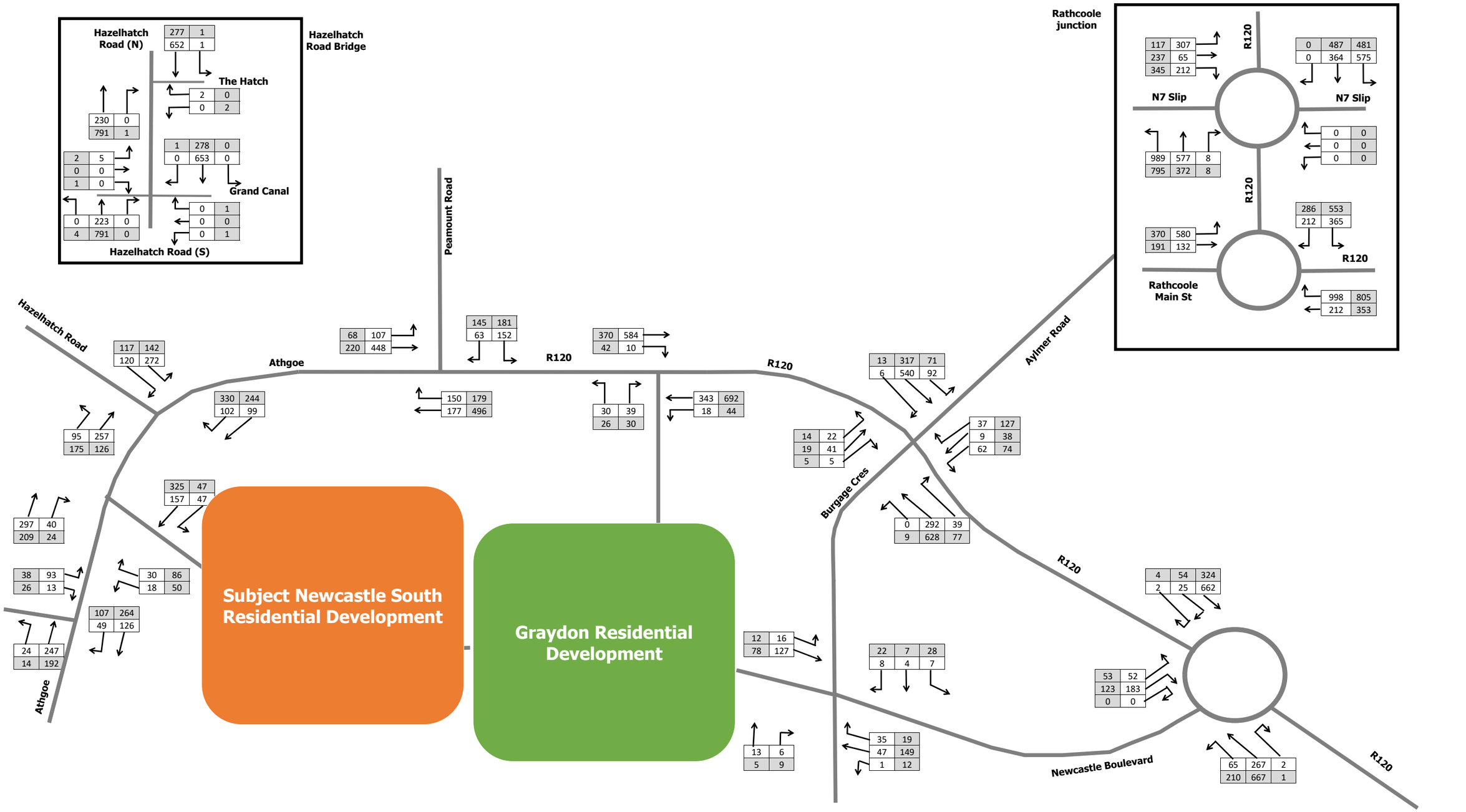
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 30

Rev:



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Project :
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Newcastle South, Dublin

DRG. Title :
Do-Something
2039 Future Design Year

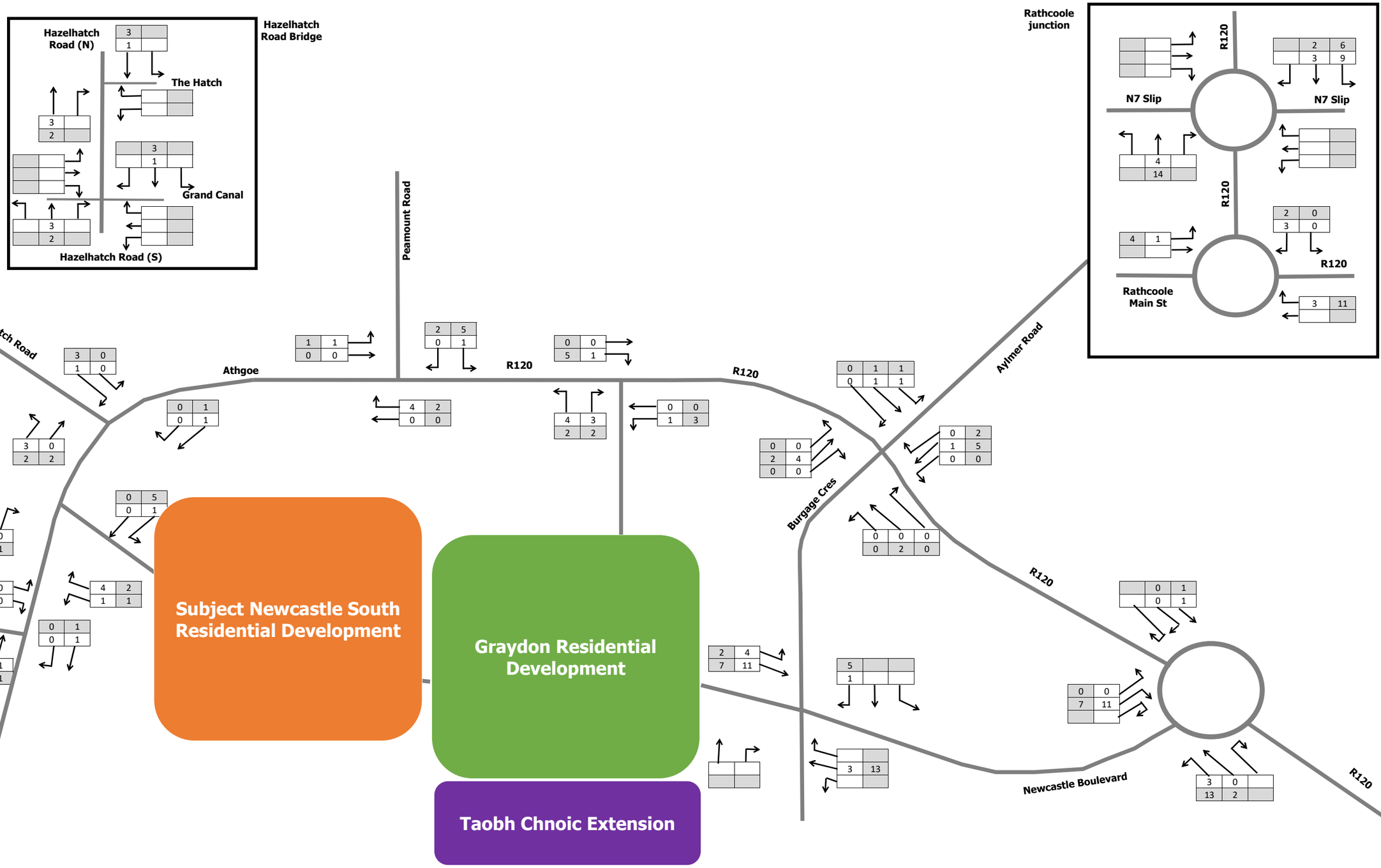
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 31

Rev:



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Project :
Proposed Residential Development
Newcastle South, Dublin

DRG. Title :
Taobh Chnoic
Trip Generation

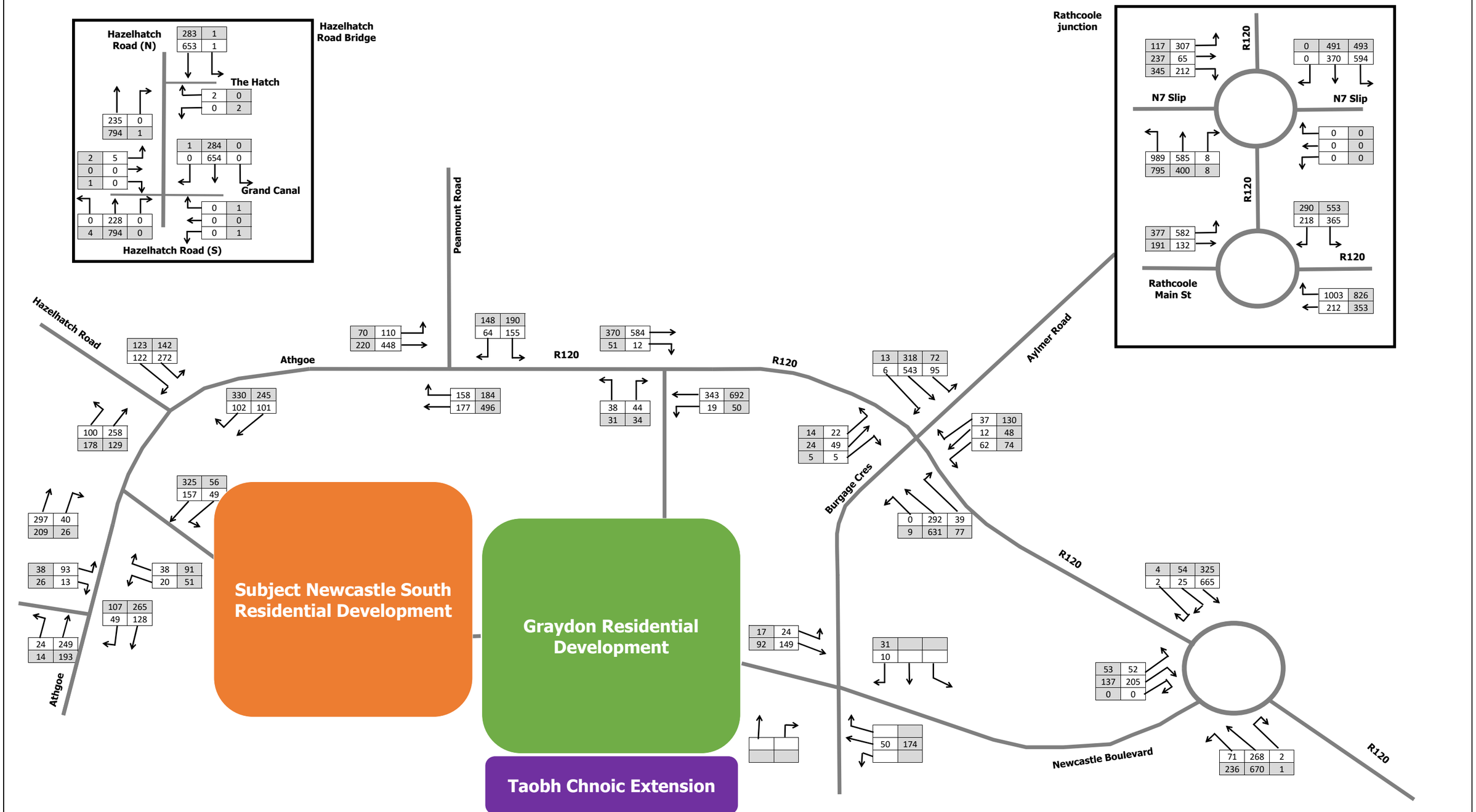
Key:
AM Peak Hour (0800-0900)
PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 32

Rev:



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	Waterford Office Suite 8b The Atrium Maritana Gate, Canada Street Waterford Ph: +353 51 309 500	

Project : Proposed Residential Development, Newcastle South, Dublin

DRG. Title : 2039 Sensitivity Analysis

Key: AM Peak Hour (0800-0900); PM Peak Hour (1700-1800)

Dwn:	Ckd:	Date:
SK	MMK	09/05/2022

Ref: p210026\calcs\excel\Traffic\210026-Traffic Model-001

Figure: 33

Rev:

APPENDIX B TRICS Output Data

Calculation Reference: AUDIT-638801-181015-1008

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

03	**SOUTH WEST**		
	DC	DORSET	1 days
04	**EAST ANGLIA**		
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
10	**WALES**		
	DB	DENBIGHSHIRE	1 days
11	**SCOTLAND**		
	SA	SOUTH AYRSHIRE	1 days
	SR	STIRLING	1 days
13	**MUNSTER**		
	WA	WATERFORD	1 days
14	**LEINSTER**		
	LU	LOUTH	2 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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 14 to 80 (units:)
Range Selected by User: 8 to 215 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 18/09/17

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	2 days
Tuesday	2 days
Wednesday	2 days
Thursday	1 days
Friday	3 days

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

Selected survey types:

Manual count	10 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	6
Suburban Area (PPS6 Out of Centre)	3
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Residential Zone	7
Built-Up Zone	1
No Sub Category	2

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	10 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 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	2 days
50,001 to 75,000	6 days
75,001 to 100,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	7 days

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

Travel Plan:

No	10 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	10 days

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

LIST OF SITES relevant to selection parameters

1 **DB-03-C-01** **FLATS IN HOUSES** **DENBIGHSHIRE**
RHYL ROAD
RHUDDLAN

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Number of dwellings: 16
Survey date: FRIDAY *07/10/11* *Survey Type: MANUAL*

2 **DC-03-C-02** **FLATS IN BLOCKS** **DORSET**
PALM COURT
WEYMOUTH
SPA ROAD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 14
Survey date: FRIDAY *28/03/14* *Survey Type: MANUAL*

3 **LU-03-C-02** **BLOCK OF FLATS** **LOUTH**
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total Number of dwellings: 33
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

4 **LU-03-C-03** **BLOCK OF FLATS** **LOUTH**
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total Number of dwellings: 20
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

5 **MG-03-C-01** **BLOCK OF FLATS** **MONAGHAN**
MALL ROAD
MONAGHAN

Edge of Town Centre
No Sub Category
Total Number of dwellings: 28
Survey date: FRIDAY *06/09/13* *Survey Type: MANUAL*

6 **NF-03-C-01** **BLOCKS OF FLATS** **NORFOLK**
PAGE STAIR LANE
KING'S LYNN

Edge of Town Centre
Built-Up Zone
Total Number of dwellings: 51
Survey date: THURSDAY *11/12/14* *Survey Type: MANUAL*

7 **SA-03-C-01** **BLOCK OF FLATS** **SOUTH AYRSHIRE**
RACECOURSE ROAD
AYR

Edge of Town Centre
Residential Zone
Total Number of dwellings: 51
Survey date: TUESDAY *16/09/14* *Survey Type: MANUAL*

8 **SF-03-C-03** **BLOCKS OF FLATS** **SUFFOLK**
TOLLGATE LANE
BURY ST EDMUNDS

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 30
Survey date: WEDNESDAY *03/12/14* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 **SR-03-C-01** **FLATS** **STIRLING**
FORTHSIDE WAY
STIRLING

Edge of Town Centre
No Sub Category
Residential Zone
Total Number of dwellings: 80
Survey date: WEDNESDAY *18/06/14* *Survey Type: MANUAL*

10 **WA-03-C-01** **BLOCKS OF FLATS** **WATERFORD**
UPPER YELLOW ROAD
WATERFORD

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 51
Survey date: TUESDAY *12/05/15* *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
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	37	0.051	10	37	0.099	10	37	0.150
08:00 - 09:00	10	37	0.061	**10**	**37**	**0.160**	10	37	0.221
09:00 - 10:00	10	37	0.088	10	37	0.107	10	37	0.195
10:00 - 11:00	10	37	0.072	10	37	0.086	10	37	0.158
11:00 - 12:00	10	37	0.102	10	37	0.118	10	37	0.220
12:00 - 13:00	10	37	0.120	10	37	0.099	10	37	0.219
13:00 - 14:00	10	37	0.094	10	37	0.112	10	37	0.206
14:00 - 15:00	10	37	0.120	10	37	0.115	10	37	0.235
15:00 - 16:00	10	37	0.112	10	37	0.102	10	37	0.214
16:00 - 17:00	10	37	0.115	10	37	0.112	10	37	0.227
17:00 - 18:00	**10**	**37**	**0.227**	10	37	0.120	**10**	**37**	**0.347**
18:00 - 19:00	10	37	0.150	10	37	0.134	10	37	0.284
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.312			1.364			2.676

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

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

Parameter summary

Trip rate parameter range selected:	14 - 80 (units:)
Survey date date range:	01/01/10 - 18/09/17
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	37	0.003	10	37	0.003	10	37	0.006
08:00 - 09:00	10	37	0.003	10	37	0.003	10	37	0.006
09:00 - 10:00	10	37	0.003	10	37	0.003	10	37	0.006
10:00 - 11:00	10	37	0.000	10	37	0.000	10	37	0.000
11:00 - 12:00	10	37	0.000	10	37	0.000	10	37	0.000
12:00 - 13:00	10	37	0.000	10	37	0.000	10	37	0.000
13:00 - 14:00	10	37	0.005	**10**	**37**	**0.005**	10	37	0.010
14:00 - 15:00	10	37	0.005	10	37	0.005	10	37	0.010
15:00 - 16:00	10	37	0.005	10	37	0.005	10	37	0.010
16:00 - 17:00	10	37	0.005	10	37	0.005	10	37	0.010
17:00 - 18:00	**10**	**37**	**0.008**	10	37	0.005	**10**	**37**	**0.013**
18:00 - 19:00	10	37	0.003	10	37	0.005	10	37	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.040			0.039			0.079

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	37	0.005	**10**	**37**	**0.008**	10	37	0.013
08:00 - 09:00	10	37	0.003	10	37	0.000	10	37	0.003
09:00 - 10:00	**10**	**37**	**0.008**	10	37	0.008	**10**	**37**	**0.016**
10:00 - 11:00	10	37	0.000	10	37	0.003	10	37	0.003
11:00 - 12:00	10	37	0.000	10	37	0.000	10	37	0.000
12:00 - 13:00	10	37	0.005	10	37	0.003	10	37	0.008
13:00 - 14:00	10	37	0.003	10	37	0.005	10	37	0.008
14:00 - 15:00	10	37	0.005	10	37	0.005	10	37	0.010
15:00 - 16:00	10	37	0.003	10	37	0.000	10	37	0.003
16:00 - 17:00	10	37	0.000	10	37	0.003	10	37	0.003
17:00 - 18:00	10	37	0.000	10	37	0.000	10	37	0.000
18:00 - 19:00	10	37	0.000	10	37	0.000	10	37	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.032			0.035			0.067

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

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
PSVS
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	10	37	0.000	10	37	0.000	10	37	0.000
08:00 - 09:00	10	37	0.000	10	37	0.000	10	37	0.000
09:00 - 10:00	10	37	0.000	10	37	0.000	10	37	0.000
10:00 - 11:00	**10**	**37**	**0.003**	**10**	**37**	**0.003**	**10**	**37**	**0.006**
11:00 - 12:00	10	37	0.003	10	37	0.003	10	37	0.006
12:00 - 13:00	10	37	0.000	10	37	0.000	10	37	0.000
13:00 - 14:00	10	37	0.000	10	37	0.000	10	37	0.000
14:00 - 15:00	10	37	0.000	10	37	0.000	10	37	0.000
15:00 - 16:00	10	37	0.003	10	37	0.000	10	37	0.003
16:00 - 17:00	10	37	0.000	10	37	0.003	10	37	0.003
17:00 - 18:00	10	37	0.000	10	37	0.000	10	37	0.000
18:00 - 19:00	10	37	0.000	10	37	0.000	10	37	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.009			0.009			0.018

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

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
CYCLISTS
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	10	37	0.003	10	37	0.005	10	37	0.008
08:00 - 09:00	10	37	0.005	10	37	0.005	10	37	0.010
09:00 - 10:00	10	37	0.005	10	37	0.003	10	37	0.008
10:00 - 11:00	10	37	0.003	10	37	0.003	10	37	0.006
11:00 - 12:00	10	37	0.003	10	37	0.000	10	37	0.003
12:00 - 13:00	10	37	0.003	10	37	0.005	10	37	0.008
13:00 - 14:00	10	37	0.000	10	37	0.003	10	37	0.003
14:00 - 15:00	10	37	0.003	10	37	0.000	10	37	0.003
15:00 - 16:00	**10**	**37**	**0.008**	**10**	**37**	**0.008**	**10**	**37**	**0.016**
16:00 - 17:00	10	37	0.005	10	37	0.005	10	37	0.010
17:00 - 18:00	10	37	0.000	10	37	0.000	10	37	0.000
18:00 - 19:00	10	37	0.003	10	37	0.000	10	37	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.041			0.037			0.078

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

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Calculation Reference: AUDIT-638801-181015-1012

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	**SOUTH EAST**		
	HC	HAMPSHIRE	1 days
	KC	KENT	1 days
	WS	WEST SUSSEX	1 days
03	**SOUTH WEST**		
	DV	DEVON	2 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	1 days
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	3 days
	SY	SOUTH YORKSHIRE	1 days
08	**NORTH WEST**		
	MS	MERSEYSIDE	1 days
09	**NORTH**		
	DH	DURHAM	2 days
	TW	TYNE & WEAR	1 days
10	**WALES**		
	PS	POWYS	1 days
12	**CONNAUGHT**		
	LT	LEITRIM	1 days
	MA	MAYO	1 days
	RO	ROSCOMMON	2 days
16	**ULSTER (REPUBLIC OF IRELAND)**		
	DN	DONEGAL	1 days
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	2 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 8 to 146 (units:)
Range Selected by User: 4 to 4334 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 19/04/18

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	6 days
Tuesday	5 days
Wednesday	2 days
Thursday	3 days
Friday	8 days

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

Selected survey types:

Manual count	24 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	20
Neighbourhood Centre (PPS6 Local Centre)	4

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.

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	23 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 1 mile:

1,001 to 5,000	11 days
5,001 to 10,000	8 days
10,001 to 15,000	5 days

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

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	9 days
25,001 to 50,000	3 days
50,001 to 75,000	1 days
75,001 to 100,000	3 days
125,001 to 250,000	3 days
250,001 to 500,000	4 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	8 days
1.1 to 1.5	14 days
1.6 to 2.0	2 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:

Yes	1 days
No	23 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	24 days

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

LIST OF SITES relevant to selection parameters

1 **AN-03-A-06** **SEMI-DET.** **ANTRIM**
GLENMOUNT ROAD
NEWTOWNABBEY

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 132
Survey date: THURSDAY 10/06/10 Survey Type: MANUAL

2 **AN-03-A-07** **SEMI DETACHED/TERRACED HOUSING** **ANTRIM**
CASTLE WAY
ANTRIM

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 55
Survey date: TUESDAY 20/12/11 Survey Type: MANUAL

3 **CA-03-A-04** **DETACHED** **CAMBRIDGESHIRE**
PETERBOROUGH
THORPE PARK ROAD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 9
Survey date: TUESDAY 18/10/11 Survey Type: MANUAL

4 **DH-03-A-01** **SEMI DETACHED** **DURHAM**
GREENFIELDS ROAD
BISHOP AUCKLAND

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 50
Survey date: TUESDAY 28/03/17 Survey Type: MANUAL

5 **DH-03-A-02** **MIXED HOUSES** **DURHAM**
LEAZES LANE
BISHOP AUCKLAND
ST HELEN AUCKLAND
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Number of dwellings: 125
Survey date: MONDAY 27/03/17 Survey Type: MANUAL

6 **DN-03-A-05** **DETACHED/SEMI-DETACHED** **DONEGAL**
GORTLEE ROAD
LETTERKENNY
GORTLEE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 146
Survey date: WEDNESDAY 03/09/14 Survey Type: MANUAL

7 **DV-03-A-02** **HOUSES & BUNGALOWS** **DEVON**
MILLHEAD ROAD
HONITON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

8 **DV-03-A-03** **TERRACED & SEMI DETACHED** **DEVON**
LOWER BRAND LANE
HONITON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 70
Survey date: MONDAY 28/09/15 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9 **HC-03-A-19** **HOUSES & FLATS** **HAMPSHIRE**
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 62
Survey date: MONDAY 27/11/17 Survey Type: MANUAL

10 **KC-03-A-05** **DETACHED & SEMI-DETACHED** **KENT**
ROCHESTER ROAD
NEAR CHATHAM
BURHAM
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Number of dwellings: 8
Survey date: FRIDAY 22/09/17 Survey Type: MANUAL

11 **LN-03-A-03** **SEMI DETACHED** **LINCOLNSHIRE**
ROOKERY LANE
LINCOLN
BOULTHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 22
Survey date: TUESDAY 18/09/12 Survey Type: MANUAL

12 **LT-03-A-01** **SEMI-DETACHED & DETACHED** **LEITRIM**
ARD NA SI
CARRICK-ON-SHANNON
ATTIRORY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 90
Survey date: FRIDAY 24/04/15 Survey Type: MANUAL

13 **MA-03-A-01** **SEMI-DET. & TERRACED** **MAYO**
N26 STATION ROAD
BALLINA

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 74
Survey date: FRIDAY 15/07/11 Survey Type: MANUAL

14 **MS-03-A-03** **DETACHED** **MERSEYSIDE**
BEMPTON ROAD
LIVERPOOL
OTTERSPOOL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 15
Survey date: FRIDAY 21/06/13 Survey Type: MANUAL

15 **NF-03-A-01** **SEMI DET. & BUNGALOWS** **NORFOLK**
YARMOUTH ROAD
CAISTER-ON-SEA

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 27
Survey date: TUESDAY 16/10/12 Survey Type: MANUAL

16 **NY-03-A-06** **BUNGALOWS & SEMI DET.** **NORTH YORKSHIRE**
HORSEFAIR
BOROUGHBRIDGE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: FRIDAY 14/10/11 Survey Type: MANUAL

17 **NY-03-A-08** **TERRACED HOUSES** **NORTH YORKSHIRE**
NICHOLAS STREET
YORK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 21
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

18 **NY-03-A-09** **MIXED HOUSING** **NORTH YORKSHIRE**
GRAMMAR SCHOOL LANE
NORTHALLERTON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

19 **PS-03-A-02** **DETACHED/SEMI-DETACHED** **POWYS**
GUNROG ROAD
WELSHPOOL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY 11/05/15 Survey Type: MANUAL

20 **RO-03-A-02** **SEMI DET. & BUNGALOWS** **ROSCOMMON**
SLIGO ROAD
BALLAGHADERREEN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 31
Survey date: THURSDAY 14/07/11 Survey Type: MANUAL

21 **RO-03-A-04** **SEMI DET. & BUNGALOWS** **ROSCOMMON**
EAGLE COURT
ROSCOMMON
ARDNANAGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 39
Survey date: FRIDAY 26/09/14 Survey Type: MANUAL

22 **SY-03-A-01** **SEMI DETACHED HOUSES** **SOUTH YORKSHIRE**
A19 BENTLEY ROAD
DONCASTER
BENTLEY RISE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 54
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

23 **TW-03-A-03** **MIXED HOUSES** **TYNE & WEAR**
STATION ROAD
NEAR NEWCASTLE
BACKWORTH
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Number of dwellings: 33
Survey date: FRIDAY 13/11/15 Survey Type: MANUAL

24 **WS-03-A-07** **BUNGALOWS** **WEST SUSSEX**
EMMS LANE
NEAR HORSHAM
BROOKS GREEN
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Number of dwellings: 57
Survey date: THURSDAY 19/10/17 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
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	24	60	0.046	24	60	0.187	24	60	0.233
08:00 - 09:00	24	60	0.115	**24**	**60**	**0.346**	24	60	0.461
09:00 - 10:00	24	60	0.159	24	60	0.212	24	60	0.371
10:00 - 11:00	24	60	0.143	24	60	0.159	24	60	0.302
11:00 - 12:00	24	60	0.130	24	60	0.145	24	60	0.275
12:00 - 13:00	24	60	0.164	24	60	0.168	24	60	0.332
13:00 - 14:00	24	60	0.165	24	60	0.159	24	60	0.324
14:00 - 15:00	24	60	0.162	24	60	0.171	24	60	0.333
15:00 - 16:00	24	60	0.229	24	60	0.154	24	60	0.383
16:00 - 17:00	24	60	0.236	24	60	0.155	24	60	0.391
17:00 - 18:00	**24**	**60**	**0.309**	24	60	0.168	**24**	**60**	**0.477**
18:00 - 19:00	24	60	0.245	24	60	0.164	24	60	0.409
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.103			2.188			4.291

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

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Parameter summary

Trip rate parameter range selected:	8 - 146 (units:)
Survey date date range:	01/01/10 - 19/04/18
Number of weekdays (Monday-Friday):	24
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

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

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	24	60	0.000	24	60	0.000	24	60	0.000
08:00 - 09:00	**24**	**60**	**0.005**	**24**	**60**	**0.005**	**24**	**60**	**0.010**
09:00 - 10:00	24	60	0.003	24	60	0.003	24	60	0.006
10:00 - 11:00	24	60	0.002	24	60	0.003	24	60	0.005
11:00 - 12:00	24	60	0.004	24	60	0.003	24	60	0.007
12:00 - 13:00	24	60	0.003	24	60	0.003	24	60	0.006
13:00 - 14:00	24	60	0.003	24	60	0.003	24	60	0.006
14:00 - 15:00	24	60	0.001	24	60	0.001	24	60	0.002
15:00 - 16:00	24	60	0.003	24	60	0.003	24	60	0.006
16:00 - 17:00	24	60	0.004	24	60	0.003	24	60	0.007
17:00 - 18:00	24	60	0.003	24	60	0.003	24	60	0.006
18:00 - 19:00	24	60	0.004	24	60	0.004	24	60	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.035			0.034			0.069

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

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

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	24	60	0.001	24	60	0.001	24	60	0.002
08:00 - 09:00	24	60	0.003	24	60	0.001	24	60	0.004
09:00 - 10:00	24	60	0.002	24	60	0.003	24	60	0.005
10:00 - 11:00	**24**	**60**	**0.006**	**24**	**60**	**0.004**	**24**	**60**	**0.010**
11:00 - 12:00	24	60	0.002	24	60	0.001	24	60	0.003
12:00 - 13:00	24	60	0.001	24	60	0.001	24	60	0.002
13:00 - 14:00	24	60	0.000	24	60	0.000	24	60	0.000
14:00 - 15:00	24	60	0.002	24	60	0.003	24	60	0.005
15:00 - 16:00	24	60	0.003	24	60	0.004	24	60	0.007
16:00 - 17:00	24	60	0.001	24	60	0.001	24	60	0.002
17:00 - 18:00	24	60	0.001	24	60	0.000	24	60	0.001
18:00 - 19:00	24	60	0.000	24	60	0.000	24	60	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.022			0.019			0.041

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

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

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	24	60	0.000	24	60	0.000	24	60	0.000
08:00 - 09:00	**24**	**60**	**0.003**	**24**	**60**	**0.003**	**24**	**60**	**0.006**
09:00 - 10:00	24	60	0.000	24	60	0.000	24	60	0.000
10:00 - 11:00	24	60	0.000	24	60	0.000	24	60	0.000
11:00 - 12:00	24	60	0.000	24	60	0.000	24	60	0.000
12:00 - 13:00	24	60	0.000	24	60	0.000	24	60	0.000
13:00 - 14:00	24	60	0.000	24	60	0.000	24	60	0.000
14:00 - 15:00	24	60	0.001	24	60	0.001	24	60	0.002
15:00 - 16:00	24	60	0.003	24	60	0.003	24	60	0.006
16:00 - 17:00	24	60	0.000	24	60	0.001	24	60	0.001
17:00 - 18:00	24	60	0.000	24	60	0.000	24	60	0.000
18:00 - 19:00	24	60	0.000	24	60	0.000	24	60	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.008			0.015

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

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

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

Time Range	ARRIVALS No. Days	ARRIVALS Ave. DWELLS	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. DWELLS	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. DWELLS	TOTALS 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	24	60	0.002	**24**	**60**	**0.013**	24	60	0.015
08:00 - 09:00	24	60	0.002	24	60	0.013	24	60	0.015
09:00 - 10:00	24	60	0.002	24	60	0.005	24	60	0.007
10:00 - 11:00	24	60	0.005	24	60	0.006	24	60	0.011
11:00 - 12:00	24	60	0.001	24	60	0.003	24	60	0.004
12:00 - 13:00	24	60	0.004	24	60	0.003	24	60	0.007
13:00 - 14:00	24	60	0.004	24	60	0.002	24	60	0.006
14:00 - 15:00	24	60	0.005	24	60	0.003	24	60	0.008
15:00 - 16:00	24	60	0.010	24	60	0.003	24	60	0.013
16:00 - 17:00	**24**	**60**	**0.015**	24	60	0.007	**24**	**60**	**0.022**
17:00 - 18:00	24	60	0.010	24	60	0.006	24	60	0.016
18:00 - 19:00	24	60	0.010	24	60	0.003	24	60	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.070			0.067			0.137

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.*

Calculation Reference: AUDIT-638801-181105-1103

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : D - NURSERY
VEHICLES

Selected regions and areas:
03 SOUTH WEST
WL WILTSHIRE 1 days
04 EAST ANGLIA
CA CAMBRIDGESHIRE 1 days
SF SUFFOLK 1 days
05 EAST MIDLANDS
LN LINCOLNSHIRE 1 days
NR NORTHAMPTONSHIRE 1 days
06 WEST MIDLANDS
SH SHROPSHIRE 1 days
08 NORTH WEST
CH CHESHIRE 1 days
11 SCOTLAND
DU DUNDEE CITY 1 days
17 ULSTER (NORTHERN IRELAND)
DE DERRY 1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 182 to 1300 (units: sqm)
Range Selected by User: 150 to 2350 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 31/10/17

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 2 days
Tuesday 2 days
Wednesday 3 days
Thursday 1 days
Friday 1 days

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

Selected survey types:
Manual count 9 days
Directional ATC Count 0 days

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

Selected Locations:
Edge of Town Centre 3
Suburban Area (PPS6 Out of Centre) 5
Free Standing (PPS6 Out of Town) 1

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

Selected Location Sub Categories:
Industrial Zone 1
Residential Zone 7
No Sub Category 1

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

Secondary Filtering selection:

Use Class:
D1 9 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 1 mile:
1,001 to 5,000 2 days
15,001 to 20,000 2 days
20,001 to 25,000 1 days
25,001 to 50,000 4 days

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

Population within 5 miles:
5,001 to 25,000 1 days
75,001 to 100,000 4 days
125,001 to 250,000 4 days

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

Car ownership within 5 miles:
0.5 or Less 1 days
0.6 to 1.0 2 days
1.1 to 1.5 6 days

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

Travel Plan:
No 9 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 9 days

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

LIST OF SITES relevant to selection parameters

1 CA-04-D-02 NURSERY CAMBRIDGESHIRE
EASTFIELD ROAD
PETERBOROUGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 400 sqm
Survey date: TUESDAY 18/10/16 Survey Type: MANUAL

2 CH-04-D-01 NURSERY CHESHIRE
CHESTER ROAD
MACCLESFIELD

Edge of Town Centre
No Sub Category
Total Gross floor area: 500 sqm
Survey date: MONDAY 24/11/14 Survey Type: MANUAL

3 DE-04-D-01 DAY NURSERY DERRY
COURTAULD WAY
NEAR LONDONDERRY
EGLINTON
Free Standing (PPS6 Out of Town)
Industrial Zone
Total Gross floor area: 1300 sqm
Survey date: FRIDAY 22/06/12 Survey Type: MANUAL

4 DU-04-D-01 NURSERY DUNDEE CITY
LONGTOWN TERRACE
DUNDEE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 325 sqm
Survey date: MONDAY 24/04/17 Survey Type: MANUAL

5 LN-04-D-01 NURSERY LINCOLNSHIRE
NEWARK ROAD
LINCOLN
SWALLOW BECK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 600 sqm
Survey date: TUESDAY 31/10/17 Survey Type: MANUAL

6 NR-04-D-02 NURSERY NORTHAMPTONSHIRE
PARK AVENUE
KETTERING

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 182 sqm
Survey date: WEDNESDAY 26/09/12 Survey Type: MANUAL

7 SF-04-D-03 NURSERY SUFFOLK
CAMP ROAD
LOWESTOFT

Edge of Town Centre
Residential Zone
Total Gross floor area: 750 sqm
Survey date: WEDNESDAY 10/12/14 Survey Type: MANUAL

8 SH-04-D-01 NURSERY SHROPSHIRE
OLD COLEHAM
SHREWSBURY

Edge of Town Centre
Residential Zone
Total Gross floor area: 326 sqm
Survey date: WEDNESDAY 28/05/14 Survey Type: MANUAL

9 WL-04-D-01 NURSERY WILTSHIRE
SHREWSBURY ROAD
SWINDON
WALCOT
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 500 sqm
Survey date: THURSDAY 22/09/16 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 04 - EDUCATION/D - NURSERY

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	9	543	1.065	9	543	0.696	9	543	1.761
08:00 - 09:00	**9**	**543**	**2.294**	9	543	1.884	**9**	**543**	**4.178**
09:00 - 10:00	9	543	0.778	9	543	0.717	9	543	1.495
10:00 - 11:00	9	543	0.246	9	543	0.184	9	543	0.430
11:00 - 12:00	9	543	0.328	9	543	0.328	9	543	0.656
12:00 - 13:00	9	543	0.696	9	543	0.717	9	543	1.413
13:00 - 14:00	9	543	0.635	9	543	0.737	9	543	1.372
14:00 - 15:00	9	543	0.225	9	543	0.307	9	543	0.532
15:00 - 16:00	9	543	0.410	9	543	0.430	9	543	0.840
16:00 - 17:00	9	543	1.126	9	543	1.188	9	543	2.314
17:00 - 18:00	9	543	1.946	**9**	**543**	**2.150**	9	543	4.096
18:00 - 19:00	9	543	0.225	9	543	0.389	9	543	0.614
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			9.974			9.727			19.701

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

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

Parameter summary

Trip rate parameter range selected:	182 - 1300 (units: sqm)
Survey date date range:	01/01/10 - 31/10/17
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	**9**	**543**	**0.041**	**9**	**543**	**0.041**	**9**	**543**	**0.082**
08:00 - 09:00	9	543	0.000	9	543	0.000	9	543	0.000
09:00 - 10:00	9	543	0.020	9	543	0.020	9	543	0.040
10:00 - 11:00	9	543	0.000	9	543	0.000	9	543	0.000
11:00 - 12:00	9	543	0.000	9	543	0.000	9	543	0.000
12:00 - 13:00	9	543	0.020	9	543	0.020	9	543	0.040
13:00 - 14:00	9	543	0.000	9	543	0.000	9	543	0.000
14:00 - 15:00	9	543	0.020	9	543	0.020	9	543	0.040
15:00 - 16:00	9	543	0.000	9	543	0.000	9	543	0.000
16:00 - 17:00	9	543	0.000	9	543	0.000	9	543	0.000
17:00 - 18:00	9	543	0.000	9	543	0.000	9	543	0.000
18:00 - 19:00	9	543	0.000	9	543	0.000	9	543	0.000
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.101			0.101			0.202

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

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TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	9	543	0.020	9	543	0.020	9	543	0.040
08:00 - 09:00	9	543	0.000	9	543	0.000	9	543	0.000
09:00 - 10:00	**9**	**543**	**0.041**	**9**	**543**	**0.041**	**9**	**543**	**0.082**
10:00 - 11:00	9	543	0.000	9	543	0.000	9	543	0.000
11:00 - 12:00	9	543	0.020	9	543	0.020	9	543	0.040
12:00 - 13:00	9	543	0.041	9	543	0.041	9	543	0.082
13:00 - 14:00	9	543	0.020	9	543	0.020	9	543	0.040
14:00 - 15:00	9	543	0.000	9	543	0.000	9	543	0.000
15:00 - 16:00	9	543	0.000	9	543	0.000	9	543	0.000
16:00 - 17:00	9	543	0.020	9	543	0.020	9	543	0.040
17:00 - 18:00	9	543	0.000	9	543	0.000	9	543	0.000
18:00 - 19:00	9	543	0.000	9	543	0.000	9	543	0.000
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.162			0.162			0.324

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	9	543	0.000	9	543	0.000	9	543	0.000
08:00 - 09:00	**9**	**543**	**0.102**	9	543	0.041	**9**	**543**	**0.143**
09:00 - 10:00	9	543	0.000	9	543	0.000	9	543	0.000
10:00 - 11:00	9	543	0.000	9	543	0.000	9	543	0.000
11:00 - 12:00	9	543	0.000	9	543	0.000	9	543	0.000
12:00 - 13:00	9	543	0.020	9	543	0.000	9	543	0.020
13:00 - 14:00	9	543	0.000	9	543	0.000	9	543	0.000
14:00 - 15:00	9	543	0.000	9	543	0.000	9	543	0.000
15:00 - 16:00	9	543	0.000	9	543	0.000	9	543	0.000
16:00 - 17:00	9	543	0.000	9	543	0.000	9	543	0.000
17:00 - 18:00	9	543	0.020	**9**	**543**	**0.061**	9	543	0.081
18:00 - 19:00	9	543	0.000	9	543	0.041	9	543	0.041
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00	1	400	0.000	1	400	0.000	1	400	0.000
21:00 - 22:00	1	400	0.000	1	400	0.000	1	400	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.142			0.143			0.285

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

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

APPENDIX C TRANSYT Output Files

TRANSYT 15

Version: 15.5.2.7994

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

Filename: 210026 Junction 2 TRANSYT Assesment.t15
Path: G:\2021\p210026\calcs\transyt\Updated 2022
Report generation date: 10/05/2022 14:25:14

File summary

File description

File title	Newcastle South Phase 2
Location	
Site number	Junction 5
UTCRegion	
Driving side	Left
Date	09/10/2021
Version	
Status	Pre Planning
Identifier	
Client	Cairn
Jobnumber	210026
Enumerator	HEADOFFICE\mckennam
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display 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
			✓		✓	✓	✓	✓	✓	✓	✓		

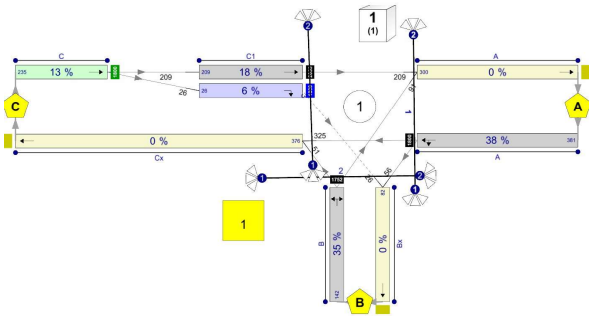
Units

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 - 2024 DM AM
D1 - 2024 DM AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
1	10/05/2022 14:24:41	10/05/2022 14:24:41	08:00	100	21.82	1.36	24.10	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2024 DM AM		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2024 DM AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	180	180
Ax	1	278	278
B	1	38	38
Bx	1	83	83
C	1	295	295
Cx	1	152	152
C1	1	256	256
	2	39	39

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	44	136
	B	22	0	16
	C	256	39	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	256
	2		C	B	C/1, C1/2, Bx/1	Normal	39
	3		A	B	A/1, Bx/1	Normal	44
	4		A	C	A/1, Cx/1	Normal	136
	5		B	A	B/1, Ax/1	Normal	22
	6		B	C	B/1, Cx/1	Normal	16

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

	To				
		1	2	3	4
From	1	0	0	5	7
	2	0	0	5	7
	3	5	5	0	7
	4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	67	7	1	1
	3	✓	3	B	72	80	8	1	7
	4	✓	4	E,F,G	87	90	3	1	3

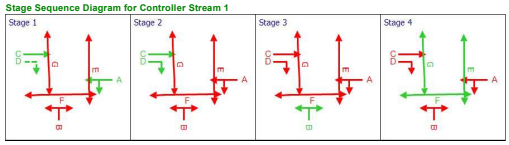
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	72	80	8
	C	1	✓	98	67	69
	D	1	✓	98	67	69
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

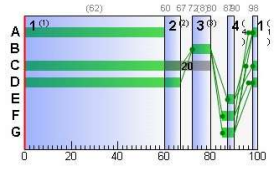
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	72	80	8
C1	1	1	1	C	98	67	69
C1	2	1	1	D	98	67	69

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 (PCU/hr)	Actual green (s (per cycle))	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	A	1	16	467	180	1800	62	7.91	2.06	5.94	5.62	0.90	6.51
	Ax	1	0	Unrestricted	278	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24	273	38	1752	8	45.93	1.02	2.93	6.89	0.45	7.34
	Bx	1	0	Unrestricted	83	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16	449	295	1800	100	0.20	0.02	0.09	0.23	0.00	0.23
	Cx	1	0	Unrestricted	152	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	18	406	256	2055	69	5.43	2.29	6.60	5.48	1.04	6.52
		2	4	2078	39	1348	69	6.83	0.39	7.82	1.05	0.18	1.23

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	180	180	0		1800	1134	16		467	0.00	62	63
	Ax	1	278	278	0		Unrestricted	Unrestricted	0		Unrestricted	0.48	100	10
	B	1	38	38	0		1752	158	24		273	0.00	8	9
	Bx	1	83	83	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100	10
	C	1	295	295	0		1800	1800	16		449	0.00	100	10
	Cx	1	152	152	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	100	10
	C1	1	256	256	0		2055	1439	18		406	0.00	69	70
		2	39	39	0		1348	944	4		2078	0.00	69	70

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	7.91	0.38	0.01	5.62	5.62	39.66	70.86	0.54	0.90	0.90
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	45.93	0.45	0.04	6.89	6.89	94.82	34.67	1.36	0.45	0.45
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.20	0.00	0.02	0.23	0.23	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.43	0.37	0.02	5.48	5.48	32.27	81.92	0.69	1.04	1.04
		2	3.60	6.83	0.07	0.00	1.05	1.05	35.90	13.97	0.03	0.18	0.18

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.06	34.78	5.94	0.00	0.00	0.00	0.01	1.86	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	1.02	34.78	2.93	0.00	0.00	0.00	0.04	1.00	6.00	0.00	6.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			35.00	0.00	35.00	
	C	1	0.00	0.02	17.39	0.09	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C1	1	0.00	2.29	34.78	6.60	0.00	0.00	0.00	0.02	2.22	0.00	0.00	0.00	
		2	0.00	0.39	5.00	7.82	0.00	0.00	0.00	0.00	0.33	62.00	0.00	62.00	

A2 - 2024 DM PM
D2 - 2024 DM PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
2	10/05/2022 14:24:41	10/05/2022 14:24:41	17:00	100	47.59	3.02	32.02	A/1	0	0	A/1	C/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2024 DM PM		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2024 DM PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	317	317
Ax	1	262	262
B	1	128	128
Bx	1	57	57
C	1	203	203
Cx	1	329	329
C1	1	182	182
	2	21	21

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	36	281
	B	80	0	48
	C	182	21	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	182
	2		C	B	C/1, C1/2, Bx/1	Normal	21
	3		A	B	A/1, Bx/1	Normal	36
	4		A	C	A/1, Cx/1	Normal	281
	5		B	A	B/1, Ax/1	Normal	80
	6		B	C	B/1, Cx/1	Normal	48

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

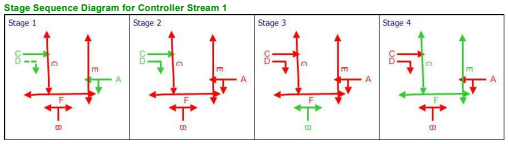
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

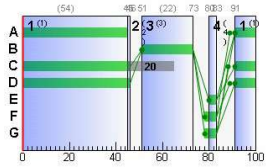
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	32	181	317	1800	54	13.15	4.83	13.89	16.44	2.12	18.57
	Ax	1	0	Unrestricted	262	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	32	183	128	1752	22	34.06	3.02	8.70	17.20	1.34	18.53
	Bx	1	0	Unrestricted	57	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	11	698	203	1800	100	0.13	0.01	0.04	0.10	0.00	0.10
	Cx	1	0	Unrestricted	329	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	16	469	182	2055	55	10.94	2.34	6.73	7.86	1.06	8.91
		2	4	2176	21	948	55	16.03	0.32	6.43	1.33	0.14	1.47

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	317	317	0		1800	990	32		181	0.00	54	55
	Ax	1	262	262	0		Unrestricted	Unrestricted	0		Unrestricted	0.71	100	10
	B	1	128	128	0		1752	403	32		183	0.00	22	23
	Bx	1	57	57	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	203	203	0		1800	1800	11		698	0.00	100	10
	Cx	1	329	329	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	100	10
	C1	1	182	182	0		2055	1151	16		469	0.00	55	56
		2	21	21	0		948	531	4		2176	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.15	1.08	0.08	16.44	16.44	53.46	166.77	2.71	2.12	2.12
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	34.06	1.14	0.07	17.20	17.20	83.36	104.06	2.64	1.34	1.34
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.13	0.00	0.01	0.10	0.10	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	10.94	0.54	0.01	7.86	7.86	46.29	83.72	0.53	1.06	1.06
		2	3.60	16.03	0.09	0.00	1.33	1.33	54.96	11.51	0.03	0.14	0.14

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	4.83	34.78	13.89	0.00	0.00	0.00	0.08	4.04	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	3.02	34.78	8.70	0.00	0.00	0.00	0.07	2.81	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			71.00	0.00	71.00	
	C	1	0.00	0.01	17.39	0.04	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			20.00	0.00	20.00	
	C1	1	0.00	2.34	34.78	6.73	0.00	0.00	0.00	0.01	2.29	0.00	0.00	0.00	
		2	0.00	0.32	5.00	6.43	0.00	0.00	0.00	0.00	0.26	43.00	0.00	43.00	

A3 - 2029 DM AM
D3 - 2029 DM AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
3	10/05/2022 14:24:41	10/05/2022 14:24:42	08:00	100	23.16	1.44	24.10	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2029 DM AM		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2029 DM AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	192	192
Ax	1	303	303
B	1	38	38
Bx	1	83	83
C	1	320	320
Cx	1	164	164
C1	1	281	281
	2	39	39

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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)

From \ To	A	B	C
A	0	44	148
B	22	0	16
C	281	39	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	281
	2		C	B	C/1, C1/2, Bx/1	Normal	39
	3		A	B	A/1, Bx/1	Normal	44
	4		A	C	A/1, Cx/1	Normal	148
	5		B	A	B/1, Ax/1	Normal	22
	6		B	C	B/1, Cx/1	Normal	16

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	67	7	1	1
	3	✓	3	B	72	80	8	1	7
	4	✓	4	E,F,G	87	90	3	1	3

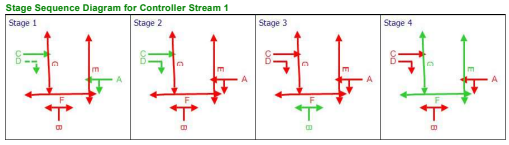
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	72	80	8
	C	1	✓	98	67	69
	D	1	✓	98	67	69
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

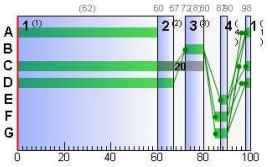
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	72	80	8
C1	1	1	1	C	98	67	69
C1	2	1	1	D	98	67	69

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 (PCU/hr)	Actual green (s (per cycle))	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	A	1	17	432	192	1800	62	8.00	2.20	6.34	6.06	0.96	7.02
	Ax	1	0	Unrestricted	303	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24	273	38	1752	8	45.93	1.02	2.93	6.89	0.45	7.34
	Bx	1	0	Unrestricted	83	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	18	406	320	1800	100	0.22	0.02	0.11	0.27	0.00	0.27
	Cx	1	0	Unrestricted	164	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	20	361	281	2055	69	5.54	2.92	8.40	6.14	1.14	7.28
		2	4	2036	39	1322	69	7.02	0.39	7.82	1.08	0.18	1.26

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	192	192	0		1800	1134	17		432	0.00	62	63
	Ax	1	303	303	0		Unrestricted	Unrestricted	0		Unrestricted	0.48	100	10
	B	1	38	38	0		1752	158	24		273	0.00	8	9
	Bx	1	83	83	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100	10
	C	1	320	320	0		1800	1800	18		406	0.00	100	10
	Cx	1	164	164	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	100	10
	C1	1	281	281	0		2055	1439	20		361	0.00	69	70
		2	39	39	0		1322	926	4		2036	0.00	69	70

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	8.00	0.41	0.02	6.06	6.06	39.99	76.15	0.62	0.96	0.96
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	45.93	0.45	0.04	6.89	6.89	94.82	34.67	1.36	0.45	0.45
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.22	0.00	0.02	0.27	0.27	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.54	0.41	0.02	6.14	6.14	32.30	89.92	0.85	1.14	1.14
		2	3.60	7.02	0.08	0.00	1.08	1.08	35.90	13.97	0.03	0.18	0.18

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.20	34.78	6.34	0.00	0.00	0.00	0.02	1.99	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	1.02	34.78	2.93	0.00	0.00	0.00	0.04	1.00	6.00	0.00	6.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			35.00	0.00	35.00	
	C	1	0.00	0.02	17.39	0.11	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C1	1	0.00	2.92	34.78	8.40	0.00	0.00	0.00	0.02	2.44	0.00	0.00	0.00	
		2	0.00	0.39	5.00	7.82	0.00	0.00	0.00	0.00	0.33	62.00	0.00	62.00	

A4 - 2029 DM PM
D4 - 2029 DM PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
4	10/05/2022 14:24:42	10/05/2022 14:24:42	17:00	100	50.55	3.21	34.65	A/1	0	0	A/1	C/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2029 DM PM		D4	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2029 DM PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	343	343
Ax	1	278	278
B	1	128	128
Bx	1	57	57
C	1	219	219
Cx	1	355	355
C1	1	198	198
	2	21	21

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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)

From \ To	A	B	C
A	0	36	307
B	80	0	48
C	198	21	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	198
	2		C	B	C/1, C1/2, Bx/1	Normal	21
	3		A	B	A/1, Bx/1	Normal	36
	4		A	C	A/1, Cx/1	Normal	307
	5		B	A	B/1, Ax/1	Normal	80
	6		B	C	B/1, Cx/1	Normal	48

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

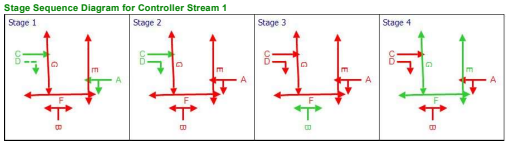
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

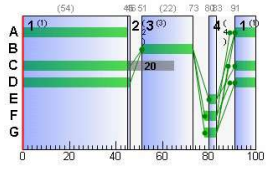
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1 Start	Green Period 1 End	Green Period 1 Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	35	160	343	1800	54	13.48	5.33	15.33	18.23	2.34	20.58
	Ax	1	0	Unrestricted	278	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	32	183	128	1752	22	34.06	3.02	8.70	17.20	1.34	18.53
	Bx	1	0	Unrestricted	57	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12	640	219	1800	100	0.14	0.01	0.05	0.12	0.00	0.12
	Cx	1	0	Unrestricted	355	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	17	423	198	2055	55	11.06	2.92	8.38	8.64	1.15	9.79
		2	4	2033	21	889	55	16.61	0.33	6.55	1.38	0.15	1.52

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	343	343	0		1800	990	35		160	0.00	54	55
	Ax	1	278	278	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	100	10
	B	1	128	128	0		1752	403	32		183	0.00	22	23
	Bx	1	57	57	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	219	219	0		1800	1800	12		640	0.00	100	10
	Cx	1	355	355	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	100	10
	C1	1	198	198	0		2055	1151	17		423	0.00	55	56
		2	21	21	0		889	498	4		2033	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.48	1.19	0.09	18.23	18.23	54.52	183.71	3.29	2.34	2.34
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	34.06	1.14	0.07	17.20	17.20	83.36	104.06	2.64	1.34	1.34
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.14	0.00	0.01	0.12	0.12	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	11.06	0.59	0.02	8.64	8.64	46.32	91.08	0.64	1.15	1.15
		2	3.60	16.61	0.10	0.00	1.38	1.38	55.98	11.72	0.03	0.15	0.15

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	5.33	34.78	15.33	0.00	0.00	0.00	0.09	4.38	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	3.02	34.78	8.70	0.00	0.00	0.00	0.07	2.81	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			70.00	0.00	70.00	
	C	1	0.00	0.01	17.39	0.05	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			20.00	0.00	20.00	
	C1	1	0.00	2.92	34.78	8.38	0.00	0.00	0.00	0.02	2.49	0.00	0.00	0.00	
		2	0.00	0.33	5.00	6.55	0.00	0.00	0.00	0.00	0.26	42.00	0.00	42.00	

A5 - 2039 DM AM
D5 - 2039 DM AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
5	10/05/2022 14:24:42	10/05/2022 14:24:42	08:00	100	23.89	1.48	27.11	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2039 DM AM		D5	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2039 DM AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	201	201
Ax	1	319	319
B	1	38	38
Bx	1	83	83
C	1	336	336
Cx	1	173	173
C1	1	297	297
	2	39	39

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	44	157
	B	22	0	16
	C	297	39	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	297
	2		C	B	C/1, C1/2, Bx/1	Normal	39
	3		A	B	A/1, Bx/1	Normal	44
	4		A	C	A/1, Cx/1	Normal	157
	5		B	A	B/1, Ax/1	Normal	22
	6		B	C	B/1, Cx/1	Normal	16

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	0	5	7
	2	0	0	5	7
	3	5	5	0	7
	4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	68	8	1	1
	3	✓	3	B	73	80	7	1	7
	4	✓	4	E,F,G	87	90	3	1	3

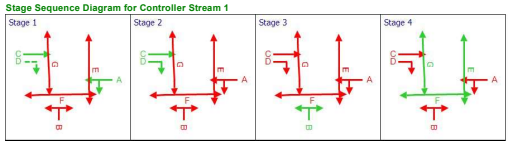
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	73	80	7
	C	1	✓	98	68	70
	D	1	✓	98	68	70
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

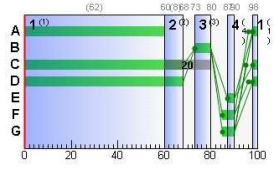
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	73	80	7
C1	1	1	1	C	98	68	70
C1	2	1	1	D	98	68	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	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	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	A	1	18	408	201	1800	62	8.06	2.31	6.64	6.39	1.01	7.40
	Ax	1	0	Unrestricted	319	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	27	232	38	1752	7	48.01	1.04	3.00	7.20	0.46	7.66
	Bx	1	0	Unrestricted	83	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	19	382	336	1800	100	0.23	0.02	0.12	0.30	0.00	0.30
	Cx	1	0	Unrestricted	173	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	20	342	297	2055	70	5.26	2.92	8.41	6.16	1.17	7.33
		2	4	2053	39	1314	70	6.71	0.38	7.60	1.03	0.17	1.20

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	201	201	0		1800	1134	18		408	0.00	62	63
	Ax	1	319	319	0		Unrestricted	Unrestricted	0		Unrestricted	0.46	100	10
	B	1	38	38	0		1752	140	27		232	0.00	7	8
	Bx	1	83	83	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	100	10
	C	1	336	336	0		1800	1800	19		382	0.00	100	10
	Cx	1	173	173	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	100	10
	C1	1	297	297	0		2055	1459	20		342	0.00	70	71
		2	39	39	0		1314	933	4		2053	0.00	70	71

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	8.06	0.43	0.02	6.39	6.39	40.09	79.90	0.69	1.01	1.01
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	48.01	0.46	0.05	7.20	7.20	97.19	35.15	1.78	0.46	0.46
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.23	0.00	0.02	0.30	0.30	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.26	0.41	0.03	6.16	6.16	31.31	92.07	0.94	1.17	1.17
		2	3.60	6.71	0.07	0.00	1.03	1.03	34.90	13.58	0.03	0.17	0.17

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.31	34.78	6.64	0.00	0.00	0.00	0.02	2.08	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			15.00	0.00	15.00	
	B	1	0.00	1.04	34.78	3.00	0.00	0.00	0.00	0.05	1.02	5.00	0.00	5.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			35.00	0.00	35.00	
	C	1	0.00	0.02	17.39	0.12	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C1	1	0.00	2.92	34.78	8.41	0.00	0.00	0.00	0.03	2.50	0.00	0.00	0.00	
		2	0.00	0.38	5.00	7.60	0.00	0.00	0.00	0.00	0.32	63.00	0.00	63.00	

A6 - 2039 DM PM
D6 - 2039 DM PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
6	10/05/2022 14:24:43	10/05/2022 14:24:43	17:00	100	52.68	3.34	36.46	A/1	0	0	A/1	C/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2039 DM PM		D6	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2039 DM PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	361	361
Ax	1	289	289
B	1	128	128
Bx	1	57	57
C	1	230	230
Cx	1	373	373
C1	1	209	209
	2	21	21

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	36	325
	B	80	0	48
	C	209	21	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	209
	2		C	B	C/1, C1/2, Bx/1	Normal	21
	3		A	B	A/1, Bx/1	Normal	36
	4		A	C	A/1, Cx/1	Normal	325
	5		B	A	B/1, Ax/1	Normal	80
	6		B	C	B/1, Cx/1	Normal	48

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

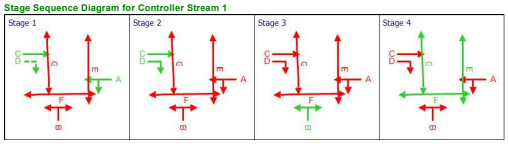
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

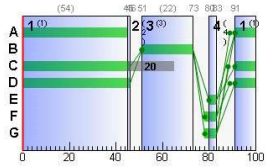
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	36	147	361	1800	54	13.71	5.72	16.45	19.52	2.51	22.03
	Ax	1	0	Unrestricted	289	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	32	183	128	1752	22	34.06	3.02	8.70	17.20	1.34	18.53
	Bx	1	0	Unrestricted	57	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	13	604	230	1800	100	0.15	0.01	0.05	0.13	0.00	0.13
	Cx	1	0	Unrestricted	373	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	18	396	209	2055	55	11.17	2.92	8.39	9.20	1.21	10.42
		2	4	1935	21	848	55	17.06	0.33	6.67	1.41	0.15	1.56

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	361	361	0		1800	990	36		147	0.00	54	55
	Ax	1	289	289	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	100	10
	B	1	128	128	0		1752	403	32		183	0.00	22	23
	Bx	1	57	57	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	230	230	0		1800	1800	13		604	0.00	100	10
	Cx	1	373	373	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	100	10
	C1	1	209	209	0		2055	1151	18		396	0.00	55	56
		2	21	21	0		848	475	4		1935	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.71	1.27	0.10	19.52	19.52	55.36	196.10	3.75	2.51	2.51
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.15	0.00	0.01	0.13	0.13	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	11.17	0.63	0.02	9.20	9.20	46.35	96.14	0.72	1.21	1.21
		2	3.60	17.06	0.10	0.00	1.41	1.41	56.99	11.93	0.04	0.15	0.15

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	5.72	34.78	16.45	0.00	0.00	0.00	0.10	4.62	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	3.02	34.78	8.70	0.00	0.00	0.00	0.07	2.81	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			69.00	0.00	69.00	
	C	1	0.00	0.01	17.39	0.05	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			20.00	0.00	20.00	
	C1	1	0.00	2.92	34.78	8.39	0.00	0.00	0.00	0.02	2.63	0.00	0.00	0.00	
		2	0.00	0.33	5.00	6.67	0.00	0.00	0.00	0.00	0.26	41.00	0.00	41.00	

A7 - 2024 DS AM
D7 - 2024 DS AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
7	10/05/2022 14:24:43	10/05/2022 14:24:43	08:00	100	23.20	1.45	27.90	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2024 DS AM		D7	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2024 DS AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	181	181
Ax	1	283	283
B	1	44	44
Bx	1	84	84
C	1	295	295
Cx	1	153	153
C1	1	256	256
	2	39	39

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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)

From \ To	A	B	C
A	0	45	136
B	27	0	17
C	256	39	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	256
	2		C	B	C/1, C1/2, Bx/1	Normal	39
	3		A	B	A/1, Bx/1	Normal	45
	4		A	C	A/1, Cx/1	Normal	136
	5		B	A	B/1, Ax/1	Normal	27
	6		B	C	B/1, Cx/1	Normal	17

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	67	7	1	1
	3	✓	3	B	72	80	8	1	7
	4	✓	4	E,F,G	87	90	3	1	3

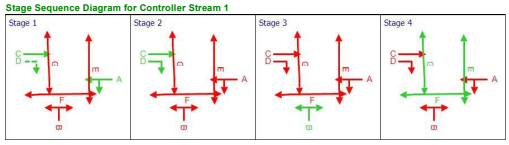
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	72	80	8
	C	1	✓	98	67	69
	D	1	✓	98	67	69
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

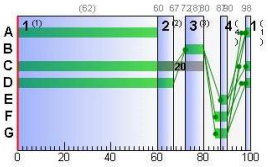
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	72	80	8
C1	1	1	1	C	98	67	69
C1	2	1	1	D	98	67	69

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 (PCU/hr)	Actual green (s (per cycle))	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	A	1	16	464	181	1800	62	7.92	2.08	5.97	5.65	0.90	6.55
	Ax	1	0	Unrestricted	283	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	28	223	44	1752	8	46.91	1.19	3.42	8.14	0.53	8.67
	Bx	1	0	Unrestricted	84	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16	449	295	1800	100	0.20	0.02	0.09	0.23	0.00	0.23
	Cx	1	0	Unrestricted	153	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	18	406	256	2055	69	5.43	2.29	6.60	5.48	1.04	6.52
		2	4	2074	39	1346	69	6.85	0.39	7.82	1.05	0.18	1.23

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	181	181	0		1800	1134	16		464	0.00	62	63
	Ax	1	283	283	0		Unrestricted	Unrestricted	0		Unrestricted	0.48	100	10
	B	1	44	44	0		1752	158	28		223	0.00	8	9
	Bx	1	84	84	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100	10
	C	1	295	295	0		1800	1800	16		449	0.00	100	10
	Cx	1	153	153	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	100	10
	C1	1	256	256	0		2055	1439	18		406	0.00	69	70
		2	39	39	0		1346	942	4		2074	0.00	69	70

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	7.92	0.38	0.02	5.65	5.65	39.70	71.32	0.55	0.90	0.90
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	46.91	0.52	0.05	8.14	8.14	96.16	40.40	1.91	0.53	0.53
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.20	0.00	0.02	0.23	0.23	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.43	0.37	0.02	5.48	5.48	32.27	81.92	0.69	1.04	1.04
		2	3.60	6.85	0.07	0.00	1.05	1.05	35.90	13.97	0.03	0.18	0.18

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.08	34.78	5.97	0.00	0.00	0.00	0.02	1.88	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			15.00	0.00	15.00	
	B	1	0.00	1.19	34.78	3.42	0.00	0.00	0.00	0.05	1.17	6.00	0.00	6.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			35.00	0.00	35.00	
	C	1	0.00	0.02	17.39	0.09	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C1	1	0.00	2.29	34.78	6.60	0.00	0.00	0.00	0.02	2.22	0.00	0.00	0.00	
		2	0.00	0.39	5.00	7.82	0.00	0.00	0.00	0.00	0.33	62.00	0.00	62.00	

A8 - 2024 DS PM
D8 - 2024 DS PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
8	10/05/2022 14:24:43	10/05/2022 14:24:43	17:00	100	48.80	3.10	32.76	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2024 DS PM		D8	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2024 DS PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	323	323
Ax	1	265	265
B	1	132	132
Bx	1	64	64
C	1	204	204
Cx	1	330	330
C1	1	182	182
	2	22	22

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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)

From \ To	A	B	C
A	0	42	281
B	83	0	49
C	182	22	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	182
	2		C	B	C/1, C1/2, Bx/1	Normal	22
	3		A	B	A/1, Bx/1	Normal	42
	4		A	C	A/1, Cx/1	Normal	281
	5		B	A	B/1, Ax/1	Normal	83
	6		B	C	B/1, Cx/1	Normal	49

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

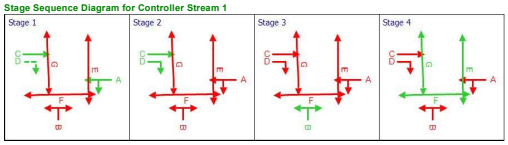
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

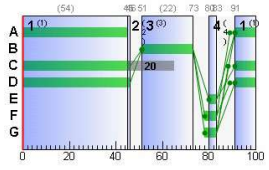
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1 Start	Green Period 1 End	Green Period 1 Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	33	176	323	1800	54	13.22	4.92	14.16	16.85	2.17	19.01
	Ax	1	0	Unrestricted	265	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	33	175	132	1752	22	34.24	3.12	8.98	17.83	1.39	19.22
	Bx	1	0	Unrestricted	64	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	11	694	204	1800	100	0.13	0.01	0.04	0.10	0.00	0.10
	Cx	1	0	Unrestricted	330	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	16	469	182	2055	55	10.94	2.34	6.73	7.86	1.06	8.91
		2	4	2047	22	937	55	16.10	0.34	6.74	1.40	0.15	1.55

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	323	323	0		1800	990	33		176	0.00	54	55
	Ax	1	265	265	0		Unrestricted	Unrestricted	0		Unrestricted	0.71	100	10
	B	1	132	132	0		1752	403	33		175	0.00	22	23
	Bx	1	64	64	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	204	204	0		1800	1800	11		694	0.00	100	10
	Cx	1	330	330	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	100	10
	C1	1	182	182	0		2055	1151	16		469	0.00	55	56
		2	22	22	0		937	525	4		2047	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.22	1.11	0.08	16.85	16.85	53.56	170.17	2.83	2.17	2.17
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	34.24	1.18	0.08	17.83	17.83	83.81	107.78	2.85	1.39	1.39
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.13	0.00	0.01	0.10	0.10	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	10.94	0.54	0.01	7.86	7.86	46.29	83.72	0.53	1.06	1.06
		2	3.60	16.10	0.10	0.00	1.40	1.40	55.57	12.19	0.03	0.15	0.15

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	4.92	34.78	14.16	0.00	0.00	0.00	0.08	4.12	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	3.12	34.78	8.98	0.00	0.00	0.00	0.08	2.90	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			46.00	0.00	46.00	
	C	1	0.00	0.01	17.39	0.04	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			20.00	0.00	20.00	
	C1	1	0.00	2.34	34.78	6.73	0.00	0.00	0.00	0.01	2.29	0.00	0.00	0.00	
		2	0.00	0.34	5.00	6.74	0.00	0.00	0.00	0.00	0.27	43.00	0.00	43.00	

A9 - 2029 DS AM
D9 - 2029 DS AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
9	10/05/2022 14:24:44	10/05/2022 14:24:44	08:00	100	25.58	1.60	30.44	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2029 DS AM		D9	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2029 DS AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	195	195
Ax	1	311	311
B	1	48	48
Bx	1	87	87
C	1	321	321
Cx	1	166	166
C1	1	281	281
	2	40	40

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	47	148
	B	30	0	18
	C	281	40	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	281
	2		C	B	C/1, C1/2, Bx/1	Normal	40
	3		A	B	A/1, Bx/1	Normal	47
	4		A	C	A/1, Cx/1	Normal	148
	5		B	A	B/1, Ax/1	Normal	30
	6		B	C	B/1, Cx/1	Normal	18

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

	To				
		1	2	3	4
From	1	0	0	5	7
	2	0	0	5	7
	3	5	5	0	7
	4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	67	7	1	1
	3	✓	3	B	72	80	8	1	7
	4	✓	4	E,F,G	87	90	3	1	3

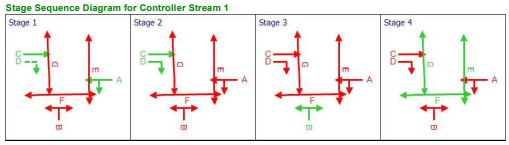
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	72	80	8
	C	1	✓	98	67	69
	D	1	✓	98	67	69
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

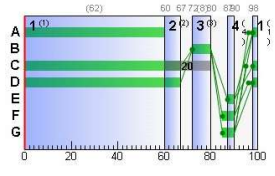
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	72	80	8
C1	1	1	1	C	98	67	69
C1	2	1	1	D	98	67	69

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 (PCU/hr)	Actual green (s (per cycle))	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	A	1	17	423	195	1800	62	8.02	2.24	6.44	6.17	0.98	7.14
	Ax	1	0	Unrestricted	311	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	30	196	48	1752	8	47.58	1.31	3.76	9.01	0.58	9.59
	Bx	1	0	Unrestricted	87	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	18	405	321	1800	100	0.22	0.02	0.11	0.27	0.00	0.27
	Cx	1	0	Unrestricted	166	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	20	361	281	2055	69	5.54	2.92	8.40	6.14	1.14	7.28
		2	4	1974	40	1317	69	7.05	0.40	8.02	1.11	0.18	1.29

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	195	195	0		1800	1134	17		423	0.00	62	63
	Ax	1	311	311	0		Unrestricted	Unrestricted	0		Unrestricted	0.47	100	10
	B	1	48	48	0		1752	158	30		196	0.00	8	9
	Bx	1	87	87	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	100	10
	C	1	321	321	0		1800	1800	18		405	0.00	100	10
	Cx	1	166	166	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	100	10
	C1	1	281	281	0		2055	1439	20		361	0.00	69	70
		2	40	40	0		1317	922	4		1974	0.00	69	70

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	8.02	0.42	0.02	6.17	6.17	40.03	77.42	0.64	0.98	0.98
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	47.58	0.57	0.07	9.01	9.01	96.72	44.07	2.35	0.58	0.58
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.22	0.00	0.02	0.27	0.27	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.54	0.41	0.02	6.14	6.14	32.30	89.92	0.85	1.14	1.14
		2	3.60	7.05	0.08	0.00	1.11	1.11	35.91	14.33	0.04	0.18	0.18

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.24	34.78	6.44	0.00	0.00	0.00	0.02	2.02	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			14.00	0.00	14.00	
	B	1	0.00	1.31	34.78	3.76	0.00	0.00	0.00	0.07	1.28	6.00	0.00	6.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			34.00	0.00	34.00	
	C	1	0.00	0.02	17.39	0.11	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C1	1	0.00	2.92	34.78	8.40	0.00	0.00	0.00	0.02	2.44	0.00	0.00	0.00	
		2	0.00	0.40	5.00	8.02	0.00	0.00	0.00	0.00	0.33	62.00	0.00	62.00	

A10 - 2029 DS PM
D10 - 2029 DS PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
10	10/05/2022 14:24:44	10/05/2022 14:24:44	17:00	100	53.02	3.37	35.76	A/1	0	0	A/1	C/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2029 DS PM		D10	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2029 DS PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	354	354
Ax	1	284	284
B	1	136	136
Bx	1	71	71
C	1	222	222
Cx	1	357	357
C1	1	198	198
	2	24	24

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	47	307
	B	86	0	50
	C	198	24	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	198
	2		C	B	C/1, C1/2, Bx/1	Normal	24
	3		A	B	A/1, Bx/1	Normal	47
	4		A	C	A/1, Cx/1	Normal	307
	5		B	A	B/1, Ax/1	Normal	86
	6		B	C	B/1, Cx/1	Normal	50

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

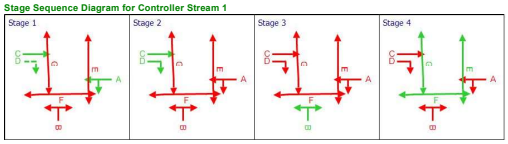
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

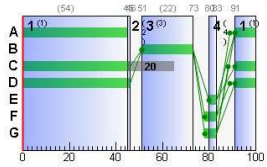
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	36	152	354	1800	54	13.61	5.61	16.12	19.01	2.43	21.44
	Ax	1	0	Unrestricted	284	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	34	167	136	1752	22	34.42	3.22	9.26	18.47	1.43	19.90
	Bx	1	0	Unrestricted	71	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12	630	222	1800	100	0.14	0.01	0.05	0.12	0.00	0.12
	Cx	1	0	Unrestricted	357	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	17	423	198	2055	55	11.06	2.92	8.38	8.64	1.15	9.79
		2	5	1724	24	869	55	16.86	0.38	7.63	1.60	0.17	1.77

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	354	354	0		1800	990	36		152	0.00	54	55
	Ax	1	284	284	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	100	10
	B	1	136	136	0		1752	403	34		167	0.00	22	23
	Bx	1	71	71	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	222	222	0		1800	1800	12		630	0.00	100	10
	Cx	1	357	357	0		Unrestricted	Unrestricted	0		Unrestricted	0.67	100	10
	C1	1	198	198	0		2055	1151	17		423	0.00	55	56
		2	24	24	0		869	486	5		1724	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.61	1.24	0.10	19.01	19.01	54.75	190.23	3.57	2.43	2.43
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	34.42	1.21	0.09	18.47	18.47	84.02	111.21	3.07	1.43	1.43
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.14	0.00	0.01	0.12	0.12	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	11.06	0.59	0.02	8.64	8.64	46.32	91.08	0.64	1.15	1.15
		2	3.60	16.86	0.11	0.00	1.60	1.60	57.01	13.64	0.05	0.17	0.17

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	5.61	34.78	16.12	0.00	0.00	0.00	0.10	4.52	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	3.22	34.78	9.26	0.00	0.00	0.00	0.09	2.99	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			45.00	0.00	45.00	
	C	1	0.00	0.01	17.39	0.05	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			19.00	0.00	19.00	
	C1	1	0.00	2.92	34.78	8.38	0.00	0.00	0.00	0.02	2.49	0.00	0.00	0.00	
		2	0.00	0.38	5.00	7.63	0.00	0.00	0.00	0.00	0.29	41.00	0.00	41.00	

A11 - 2039 DS AM
D11 - 2039 DS AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
11	10/05/2022 14:24:45	10/05/2022 14:24:45	08:00	100	26.49	1.66	34.25	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2039 DS AM		D11	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2039 DS AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	204	204
Ax	1	327	327
B	1	48	48
Bx	1	87	87
C	1	337	337
Cx	1	175	175
C1	1	297	297
	2	40	40

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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)

From \ To	A	B	C
A	0	47	157
B	30	0	18
C	297	40	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	297
	2		C	B	C/1, C1/2, Bx/1	Normal	40
	3		A	B	A/1, Bx/1	Normal	47
	4		A	C	A/1, Cx/1	Normal	157
	5		B	A	B/1, Ax/1	Normal	30
	6		B	C	B/1, Cx/1	Normal	18

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	68	8	1	1
	3	✓	3	B	73	80	7	1	7
	4	✓	4	E,F,G	87	90	3	1	3

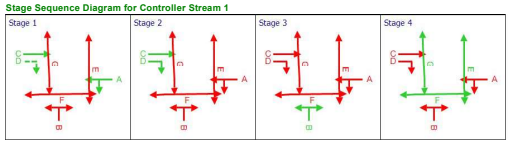
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	73	80	7
	C	1	✓	98	68	70
	D	1	✓	98	68	70
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

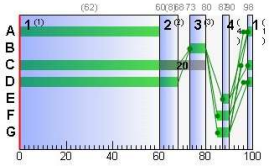
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	73	80	7
C1	1	1	1	C	98	68	70
C1	2	1	1	D	98	68	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	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	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	A	1	18	400	204	1800	62	8.08	2.34	6.74	6.50	1.03	7.52
	Ax	1	0	Unrestricted	327	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	34	163	48	1752	7	50.18	1.34	3.86	9.50	0.60	10.10
	Bx	1	0	Unrestricted	87	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	19	381	337	1800	100	0.23	0.02	0.12	0.31	0.00	0.31
	Cx	1	0	Unrestricted	175	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	20	342	297	2055	70	5.26	2.92	8.41	6.16	1.17	7.33
		2	4	1992	40	1309	70	6.72	0.39	7.80	1.06	0.18	1.24

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	204	204	0		1800	1134	18		400	0.00	62	63
	Ax	1	327	327	0		Unrestricted	Unrestricted	0		Unrestricted	0.46	100	10
	B	1	48	48	0		1752	140	34		163	0.00	7	8
	Bx	1	87	87	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	100	10
	C	1	337	337	0		1800	1800	19		381	0.00	100	10
	Cx	1	175	175	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	100	10
	C1	1	297	297	0		2055	1459	20		342	0.00	70	71
		2	40	40	0		1309	930	4		1992	0.00	70	71

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	8.08	0.44	0.02	6.50	6.50	40.12	81.13	0.71	1.03	1.03
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	50.18	0.58	0.09	9.50	9.50	99.34	44.55	3.13	0.60	0.60
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.23	0.00	0.02	0.31	0.31	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.26	0.41	0.03	6.16	6.16	31.31	92.07	0.94	1.17	1.17
		2	3.60	6.72	0.07	0.00	1.06	1.06	34.90	13.93	0.03	0.18	0.18

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.34	34.78	6.74	0.00	0.00	0.00	0.02	2.12	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			14.00	0.00	14.00	
	B	1	0.00	1.34	34.78	3.86	0.00	0.00	0.00	0.09	1.32	5.00	0.00	5.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			34.00	0.00	34.00	
	C	1	0.00	0.02	17.39	0.12	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C1	1	0.00	2.92	34.78	8.41	0.00	0.00	0.00	0.03	2.50	0.00	0.00	0.00	
		2	0.00	0.39	5.00	7.80	0.00	0.00	0.00	0.00	0.32	63.00	0.00	63.00	

A12 - 2039 DS PM
D12 - 2039 DS PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
12	10/05/2022 14:24:45	10/05/2022 14:24:45	17:00	100	55.21	3.51	37.58	A/1	0	0	A/1	C/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2039 DS PM		D12	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2039 DS PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	372	372
Ax	1	295	295
B	1	136	136
Bx	1	71	71
C	1	233	233
Cx	1	375	375
C1	1	209	209
	2	24	24

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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)

From \ To	A	B	C
A	0	47	325
B	86	0	50
C	209	24	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	209
	2		C	B	C/1, C1/2, Bx/1	Normal	24
	3		A	B	A/1, Bx/1	Normal	47
	4		A	C	A/1, Cx/1	Normal	325
	5		B	A	B/1, Ax/1	Normal	86
	6		B	C	B/1, Cx/1	Normal	50

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

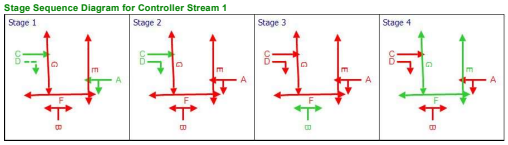
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

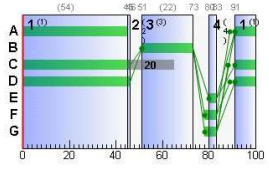
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1 Start	Green Period 1 End	Green Period 1 Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	38	140	372	1800	54	13.86	5.90	16.96	20.34	2.60	22.93
	Ax	1	0	Unrestricted	295	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	34	167	136	1752	22	34.42	3.22	9.26	18.47	1.43	19.90
	Bx	1	0	Unrestricted	71	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	13	595	233	1800	100	0.15	0.01	0.06	0.14	0.00	0.14
	Cx	1	0	Unrestricted	375	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	18	396	209	2055	55	11.17	2.92	8.39	9.20	1.21	10.42
		2	5	1633	24	825	55	17.39	0.38	7.63	1.65	0.17	1.82

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	372	372	0		1800	990	38		140	0.00	54	55
	Ax	1	295	295	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	100	10
	B	1	136	136	0		1752	403	34		167	0.00	22	23
	Bx	1	71	71	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	233	233	0		1800	1800	13		595	0.00	100	10
	Cx	1	375	375	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	100	10
	C1	1	209	209	0		2055	1151	18		396	0.00	55	56
		2	24	24	0		825	462	5		1633	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.86	1.32	0.11	20.34	20.34	55.67	203.04	4.05	2.60	2.60
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	34.42	1.21	0.09	18.47	18.47	84.02	111.21	3.07	1.43	1.43
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.15	0.00	0.01	0.14	0.14	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	11.17	0.63	0.02	9.20	9.20	46.35	96.14	0.72	1.21	1.21
		2	3.60	17.39	0.11	0.00	1.65	1.65	58.03	13.88	0.05	0.17	0.17

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	5.90	34.78	16.96	0.00	0.00	0.00	0.11	4.76	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	B	1	0.00	3.22	34.78	9.26	0.00	0.00	0.00	0.09	2.99	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			45.00	0.00	45.00	
	C	1	0.00	0.01	17.39	0.06	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			19.00	0.00	19.00	
	C1	1	0.00	2.92	34.78	8.39	0.00	0.00	0.00	0.02	2.63	0.00	0.00	0.00	
		2	0.00	0.38	5.00	7.63	0.00	0.00	0.00	0.00	0.29	40.00	0.00	40.00	

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Stream			RRL?	Condition	Site factor		(m)	Use turning radius	Start turn (%)	(m)	Taper	Saturation (PCU/hr)
A	1	1	(untitled)										1800
Ax	1	1	(untitled)										
B	1	1	(untitled)	✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)										
C	1	1	(untitled)										1800
Cx	1	1	(untitled)										
C1	1	1	(untitled)										2055
	2	1	(untitled)										1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	206	206
Ax	1	335	335
B	1	58	58
Bx	1	89	89
C	1	337	337
Cx	1	177	177
C1	1	297	297
	2	40	40

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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

A13 - 2039 SA AM
D13 - 2039 SA AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
13	10/05/2022 14:24:45	10/05/2022 14:24:46	08:00	100	29.29	1.84	41.38	B/1	0	0	B/1	C/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2039 SA AM		D13	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2039 SA AM				08:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

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

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		
		A	B	C
From	A	0	49	157
	B	36	0	20
	C	297	40	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	297
	2		C	B	C/1, C1/2, Bx/1	Normal	40
	3		A	B	A/1, Bx/1	Normal	49
	4		A	C	A/1, Cx/1	Normal	157
	5		B	A	B/1, Ax/1	Normal	38
	6		B	C	B/1, Cx/1	Normal	20

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

	To				
		1	2	3	4
From	1	0	0	5	7
	2	0	0	5	7
	3	5	5	0	7
	4	8	8	8	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,C,D	98	60	62	1	7
	2	✓	2	C,D	60	68	8	1	1
	3	✓	3	B	73	80	7	1	7
	4	✓	4	E,F,G	87	90	3	1	3

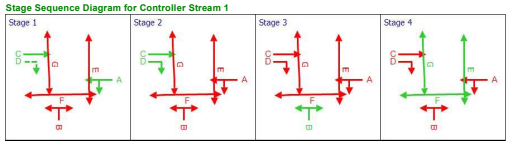
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	98	60	62
	B	1	✓	73	80	7
	C	1	✓	98	68	70
	D	1	✓	98	68	70
	E	1	✓	87	90	3
	F	1	✓	85	90	5
	G	1	✓	85	90	5

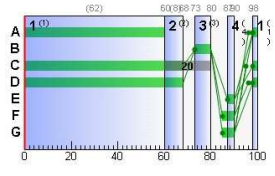
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	98	60	62
B	1	1	1	B	73	80	7
C1	1	1	1	C	98	68	70
C1	2	1	1	D	98	68	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	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	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	A	1	18	395	206	1800	62	8.09	2.37	6.80	6.57	1.04	7.61
	Ax	1	0	Unrestricted	335	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	41	117	58	1752	7	52.73	1.67	4.81	12.06	0.75	12.81
	Bx	1	0	Unrestricted	89	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	19	381	337	1800	100	0.23	0.02	0.12	0.31	0.00	0.31
	Cx	1	0	Unrestricted	177	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	20	342	297	2055	70	5.26	2.92	8.41	6.16	1.17	7.33
		2	4	1987	40	1306	70	6.73	0.39	7.80	1.06	0.18	1.24

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
08:00-09:00	A	1	206	206	0		1800	1134	18		395	0.00	62	63
	Ax	1	335	335	0		Unrestricted	Unrestricted	0		Unrestricted	0.46	100	10
	B	1	58	58	0		1752	140	41		117	0.00	7	8
	Bx	1	89	89	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	100	10
	C	1	337	337	0		1800	1800	19		381	0.00	100	10
	Cx	1	177	177	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	100	10
	C1	1	297	297	0		2055	1459	20		342	0.00	70	71
		2	40	40	0		1306	927	4		1987	0.00	70	71

Traffic Stream Results: Stops and delays

Time Segment	Arm	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	A	1	24.00	8.09	0.44	0.02	6.57	6.57	40.13	81.94	0.72	1.04	1.04
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	52.73	0.71	0.14	12.06	12.06	102.46	54.36	5.07	0.75	0.75
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.23	0.00	0.02	0.31	0.31	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	5.26	0.41	0.03	6.16	6.16	31.31	92.07	0.94	1.17	1.17
		2	3.60	6.73	0.07	0.00	1.06	1.06	34.98	13.96	0.03	0.18	0.18

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	2.37	34.78	6.80	0.00	0.00	0.00	0.02	2.14	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			12.00	0.00	12.00	
	B	1	0.00	1.67	34.78	4.81	0.00	0.00	0.00	0.14	1.63	4.00	0.00	4.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			34.00	0.00	34.00	
	C	1	0.00	0.02	17.39	0.12	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			24.00	0.00	24.00	
	C1	1	0.00	2.92	34.78	8.41	0.00	0.00	0.00	0.03	2.50	0.00	0.00	0.00	
		2	0.00	0.39	5.00	7.80	0.00	0.00	0.00	0.00	0.32	63.00	0.00	63.00	

A14 - 2039 SA PM
D14 - 2039 SA PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Info	Optimisation Order	Advanced	Because the optimisation list is blank, no optimisation will occur.

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	Ite wit wor over PR
14	10/05/2022 14:24:46	10/05/2022 14:24:46	17:00	100	57.17	3.63	38.48	A/1	0	0	A/1	C/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2039 SA PM		D14	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2039 SA PM				17:00	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
C1	(untitled)		1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			200.00	✓	Sum of lanes	1800			✓		Normal	
Ax	1	(untitled)			100.00								Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1752			✓		Normal	
Bx	1	(untitled)			100.00								Normal	
C	1	(untitled)			100.00	✓	Sum of lanes	1800					Normal	
Cx	1	(untitled)			100.00								Normal	
C1	1	(untitled)			200.00	✓	Sum of lanes	2055	✓	1800	✓		Normal	
	2	(untitled)			30.00	✓	Sum of lanes	1800			✓	✓	Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)											1800
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	N/A	0	3.25	✓	100	8.00		1752
Bx	1	1	(untitled)											
C	1	1	(untitled)											1800
Cx	1	1	(untitled)											
C1	1	1	(untitled)											2055
	2	1	(untitled)											1800

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	381	381
Ax	1	300	300
B	1	142	142
Bx	1	82	82
C	1	235	235
Cx	1	376	376
C1	1	209	209
	2	26	26

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C1	1	1	C	
	2	1	D	

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
1	1	E	
2	1	F	
3	1	G	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	1100

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		
		A	B	C
From	A	0	56	325
	B	91	0	51
	C	209	26	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	A	(untitled)	A/1	Ax/1	#FF0000
	B	(untitled)	B/1	Bx/1	#00FF00
	C	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		C	A	C/1, C1/1, Ax/1	Normal	209
	2		C	B	C/1, C1/2, Bx/1	Normal	26
	3		A	B	A/1, Bx/1	Normal	56
	4		A	C	A/1, Cx/1	Normal	325
	5		B	A	B/1, Ax/1	Normal	91
	6		B	C	B/1, Cx/1	Normal	51

Signal Timings

Network Default: 100s cycle time; 100 steps

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	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	3	300	0	0	Pedestrian	0
	F	(untitled)	3	300	0	0	Pedestrian	0
	G	(untitled)	3	300	0	0	Pedestrian	0

Library Stages

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

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	C	1	2	20

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4
1	0	0	5	7
2	0	0	5	7
3	5	5	0	7
4	8	8	8	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,C,D	91	45	54	1	7
	2	✓	2	C,D	45	46	1	1	1
	3	✓	3	B	51	73	22	1	7
	4	✓	4	E,F,G	80	83	3	1	3

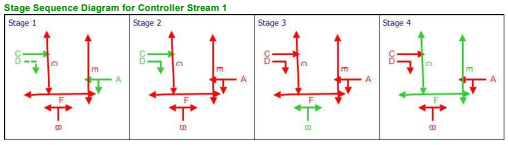
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	91	45	54
	B	1	✓	51	73	22
	C	1	✓	91	46	55
	D	1	✓	91	46	55
	E	1	✓	80	83	3
	F	1	✓	78	83	5
	G	1	✓	78	83	5

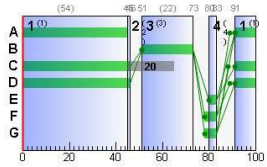
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	91	45	54
B	1	1	1	B	51	73	22
C1	1	1	1	C	91	46	55
C1	2	1	1	D	91	46	55

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 (PCU/hr)	Actual green (s (per cycle))	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)
17:00-18:00	A	1	38	134	381	1800	54	13.98	6.15	17.69	21.01	2.67	23.69
	Ax	1	0	Unrestricted	300	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	35	155	142	1752	22	34.69	3.37	9.69	19.43	1.50	20.93
	Bx	1	0	Unrestricted	82	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	13	589	235	1800	100	0.15	0.01	0.06	0.14	0.00	0.14
	Cx	1	0	Unrestricted	376	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	18	396	209	2055	55	11.17	2.92	8.39	9.20	1.21	10.42
		2	6	1464	26	807	55	17.62	0.42	8.41	1.81	0.19	2.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))	Effec gree (pe cycl
17:00-18:00	A	1	381	381	0		1800	990	38		134	0.00	54	55
	Ax	1	300	300	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	100	10
	B	1	142	142	0		1752	403	35		155	0.00	22	23
	Bx	1	82	82	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	100	10
	C	1	235	235	0		1800	1800	13		589	0.00	100	10
	Cx	1	376	376	0		Unrestricted	Unrestricted	0		Unrestricted	0.67	100	10
	C1	1	209	209	0		2055	1151	18		396	0.00	55	56
		2	26	26	0		807	452	6		1464	0.00	55	56

Traffic Stream Results: Stops and delays

Time Segment	Arm	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)
17:00-18:00	A	1	24.00	13.98	1.36	0.12	21.01	21.01	55.99	209.01	4.31	2.67	2.67
	Ax	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	34.69	1.27	0.10	19.43	19.43	84.22	116.18	3.42	1.50	1.50
	Bx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	12.00	0.15	0.00	0.01	0.14	0.14	0.00	0.00	0.00	0.00	0.00
	Cx	1	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C1	1	24.00	11.17	0.63	0.02	9.20	9.20	46.35	96.14	0.72	1.21	1.21
		2	3.60	17.62	0.13	0.00	1.81	1.81	58.06	15.03	0.06	0.19	0.19

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	6.15	34.78	17.69	0.00	0.00	0.00	0.12	4.88	0.00	0.00	0.00	
	Ax	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			15.00	0.00	15.00	
	B	1	0.00	3.37	34.78	9.69	0.00	0.00	0.00	0.10	3.13	0.00	0.00	0.00	
	Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			44.00	0.00	44.00	
	C	1	0.00	0.01	17.39	0.06	0.00	0.00	0.00			0.00	0.00	0.00	
	Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00			18.00	0.00	18.00	
	C1	1	0.00	2.92	34.78	8.39	0.00	0.00	0.00	0.02	2.63	0.00	0.00	0.00	
		2	0.00	0.42	5.00	8.41	0.00	0.00	0.00	0.00	0.32	40.00	0.00	40.00	

APPENDIX D ARCADY Output Files

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Junction 7 ARCADY Analysis.j9
Path: G:\2021\p210026\calcs\arcady\Updated 2022
Report generation date: 10/05/2022 15:12:13

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2024 DM										
A - R120 (SE)	0.3	3.30	0.23	A	71 % [C - R120 (NW)]	1.4	6.36	0.59	A	56 % [A - R120 (SE)]
B - Newcastle Boulevard	0.2	3.34	0.17	A		0.2	3.94	0.15	A	
C - R120 (NW)	1.0	5.77	0.51	A		0.4	3.79	0.28	A	
2029 DM										
A - R120 (SE)	0.3	3.37	0.24	A	58 % [C - R120 (NW)]	1.7	7.15	0.64	A	45 % [A - R120 (SE)]
B - Newcastle Boulevard	0.2	3.41	0.18	A		0.2	4.13	0.16	A	
C - R120 (NW)	1.3	6.39	0.56	A		0.4	3.93	0.30	A	
2039 DM										
A - R120 (SE)	0.3	3.43	0.25	A	50 % [C - R120 (NW)]	2.0	7.86	0.67	A	38 % [A - R120 (SE)]
B - Newcastle Boulevard	0.2	3.46	0.18	A		0.2	4.28	0.17	A	
C - R120 (NW)	1.4	6.90	0.59	A		0.5	4.03	0.32	A	
2024 DS										
A - R120 (SE)	0.3	3.31	0.23	A	68 % [C - R120 (NW)]	1.5	6.59	0.61	A	52 % [A - R120 (SE)]
B - Newcastle Boulevard	0.2	3.39	0.18	A		0.2	3.99	0.16	A	
C - R120 (NW)	1.1	5.87	0.52	A		0.4	3.82	0.28	A	
2029 DS										
A - R120 (SE)	0.3	3.40	0.25	A	55 % [C - R120 (NW)]	2.0	7.72	0.67	A	40 % [A - R120 (SE)]
B - Newcastle Boulevard	0.2	3.49	0.20	A		0.2	4.23	0.18	A	
C - R120 (NW)	1.3	6.60	0.57	A		0.4	3.98	0.31	A	
2039 DS										
A - R120 (SE)	0.4	3.46	0.26	A	47 % [C - R120 (NW)]	2.3	8.53	0.70	A	33 % [A - R120 (SE)]
B - Newcastle Boulevard	0.3	3.54	0.20	A		0.2	4.38	0.19	A	
C - R120 (NW)	1.5	7.14	0.60	A		0.5	4.09	0.32	A	
2039 SA										
A - R120 (SE)	0.4	3.48	0.27	A	45 % [C - R120 (NW)]	2.5	9.23	0.72	A	29 % [A - R120 (SE)]
B - Newcastle Boulevard	0.3	3.63	0.22	A		0.3	4.47	0.21	A	
C - R120 (NW)	1.5	7.39	0.61	A		0.5	4.13	0.33	A	

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

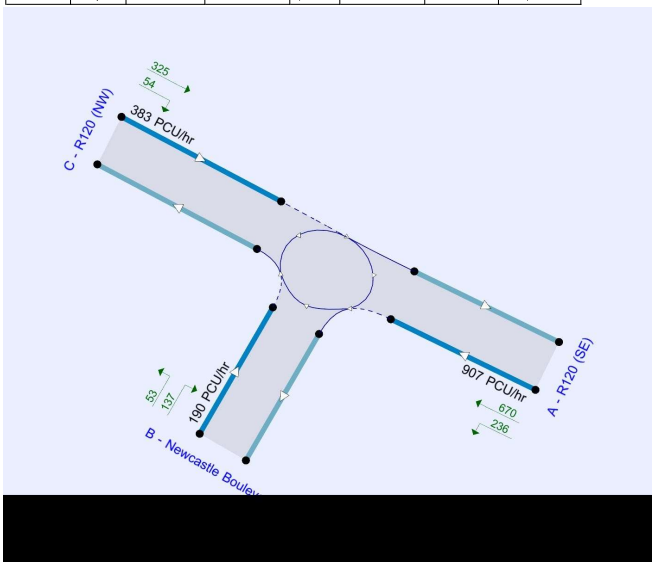
File summary

File Description

Title	Newcastle South
Location	
Site number	Junction 7
Date	10/05/2022
Version	
Status	Planning
Identifier	
Client	Cairn
Jobnumber	210026
Enumerator	HEADOFFICE\mckennam
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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)
2024 DM	AM	ONE HOUR	07:45	09:15	15
2024 DM	PM	ONE HOUR	16:45	18:15	15
2029 DM	AM	ONE HOUR	07:45	09:15	15
2029 DM	PM	ONE HOUR	16:45	18:15	15
2039 DM	AM	ONE HOUR	07:45	09:15	15
2039 DM	PM	ONE HOUR	16:45	18:15	15
2024 DS	AM	ONE HOUR	07:45	09:15	15
2024 DS	PM	ONE HOUR	16:45	18:15	15
2029 DS	AM	ONE HOUR	07:45	09:15	15
2029 DS	PM	ONE HOUR	16:45	18:15	15
2039 DS	AM	ONE HOUR	07:45	09:15	15
2039 DS	PM	ONE HOUR	16:45	18:15	15
2039 SA	AM	ONE HOUR	07:45	09:15	15
2039 SA	PM	ONE HOUR	16:45	18:15	15

2024 DM, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	4.66	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	71	C - R120 (NW)

Arms

Arms

Arm	Name	Description
A	R120 (SE)	
B	Newcastle Boulevard	
C	R120 (NW)	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A - R120 (SE)	0.00	99999.00
B - Newcastle Boulevard	0.00	99999.00
C - R120 (NW)	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - R120 (SE)	3.40	5.90	11.0	12.0	30.0	29.0	
B - Newcastle Boulevard	4.00	6.30	7.0	14.0	30.0	43.0	
C - R120 (NW)	3.00	6.40	12.0	15.0	30.0	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - R120 (SE)	0.593	1425.968
B - Newcastle Boulevard	0.586	1449.197
C - R120 (NW)	0.578	1380.429

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)
D1	2024 DM	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	289.00	100.000
B - Newcastle Boulevard		✓	199.00	100.000
C - R120 (NW)		✓	597.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	55.000	232.000
	B - Newcastle Boulevard	154.000	0.000	45.000
	C - R120 (NW)	573.000	22.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.23	3.30	0.3	A
B - Newcastle Boulevard	0.17	3.34	0.2	A
C - R120 (NW)	0.51	5.77	1.0	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	217.57	17.99	1415.31	0.154	216.85	0.2	3.002	A
B - Newcastle Boulevard	149.82	177.08	1345.41	0.111	149.32	0.1	3.008	A
C - R120 (NW)	449.45	117.05	1312.80	0.342	447.39	0.5	4.149	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	259.81	21.55	1413.20	0.184	259.63	0.2	3.120	A
B - Newcastle Boulevard	178.90	212.02	1324.94	0.135	178.77	0.2	3.140	A
C - R120 (NW)	536.69	140.14	1299.46	0.413	535.97	0.7	4.711	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	318.19	26.37	1410.34	0.226	317.93	0.3	3.295	A
B - Newcastle Boulevard	219.10	259.62	1297.03	0.169	218.92	0.2	3.338	A
C - R120 (NW)	657.31	171.61	1281.28	0.513	655.94	1.0	5.744	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	318.19	26.42	1410.30	0.226	318.19	0.3	3.295	A
B - Newcastle Boulevard	219.10	259.84	1296.91	0.169	219.10	0.2	3.339	A
C - R120 (NW)	657.31	171.76	1281.19	0.513	657.28	1.0	5.769	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	259.81	21.63	1413.15	0.184	260.06	0.2	3.124	A
B - Newcastle Boulevard	178.90	212.37	1324.73	0.135	179.08	0.2	3.142	A
C - R120 (NW)	536.69	140.39	1299.32	0.413	538.04	0.7	4.738	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	217.57	18.10	1415.24	0.154	217.75	0.2	3.006	A
B - Newcastle Boulevard	149.82	177.82	1344.98	0.111	149.94	0.1	3.012	A
C - R120 (NW)	449.45	117.54	1312.52	0.342	450.20	0.5	4.179	A

2024 DM, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.38	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D2	2024 DM	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	751.00	100.000
B - Newcastle Boulevard		✓	147.00	100.000
C - R120 (NW)		✓	333.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	1.000	173.000	577.000
	B - Newcastle Boulevard	101.000	0.000	46.000
	C - R120 (NW)	282.000	48.000	3.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.59	6.36	1.4	A
B - Newcastle Boulevard	0.15	3.94	0.2	A
C - R120 (NW)	0.28	3.79	0.4	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	565.39	38.25	1403.29	0.403	562.71	0.7	4.269	A
B - Newcastle Boulevard	110.67	435.34	1194.05	0.093	110.26	0.1	3.322	A
C - R120 (NW)	250.70	76.51	1336.22	0.188	249.78	0.2	3.310	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	675.13	45.81	1398.81	0.483	674.12	0.9	4.960	A
B - Newcastle Boulevard	132.15	521.52	1143.54	0.116	132.04	0.1	3.558	A
C - R120 (NW)	299.36	91.62	1327.50	0.226	299.12	0.3	3.500	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	826.87	56.09	1392.72	0.594	824.81	1.4	6.316	A
B - Newcastle Boulevard	161.85	638.11	1075.21	0.151	161.67	0.2	3.939	A
C - R120 (NW)	366.64	112.17	1315.62	0.279	366.26	0.4	3.789	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	826.87	56.15	1392.68	0.594	826.82	1.4	6.361	A
B - Newcastle Boulevard	161.85	639.66	1074.30	0.151	161.85	0.2	3.945	A
C - R120 (NW)	366.64	112.30	1315.54	0.279	366.64	0.4	3.792	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	675.13	45.90	1398.76	0.483	677.16	0.9	5.002	A
B - Newcastle Boulevard	132.15	523.87	1142.16	0.116	132.33	0.1	3.564	A
C - R120 (NW)	299.36	91.82	1327.38	0.226	299.73	0.3	3.503	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	565.39	38.43	1403.19	0.403	566.44	0.7	4.309	A
B - Newcastle Boulevard	110.67	438.22	1192.36	0.093	110.78	0.1	3.328	A
C - R120 (NW)	250.70	76.87	1336.01	0.188	250.94	0.2	3.320	A

2029 DM, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.06	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D3	2029 DM	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	310.00	100.000
B - Newcastle Boulevard		✓	207.00	100.000
C - R120 (NW)		✓	650.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	56.000	252.000
	B - Newcastle Boulevard	158.000	0.000	49.000
	C - R120 (NW)	624.000	24.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.24	3.37	0.3	A
B - Newcastle Boulevard	0.18	3.41	0.2	A
C - R120 (NW)	0.56	6.39	1.3	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	233.38	19.48	1414.42	0.165	232.60	0.2	3.045	A
B - Newcastle Boulevard	155.84	192.08	1336.62	0.117	155.31	0.1	3.045	A
C - R120 (NW)	489.35	120.05	1311.07	0.373	486.99	0.8	4.356	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	278.68	23.34	1412.13	0.197	278.49	0.2	3.175	A
B - Newcastle Boulevard	186.09	229.98	1314.41	0.142	185.96	0.2	3.189	A
C - R120 (NW)	584.34	143.74	1297.38	0.450	583.45	0.8	5.036	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	341.32	28.56	1409.04	0.242	341.02	0.3	3.370	A
B - Newcastle Boulevard	227.91	281.52	1284.15	0.177	227.71	0.2	3.407	A
C - R120 (NW)	715.66	176.01	1278.74	0.560	713.90	1.3	6.352	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	341.32	28.62	1409.00	0.242	341.31	0.3	3.370	A
B - Newcastle Boulevard	227.91	281.86	1284.00	0.178	227.91	0.2	3.407	A
C - R120 (NW)	715.66	176.16	1278.65	0.560	715.62	1.3	6.393	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	278.68	23.44	1412.07	0.197	278.97	0.2	3.179	A
B - Newcastle Boulevard	186.09	230.38	1314.17	0.142	186.29	0.2	3.191	A
C - R120 (NW)	584.34	143.99	1297.24	0.450	586.07	0.8	5.075	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	233.38	19.61	1414.34	0.165	233.58	0.2	3.051	A
B - Newcastle Boulevard	155.84	192.89	1336.15	0.117	155.97	0.1	3.050	A
C - R120 (NW)	489.35	120.56	1310.77	0.373	490.26	0.8	4.393	A

2029 DM, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.92	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D4	2029 DM	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	806.00	100.000
B - Newcastle Boulevard		✓	155.00	100.000
C - R120 (NW)		✓	360.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	1.000	177.000	628.000
	B - Newcastle Boulevard	105.000	0.000	50.000
	C - R120 (NW)	306.000	51.000	3.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.64	7.15	1.7	A
B - Newcastle Boulevard	0.16	4.13	0.2	A
C - R120 (NW)	0.30	3.93	0.4	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	606.80	40.50	1401.96	0.433	603.77	0.8	4.493	A
B - Newcastle Boulevard	116.69	473.43	1171.72	0.100	116.25	0.1	3.408	A
C - R120 (NW)	271.03	79.50	1334.50	0.203	270.01	0.3	3.379	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	724.58	48.50	1397.22	0.519	723.35	1.1	5.332	A
B - Newcastle Boulevard	139.34	567.19	1116.77	0.125	139.21	0.1	3.682	A
C - R120 (NW)	323.63	95.20	1325.42	0.244	323.36	0.3	3.592	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	887.42	59.39	1390.76	0.638	884.77	1.7	7.078	A
B - Newcastle Boulevard	170.66	693.77	1042.58	0.164	170.45	0.2	4.126	A
C - R120 (NW)	396.37	116.56	1313.08	0.302	395.93	0.4	3.923	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	887.42	59.45	1390.72	0.638	887.35	1.7	7.149	A
B - Newcastle Boulevard	170.66	695.79	1041.40	0.164	170.66	0.2	4.134	A
C - R120 (NW)	396.37	116.71	1313.00	0.302	396.36	0.4	3.927	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	724.58	48.61	1397.15	0.519	727.19	1.1	5.393	A
B - Newcastle Boulevard	139.34	570.20	1115.01	0.125	139.55	0.1	3.690	A
C - R120 (NW)	323.63	95.44	1325.29	0.244	324.06	0.3	3.599	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	606.80	40.70	1401.84	0.433	608.08	0.8	4.542	A
B - Newcastle Boulevard	116.69	476.81	1169.75	0.100	116.82	0.1	3.418	A
C - R120 (NW)	271.03	79.89	1334.27	0.203	271.30	0.3	3.389	A

2039 DM, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.38	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D5	2039 DM	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	325.00	100.000
B - Newcastle Boulevard		✓	213.00	100.000
C - R120 (NW)		✓	686.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	57.000	266.000
	B - Newcastle Boulevard	161.000	0.000	52.000
	C - R120 (NW)	659.000	25.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.25	3.43	0.3	A
B - Newcastle Boulevard	0.18	3.46	0.2	A
C - R120 (NW)	0.59	6.90	1.4	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	244.68	20.23	1413.98	0.173	243.84	0.2	3.075	A
B - Newcastle Boulevard	160.36	202.58	1330.47	0.121	159.81	0.1	3.073	A
C - R120 (NW)	516.46	122.30	1309.77	0.394	513.87	0.6	4.509	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	292.17	24.23	1411.60	0.207	291.96	0.3	3.215	A
B - Newcastle Boulevard	191.48	242.55	1307.04	0.147	191.34	0.2	3.226	A
C - R120 (NW)	616.70	146.43	1295.83	0.476	615.69	0.9	5.285	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	357.83	29.65	1408.39	0.254	357.52	0.3	3.425	A
B - Newcastle Boulevard	234.52	297.01	1275.12	0.184	234.30	0.2	3.458	A
C - R120 (NW)	755.30	179.30	1276.83	0.592	753.20	1.4	6.847	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	357.83	29.73	1408.35	0.254	357.83	0.3	3.426	A
B - Newcastle Boulevard	234.52	297.27	1274.97	0.184	234.52	0.2	3.459	A
C - R120 (NW)	755.30	179.46	1276.74	0.592	755.25	1.4	6.903	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	292.17	24.35	1411.53	0.207	292.48	0.3	3.219	A
B - Newcastle Boulevard	191.48	242.99	1306.79	0.147	191.69	0.2	3.230	A
C - R120 (NW)	616.70	146.69	1295.67	0.476	618.77	0.9	5.336	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	244.68	20.37	1413.89	0.173	244.89	0.2	3.081	A
B - Newcastle Boulevard	160.36	203.44	1329.96	0.121	160.50	0.1	3.080	A
C - R120 (NW)	516.46	122.82	1309.47	0.394	517.50	0.7	4.551	A

2039 DM, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	6.39	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D6	2039 DM	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	845.00	100.000
B - Newcastle Boulevard		✓	160.00	100.000
C - R120 (NW)		✓	380.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	180.000	663.000
	B - Newcastle Boulevard	107.000	0.000	53.000
	C - R120 (NW)	322.000	54.000	4.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.67	7.86	2.0	A
B - Newcastle Boulevard	0.17	4.28	0.2	A
C - R120 (NW)	0.32	4.03	0.5	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	636.16	43.50	1400.18	0.454	632.86	0.8	4.672	A
B - Newcastle Boulevard	120.46	501.05	1155.54	0.104	119.99	0.1	3.474	A
C - R120 (NW)	286.08	81.74	1333.20	0.215	285.00	0.3	3.431	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	759.64	52.10	1395.09	0.545	758.22	1.2	5.640	A
B - Newcastle Boulevard	143.84	600.30	1097.37	0.131	143.70	0.2	3.774	A
C - R120 (NW)	341.61	97.89	1323.87	0.258	341.32	0.3	3.664	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	930.36	63.79	1388.16	0.670	927.15	2.0	7.754	A
B - Newcastle Boulevard	176.16	734.05	1018.98	0.173	175.93	0.2	4.269	A
C - R120 (NW)	418.39	119.85	1311.18	0.319	417.91	0.5	4.028	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	930.36	63.86	1388.11	0.670	930.26	2.0	7.858	A
B - Newcastle Boulevard	176.16	736.51	1017.54	0.173	176.16	0.2	4.278	A
C - R120 (NW)	418.39	120.01	1311.09	0.319	418.38	0.5	4.032	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	759.64	52.21	1395.02	0.545	762.82	1.2	5.722	A
B - Newcastle Boulevard	143.84	603.92	1095.24	0.131	144.06	0.2	3.787	A
C - R120 (NW)	341.61	98.15	1323.72	0.258	342.08	0.3	3.671	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	636.16	43.71	1400.06	0.454	637.64	0.8	4.732	A
B - Newcastle Boulevard	120.46	504.83	1153.32	0.104	120.60	0.1	3.488	A
C - R120 (NW)	286.08	82.16	1332.96	0.215	286.38	0.3	3.442	A

2024 DS, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	4.71	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D7	2024 DS	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	293.00	100.000
B - Newcastle Boulevard		✓	213.00	100.000
C - R120 (NW)		✓	599.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	59.000	232.000
	B - Newcastle Boulevard	168.000	0.000	45.000
	C - R120 (NW)	575.000	22.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.23	3.31	0.3	A
B - Newcastle Boulevard	0.18	3.39	0.2	A
C - R120 (NW)	0.52	5.87	1.1	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	220.59	17.98	1415.31	0.156	219.85	0.2	3.010	A
B - Newcastle Boulevard	160.36	177.08	1345.41	0.119	159.82	0.1	3.034	A
C - R120 (NW)	450.96	127.55	1306.73	0.345	448.87	0.5	4.186	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	263.40	21.55	1413.20	0.186	263.22	0.2	3.130	A
B - Newcastle Boulevard	191.48	212.02	1324.94	0.145	191.35	0.2	3.175	A
C - R120 (NW)	538.49	152.72	1292.19	0.417	537.75	0.7	4.766	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	322.60	26.37	1410.34	0.229	322.33	0.3	3.308	A
B - Newcastle Boulevard	234.52	259.62	1297.04	0.181	234.31	0.2	3.387	A
C - R120 (NW)	659.51	187.01	1272.38	0.518	658.10	1.1	5.848	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	322.60	26.42	1410.30	0.229	322.60	0.3	3.308	A
B - Newcastle Boulevard	234.52	259.84	1296.91	0.181	234.52	0.2	3.387	A
C - R120 (NW)	659.51	187.17	1272.29	0.518	659.48	1.1	5.874	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	263.40	21.63	1413.15	0.186	263.66	0.2	3.131	A
B - Newcastle Boulevard	191.48	212.37	1324.73	0.145	191.68	0.2	3.179	A
C - R120 (NW)	538.49	152.99	1292.04	0.417	539.88	0.7	4.796	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	220.59	18.10	1415.24	0.156	220.76	0.2	3.013	A
B - Newcastle Boulevard	160.36	177.82	1344.98	0.119	160.49	0.1	3.041	A
C - R120 (NW)	450.96	128.09	1306.42	0.345	451.72	0.5	4.215	A

2024 DS, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.53	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D8	2024 DS	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	769.00	100.000
B - Newcastle Boulevard		✓	156.00	100.000
C - R120 (NW)		✓	334.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	1.000	189.000	579.000
	B - Newcastle Boulevard	110.000	0.000	46.000
	C - R120 (NW)	283.000	48.000	3.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.61	6.59	1.5	A
B - Newcastle Boulevard	0.16	3.99	0.2	A
C - R120 (NW)	0.28	3.82	0.4	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	578.94	38.25	1403.29	0.413	576.16	0.7	4.337	A
B - Newcastle Boulevard	117.44	436.80	1193.19	0.098	117.01	0.1	3.343	A
C - R120 (NW)	251.45	83.26	1332.33	0.189	250.53	0.2	3.324	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	691.32	45.81	1398.81	0.494	690.23	1.0	5.073	A
B - Newcastle Boulevard	140.24	523.29	1142.50	0.123	140.12	0.1	3.590	A
C - R120 (NW)	300.26	99.70	1322.83	0.227	300.02	0.3	3.519	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	846.68	56.09	1392.72	0.608	844.46	1.5	6.540	A
B - Newcastle Boulevard	171.76	640.21	1073.97	0.160	171.56	0.2	3.988	A
C - R120 (NW)	367.74	122.07	1309.90	0.281	367.36	0.4	3.817	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	846.68	56.15	1392.68	0.608	846.63	1.5	6.592	A
B - Newcastle Boulevard	171.76	641.85	1073.01	0.160	171.76	0.2	3.994	A
C - R120 (NW)	367.74	122.21	1309.82	0.281	367.74	0.4	3.820	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	691.32	45.91	1398.76	0.494	693.51	1.0	5.121	A
B - Newcastle Boulevard	140.24	525.76	1141.05	0.123	140.44	0.1	3.600	A
C - R120 (NW)	300.26	99.93	1322.69	0.227	300.64	0.3	3.525	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	578.94	38.43	1403.19	0.413	580.06	0.7	4.380	A
B - Newcastle Boulevard	117.44	439.76	1191.46	0.099	117.57	0.1	3.351	A
C - R120 (NW)	251.45	83.66	1332.10	0.189	251.70	0.2	3.334	A

2029 DS, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.16	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D9	2029 DS	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	319.00	100.000
B - Newcastle Boulevard		✓	229.00	100.000
C - R120 (NW)		✓	653.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	64.000	253.000
	B - Newcastle Boulevard	180.000	0.000	49.000
	C - R120 (NW)	627.000	24.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.25	3.40	0.3	A
B - Newcastle Boulevard	0.20	3.49	0.2	A
C - R120 (NW)	0.57	6.60	1.3	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	240.16	19.48	1414.42	0.170	239.35	0.2	3.062	A
B - Newcastle Boulevard	172.40	192.82	1336.18	0.129	171.81	0.1	3.090	A
C - R120 (NW)	491.61	136.55	1301.53	0.378	489.20	0.6	4.418	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	286.77	23.34	1412.13	0.203	286.57	0.3	3.198	A
B - Newcastle Boulevard	205.87	230.87	1313.88	0.157	205.72	0.2	3.248	A
C - R120 (NW)	587.03	163.50	1285.97	0.456	586.12	0.8	5.138	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	351.23	28.55	1409.04	0.249	350.92	0.3	3.402	A
B - Newcastle Boulevard	252.13	282.71	1283.50	0.196	251.90	0.2	3.489	A
C - R120 (NW)	718.97	200.20	1264.76	0.568	717.11	1.3	6.551	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	351.23	28.62	1409.00	0.249	351.22	0.3	3.402	A
B - Newcastle Boulevard	252.13	282.96	1283.36	0.196	252.13	0.2	3.490	A
C - R120 (NW)	718.97	200.38	1264.65	0.569	718.92	1.3	6.596	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	286.77	23.45	1412.07	0.203	287.08	0.3	3.202	A
B - Newcastle Boulevard	205.87	231.28	1313.64	0.157	206.10	0.2	3.250	A
C - R120 (NW)	587.03	163.80	1285.79	0.457	588.86	0.8	5.180	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	240.16	19.61	1414.34	0.170	240.36	0.2	3.068	A
B - Newcastle Boulevard	172.40	193.65	1335.70	0.129	172.55	0.1	3.094	A
C - R120 (NW)	491.61	137.14	1301.19	0.378	492.56	0.6	4.456	A

2029 DS, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	6.30	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D10	2029 DS	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	840.00	100.000
B - Newcastle Boulevard		✓	171.00	100.000
C - R120 (NW)		✓	362.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	1.000	207.000	632.000
	B - Newcastle Boulevard	121.000	0.000	50.000
	C - R120 (NW)	308.000	51.000	3.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.67	7.72	2.0	A
B - Newcastle Boulevard	0.18	4.23	0.2	A
C - R120 (NW)	0.31	3.98	0.4	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	632.40	40.50	1401.96	0.451	629.14	0.8	4.639	A
B - Newcastle Boulevard	128.74	476.35	1170.01	0.110	128.25	0.1	3.453	A
C - R120 (NW)	272.53	91.50	1327.57	0.205	271.50	0.3	3.406	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	755.14	48.50	1397.22	0.540	753.76	1.2	5.582	A
B - Newcastle Boulevard	153.73	570.70	1114.71	0.138	153.58	0.2	3.745	A
C - R120 (NW)	325.43	109.57	1317.12	0.247	325.15	0.3	3.629	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	924.86	59.39	1390.76	0.665	921.75	1.9	7.624	A
B - Newcastle Boulevard	188.27	697.90	1040.16	0.181	188.03	0.2	4.223	A
C - R120 (NW)	398.57	134.15	1302.92	0.306	398.12	0.4	3.977	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	924.86	59.45	1390.72	0.665	924.76	2.0	7.725	A
B - Newcastle Boulevard	188.27	700.18	1038.83	0.181	188.27	0.2	4.232	A
C - R120 (NW)	398.57	134.32	1302.82	0.306	398.56	0.4	3.980	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	755.14	48.61	1397.15	0.540	758.22	1.2	5.662	A
B - Newcastle Boulevard	153.73	574.07	1112.74	0.138	153.96	0.2	3.754	A
C - R120 (NW)	325.43	109.85	1316.96	0.247	325.87	0.3	3.633	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	632.40	40.70	1401.84	0.451	633.85	0.8	4.697	A
B - Newcastle Boulevard	128.74	479.91	1167.93	0.110	128.88	0.1	3.464	A
C - R120 (NW)	272.53	91.95	1327.30	0.205	272.81	0.3	3.416	A

2039 DS, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.49	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D11	2039 DS	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	334.00	100.000
B - Newcastle Boulevard		✓	235.00	100.000
C - R120 (NW)		✓	689.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	65.000	267.000
	B - Newcastle Boulevard	183.000	0.000	52.000
	C - R120 (NW)	662.000	25.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.26	3.46	0.4	A
B - Newcastle Boulevard	0.20	3.54	0.3	A
C - R120 (NW)	0.60	7.14	1.5	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	251.45	20.22	1413.98	0.178	250.59	0.2	3.093	A
B - Newcastle Boulevard	176.92	203.32	1330.03	0.133	176.31	0.2	3.118	A
C - R120 (NW)	518.72	138.80	1300.24	0.399	516.08	0.7	4.577	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	300.26	24.23	1411.60	0.213	300.04	0.3	3.238	A
B - Newcastle Boulevard	211.26	243.45	1306.51	0.162	211.10	0.2	3.286	A
C - R120 (NW)	619.40	166.19	1284.41	0.482	618.35	0.9	5.395	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	367.74	29.64	1408.40	0.261	367.41	0.4	3.458	A
B - Newcastle Boulevard	258.74	298.10	1274.48	0.203	258.49	0.3	3.543	A
C - R120 (NW)	758.60	203.50	1262.86	0.601	756.38	1.5	7.077	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	367.74	29.73	1408.35	0.261	367.74	0.4	3.458	A
B - Newcastle Boulevard	258.74	298.37	1274.32	0.203	258.74	0.3	3.543	A
C - R120 (NW)	758.60	203.69	1262.74	0.601	758.55	1.5	7.137	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	300.26	24.36	1411.53	0.213	300.58	0.3	3.243	A
B - Newcastle Boulevard	211.26	243.89	1306.26	0.162	211.50	0.2	3.290	A
C - R120 (NW)	619.40	166.50	1284.23	0.482	621.59	0.9	5.452	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	251.45	20.37	1413.89	0.178	251.67	0.2	3.099	A
B - Newcastle Boulevard	176.92	204.20	1329.52	0.133	177.08	0.2	3.125	A
C - R120 (NW)	518.72	139.40	1299.89	0.399	519.81	0.7	4.622	A

2039 DS, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	6.84	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D12	2039 DS	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	878.00	100.000
B - Newcastle Boulevard		✓	176.00	100.000
C - R120 (NW)		✓	382.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	1.000	210.000	667.000
	B - Newcastle Boulevard	123.000	0.000	53.000
	C - R120 (NW)	324.000	54.000	4.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.70	8.53	2.3	A
B - Newcastle Boulevard	0.19	4.38	0.2	A
C - R120 (NW)	0.32	4.09	0.5	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	661.00	43.50	1400.18	0.472	657.46	0.9	4.824	A
B - Newcastle Boulevard	132.50	503.21	1154.27	0.115	131.99	0.1	3.519	A
C - R120 (NW)	287.59	92.99	1326.70	0.217	286.49	0.3	3.458	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	789.30	52.09	1395.09	0.566	787.71	1.3	5.911	A
B - Newcastle Boulevard	158.22	602.90	1095.85	0.144	158.07	0.2	3.838	A
C - R120 (NW)	343.41	111.36	1316.09	0.261	343.11	0.4	3.700	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	966.70	63.78	1388.16	0.696	962.92	2.2	6.391	A
B - Newcastle Boulevard	193.78	737.01	1017.24	0.190	193.52	0.2	4.369	A
C - R120 (NW)	420.59	136.34	1301.66	0.323	420.10	0.5	4.082	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	966.70	63.86	1388.11	0.696	966.57	2.3	8.532	A
B - Newcastle Boulevard	193.78	739.79	1015.61	0.191	193.78	0.2	4.380	A
C - R120 (NW)	420.59	136.52	1301.55	0.323	420.58	0.5	4.086	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	789.30	52.21	1395.02	0.566	793.05	1.3	6.018	A
B - Newcastle Boulevard	158.22	606.97	1093.46	0.145	158.48	0.2	3.852	A
C - R120 (NW)	343.41	111.66	1315.92	0.261	343.89	0.4	3.704	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	661.00	43.71	1400.06	0.472	662.68	0.9	4.894	A
B - Newcastle Boulevard	132.50	507.20	1151.94	0.115	132.66	0.1	3.531	A
C - R120 (NW)	287.59	93.47	1326.43	0.217	287.90	0.3	3.469	A

2039 SA, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	5.61	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D13	2039 SA	AM	ONEHOUR	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	341.00	100.000
B - Newcastle Boulevard		✓	257.00	100.000
C - R120 (NW)		✓	692.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	2.000	71.000	268.000
	B - Newcastle Boulevard	205.000	0.000	52.000
	C - R120 (NW)	665.000	25.000	2.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.27	3.48	0.4	A
B - Newcastle Boulevard	0.22	3.63	0.3	A
C - R120 (NW)	0.61	7.39	1.5	A

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	256.72	20.22	1413.98	0.182	255.84	0.2	3.107	A
B - Newcastle Boulevard	193.48	204.07	1329.59	0.146	192.80	0.2	3.165	A
C - R120 (NW)	520.97	155.29	1290.70	0.404	518.29	0.7	4.645	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	306.55	24.23	1411.60	0.217	306.33	0.3	3.256	A
B - Newcastle Boulevard	231.04	244.34	1305.99	0.177	230.86	0.2	3.348	A
C - R120 (NW)	622.09	185.95	1272.99	0.489	621.00	0.9	5.512	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	375.45	29.64	1408.40	0.267	375.11	0.4	3.484	A
B - Newcastle Boulevard	282.96	299.20	1273.84	0.222	282.68	0.3	3.632	A
C - R120 (NW)	761.91	227.69	1248.88	0.610	759.55	1.5	7.322	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	375.45	29.73	1408.35	0.267	375.44	0.4	3.484	A
B - Newcastle Boulevard	282.96	299.47	1273.68	0.222	282.96	0.3	3.632	A
C - R120 (NW)	761.91	227.91	1248.75	0.610	761.84	1.5	7.390	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	306.55	24.36	1411.53	0.217	306.89	0.3	3.261	A
B - Newcastle Boulevard	231.04	244.79	1305.73	0.177	231.31	0.2	3.350	A
C - R120 (NW)	622.09	186.31	1272.78	0.489	624.42	1.0	5.571	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	256.72	20.37	1413.89	0.182	256.95	0.2	3.111	A
B - Newcastle Boulevard	193.48	204.96	1329.07	0.146	193.66	0.2	3.170	A
C - R120 (NW)	520.97	155.98	1290.31	0.404	522.11	0.7	4.694	A

2039 SA, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Standard Roundabout	7.30	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

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)
D14	2039 SA	PM	ONE HOUR	16:45	18:15	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	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R120 (SE)		✓	907.00	100.000
B - Newcastle Boulevard		✓	190.00	100.000
C - R120 (NW)		✓	383.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	1.000	236.000	670.000
	B - Newcastle Boulevard	137.000	0.000	53.000
	C - R120 (NW)	325.000	54.000	4.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R120 (SE)	B - Newcastle Boulevard	C - R120 (NW)
From	A - R120 (SE)	0	0	0
	B - Newcastle Boulevard	0	0	0
	C - R120 (NW)	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
A - R120 (SE)	0.72	9.23	2.5	A
B - Newcastle Boulevard	0.21	4.47	0.3	A
C - R120 (NW)	0.33	4.13	0.5	A

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	682.84	43.50	1400.18	0.488	679.07	0.9	4.967	A
B - Newcastle Boulevard	143.04	505.38	1153.00	0.124	142.48	0.1	3.560	A
C - R120 (NW)	288.34	103.48	1320.64	0.218	287.23	0.3	3.481	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	815.37	52.09	1395.09	0.584	813.60	1.4	6.172	A
B - Newcastle Boulevard	170.81	605.50	1094.32	0.156	170.63	0.2	3.897	A
C - R120 (NW)	344.31	123.93	1308.82	0.263	344.00	0.4	3.731	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	998.63	63.78	1388.16	0.719	994.25	2.5	9.037	A
B - Newcastle Boulevard	209.19	739.95	1015.52	0.206	208.90	0.3	4.462	A
C - R120 (NW)	421.69	151.72	1292.77	0.326	421.19	0.5	4.129	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	998.63	63.86	1388.11	0.719	998.46	2.5	9.228	A
B - Newcastle Boulevard	209.19	743.07	1013.69	0.206	209.19	0.3	4.474	A
C - R120 (NW)	421.69	151.94	1292.64	0.326	421.68	0.5	4.133	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	815.37	52.22	1395.01	0.584	819.73	1.4	6.303	A
B - Newcastle Boulevard	170.81	610.04	1091.66	0.156	171.10	0.2	3.913	A
C - R120 (NW)	344.31	124.27	1308.63	0.263	344.80	0.4	3.739	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
A - R120 (SE)	682.84	43.71	1400.06	0.488	684.71	1.0	5.047	A
B - Newcastle Boulevard	143.04	509.56	1150.55	0.124	143.22	0.1	3.573	A
C - R120 (NW)	288.34	104.02	1320.33	0.218	288.66	0.3	3.492	A

APPENDIX E PICADY Output Files

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []

Filename: Junction 8.j9
Path: G:\2021\p210026\calcs\picady
Report generation date: 10/05/2022 15:07:10

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Minimum - 2024 DM								
Stream B-ACD	0.0	7.53	0.03	A	0.1	7.50	0.09	A
Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.0	8.40	0.04	A	0.0	8.62	0.04	A
Stream C-ABD	0.1	6.64	0.06	A	0.0	5.86	0.04	A
Stream C-D								
Stream C-A								
Do Minimum - 2029 DM								
Stream B-ACD	0.0	7.47	0.03	A	0.1	7.53	0.09	A
Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.0	8.46	0.04	A	0.0	8.63	0.03	A
Stream C-ABD	0.1	6.68	0.07	A	0.1	5.86	0.04	A
Stream C-D								
Stream C-A								
Do Minimum - 2039 DM								
Stream B-ACD	0.0	7.56	0.04	A	0.1	7.53	0.10	A

Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.0	8.49	0.05	A	0.0	8.65	0.04	A
Stream C-ABD	0.1	6.70	0.07	A	0.1	5.86	0.04	A
Stream C-D								
Stream C-A								

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Something - 2024 DS								
Stream B-ACD	0.0	7.76	0.04	A	0.1	7.87	0.10	A
Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.0	8.47	0.04	A	0.0	8.70	0.03	A
Stream C-ABD	0.1	6.65	0.06	A	0.1	5.80	0.04	A
Stream C-D								
Stream C-A								
Do Something - 2029 DS								
Stream B-ACD	0.0	7.82	0.04	A	0.1	8.21	0.12	A
Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.0	8.58	0.05	A	0.0	8.84	0.03	A
Stream C-ABD	0.1	6.69	0.07	A	0.1	5.75	0.04	A
Stream C-D								
Stream C-A								
Do Something - 2039 DS								
Stream B-ACD	0.0	7.90	0.04	A	0.1	8.21	0.13	A
Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.0	8.60	0.05	A	0.0	8.86	0.04	A
Stream C-ABD	0.1	6.71	0.07	A	0.1	5.75	0.04	A
Stream C-D								
Stream C-A								

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Sensitivity Analysis - 2039 SA								
Stream B-ACD	0.1	8.14	0.05	A	0.2	8.75	0.15	A
Stream A-BCD	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream A-B								
Stream A-C								
Stream D-ABC	0.1	8.70	0.05	A	0.0	9.05	0.04	A
Stream C-ABD	0.1	6.77	0.07	A	0.1	5.67	0.04	A
Stream C-D								
Stream C-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	10/05/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HEADOFFICE*kellysh
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	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
2024 DM	AM	ONE HOUR	07:45	09:15	15	✓
2024 DM	PM	ONE HOUR	16:45	18:15	15	✓
2029 DM	AM	ONE HOUR	07:45	09:15	15	✓
2029 DM	PM	ONE HOUR	16:45	18:15	15	✓
2039 DM	AM	ONE HOUR	07:45	09:15	15	✓
2039 DM	PM	ONE HOUR	16:45	18:15	15	✓
2024 DS	AM	ONE HOUR	07:45	09:15	15	✓
2024 DS	PM	ONE HOUR	16:45	18:15	15	✓
2029 DS	AM	ONE HOUR	07:45	09:15	15	✓
2029 DS	PM	ONE HOUR	16:45	18:15	15	✓
2039 DS	AM	ONE HOUR	07:45	09:15	15	✓
2039 DS	PM	ONE HOUR	16:45	18:15	15	✓
2039 SA	AM	ONE HOUR	07:45	09:15	15	✓
2039 SA	PM	ONE HOUR	16:45	18:15	15	✓

Do Minimum - 2024 DM, 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	Do Minimum	✓	✓	D1,D2,D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573,963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573,963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D1	2024 DM	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 - Newcastle Blvd (NW)		ONE HOUR	✓	113.00	100.000
B - Burgage St		ONE HOUR	✓	14.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	71.00	100.000
D - Lyons Ave		ONE HOUR	✓	16.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	8.000	105.000	0.000
B - Burgage St	5.000	0.000	6.000	3.000
C - Newcastle Blvd (SE)	39.000	31.000	0.000	1.000
D - Lyons Ave	0.000	11.000	5.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.07	0.93	0.00
B - Burgage St	0.36	0.00	0.43	0.21
C - Newcastle Blvd (SE)	0.55	0.44	0.00	0.01
D - Lyons Ave	0.00	0.69	0.31	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.03	7.53	0.0	A	12.85	19.27
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					7.34	11.01
A-C					96.35	144.52
D-ABC	0.04	8.40	0.0	A	14.68	22.02
C-ABD	0.06	6.64	0.1	A	30.43	45.64
C-D					0.87	1.30
C-A					33.86	50.79

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-ACD	10.54	10.54	2.63	0.00	505.63	0.021	10.46	0.0	0.0	7.270	A
A-BCD	0.00	0.00	0.00	0.00	561.08	0.000	0.00	0.0	0.0	0.000	A
A-B	6.02	6.02	1.51	0.00			6.02				
A-C	79.05	79.05	19.76	0.00			79.05				
D-ABC	12.05	12.05	3.01	0.00	456.15	0.026	11.94	0.0	0.0	8.102	A
C-ABD	24.62	24.62	6.15	0.00	577.49	0.043	24.42	0.0	0.0	6.508	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	28.12	28.12	7.03	0.00			28.12				

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-ACD	12.59	12.59	3.15	0.00	500.60	0.025	12.57	0.0	0.0	7.375	A
A-BCD	0.00	0.00	0.00	0.00	558.52	0.000	0.00	0.0	0.0	0.000	A
A-B	7.19	7.19	1.80	0.00			7.19				
A-C	94.39	94.39	23.60	0.00			94.39				
D-ABC	14.38	14.38	3.60	0.00	451.90	0.032	14.36	0.0	0.0	8.228	A
C-ABD	29.72	29.72	7.43	0.00	578.24	0.051	29.67	0.0	0.1	6.562	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	33.26	33.26	8.31	0.00			33.26				

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-ACD	15.41	15.41	3.85	0.00	493.69	0.031	15.39	0.0	0.0	7.526	A
A-BCD	0.00	0.00	0.00	0.00	555.05	0.000	0.00	0.0	0.0	0.000	A
A-B	8.81	8.81	2.20	0.00			8.81				
A-C	115.61	115.61	28.90	0.00			115.61				
D-ABC	17.62	17.62	4.40	0.00	446.06	0.039	17.58	0.0	0.0	8.402	A
C-ABD	36.93	36.93	9.23	0.00	579.31	0.064	36.87	0.1	0.1	6.636	A
C-D	1.03	1.03	0.26	0.00			1.03				
C-A	40.21	40.21	10.05	0.00			40.21				

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-ACD	15.41	15.41	3.85	0.00	493.67	0.031	15.41	0.0	0.0	7.526	A
A-BCD	0.00	0.00	0.00	0.00	555.04	0.000	0.00	0.0	0.0	0.000	A
A-B	8.81	8.81	2.20	0.00			8.81				
A-C	115.61	115.61	28.90	0.00			115.61				
D-ABC	17.62	17.62	4.40	0.00	446.05	0.039	17.62	0.0	0.0	8.402	A
C-ABD	36.94	36.94	9.23	0.00	579.32	0.064	36.94	0.1	0.1	6.637	A
C-D	1.03	1.03	0.26	0.00			1.03				
C-A	40.20	40.20	10.05	0.00			40.20				

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-ACD	12.59	12.59	3.15	0.00	500.58	0.025	12.61	0.0	0.0	7.379	A
A-BCD	0.00	0.00	0.00	0.00	558.49	0.000	0.00	0.0	0.0	0.000	A
A-B	7.19	7.19	1.80	0.00			7.19				
A-C	94.39	94.39	23.60	0.00			94.39				
D-ABC	14.38	14.38	3.60	0.00	451.87	0.032	14.41	0.0	0.0	8.231	A
C-ABD	29.72	29.72	7.43	0.00	578.25	0.051	29.78	0.1	0.1	6.564	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	33.25	33.25	8.31	0.00			33.25				

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-ACD	10.54	10.54	2.63	0.00	505.57	0.021	10.56	0.0	0.0	7.271	A
A-BCD	0.00	0.00	0.00	0.00	561.01	0.000	0.00	0.0	0.0	0.000	A
A-B	6.02	6.02	1.51	0.00			6.02				
A-C	79.05	79.05	19.76	0.00			79.05				
D-ABC	12.05	12.05	3.01	0.00	456.10	0.026	12.07	0.0	0.0	8.107	A
C-ABD	24.63	24.63	6.16	0.00	577.50	0.043	24.67	0.1	0.0	6.512	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	28.10	28.10	7.03	0.00			28.10				

Do Minimum - 2024 DM, 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	Do Minimum	✓	✓	D1,D2,D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D2	2024 DM	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	68.00	100.000
B - Burgage St		ONE HOUR	✓	42.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	146.00	100.000
D - Lyons Ave		ONE HOUR	✓	16.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	6.000	62.000	0.000
B - Burgage St	11.000	0.000	25.000	6.000
C - Newcastle Blvd (SE)	119.000	17.000	0.000	10.000
D - Lyons Ave	0.000	11.000	5.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.09	0.91	0.00
B - Burgage St	0.26	0.00	0.60	0.14
C - Newcastle Blvd (SE)	0.82	0.12	0.00	0.07
D - Lyons Ave	0.00	0.69	0.31	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.09	7.50	0.1	A	38.54	57.81
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					5.51	8.26
A-C					56.89	85.34
D-ABC	0.04	8.62	0.0	A	14.68	22.02
C-ABD	0.04	5.86	0.0	A	19.15	28.72
C-D					8.90	13.35
C-A					105.92	158.89

Main Results for each time segment

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-ACD	31.62	31.62	7.90	0.00	535.56	0.059	31.37	0.0	0.1	7.137	A
A-BCD	0.00	0.00	0.00	0.00	550.53	0.000	0.00	0.0	0.0	0.000	A
A-B	4.52	4.52	1.13	0.00			4.52				
A-C	46.68	46.68	11.67	0.00			46.68				
D-ABC	12.05	12.05	3.01	0.00	448.66	0.027	11.94	0.0	0.0	8.241	A
C-ABD	15.08	15.08	3.77	0.00	630.10	0.024	14.96	0.0	0.0	5.852	A
C-D	7.35	7.35	1.84	0.00			7.35				
C-A	87.48	87.48	21.87	0.00			87.48				

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-ACD	37.76	37.76	9.44	0.00	531.67	0.071	37.70	0.1	0.1	7.287	A
A-BCD	0.00	0.00	0.00	0.00	545.95	0.000	0.00	0.0	0.0	0.000	A
A-B	5.39	5.39	1.35	0.00			5.39				
A-C	55.74	55.74	13.93	0.00			55.74				
D-ABC	14.38	14.38	3.60	0.00	442.96	0.032	14.36	0.0	0.0	8.399	A
C-ABD	18.59	18.59	4.65	0.00	641.04	0.029	18.56	0.0	0.0	5.782	A
C-D	8.73	8.73	2.18	0.00			8.73				
C-A	103.93	103.93	25.98	0.00			103.93				

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-ACD	46.24	46.24	11.56	0.00	526.29	0.088	46.16	0.1	0.1	7.498	A
A-BCD	0.00	0.00	0.00	0.00	539.66	0.000	0.00	0.0	0.0	0.000	A
A-B	6.61	6.61	1.65	0.00			6.61				
A-C	68.26	68.26	17.07	0.00			68.26				
D-ABC	17.62	17.62	4.40	0.00	435.11	0.040	17.58	0.0	0.0	8.622	A
C-ABD	23.75	23.75	5.94	0.00	656.16	0.036	23.70	0.0	0.0	5.691	A
C-D	10.62	10.62	2.66	0.00			10.62				
C-A	126.38	126.38	31.60	0.00			126.38				

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-ACD	46.24	46.24	11.56	0.00	526.28	0.088	46.24	0.1	0.1	7.498	A
A-BCD	0.00	0.00	0.00	0.00	539.64	0.000	0.00	0.0	0.0	0.000	A
A-B	6.61	6.61	1.65	0.00			6.61				
A-C	68.26	68.26	17.07	0.00			68.26				
D-ABC	17.62	17.62	4.40	0.00	435.09	0.040	17.62	0.0	0.0	8.622	A
C-ABD	23.76	23.76	5.94	0.00	656.17	0.036	23.75	0.0	0.0	5.692	A
C-D	10.62	10.62	2.65	0.00			10.62				
C-A	126.37	126.37	31.59	0.00			126.37				

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-ACD	37.76	37.76	9.44	0.00	531.66	0.071	37.83	0.1	0.1	7.293	A
A-BCD	0.00	0.00	0.00	0.00	545.93	0.000	0.00	0.0	0.0	0.000	A
A-B	5.39	5.39	1.35	0.00			5.39				
A-C	55.74	55.74	13.93	0.00			55.74				
D-ABC	14.38	14.38	3.60	0.00	442.93	0.032	14.42	0.0	0.0	8.403	A
C-ABD	18.60	18.60	4.65	0.00	641.06	0.029	18.65	0.0	0.0	5.784	A
C-D	8.73	8.73	2.18	0.00			8.73				
C-A	103.92	103.92	25.98	0.00			103.92				

Main results: (18:00-18:15)

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-ACD	31.62	31.62	7.90	0.00	535.53	0.059	31.68	0.1	0.1	7.144	A
A-BCD	0.00	0.00	0.00	0.00	550.49	0.000	0.00	0.0	0.0	0.000	A
A-B	4.52	4.52	1.13	0.00			4.52				
A-C	46.68	46.68	11.67	0.00			46.68				
D-ABC	12.05	12.05	3.01	0.00	448.61	0.027	12.07	0.0	0.0	8.248	A
C-ABD	15.10	15.10	3.78	0.00	630.11	0.024	15.14	0.0	0.0	5.856	A
C-D	7.35	7.35	1.84	0.00			7.35				
C-A	87.46	87.46	21.87	0.00			87.46				

Do Minimum - 2029 DM, 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	Do Minimum	✓	✓	D1,D2,D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D3	2029 DM	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 - Newcastle Blvd (NW)		ONE HOUR	✓	113.00	100.000
B - Burgage St		ONE HOUR	✓	15.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	74.00	100.000
D - Lyons Ave		ONE HOUR	✓	18.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	8.000	105.000	0.000
B - Burgage St	5.000	0.000	7.000	3.000
C - Newcastle Blvd (SE)	39.000	34.000	0.000	1.000
D - Lyons Ave	0.000	12.000	6.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.07	0.93	0.00
B - Burgage St	0.33	0.00	0.47	0.20
C - Newcastle Blvd (SE)	0.53	0.46	0.00	0.01
D - Lyons Ave	0.00	0.67	0.33	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.03	7.47	0.0	A	13.76	20.65
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					7.34	11.01
A-C					96.35	144.52
D-ABC	0.04	8.46	0.0	A	16.52	24.78
C-ABD	0.07	6.68	0.1	A	33.37	50.06
C-D					0.86	1.30
C-A					33.67	50.51

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-ACD	11.29	11.29	2.82	0.00	510.73	0.022	11.20	0.0	0.0	7.207	A
A-BCD	0.00	0.00	0.00	0.00	560.42	0.000	0.00	0.0	0.0	0.000	A
A-B	6.02	6.02	1.51	0.00			6.02				
A-C	79.05	79.05	19.76	0.00			79.05				
D-ABC	13.55	13.55	3.39	0.00	455.63	0.030	13.43	0.0	0.0	8.139	A
C-ABD	27.00	27.00	6.75	0.00	577.49	0.047	26.79	0.0	0.1	6.536	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	28.00	28.00	7.00	0.00			28.00				

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-ACD	13.48	13.48	3.37	0.00	505.65	0.027	13.47	0.0	0.0	7.313	A
A-BCD	0.00	0.00	0.00	0.00	557.74	0.000	0.00	0.0	0.0	0.000	A
A-B	7.19	7.19	1.80	0.00			7.19				
A-C	94.39	94.39	23.60	0.00			94.39				
D-ABC	16.18	16.18	4.05	0.00	451.27	0.036	16.16	0.0	0.0	8.273	A
C-ABD	32.59	32.59	8.15	0.00	578.24	0.056	32.54	0.1	0.1	6.596	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	33.08	33.08	8.27	0.00			33.08				

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-ACD	16.52	16.52	4.13	0.00	498.67	0.033	16.49	0.0	0.0	7.465	A
A-BCD	0.00	0.00	0.00	0.00	554.09	0.000	0.00	0.0	0.0	0.000	A
A-B	8.81	8.81	2.20	0.00			8.81				
A-C	115.61	115.61	28.90	0.00			115.61				
D-ABC	19.82	19.82	4.95	0.00	445.29	0.045	19.78	0.0	0.0	8.460	A
C-ABD	40.51	40.51	10.13	0.00	579.31	0.070	40.44	0.1	0.1	6.680	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	39.94	39.94	9.99	0.00			39.94				

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-ACD	16.52	16.52	4.13	0.00	498.65	0.033	16.51	0.0	0.0	7.465	A
A-BCD	0.00	0.00	0.00	0.00	554.07	0.000	0.00	0.0	0.0	0.000	A
A-B	8.81	8.81	2.20	0.00			8.81				
A-C	115.61	115.61	28.90	0.00			115.61				
D-ABC	19.82	19.82	4.95	0.00	445.27	0.045	19.82	0.0	0.0	8.461	A
C-ABD	40.51	40.51	10.13	0.00	579.32	0.070	40.51	0.1	0.1	6.683	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	39.94	39.94	9.98	0.00			39.94				

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-ACD	13.48	13.48	3.37	0.00	505.62	0.027	13.51	0.0	0.0	7.317	A
A-BCD	0.00	0.00	0.00	0.00	557.70	0.000	0.00	0.0	0.0	0.000	A
A-B	7.19	7.19	1.80	0.00			7.19				
A-C	94.39	94.39	23.60	0.00			94.39				
D-ABC	16.18	16.18	4.05	0.00	451.24	0.036	16.22	0.0	0.0	8.275	A
C-ABD	32.60	32.60	8.15	0.00	578.25	0.056	32.67	0.1	0.1	6.599	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	33.08	33.08	8.27	0.00			33.08				

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-ACD	11.29	11.29	2.82	0.00	510.67	0.022	11.31	0.0	0.0	7.211	A
A-BCD	0.00	0.00	0.00	0.00	560.35	0.000	0.00	0.0	0.0	0.000	A
A-B	6.02	6.02	1.51	0.00			6.02				
A-C	79.05	79.05	19.76	0.00			79.05				
D-ABC	13.55	13.55	3.39	0.00	455.57	0.030	13.58	0.0	0.0	8.146	A
C-ABD	27.01	27.01	6.75	0.00	577.50	0.047	27.06	0.1	0.1	6.540	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	27.98	27.98	7.00	0.00			27.98				

Do Minimum - 2029 DM, 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	Do Minimum	✓	✓	D1,D2,D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D4	2029 DM	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	68.00	100.000
B - Burgage St		ONE HOUR	✓	45.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	148.00	100.000
D - Lyons Ave		ONE HOUR	✓	13.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.000	6.000	62.000	0.000
	B - Burgage St	11.000	0.000	27.000	7.000
	C - Newcastle Blvd (SE)	119.000	18.000	0.000	11.000
	D - Lyons Ave	0.000	4.000	9.000	0.000

Proportions

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.00	0.09	0.91	0.00
	B - Burgage St	0.24	0.00	0.60	0.16
	C - Newcastle Blvd (SE)	0.80	0.12	0.00	0.07
	D - Lyons Ave	0.00	0.31	0.69	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0	0	0	0
	B - Burgage St	0	0	0	0
	C - Newcastle Blvd (SE)	0	0	0	0
	D - Lyons Ave	0	0	0	0

Average PCU Per Veh

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
	B - Burgage St	1.000	1.000	1.000	1.000
	C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
	D - Lyons Ave	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-ACD	0.09	7.53	0.1	A	41.29	61.94
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					5.51	8.26
A-C					56.89	85.34
D-ABC	0.03	8.63	0.0	A	11.93	17.89
C-ABD	0.04	5.86	0.1	A	20.30	30.46
C-D					9.77	14.66
C-A					105.73	158.60

Main Results for each time segment

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-ACD	33.88	33.88	8.47	0.00	536.50	0.063	33.61	0.0	0.1	7.155	A
A-BCD	0.00	0.00	0.00	0.00	550.16	0.000	0.00	0.0	0.0	0.000	A
A-B	4.52	4.52	1.13	0.00			4.52				
A-C	46.68	46.68	11.67	0.00			46.68				
D-ABC	9.79	9.79	2.45	0.00	446.26	0.022	9.70	0.0	0.0	8.243	A
C-ABD	15.99	15.99	4.00	0.00	630.61	0.025	15.86	0.0	0.0	5.856	A
C-D	8.08	8.08	2.02	0.00			8.08				
C-A	87.36	87.36	21.84	0.00			87.36				

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-ACD	40.45	40.45	10.11	0.00	532.66	0.076	40.40	0.1	0.1	7.313	A
A-BCD	0.00	0.00	0.00	0.00	545.51	0.000	0.00	0.0	0.0	0.000	A
A-B	5.39	5.39	1.35	0.00			5.39				
A-C	55.74	55.74	13.93	0.00			55.74				
D-ABC	11.69	11.69	2.92	0.00	440.06	0.027	11.67	0.0	0.0	8.403	A
C-ABD	19.71	19.71	4.93	0.00	641.66	0.031	19.68	0.0	0.0	5.787	A
C-D	9.59	9.59	2.40	0.00			9.59				
C-A	103.75	103.75	25.94	0.00			103.75				

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-ACD	49.55	49.55	12.39	0.00	527.34	0.094	49.46	0.1	0.1	7.533	A
A-BCD	0.00	0.00	0.00	0.00	539.11	0.000	0.00	0.0	0.0	0.000	A
A-B	6.61	6.61	1.65	0.00			6.61				
A-C	68.26	68.26	17.07	0.00			68.26				
D-ABC	14.31	14.31	3.58	0.00	431.56	0.033	14.29	0.0	0.0	8.627	A
C-ABD	25.19	25.19	6.30	0.00	656.91	0.038	25.13	0.0	0.1	5.700	A
C-D	11.66	11.66	2.91	0.00			11.66				
C-A	126.11	126.11	31.53	0.00			126.11				

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-ACD	49.55	49.55	12.39	0.00	527.33	0.094	49.54	0.1	0.1	7.533	A
A-BCD	0.00	0.00	0.00	0.00	539.10	0.000	0.00	0.0	0.0	0.000	A
A-B	6.61	6.61	1.65	0.00			6.61				
A-C	68.26	68.26	17.07	0.00			68.26				
D-ABC	14.31	14.31	3.58	0.00	431.54	0.033	14.31	0.0	0.0	8.628	A
C-ABD	25.20	25.20	6.30	0.00	656.92	0.038	25.20	0.1	0.1	5.701	A
C-D	11.66	11.66	2.91	0.00			11.66				
C-A	126.10	126.10	31.52	0.00			126.10				

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-ACD	40.45	40.45	10.11	0.00	532.64	0.076	40.54	0.1	0.1	7.318	A
A-BCD	0.00	0.00	0.00	0.00	545.48	0.000	0.00	0.0	0.0	0.000	A
A-B	5.39	5.39	1.35	0.00			5.39				
A-C	55.74	55.74	13.93	0.00			55.74				
D-ABC	11.69	11.69	2.92	0.00	440.03	0.027	11.71	0.0	0.0	8.405	A
C-ABD	19.73	19.73	4.93	0.00	641.67	0.031	19.78	0.1	0.0	5.791	A
C-D	9.59	9.59	2.40	0.00			9.59				
C-A	103.73	103.73	25.93	0.00			103.73				

Main results: (18:00-18:15)

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-ACD	33.88	33.88	8.47	0.00	536.48	0.063	33.94	0.1	0.1	7.163	A
A-BCD	0.00	0.00	0.00	0.00	550.12	0.000	0.00	0.0	0.0	0.000	A
A-B	4.52	4.52	1.13	0.00			4.52				
A-C	46.68	46.68	11.67	0.00			46.68				
D-ABC	9.79	9.79	2.45	0.00	446.18	0.022	9.81	0.0	0.0	8.251	A
C-ABD	16.01	16.01	4.00	0.00	630.63	0.025	16.05	0.0	0.0	5.860	A
C-D	8.07	8.07	2.02	0.00			8.07				
C-A	87.34	87.34	21.83	0.00			87.34				

Do Minimum - 2039 DM, 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	Do Minimum	✓	✓	D1,D2,D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573,963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477,852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623,937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477,852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477,852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573,963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623,937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477,852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477,852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477,852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D5	2039 DM	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 - Newcastle Blvd (NW)		ONE HOUR	✓	113.00	100.000
B - Burgage St		ONE HOUR	✓	16.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	75.00	100.000
D - Lyons Ave		ONE HOUR	✓	19.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.000	8.000	105.000	0.000
	B - Burgage St	5.000	0.000	7.000	4.000
	C - Newcastle Blvd (SE)	39.000	35.000	0.000	1.000
	D - Lyons Ave	0.000	13.000	6.000	0.000

Proportions

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.00	0.07	0.93	0.00
	B - Burgage St	0.31	0.00	0.44	0.25
	C - Newcastle Blvd (SE)	0.52	0.47	0.00	0.01
	D - Lyons Ave	0.00	0.68	0.32	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0	0	0	0
	B - Burgage St	0	0	0	0
	C - Newcastle Blvd (SE)	0	0	0	0
	D - Lyons Ave	0	0	0	0

Average PCU Per Veh

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
	B - Burgage St	1.000	1.000	1.000	1.000
	C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
	D - Lyons Ave	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-ACD	0.04	7.56	0.0	A	14.68	22.02
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					7.34	11.01
A-C					96.35	144.52
D-ABC	0.05	8.49	0.0	A	17.43	26.15
C-ABD	0.07	6.70	0.1	A	34.35	51.53
C-D					0.86	1.29
C-A					33.61	50.41

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-ACD	12.05	12.05	3.01	0.00	506.27	0.024	11.95	0.0	0.0	7.283	A
A-BCD	0.00	0.00	0.00	0.00	560.21	0.000	0.00	0.0	0.0	0.000	A
A-B	6.02	6.02	1.51	0.00			6.02				
A-C	79.05	79.05	19.76	0.00			79.05				
D-ABC	14.30	14.30	3.58	0.00	455.45	0.031	14.18	0.0	0.0	8.157	A
C-ABD	27.79	27.79	6.95	0.00	577.49	0.048	27.57	0.0	0.1	6.545	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	27.96	27.96	6.99	0.00			27.96				

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-ACD	14.38	14.38	3.60	0.00	501.12	0.029	14.36	0.0	0.0	7.395	A
A-BCD	0.00	0.00	0.00	0.00	557.47	0.000	0.00	0.0	0.0	0.000	A
A-B	7.19	7.19	1.80	0.00			7.19				
A-C	94.39	94.39	23.60	0.00			94.39				
D-ABC	17.08	17.08	4.27	0.00	451.05	0.038	17.05	0.0	0.0	8.295	A
C-ABD	33.55	33.55	8.39	0.00	578.24	0.058	33.50	0.1	0.1	6.808	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	33.03	33.03	8.26	0.00			33.03				

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-ACD	17.62	17.62	4.40	0.00	494.03	0.036	17.59	0.0	0.0	7.555	A
A-BCD	0.00	0.00	0.00	0.00	553.77	0.000	0.00	0.0	0.0	0.000	A
A-B	8.81	8.81	2.20	0.00			8.81				
A-C	115.61	115.61	28.90	0.00			115.61				
D-ABC	20.92	20.92	5.23	0.00	445.03	0.047	20.88	0.0	0.0	8.488	A
C-ABD	41.70	41.70	10.43	0.00	579.31	0.072	41.63	0.1	0.1	6.695	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	39.85	39.85	9.96	0.00			39.85				

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-ACD	17.62	17.62	4.40	0.00	494.01	0.036	17.62	0.0	0.0	7.555	A
A-BCD	0.00	0.00	0.00	0.00	553.75	0.000	0.00	0.0	0.0	0.000	A
A-B	8.81	8.81	2.20	0.00			8.81				
A-C	115.61	115.61	28.90	0.00			115.61				
D-ABC	20.92	20.92	5.23	0.00	445.01	0.047	20.92	0.0	0.0	8.488	A
C-ABD	41.71	41.71	10.43	0.00	579.32	0.072	41.70	0.1	0.1	6.696	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	39.85	39.85	9.96	0.00			39.85				

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-ACD	14.38	14.38	3.60	0.00	501.09	0.029	14.41	0.0	0.0	7.396	A
A-BCD	0.00	0.00	0.00	0.00	557.44	0.000	0.00	0.0	0.0	0.000	A
A-B	7.19	7.19	1.80	0.00			7.19				
A-C	94.39	94.39	23.60	0.00			94.39				
D-ABC	17.08	17.08	4.27	0.00	451.02	0.038	17.12	0.0	0.0	8.298	A
C-ABD	33.56	33.56	8.39	0.00	578.25	0.058	33.63	0.1	0.1	6.813	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	33.02	33.02	8.25	0.00			33.02				

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-ACD	12.05	12.05	3.01	0.00	506.21	0.024	12.07	0.0	0.0	7.287	A
A-BCD	0.00	0.00	0.00	0.00	560.13	0.000	0.00	0.0	0.0	0.000	A
A-B	6.02	6.02	1.51	0.00			6.02				
A-C	79.05	79.05	19.76	0.00			79.05				
D-ABC	14.30	14.30	3.58	0.00	455.39	0.031	14.33	0.0	0.0	8.164	A
C-ABD	27.81	27.81	6.95	0.00	577.50	0.048	27.86	0.1	0.1	6.552	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	27.94	27.94	6.99	0.00			27.94				

Do Minimum - 2039 DM, 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	Do Minimum	✓	✓	D1,D2,D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D6	2039 DM	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	68.00	100.000
B - Burgage St		ONE HOUR	✓	46.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	150.00	100.000
D - Lyons Ave		ONE HOUR	✓	14.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	6.000	62.000	0.000
B - Burgage St	11.000	0.000	28.000	7.000
C - Newcastle Blvd (SE)	119.000	19.000	0.000	12.000
D - Lyons Ave	0.000	5.000	9.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.09	0.91	0.00
B - Burgage St	0.24	0.00	0.61	0.15
C - Newcastle Blvd (SE)	0.79	0.13	0.00	0.08
D - Lyons Ave	0.00	0.36	0.64	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.10	7.53	0.1	A	42.21	63.32
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					5.51	8.26
A-C					56.89	85.34
D-ABC	0.04	8.65	0.0	A	12.85	19.27
C-ABD	0.04	5.86	0.1	A	21.46	32.20
C-D					10.64	15.96
C-A					105.54	158.30

Main Results for each time segment

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-ACD	34.63	34.63	8.66	0.00	537.78	0.064	34.36	0.0	0.1	7.148	A
A-BCD	0.00	0.00	0.00	0.00	549.79	0.000	0.00	0.0	0.0	0.000	A
A-B	4.52	4.52	1.13	0.00			4.52				
A-C	46.68	46.68	11.67	0.00			46.68				
D-ABC	10.54	10.54	2.63	0.00	446.21	0.024	10.44	0.0	0.0	8.259	A
C-ABD	16.90	16.90	4.22	0.00	631.12	0.027	16.76	0.0	0.0	5.860	A
C-D	8.80	8.80	2.20	0.00			8.80				
C-A	87.23	87.23	21.81	0.00			87.23				

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-ACD	41.35	41.35	10.34	0.00	533.92	0.077	41.29	0.1	0.1	7.307	A
A-BCD	0.00	0.00	0.00	0.00	545.06	0.000	0.00	0.0	0.0	0.000	A
A-B	5.39	5.39	1.35	0.00			5.39				
A-C	55.74	55.74	13.93	0.00			55.74				
D-ABC	12.59	12.59	3.15	0.00	440.01	0.029	12.56	0.0	0.0	8.422	A
C-ABD	20.84	20.84	5.21	0.00	642.27	0.032	20.80	0.0	0.0	5.792	A
C-D	10.44	10.44	2.61	0.00			10.44				
C-A	103.56	103.56	25.89	0.00			103.56				

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-ACD	50.65	50.65	12.66	0.00	528.58	0.096	50.56	0.1	0.1	7.531	A
A-BCD	0.00	0.00	0.00	0.00	538.56	0.000	0.00	0.0	0.0	0.000	A
A-B	6.61	6.61	1.65	0.00			6.61				
A-C	68.26	68.26	17.07	0.00			68.26				
D-ABC	15.41	15.41	3.85	0.00	431.50	0.036	15.38	0.0	0.0	8.651	A
C-ABD	26.63	26.63	6.66	0.00	657.66	0.041	26.58	0.0	0.1	5.704	A
C-D	12.69	12.69	3.17	0.00			12.69				
C-A	125.83	125.83	31.46	0.00			125.83				

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-ACD	50.65	50.65	12.66	0.00	528.57	0.096	50.65	0.1	0.1	7.531	A
A-BCD	0.00	0.00	0.00	0.00	538.55	0.000	0.00	0.0	0.0	0.000	A
A-B	6.61	6.61	1.65	0.00			6.61				
A-C	68.26	68.26	17.07	0.00			68.26				
D-ABC	15.41	15.41	3.85	0.00	431.48	0.036	15.41	0.0	0.0	8.652	A
C-ABD	26.64	26.64	6.66	0.00	657.67	0.041	26.64	0.1	0.1	5.705	A
C-D	12.69	12.69	3.17	0.00			12.69				
C-A	125.82	125.82	31.46	0.00			125.82				

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-ACD	41.35	41.35	10.34	0.00	533.90	0.077	41.44	0.1	0.1	7.310	A
A-BCD	0.00	0.00	0.00	0.00	545.04	0.000	0.00	0.0	0.0	0.000	A
A-B	5.39	5.39	1.35	0.00			5.39				
A-C	55.74	55.74	13.93	0.00			55.74				
D-ABC	12.59	12.59	3.15	0.00	439.97	0.029	12.61	0.0	0.0	8.424	A
C-ABD	20.85	20.85	5.21	0.00	642.29	0.032	20.91	0.1	0.0	5.796	A
C-D	10.44	10.44	2.61	0.00			10.44				
C-A	103.55	103.55	25.89	0.00			103.55				

Main results: (18:00-18:15)

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-ACD	34.63	34.63	8.66	0.00	537.74	0.064	34.69	0.1	0.1	7.156	A
A-BCD	0.00	0.00	0.00	0.00	549.74	0.000	0.00	0.0	0.0	0.000	A
A-B	4.52	4.52	1.13	0.00			4.52				
A-C	46.68	46.68	11.67	0.00			46.68				
D-ABC	10.54	10.54	2.63	0.00	446.14	0.024	10.56	0.0	0.0	8.266	A
C-ABD	16.92	16.92	4.23	0.00	631.14	0.027	16.96	0.0	0.0	5.863	A
C-D	8.79	8.79	2.20	0.00			8.79				
C-A	87.21	87.21	21.80	0.00			87.21				

Do Something - 2024 DS, 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	Do Something	✓	✓	D7,D8,D9,D10,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D7	2024 DS	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 - Newcastle Blvd (NW)		ONE HOUR	✓	132.00	100.000
B - Burgage St		ONE HOUR	✓	16.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	76.00	100.000
D - Lyons Ave		ONE HOUR	✓	16.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.000	13.000	119.000	0.000
	B - Burgage St	7.000	0.000	6.000	3.000
	C - Newcastle Blvd (SE)	44.000	31.000	0.000	1.000
	D - Lyons Ave	0.000	11.000	5.000	0.000

Proportions

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.00	0.10	0.90	0.00
	B - Burgage St	0.44	0.00	0.38	0.19
	C - Newcastle Blvd (SE)	0.58	0.41	0.00	0.01
	D - Lyons Ave	0.00	0.69	0.31	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0	0	0	0
	B - Burgage St	0	0	0	0
	C - Newcastle Blvd (SE)	0	0	0	0
	D - Lyons Ave	0	0	0	0

Average PCU Per Veh

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
	B - Burgage St	1.000	1.000	1.000	1.000
	C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
	D - Lyons Ave	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-ACD	0.04	7.76	0.0	A	14.68	22.02
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					11.93	17.89
A-C					109.20	163.79
D-ABC	0.04	8.47	0.0	A	14.68	22.02
C-ABD	0.06	6.65	0.1	A	30.69	46.04
C-D					0.87	1.30
C-A					38.18	57.27

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-ACD	12.05	12.05	3.01	0.00	494.90	0.024	11.95	0.0	0.0	7.451	A
A-BCD	0.00	0.00	0.00	0.00	560.32	0.000	0.00	0.0	0.0	0.000	A
A-B	9.79	9.79	2.45	0.00			9.79				
A-C	89.59	89.59	22.40	0.00			89.59				
D-ABC	12.05	12.05	3.01	0.00	453.69	0.027	11.94	0.0	0.0	8.147	A
C-ABD	24.78	24.78	6.20	0.00	577.23	0.043	24.59	0.0	0.0	6.513	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	31.71	31.71	7.93	0.00			31.71				

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-ACD	14.38	14.38	3.60	0.00	489.20	0.029	14.36	0.0	0.0	7.580	A
A-BCD	0.00	0.00	0.00	0.00	557.61	0.000	0.00	0.0	0.0	0.000	A
A-B	11.69	11.69	2.92	0.00			11.69				
A-C	106.98	106.98	26.74	0.00			106.98				
D-ABC	14.38	14.38	3.60	0.00	448.96	0.032	14.36	0.0	0.0	8.283	A
C-ABD	29.96	29.96	7.49	0.00	577.96	0.052	29.92	0.0	0.1	6.568	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	37.51	37.51	9.38	0.00			37.51				

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-ACD	17.62	17.62	4.40	0.00	481.37	0.037	17.59	0.0	0.0	7.762	A
A-BCD	0.00	0.00	0.00	0.00	553.94	0.000	0.00	0.0	0.0	0.000	A
A-B	14.31	14.31	3.58	0.00			14.31				
A-C	131.02	131.02	32.76	0.00			131.02				
D-ABC	17.62	17.62	4.40	0.00	442.46	0.040	17.58	0.0	0.0	8.473	A
C-ABD	37.32	37.32	9.33	0.00	579.00	0.064	37.25	0.1	0.1	6.645	A
C-D	1.03	1.03	0.26	0.00			1.03				
C-A	45.33	45.33	11.33	0.00			45.33				

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-ACD	17.62	17.62	4.40	0.00	481.35	0.037	17.62	0.0	0.0	7.762	A
A-BCD	0.00	0.00	0.00	0.00	553.92	0.000	0.00	0.0	0.0	0.000	A
A-B	14.31	14.31	3.58	0.00			14.31				
A-C	131.02	131.02	32.76	0.00			131.02				
D-ABC	17.62	17.62	4.40	0.00	442.45	0.040	17.62	0.0	0.0	8.473	A
C-ABD	37.32	37.32	9.33	0.00	579.01	0.064	37.32	0.1	0.1	6.648	A
C-D	1.03	1.03	0.26	0.00			1.03				
C-A	45.33	45.33	11.33	0.00			45.33				

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-ACD	14.38	14.38	3.60	0.00	489.17	0.029	14.41	0.0	0.0	7.582	A
A-BCD	0.00	0.00	0.00	0.00	557.58	0.000	0.00	0.0	0.0	0.000	A
A-B	11.69	11.69	2.92	0.00			11.69				
A-C	106.98	106.98	26.74	0.00			106.98				
D-ABC	14.38	14.38	3.60	0.00	448.93	0.032	14.42	0.0	0.0	8.285	A
C-ABD	29.97	29.97	7.49	0.00	577.97	0.052	30.04	0.1	0.1	6.570	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	37.50	37.50	9.37	0.00			37.50				

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-ACD	12.05	12.05	3.01	0.00	494.84	0.024	12.07	0.0	0.0	7.456	A
A-BCD	0.00	0.00	0.00	0.00	560.25	0.000	0.00	0.0	0.0	0.000	A
A-B	9.79	9.79	2.45	0.00			9.79				
A-C	89.59	89.59	22.40	0.00			89.59				
D-ABC	12.05	12.05	3.01	0.00	453.63	0.027	12.07	0.0	0.0	8.154	A
C-ABD	24.80	24.80	6.20	0.00	577.25	0.043	24.84	0.1	0.0	6.517	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	31.70	31.70	7.92	0.00			31.70				

Do Something - 2024 DS, 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	Do Something	✓	✓	D7,D8,D9,D10,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D8	2024 DS	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	80.00	100.000
B - Burgage St		ONE HOUR	✓	48.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	162.00	100.000
D - Lyons Ave		ONE HOUR	✓	12.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	9.000	71.000	0.000
B - Burgage St	17.000	0.000	25.000	6.000
C - Newcastle Blvd (SE)	135.000	17.000	0.000	10.000
D - Lyons Ave	0.000	4.000	8.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.11	0.89	0.00
B - Burgage St	0.35	0.00	0.52	0.13
C - Newcastle Blvd (SE)	0.83	0.10	0.00	0.06
D - Lyons Ave	0.00	0.33	0.67	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.10	7.87	0.1	A	44.05	66.07
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					8.26	12.39
A-C					65.15	97.73
D-ABC	0.03	8.70	0.0	A	11.01	16.52
C-ABD	0.04	5.80	0.1	A	19.62	29.43
C-D					8.90	13.35
C-A					120.13	180.20

Main Results for each time segment

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-ACD	36.14	36.14	9.03	0.00	521.09	0.069	35.84	0.0	0.1	7.413	A
A-BCD	0.00	0.00	0.00	0.00	548.09	0.000	0.00	0.0	0.0	0.000	A
A-B	6.78	6.78	1.69	0.00			6.78				
A-C	53.45	53.45	13.36	0.00			53.45				
D-ABC	9.03	9.03	2.26	0.00	443.24	0.020	8.95	0.0	0.0	8.289	A
C-ABD	15.38	15.38	3.85	0.00	636.57	0.024	15.26	0.0	0.0	5.794	A
C-D	7.35	7.35	1.84	0.00			7.35				
C-A	99.23	99.23	24.81	0.00			99.23				

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-ACD	43.15	43.15	10.79	0.00	516.52	0.084	43.09	0.1	0.1	7.604	A
A-BCD	0.00	0.00	0.00	0.00	543.03	0.000	0.00	0.0	0.0	0.000	A
A-B	8.09	8.09	2.02	0.00			8.09				
A-C	63.83	63.83	15.96	0.00			63.83				
D-ABC	10.79	10.79	2.70	0.00	436.46	0.025	10.77	0.0	0.0	8.456	A
C-ABD	19.03	19.03	4.76	0.00	648.78	0.029	19.00	0.0	0.0	5.715	A
C-D	8.73	8.73	2.18	0.00			8.73				
C-A	117.87	117.87	29.47	0.00			117.87				

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-ACD	52.85	52.85	13.21	0.00	510.20	0.104	52.75	0.1	0.1	7.868	A
A-BCD	0.00	0.00	0.00	0.00	536.08	0.000	0.00	0.0	0.0	0.000	A
A-B	9.91	9.91	2.48	0.00			9.91				
A-C	78.17	78.17	19.54	0.00			78.17				
D-ABC	13.21	13.21	3.30	0.00	427.15	0.031	13.19	0.0	0.0	8.696	A
C-ABD	24.43	24.43	6.11	0.00	665.64	0.037	24.38	0.0	0.1	5.613	A
C-D	10.62	10.62	2.65	0.00			10.62				
C-A	143.32	143.32	35.83	0.00			143.32				

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-ACD	52.85	52.85	13.21	0.00	510.19	0.104	52.85	0.1	0.1	7.871	A
A-BCD	0.00	0.00	0.00	0.00	536.07	0.000	0.00	0.0	0.0	0.000	A
A-B	9.91	9.91	2.48	0.00			9.91				
A-C	78.17	78.17	19.54	0.00			78.17				
D-ABC	13.21	13.21	3.30	0.00	427.13	0.031	13.21	0.0	0.0	8.697	A
C-ABD	24.44	24.44	6.11	0.00	665.65	0.037	24.44	0.1	0.1	5.614	A
C-D	10.62	10.62	2.65	0.00			10.62				
C-A	143.31	143.31	35.83	0.00			143.31				

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-ACD	43.15	43.15	10.79	0.00	516.51	0.084	43.24	0.1	0.1	7.607	A
A-BCD	0.00	0.00	0.00	0.00	543.01	0.000	0.00	0.0	0.0	0.000	A
A-B	8.09	8.09	2.02	0.00			8.09				
A-C	63.83	63.83	15.96	0.00			63.83				
D-ABC	10.79	10.79	2.70	0.00	436.42	0.025	10.81	0.0	0.0	8.460	A
C-ABD	19.05	19.05	4.76	0.00	648.80	0.029	19.09	0.1	0.0	5.717	A
C-D	8.73	8.73	2.18	0.00			8.73				
C-A	117.86	117.86	29.46	0.00			117.86				

Main results: (18:00-18:15)

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-ACD	36.14	36.14	9.03	0.00	521.06	0.069	36.20	0.1	0.1	7.427	A
A-BCD	0.00	0.00	0.00	0.00	548.05	0.000	0.00	0.0	0.0	0.000	A
A-B	6.78	6.78	1.69	0.00			6.78				
A-C	53.45	53.45	13.36	0.00			53.45				
D-ABC	9.03	9.03	2.26	0.00	443.16	0.020	9.05	0.0	0.0	8.292	A
C-ABD	15.41	15.41	3.85	0.00	636.59	0.024	15.44	0.0	0.0	5.798	A
C-D	7.35	7.35	1.84	0.00			7.35				
C-A	99.21	99.21	24.80	0.00			99.21				

Do Something - 2029 DS, 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	Do Something	✓	✓	D7,D8,D9,D10,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573,963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573,963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D9	2029 DS	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 - Newcastle Blvd (NW)		ONE HOUR	✓	143.00	100.000
B - Burgage St		ONE HOUR	✓	18.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	82.00	100.000
D - Lyons Ave		ONE HOUR	✓	18.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	16.000	127.000	0.000
B - Burgage St	8.000	0.000	7.000	3.000
C - Newcastle Blvd (SE)	47.000	34.000	0.000	1.000
D - Lyons Ave	0.000	12.000	6.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.11	0.89	0.00
B - Burgage St	0.44	0.00	0.39	0.17
C - Newcastle Blvd (SE)	0.57	0.41	0.00	0.01
D - Lyons Ave	0.00	0.67	0.33	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.04	7.82	0.0	A	16.52	24.78
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					14.68	22.02
A-C					116.54	174.81
D-ABC	0.05	8.58	0.0	A	16.52	24.78
C-ABD	0.07	6.69	0.1	A	33.84	50.76
C-D					0.86	1.29
C-A					40.54	60.81

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-ACD	13.55	13.55	3.39	0.00	494.56	0.027	13.44	0.0	0.0	7.480	A
A-BCD	0.00	0.00	0.00	0.00	559.20	0.000	0.00	0.0	0.0	0.000	A
A-B	12.05	12.05	3.01	0.00			12.05				
A-C	95.61	95.61	23.90	0.00			95.61				
D-ABC	13.55	13.55	3.39	0.00	451.74	0.030	13.43	0.0	0.0	8.212	A
C-ABD	27.30	27.30	6.82	0.00	577.15	0.047	27.08	0.0	0.1	6.543	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	33.72	33.72	8.43	0.00			33.72				

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-ACD	16.18	16.18	4.05	0.00	488.42	0.033	16.16	0.0	0.0	7.622	A
A-BCD	0.00	0.00	0.00	0.00	556.27	0.000	0.00	0.0	0.0	0.000	A
A-B	14.38	14.38	3.60	0.00			14.38				
A-C	114.17	114.17	28.54	0.00			114.17				
D-ABC	16.18	16.18	4.05	0.00	446.62	0.036	16.16	0.0	0.0	8.363	A
C-ABD	33.03	33.03	8.26	0.00	577.87	0.057	32.98	0.1	0.1	6.606	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	39.84	39.84	9.96	0.00			39.84				

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-ACD	19.82	19.82	4.95	0.00	479.97	0.041	19.78	0.0	0.0	7.823	A
A-BCD	0.00	0.00	0.00	0.00	552.30	0.000	0.00	0.0	0.0	0.000	A
A-B	17.62	17.62	4.40	0.00			17.62				
A-C	139.83	139.83	34.96	0.00			139.83				
D-ABC	19.82	19.82	4.95	0.00	439.61	0.045	19.78	0.0	0.0	8.575	A
C-ABD	41.18	41.18	10.30	0.00	578.92	0.071	41.11	0.1	0.1	6.693	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	48.08	48.08	12.02	0.00			48.08				

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-ACD	19.82	19.82	4.95	0.00	479.95	0.041	19.82	0.0	0.0	7.823	A
A-BCD	0.00	0.00	0.00	0.00	552.28	0.000	0.00	0.0	0.0	0.000	A
A-B	17.62	17.62	4.40	0.00			17.62				
A-C	139.83	139.83	34.96	0.00			139.83				
D-ABC	19.82	19.82	4.95	0.00	439.59	0.045	19.82	0.0	0.0	8.575	A
C-ABD	41.19	41.19	10.30	0.00	578.92	0.071	41.19	0.1	0.1	6.694	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	48.07	48.07	12.02	0.00			48.07				

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-ACD	16.18	16.18	4.05	0.00	488.39	0.033	16.21	0.0	0.0	7.626	A
A-BCD	0.00	0.00	0.00	0.00	556.24	0.000	0.00	0.0	0.0	0.000	A
A-B	14.38	14.38	3.60	0.00			14.38				
A-C	114.17	114.17	28.54	0.00			114.17				
D-ABC	16.18	16.18	4.05	0.00	446.60	0.036	16.22	0.0	0.0	8.366	A
C-ABD	33.04	33.04	8.26	0.00	577.88	0.057	33.11	0.1	0.1	6.611	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	39.83	39.83	9.96	0.00			39.83				

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-ACD	13.55	13.55	3.39	0.00	494.49	0.027	13.58	0.0	0.0	7.485	A
A-BCD	0.00	0.00	0.00	0.00	559.12	0.000	0.00	0.0	0.0	0.000	A
A-B	12.05	12.05	3.01	0.00			12.05				
A-C	95.61	95.61	23.90	0.00			95.61				
D-ABC	13.55	13.55	3.39	0.00	451.68	0.030	13.58	0.0	0.0	8.217	A
C-ABD	27.31	27.31	6.83	0.00	577.16	0.047	27.36	0.1	0.1	6.550	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	33.70	33.70	8.43	0.00			33.70				

Do Something - 2029 DS, 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	Do Something	✓	✓	D7,D8,D9,D10,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D10	2029 DS	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	90.00	100.000
B - Burgage St		ONE HOUR	✓	56.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	178.00	100.000
D - Lyons Ave		ONE HOUR	✓	13.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	12.000	78.000	0.000
B - Burgage St	22.000	0.000	27.000	7.000
C - Newcastle Blvd (SE)	149.000	18.000	0.000	11.000
D - Lyons Ave	0.000	4.000	9.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.13	0.87	0.00
B - Burgage St	0.39	0.00	0.48	0.13
C - Newcastle Blvd (SE)	0.84	0.10	0.00	0.06
D - Lyons Ave	0.00	0.31	0.69	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.12	8.21	0.1	A	51.39	77.08
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					11.01	16.52
A-C					71.57	107.36
D-ABC	0.03	8.84	0.0	A	11.93	17.89
C-ABD	0.04	5.75	0.1	A	21.26	31.88
C-D					9.77	14.65
C-A					132.31	198.47

Main Results for each time segment

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-ACD	42.16	42.16	10.54	0.00	512.52	0.082	41.80	0.0	0.1	7.643	A
A-BCD	0.00	0.00	0.00	0.00	545.58	0.000	0.00	0.0	0.0	0.000	A
A-B	9.03	9.03	2.26	0.00			9.03				
A-C	58.72	58.72	14.68	0.00			58.72				
D-ABC	9.79	9.79	2.45	0.00	439.44	0.022	9.70	0.0	0.0	8.375	A
C-ABD	16.59	16.59	4.15	0.00	642.83	0.026	16.46	0.0	0.0	5.748	A
C-D	8.07	8.07	2.02	0.00			8.07				
C-A	109.34	109.34	27.34	0.00			109.34				

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-ACD	50.34	50.34	12.59	0.00	507.35	0.099	50.26	0.1	0.1	7.875	A
A-BCD	0.00	0.00	0.00	0.00	540.03	0.000	0.00	0.0	0.0	0.000	A
A-B	10.79	10.79	2.70	0.00			10.79				
A-C	70.12	70.12	17.53	0.00			70.12				
D-ABC	11.69	11.69	2.92	0.00	431.92	0.027	11.67	0.0	0.0	8.566	A
C-ABD	20.60	20.60	5.15	0.00	656.25	0.031	20.56	0.0	0.0	5.662	A
C-D	9.59	9.59	2.40	0.00			9.59				
C-A	129.84	129.84	32.46	0.00			129.84				

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-ACD	61.66	61.66	15.41	0.00	500.20	0.123	61.54	0.1	0.1	8.205	A
A-BCD	0.00	0.00	0.00	0.00	532.40	0.000	0.00	0.0	0.0	0.000	A
A-B	13.21	13.21	3.30	0.00			13.21				
A-C	85.88	85.88	21.47	0.00			85.88				
D-ABC	14.31	14.31	3.58	0.00	421.59	0.034	14.28	0.0	0.0	8.838	A
C-ABD	26.55	26.55	6.64	0.00	674.77	0.039	26.50	0.0	0.1	5.555	A
C-D	11.65	11.65	2.91	0.00			11.65				
C-A	157.78	157.78	39.45	0.00			157.78				

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-ACD	61.66	61.66	15.41	0.00	500.19	0.123	61.65	0.1	0.1	8.208	A
A-BCD	0.00	0.00	0.00	0.00	532.39	0.000	0.00	0.0	0.0	0.000	A
A-B	13.21	13.21	3.30	0.00			13.21				
A-C	85.88	85.88	21.47	0.00			85.88				
D-ABC	14.31	14.31	3.58	0.00	421.56	0.034	14.31	0.0	0.0	8.839	A
C-ABD	26.56	26.56	6.64	0.00	674.79	0.039	26.56	0.1	0.1	5.554	A
C-D	11.65	11.65	2.91	0.00			11.65				
C-A	157.77	157.77	39.44	0.00			157.77				

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-ACD	50.34	50.34	12.59	0.00	507.33	0.099	50.46	0.1	0.1	7.881	A
A-BCD	0.00	0.00	0.00	0.00	540.01	0.000	0.00	0.0	0.0	0.000	A
A-B	10.79	10.79	2.70	0.00			10.79				
A-C	70.12	70.12	17.53	0.00			70.12				
D-ABC	11.69	11.69	2.92	0.00	431.88	0.027	11.71	0.0	0.0	8.569	A
C-ABD	20.61	20.61	5.15	0.00	656.27	0.031	20.67	0.1	0.0	5.664	A
C-D	9.58	9.58	2.40	0.00			9.58				
C-A	129.82	129.82	32.46	0.00			129.82				

Main results: (18:00-18:15)

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-ACD	42.16	42.16	10.54	0.00	512.48	0.082	42.24	0.1	0.1	7.656	A
A-BCD	0.00	0.00	0.00	0.00	545.53	0.000	0.00	0.0	0.0	0.000	A
A-B	9.03	9.03	2.26	0.00			9.03				
A-C	58.72	58.72	14.68	0.00			58.72				
D-ABC	9.79	9.79	2.45	0.00	439.36	0.022	9.81	0.0	0.0	8.382	A
C-ABD	16.62	16.62	4.16	0.00	642.85	0.026	16.66	0.0	0.0	5.749	A
C-D	8.07	8.07	2.02	0.00			8.07				
C-A	109.32	109.32	27.33	0.00			109.32				

Do Something - 2039 DS, 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	Do Something	✓	✓	D7,D8,D9,D10,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D11	2039 DS	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 - Newcastle Blvd (NW)		ONE HOUR	✓	143.00	100.000
B - Burgage St		ONE HOUR	✓	19.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	83.00	100.000
D - Lyons Ave		ONE HOUR	✓	19.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.000	16.000	127.000	0.000
	B - Burgage St	8.000	0.000	7.000	4.000
	C - Newcastle Blvd (SE)	47.000	35.000	0.000	1.000
	D - Lyons Ave	0.000	13.000	6.000	0.000

Proportions

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.00	0.11	0.89	0.00
	B - Burgage St	0.42	0.00	0.37	0.21
	C - Newcastle Blvd (SE)	0.57	0.42	0.00	0.01
	D - Lyons Ave	0.00	0.68	0.32	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0	0	0	0
	B - Burgage St	0	0	0	0
	C - Newcastle Blvd (SE)	0	0	0	0
	D - Lyons Ave	0	0	0	0

Average PCU Per Veh

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
	B - Burgage St	1.000	1.000	1.000	1.000
	C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
	D - Lyons Ave	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-ACD	0.04	7.90	0.0	A	17.43	26.15
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					14.68	22.02
A-C					116.54	174.81
D-ABC	0.05	8.60	0.0	A	17.43	26.15
C-ABD	0.07	6.71	0.1	A	34.84	52.25
C-D					0.86	1.29
C-A					40.47	60.70

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-ACD	14.30	14.30	3.58	0.00	491.48	0.029	14.19	0.0	0.0	7.540	A
A-BCD	0.00	0.00	0.00	0.00	558.98	0.000	0.00	0.0	0.0	0.000	A
A-B	12.05	12.05	3.01	0.00			12.05				
A-C	95.61	95.61	23.90	0.00			95.61				
D-ABC	14.30	14.30	3.58	0.00	451.55	0.032	14.17	0.0	0.0	8.228	A
C-ABD	28.10	28.10	7.02	0.00	577.15	0.049	27.87	0.0	0.1	6.553	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	33.67	33.67	8.42	0.00			33.67				

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-ACD	17.08	17.08	4.27	0.00	485.28	0.035	17.05	0.0	0.0	7.688	A
A-BCD	0.00	0.00	0.00	0.00	556.01	0.000	0.00	0.0	0.0	0.000	A
A-B	14.38	14.38	3.60	0.00			14.38				
A-C	114.17	114.17	28.54	0.00			114.17				
D-ABC	17.08	17.08	4.27	0.00	446.40	0.038	17.05	0.0	0.0	8.385	A
C-ABD	34.00	34.00	8.50	0.00	577.87	0.059	33.95	0.1	0.1	6.618	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	39.77	39.77	9.94	0.00			39.77				

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-ACD	20.92	20.92	5.23	0.00	476.75	0.044	20.88	0.0	0.0	7.897	A
A-BCD	0.00	0.00	0.00	0.00	551.98	0.000	0.00	0.0	0.0	0.000	A
A-B	17.62	17.62	4.40	0.00			17.62				
A-C	139.83	139.83	34.96	0.00			139.83				
D-ABC	20.92	20.92	5.23	0.00	439.33	0.048	20.88	0.0	0.0	8.601	A
C-ABD	42.39	42.39	10.60	0.00	578.92	0.073	42.32	0.1	0.1	6.709	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	47.97	47.97	11.99	0.00			47.97				

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-ACD	20.92	20.92	5.23	0.00	476.73	0.044	20.92	0.0	0.0	7.897	A
A-BCD	0.00	0.00	0.00	0.00	551.96	0.000	0.00	0.0	0.0	0.000	A
A-B	17.62	17.62	4.40	0.00			17.62				
A-C	139.83	139.83	34.96	0.00			139.83				
D-ABC	20.92	20.92	5.23	0.00	439.31	0.048	20.92	0.0	0.0	8.604	A
C-ABD	42.40	42.40	10.60	0.00	578.92	0.073	42.40	0.1	0.1	6.712	A
C-D	1.02	1.02	0.26	0.00			1.02				
C-A	47.96	47.96	11.99	0.00			47.96				

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-ACD	17.08	17.08	4.27	0.00	485.25	0.035	17.12	0.0	0.0	7.692	A
A-BCD	0.00	0.00	0.00	0.00	555.98	0.000	0.00	0.0	0.0	0.000	A
A-B	14.38	14.38	3.60	0.00			14.38				
A-C	114.17	114.17	28.54	0.00			114.17				
D-ABC	17.08	17.08	4.27	0.00	446.37	0.038	17.12	0.0	0.0	8.387	A
C-ABD	34.01	34.01	8.50	0.00	577.89	0.059	34.08	0.1	0.1	6.620	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	39.76	39.76	9.94	0.00			39.76				

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-ACD	14.30	14.30	3.58	0.00	491.41	0.029	14.33	0.0	0.0	7.545	A
A-BCD	0.00	0.00	0.00	0.00	558.90	0.000	0.00	0.0	0.0	0.000	A
A-B	12.05	12.05	3.01	0.00			12.05				
A-C	95.61	95.61	23.90	0.00			95.61				
D-ABC	14.30	14.30	3.58	0.00	451.49	0.032	14.33	0.0	0.0	8.235	A
C-ABD	28.12	28.12	7.03	0.00	577.16	0.049	28.17	0.1	0.1	6.560	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	33.66	33.66	8.41	0.00			33.66				

Do Something - 2039 DS, 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	Do Something	✓	✓	D7,D8,D9,D10,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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
D12	2039 DS	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	90.00	100.000
B - Burgage St		ONE HOUR	✓	57.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	180.00	100.000
D - Lyons Ave		ONE HOUR	✓	14.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.000	12.000	78.000	0.000
	B - Burgage St	22.000	0.000	28.000	7.000
	C - Newcastle Blvd (SE)	149.000	19.000	0.000	12.000
	D - Lyons Ave	0.000	5.000	9.000	0.000

Proportions

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0.00	0.13	0.87	0.00
	B - Burgage St	0.39	0.00	0.49	0.12
	C - Newcastle Blvd (SE)	0.83	0.11	0.00	0.07
	D - Lyons Ave	0.00	0.36	0.64	0.00

Vehicle Mix

Heavy Vehicle proportion

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	0	0	0	0
	B - Burgage St	0	0	0	0
	C - Newcastle Blvd (SE)	0	0	0	0
	D - Lyons Ave	0	0	0	0

Average PCU Per Veh

		To			
		A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
From	A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
	B - Burgage St	1.000	1.000	1.000	1.000
	C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
	D - Lyons Ave	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-ACD	0.13	8.21	0.1	A	52.30	78.46
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					11.01	16.52
A-C					71.57	107.36
D-ABC	0.04	8.86	0.0	A	12.85	19.27
C-ABD	0.04	5.75	0.1	A	22.47	33.70
C-D					10.64	15.95
C-A					132.07	198.10

Main Results for each time segment

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-ACD	42.91	42.91	10.73	0.00	513.72	0.084	42.55	0.0	0.1	7.636	A
A-BCD	0.00	0.00	0.00	0.00	545.20	0.000	0.00	0.0	0.0	0.000	A
A-B	9.03	9.03	2.26	0.00			9.03				
A-C	58.72	58.72	14.68	0.00			58.72				
D-ABC	10.54	10.54	2.63	0.00	439.41	0.024	10.44	0.0	0.0	8.390	A
C-ABD	17.53	17.53	4.38	0.00	643.34	0.027	17.39	0.0	0.0	5.751	A
C-D	8.79	8.79	2.20	0.00			8.79				
C-A	109.19	109.19	27.30	0.00			109.19				

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-ACD	51.24	51.24	12.81	0.00	508.53	0.101	51.16	0.1	0.1	7.871	A
A-BCD	0.00	0.00	0.00	0.00	539.58	0.000	0.00	0.0	0.0	0.000	A
A-B	10.79	10.79	2.70	0.00			10.79				
A-C	70.12	70.12	17.53	0.00			70.12				
D-ABC	12.59	12.59	3.15	0.00	431.88	0.029	12.56	0.0	0.0	8.585	A
C-ABD	21.77	21.77	5.44	0.00	656.86	0.033	21.73	0.0	0.0	5.667	A
C-D	10.44	10.44	2.61	0.00			10.44				
C-A	129.61	129.61	32.40	0.00			129.61				

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-ACD	62.76	62.76	15.69	0.00	501.35	0.125	62.64	0.1	0.1	8.204	A
A-BCD	0.00	0.00	0.00	0.00	531.86	0.000	0.00	0.0	0.0	0.000	A
A-B	13.21	13.21	3.30	0.00			13.21				
A-C	85.88	85.88	21.47	0.00			85.88				
D-ABC	15.41	15.41	3.85	0.00	421.54	0.037	15.38	0.0	0.0	8.863	A
C-ABD	28.07	28.07	7.02	0.00	675.52	0.042	28.01	0.0	0.1	5.561	A
C-D	12.68	12.68	3.17	0.00			12.68				
C-A	157.43	157.43	39.36	0.00			157.43				

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-ACD	62.76	62.76	15.69	0.00	501.34	0.125	62.76	0.1	0.1	8.207	A
A-BCD	0.00	0.00	0.00	0.00	531.84	0.000	0.00	0.0	0.0	0.000	A
A-B	13.21	13.21	3.30	0.00			13.21				
A-C	85.88	85.88	21.47	0.00			85.88				
D-ABC	15.41	15.41	3.85	0.00	421.52	0.037	15.41	0.0	0.0	8.864	A
C-ABD	28.09	28.09	7.02	0.00	675.53	0.042	28.09	0.1	0.1	5.560	A
C-D	12.68	12.68	3.17	0.00			12.68				
C-A	157.42	157.42	39.35	0.00			157.42				

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-ACD	51.24	51.24	12.81	0.00	508.52	0.101	51.36	0.1	0.1	7.878	A
A-BCD	0.00	0.00	0.00	0.00	539.56	0.000	0.00	0.0	0.0	0.000	A
A-B	10.79	10.79	2.70	0.00			10.79				
A-C	70.12	70.12	17.53	0.00			70.12				
D-ABC	12.59	12.59	3.15	0.00	431.84	0.029	12.62	0.0	0.0	8.587	A
C-ABD	21.79	21.79	5.45	0.00	656.89	0.033	21.85	0.1	0.0	5.671	A
C-D	10.44	10.44	2.61	0.00			10.44				
C-A	129.59	129.59	32.40	0.00			129.59				

Main results: (18:00-18:15)

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-ACD	42.91	42.91	10.73	0.00	513.69	0.084	43.00	0.1	0.1	7.648	A
A-BCD	0.00	0.00	0.00	0.00	545.16	0.000	0.00	0.0	0.0	0.000	A
A-B	9.03	9.03	2.26	0.00			9.03				
A-C	58.72	58.72	14.68	0.00			58.72				
D-ABC	10.54	10.54	2.63	0.00	439.33	0.024	10.56	0.0	0.0	8.397	A
C-ABD	17.56	17.56	4.39	0.00	643.37	0.027	17.60	0.0	0.0	5.755	A
C-D	8.79	8.79	2.20	0.00			8.79				
C-A	109.16	109.16	27.29	0.00			109.16				

Sensitivity Analysis - 2039 SA, 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 (%)
A3	Sensitivity Analysis	✓	✓	D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	1.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573,963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573,963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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	2039 SA	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 - Newcastle Blvd (NW)		ONE HOUR	✓	173.00	100.000
B - Burgage St		ONE HOUR	✓	21.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	86.00	100.000
D - Lyons Ave		ONE HOUR	✓	19.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	24.000	149.000	0.000
B - Burgage St	10.000	0.000	7.000	4.000
C - Newcastle Blvd (SE)	50.000	35.000	0.000	1.000
D - Lyons Ave	0.000	13.000	6.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.14	0.86	0.00
B - Burgage St	0.48	0.00	0.33	0.19
C - Newcastle Blvd (SE)	0.58	0.41	0.00	0.01
D - Lyons Ave	0.00	0.68	0.32	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.05	8.14	0.1	A	19.27	28.90
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					22.02	33.03
A-C					136.73	205.09
D-ABC	0.05	8.70	0.1	A	17.43	26.15
C-ABD	0.07	6.77	0.1	A	35.04	52.56
C-D					0.86	1.29
C-A					43.01	64.52

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-ACD	15.81	15.81	3.95	0.00	482.26	0.033	15.68	0.0	0.0	7.714	A
A-BCD	0.00	0.00	0.00	0.00	558.52	0.000	0.00	0.0	0.0	0.000	A
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	112.18	112.18	28.04	0.00			112.18				
D-ABC	14.30	14.30	3.58	0.00	448.44	0.032	14.17	0.0	0.0	8.287	A
C-ABD	28.22	28.22	7.06	0.00	574.22	0.049	28.00	0.0	0.1	6.590	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	35.80	35.80	8.95	0.00			35.80				

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-ACD	18.88	18.88	4.72	0.00	475.16	0.040	18.85	0.0	0.0	7.889	A
A-BCD	0.00	0.00	0.00	0.00	555.46	0.000	0.00	0.0	0.0	0.000	A
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	133.95	133.95	33.49	0.00			133.95				
D-ABC	17.08	17.08	4.27	0.00	442.68	0.039	17.05	0.0	0.0	8.458	A
C-ABD	34.19	34.19	8.55	0.00	574.41	0.060	34.13	0.1	0.1	6.663	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	42.28	42.28	10.57	0.00			42.28				

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-ACD	23.12	23.12	5.78	0.00	465.39	0.050	23.08	0.0	0.1	8.137	A
A-BCD	0.00	0.00	0.00	0.00	551.31	0.000	0.00	0.0	0.0	0.000	A
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	164.05	164.05	41.01	0.00			164.05				
D-ABC	20.92	20.92	5.23	0.00	434.77	0.048	20.88	0.0	0.1	8.696	A
C-ABD	42.69	42.69	10.67	0.00	574.72	0.074	42.61	0.1	0.1	6.765	A
C-D	1.02	1.02	0.25	0.00			1.02				
C-A	50.98	50.98	12.74	0.00			50.98				

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-ACD	23.12	23.12	5.78	0.00	465.37	0.050	23.12	0.1	0.1	8.139	A
A-BCD	0.00	0.00	0.00	0.00	551.28	0.000	0.00	0.0	0.0	0.000	A
A-B	26.42	26.42	6.61	0.00			26.42				
A-C	164.05	164.05	41.01	0.00			164.05				
D-ABC	20.92	20.92	5.23	0.00	434.75	0.048	20.92	0.1	0.1	8.698	A
C-ABD	42.70	42.70	10.67	0.00	574.73	0.074	42.70	0.1	0.1	6.769	A
C-D	1.02	1.02	0.25	0.00			1.02				
C-A	50.97	50.97	12.74	0.00			50.97				

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-ACD	18.88	18.88	4.72	0.00	475.12	0.040	18.92	0.1	0.0	7.893	A
A-BCD	0.00	0.00	0.00	0.00	555.43	0.000	0.00	0.0	0.0	0.000	A
A-B	21.58	21.58	5.39	0.00			21.58				
A-C	133.95	133.95	33.49	0.00			133.95				
D-ABC	17.08	17.08	4.27	0.00	442.65	0.039	17.12	0.1	0.0	8.462	A
C-ABD	34.20	34.20	8.55	0.00	574.42	0.060	34.28	0.1	0.1	6.668	A
C-D	0.85	0.85	0.21	0.00			0.85				
C-A	42.27	42.27	10.57	0.00			42.27				

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-ACD	15.81	15.81	3.95	0.00	482.18	0.033	15.84	0.0	0.0	7.721	A
A-BCD	0.00	0.00	0.00	0.00	558.44	0.000	0.00	0.0	0.0	0.000	A
A-B	18.07	18.07	4.52	0.00			18.07				
A-C	112.18	112.18	28.04	0.00			112.18				
D-ABC	14.30	14.30	3.58	0.00	448.37	0.032	14.33	0.0	0.0	8.294	A
C-ABD	28.24	28.24	7.06	0.00	574.24	0.049	28.30	0.1	0.1	6.594	A
C-D	0.72	0.72	0.18	0.00			0.72				
C-A	35.79	35.79	8.95	0.00			35.79				

Sensitivity Analysis - 2039 SA, 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 (%)
A3	Sensitivity Analysis	✓	✓	D13,D14	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	Crossroads	Two-way	2.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Newcastle Blvd (NW)		Major
B	Burgage St		Minor
C	Newcastle Blvd (SE)		Major
D	Lyons Ave		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Newcastle Blvd (NW)	8.00			0.0	✓	0.00
C - Newcastle Blvd (SE)	8.00			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Burgage St	One lane	3.00	0	0
D - Lyons Ave	One lane	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	573.963	-	-	-	-	-	-	0.203	0.290	0.203	-	-	-
1	B-A	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	-	0.201	0.201	0.100
1	B-C	623.937	0.087	0.221	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	B-D, offside lane	477.852	0.079	0.201	0.201	-	-	-	0.126	0.287	0.126	-	-	-
1	C-B	573.963	0.203	0.203	0.290	-	-	-	-	-	-	-	-	-
1	D-A	623.937	-	-	-	-	-	-	0.221	-	0.087	-	-	-
1	D-B, nearside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-B, offside lane	477.852	0.126	0.126	0.287	-	-	-	0.201	0.201	0.079	-	-	-
1	D-C	477.852	-	0.126	0.287	0.100	0.201	0.201	0.201	0.201	0.079	-	-	-

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	2039 SA	PM	ONE HOUR	16:45	18:15	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 - Newcastle Blvd (NW)		ONE HOUR	✓	109.00	100.000
B - Burgage St		ONE HOUR	✓	66.00	100.000
C - Newcastle Blvd (SE)		ONE HOUR	✓	205.00	100.000
D - Lyons Ave		ONE HOUR	✓	14.00	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.000	17.000	92.000	0.000
B - Burgage St	31.000	0.000	28.000	7.000
C - Newcastle Blvd (SE)	174.000	19.000	0.000	12.000
D - Lyons	0.000	5.000	0.000	0.000

Proportions

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0.00	0.16	0.84	0.00
B - Burgage St	0.47	0.00	0.42	0.11
C - Newcastle Blvd (SE)	0.85	0.09	0.00	0.06
D - Lyons	0.00	0.26	0.01	0.00

Vehicle Mix

Heavy Vehicle proportion

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	0	0	0	0
B - Burgage St	0	0	0	0
C - Newcastle Blvd (SE)	0	0	0	0
D - Lyons Ave	0	0	0	0

Average PCU Per Veh

From \ To	A - Newcastle Blvd (NW)	B - Burgage St	C - Newcastle Blvd (SE)	D - Lyons Ave
A - Newcastle Blvd (NW)	1.000	1.000	1.000	1.000
B - Burgage St	1.000	1.000	1.000	1.000
C - Newcastle Blvd (SE)	1.000	1.000	1.000	1.000
D - Lyons Ave	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-ACD	0.15	8.75	0.2	A	60.56	90.84
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					15.60	23.40
A-C					84.42	126.63
D-ABC	0.04	9.05	0.0	A	12.85	19.27
C-ABD	0.04	5.67	0.1	A	23.33	35.00
C-D					10.63	15.95
C-A					154.15	231.22

Main Results for each time segment

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-ACD	49.69	49.69	12.42	0.00	498.95	0.100	49.25	0.0	0.1	7.998	A
A-BCD	0.00	0.00	0.00	0.00	541.38	0.000	0.00	0.0	0.0	0.000	A
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	69.26	69.26	17.32	0.00			69.26				
D-ABC	10.54	10.54	2.63	0.00	433.69	0.024	10.44	0.0	0.0	8.503	A
C-ABD	18.08	18.08	4.52	0.00	653.44	0.028	17.94	0.0	0.0	5.665	A
C-D	8.79	8.79	2.20	0.00			8.79				
C-A	127.47	127.47	31.87	0.00			127.47				

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-ACD	59.33	59.33	14.83	0.00	492.70	0.120	59.23	0.1	0.1	8.303	A
A-BCD	0.00	0.00	0.00	0.00	535.02	0.000	0.00	0.0	0.0	0.000	A
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	82.71	82.71	20.68	0.00			82.71				
D-ABC	12.59	12.59	3.15	0.00	425.05	0.030	12.56	0.0	0.0	8.727	A
C-ABD	22.57	22.57	5.64	0.00	668.92	0.034	22.53	0.0	0.0	5.571	A
C-D	10.43	10.43	2.61	0.00			10.43				
C-A	151.29	151.29	37.82	0.00			151.29				

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-ACD	72.67	72.67	18.17	0.00	484.05	0.150	72.51	0.1	0.2	8.748	A
A-BCD	0.00	0.00	0.00	0.00	526.27	0.000	0.00	0.0	0.0	0.000	A
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	101.29	101.29	25.32	0.00			101.29				
D-ABC	15.41	15.41	3.85	0.00	413.17	0.037	15.38	0.0	0.0	9.050	A
C-ABD	29.32	29.32	7.33	0.00	690.25	0.042	29.25	0.0	0.1	5.446	A
C-D	12.67	12.67	3.17	0.00			12.67				
C-A	183.72	183.72	45.93	0.00			183.72				

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-ACD	72.67	72.67	18.17	0.00	484.03	0.150	72.66	0.2	0.2	8.750	A
A-BCD	0.00	0.00	0.00	0.00	526.25	0.000	0.00	0.0	0.0	0.000	A
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	101.29	101.29	25.32	0.00			101.29				
D-ABC	15.41	15.41	3.85	0.00	413.14	0.037	15.41	0.0	0.0	9.051	A
C-ABD	29.33	29.33	7.33	0.00	690.27	0.042	29.33	0.1	0.1	5.447	A
C-D	12.67	12.67	3.17	0.00			12.67				
C-A	183.71	183.71	45.93	0.00			183.71				

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-ACD	59.33	59.33	14.83	0.00	492.68	0.120	59.48	0.2	0.1	8.313	A
A-BCD	0.00	0.00	0.00	0.00	535.00	0.000	0.00	0.0	0.0	0.000	A
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	82.71	82.71	20.68	0.00			82.71				
D-ABC	12.59	12.59	3.15	0.00	425.00	0.030	12.62	0.0	0.0	8.730	A
C-ABD	22.59	22.59	5.65	0.00	668.95	0.034	22.65	0.1	0.0	5.573	A
C-D	10.43	10.43	2.61	0.00			10.43				
C-A	151.27	151.27	37.82	0.00			151.27				

Main results: (18:00-18:15)

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-ACD	49.69	49.69	12.42	0.00	498.90	0.100	49.79	0.1	0.1	8.019	A
A-BCD	0.00	0.00	0.00	0.00	541.33	0.000	0.00	0.0	0.0	0.000	A
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	69.26	69.26	17.32	0.00			69.26				
D-ABC	10.54	10.54	2.63	0.00	433.60	0.024	10.56	0.0	0.0	8.510	A
C-ABD	18.11	18.11	4.53	0.00	653.47	0.028	18.15	0.0	0.0	5.668	A
C-D	8.79	8.79	2.20	0.00			8.79				
C-A	127.43	127.43	31.86	0.00			127.43				