Project

Proposed Residential Development at Milltown Park, Sandford Road, Dublin 6

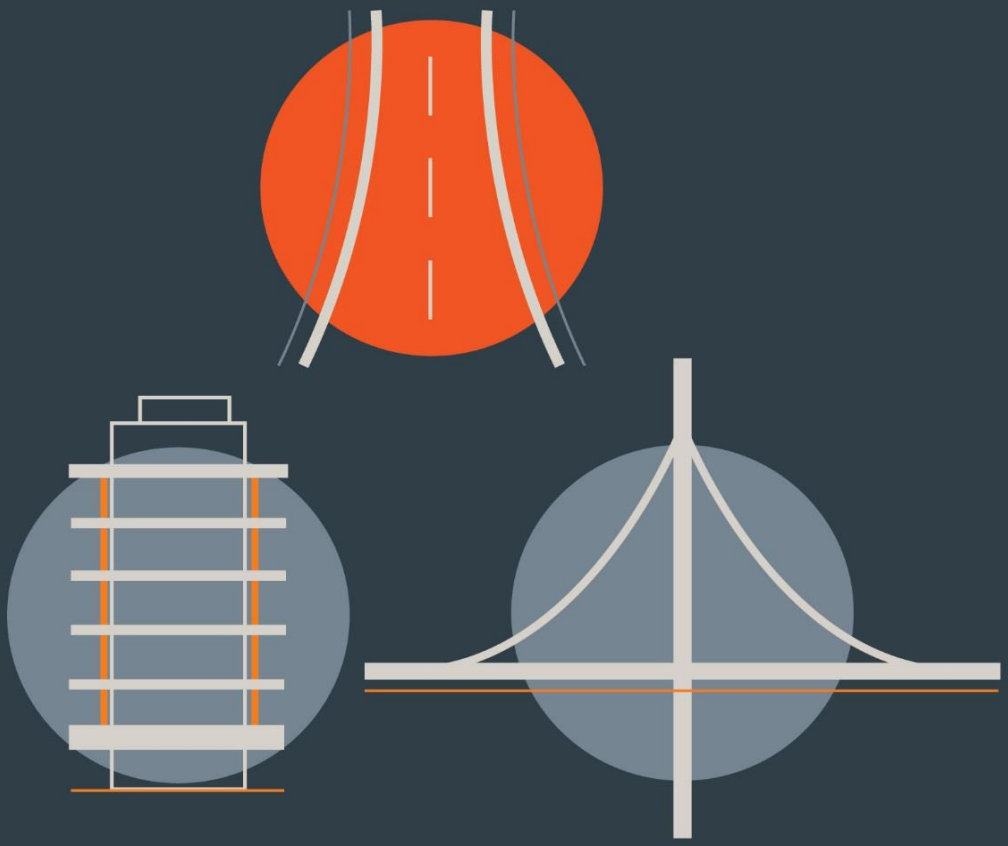
Report Title

TRAFFIC AND TRANSPORT ASSESSMENT

Client

Sandford Living Ltd

TRANSPORTATION



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APPENDICES

1.0 INTRODUCTION

1.1 BACKGROUND

1.1.1 DBFL Consulting Engineers (DBFL) have been commissioned to prepare a Traffic and Transport Assessment (TTA) for a proposed residential development at a site located on Sandford Road, Dublin 6.

1.1.2 The development will principally consist of: the demolition of 4,883.9 m^2 of existing structures on site, the retention, refurbishment and reuse of Tabor House and the Chapel, and the provision of a 671 No. unit residential development comprising 604 No. Build-to-Rent apartment units (88 No. studios, 262 No. 1 bed units, 242 No. two bed units and 12 No. three bed units) and 67 No. Build-to Sell apartments and duplex unit (11 No. studios, 9 No. one bed units, 32 No. 2 bed units and 15 No. three bed units) and one 400m^2 creche.

1.1.3 The development also provides a new access from Milltown Road (which will be the principal vehicular entrance to the site) in addition to utilising the existing access from Sandford Road as a secondary access for emergencies and deliveries; for example new pedestrian access points; pedestrian/bicycle connections through the site; 344 No. car parking spaces (295 No. at basement level and 49 No. at surface level); bicycle parking; bin storage; and all other associated site works above and below ground.

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

1.1.5 During the development of this report, traffic turning count surveys have been commissioned specifically for this assessment and conducted by IDASO, with the objective of providing background information relating to existing traffic movement patterns across the local road network (**Appendix A**). 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 the assessment work undertaken to identify the potential level of transport impact generated as a result of the proposed residential development.

1.2.2 The scope of the assessment covers transport and sustainability issues including access, pedestrian, cyclist and public transport connections. Recommendations contained within this report are based on existing and proposed road layout plans, site visits, site traffic observations and junction survey data.

1.2.3 This TTA has been prepared in reference to the requirements of the National Roads Authority (TII) "Traffic and Transportation Assessment Guidelines". Reference has also been made to the Dublin City Council Development Plan.

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;

- *'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; and
- *'Dublin City Council Development Plan 2016-2022'*.

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 Milltown area, and (c) a review of planning applications to establish the legal 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 in addition to vehicle queue length surveys were undertaken and 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, 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 2022, 2027 and 2037 development scenarios.

1.4 REPORT STRUCTURE

1.4.1 **Section 2** of this report describes the existing conditions at the proposed development location and immediate surrounding area, whilst the relevant transport policies that influence the design and appraisal of the subject residential development proposals are highlighted within **Section 3**.

1.4.2 A summary of the principal characteristics of the proposed residential development is provided in **Section 4**.

1.4.3 **Section 5** outlines the trip generation exercise carried out and the adopted methodology for applying growth factors to establish design year network traffic flows. The Construction Phase is also described in this section of the report.

1.4.4 The potential traffic impact of the proposals as assessed for the adopted 2022 Opening Year and the Horizon Year of 2027 and 2037 are summarised within **Section 6**.

1.4.5 The main conclusions and recommendations derived from the analysis are summarised in **Section 7**.

2.0 RECEIVING ENVIRONMENT

2.1 LAND USE

2.1.1 The proposed development site which currently comprises former institutional buildings associated with the Jesuit Community which are located in the southern portion of the subject site.

2.1.2 The Dublin City Council (DCC) Development Plan 2016-2022 allocates this land as being zoned *"Zone Z15 – To protect and provide for institutional and community uses."* The development plan states that "*residential uses are 'open for consideration' in this zoning"*, with a creche being another permissible use. (**Figure 2.1**)

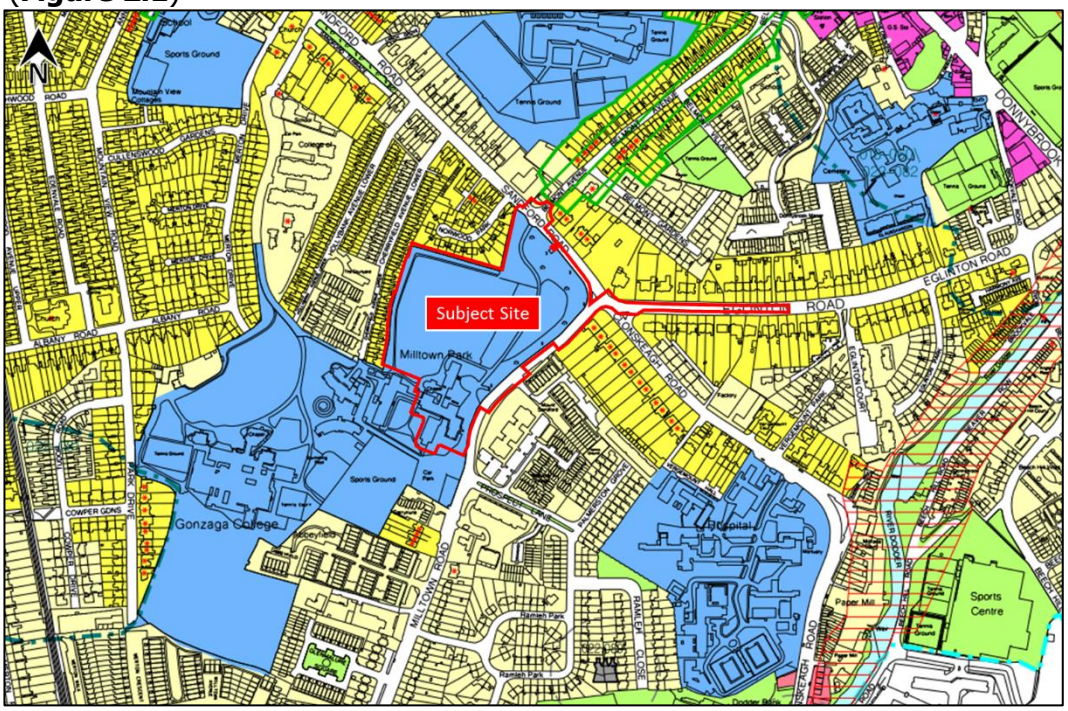


Figure 2.1: Dublin City Development Plan – Land Use Zoning (Extract of Mapset H)

2.2 LOCATION

2.2.1 The proposed development site is located between Sandford Road and Milltown Road, Dublin 6. The subject site is within approximately 5 km south of Dublin City Centre (and c. 1.6km of the Grand Canal) and approximately 6 to 18 minutes walking distance to parts of Ranelagh village and 6 to 10 minutes to parts of Donnybrook. The site is ideally located to benefit from sustainable travel options including pedestrian/cycle facilities and public transport (Bus and Luas Green Line services) which is discussed further in **Section 2.3**. The general location of the subject site in relation to the surrounding road network is illustrated in **Figure 2.2** below, whilst **Figure 2.3** shows the indicative extent of the subject site lands.

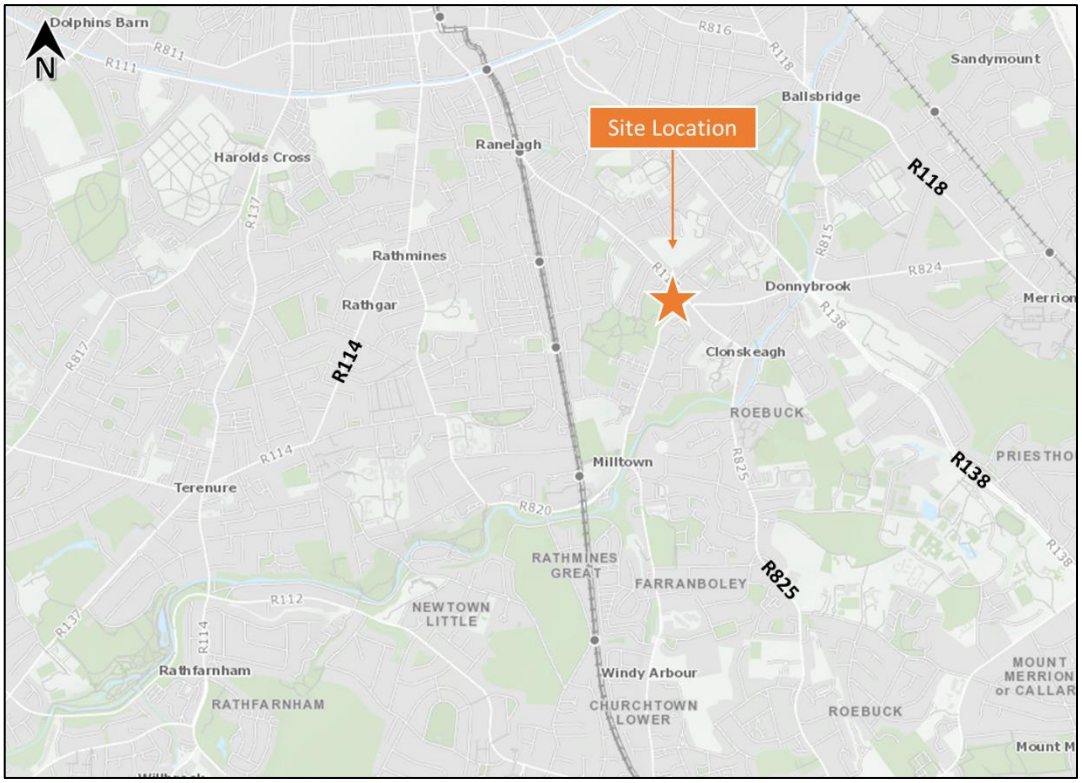


Figure 2.2: Site Location (Source: GeoHive)

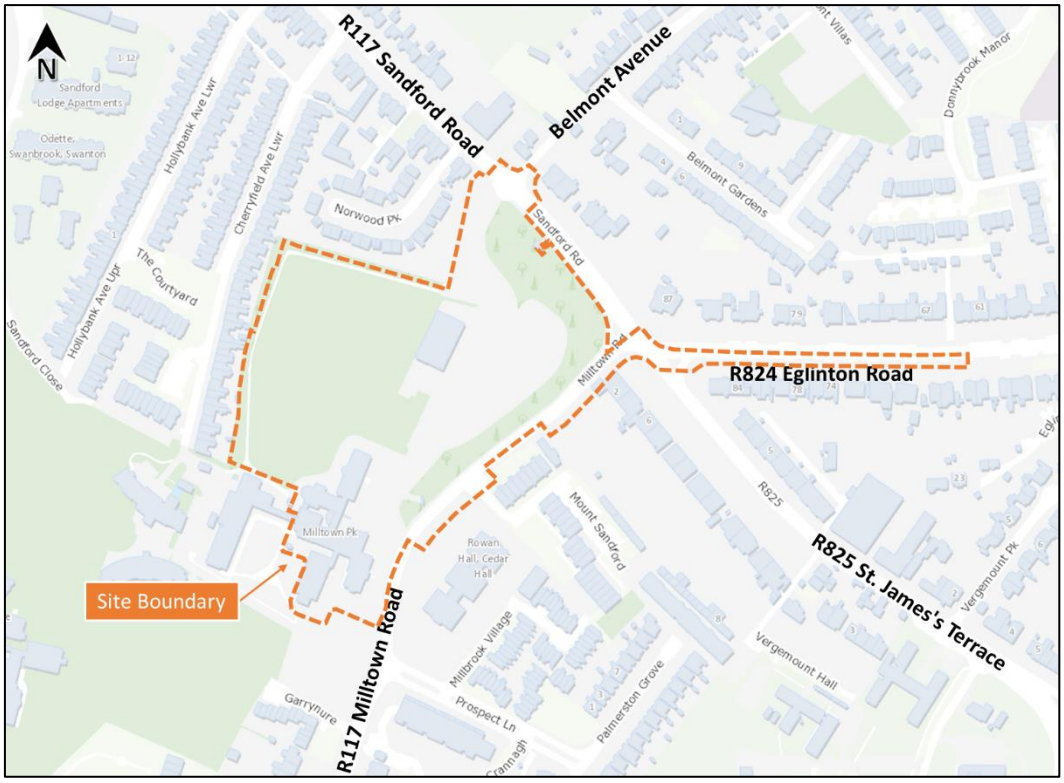


Figure 2.3: Indicative Site Boundary (Source: GeoHive)

2.3 EXISTING TRANSPORTATION INFRASTRUCTURE

Road Network

2.3.1 The subject development site is located immediately south of Sandford Road (R117). Sandford Road is a wide single carriageway road with one lane in each

direction which contains on road cycle lanes on both sides of the road. Travelling Northwest bound, the Sandford Road will connect the subject site to Dublin City Centre via Ranelagh. Whereas travelling south bound it will connect the site to Clonskeagh and UCD Belfield.

2.3.2 The Milltown Road (R117) is immediately east of the subject site. Milltown Road is a single carriageway road with one lane in each direction. Milltown Road extends from Sandford Road on the north and leading to Churchtown and Dundrum southbound.

2.3.3 The R824 Eglinton Road is a single carriageway with one lane in each direction. The road provides mandatory cycle lanes along both sides of the road. Eglinton Road connects the subject site to Stillorgan Road.

2.3.4 The R138 Stillorgan Road is a four-lane dual carriageway road with a bus lane in each direction. It is currently a major bus corridor (QBC). Stillorgan Road becomes Donnybrook Road northwest from Donnybrook Church. The R138 Donnybrook Road is a single carriageway with two general traffic and one cycle lane southeast bound and one general traffic, a bus lane and cycle lane northwest bound.

2.3.5 **Figure 2.4** below illustrates the location of the subject site within the context of the existing road network.

Figure 2.4: Existing Road Network (Source: Google Maps)

Existing Pedestrian Facilities

2.3.6 All the immediate routes leading to and from the subject site benefit from the provision of street lighting and pedestrian footways. Sandford Road is a regional road with the speed limit of 50kph and incorporates dedicated footpaths on both sides of the road and contains signalized pedestrian crossings.

2.3.7 Milltown Road is a regional road with the speed limit of 50kph and pedestrian footways provided on both sides of the roads. Public lighting is provided on one side of the road. The Milltown Road/Sandford Road signalised junction which is in the immediate vicinity of the proposed site access contains pedestrian crossings on all arms.

2.3.8 The subject site is highly accessible to pedestrians and cyclists from Sandford Road and Milltown Road. The scheme proposals for the subject site will ensure pedestrians are given priority within the internal site layout to ensure desire lines within the site are accommodated, providing a good level of service, ensuring the risk of pedestrian conflict with vehicles is minimised and providing attractive convenient connections to external key walking desire lines. The internal site layout will provide a safe short-cut through the site from Milltown Road to Sandford Road and vice versa.

2.3.9 The proposed new access arrangements to the site will include the provision of dedicated pedestrian crossing facilities along key desire lines.

2.3.10 Detailed transport linkages for the existing scenarios detailing distances to surrounding Public Transport is presented in a separate **Drawing No. 190226-DBFL-TR-ST-DR-C-1002** submitted with the pre-planning application package.

2.3.11 **Figure 2.5** to **Figure 2.8** below illustrates existing pedestrian facilities along the roads surrounding the subject site.

Figure 2.5: Existing Pedestrian Facilities along Sandford Road and Milltown Road

Figure 2.6: Existing Pedestrian Facilities along Sandford Road

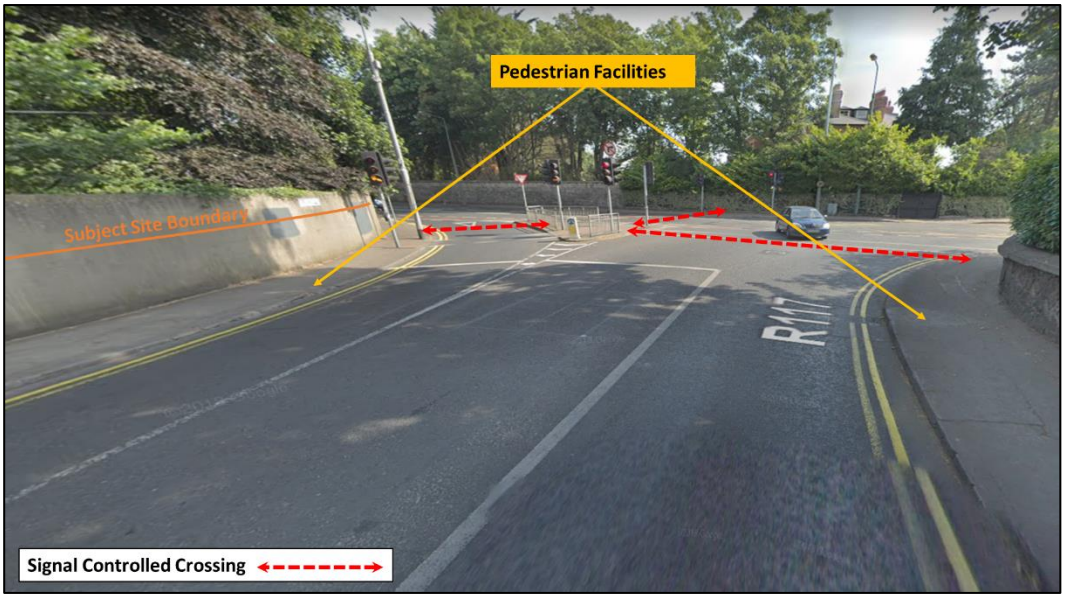


Figure 2.7: Existing Pedestrian Facilities along Milltown Road

Figure 2.8: Existing Pedestrian Facilities along Eglinton Road

Existing Cycling Facilities

2.3.12 In the immediate vicinity of the subject site, cyclists benefit from existing cycle facilities along Sandford Road and Eglington Road which contains mandatory cycle lanes on both sides with some sections of advisory lanes.

2.3.13 Milltown Road currently does not provide dedicated cycle facilities. However, cyclists can share the road surface with other road users. In addition to the cycle facilities outlined above, there are also a variety of other cycling facilities available on the routes leading to the subject site and are illustrated in **Figure 2.9** to **Figure 2.11**.

Figure 2.9: Existing Cycle Facilities along Sandford Road

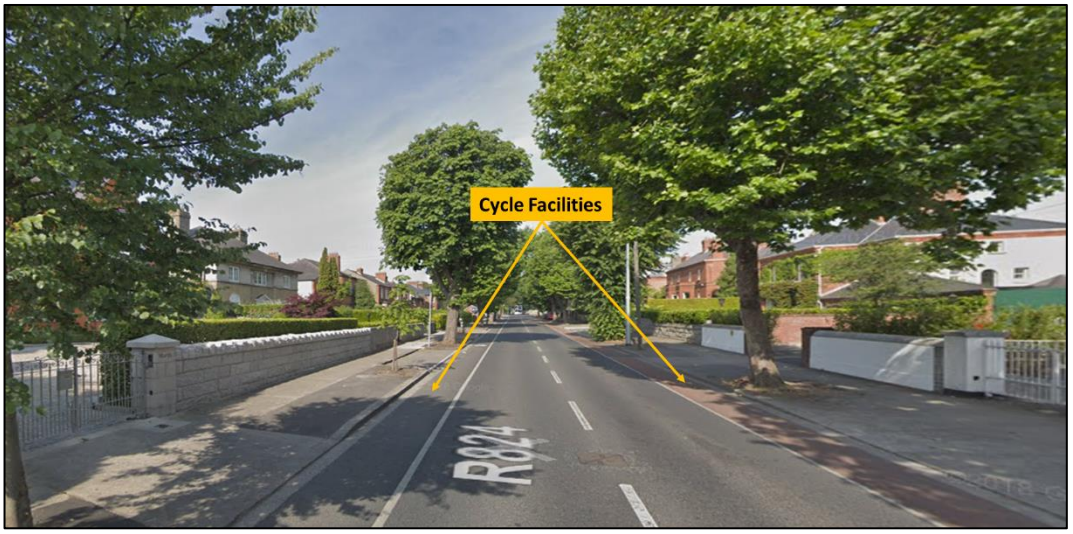


Figure 2.10: Existing Cycle Facilities along Eglinton Road

Figure 2.11: Existing Cycle Network (Existing Cycle Facility Type Dublin South Central – Sheet E7 GDA)

2.3.14 A separate **Drawing No. 190226-DBFL-TR-ST-DR-C-1002** is submitted with the Application Package which illustrates existing transportation linkages.

LUAS

2.3.15 The LUAS Green Line service runs from Brides Glen in Cherrywood to Broombridge in Cabra, routing through a number of locations including Leopardstown, Stillorgan, Dundrum and Dublin City Centre in addition to other destinations along its route. The proposed development site benefits from a high level of accessibility to the Luas Green Line. The Beechwood Luas stop is within 1km walking distance of the subject site. Also, Cowper and Ranelagh stops are within similar walking distance as illustrated in **Figure 2.12** overleaf.

2.3.16 As shown in **Table 2.1** below, the Green Line LUAS at the Beechwood Luas stop operates at a high frequency, with many services provided between the first tram and the last tram of the day for either the northbound or the southbound direction. The trams operate at a 3 – 5 minute frequency during peak hours and at a frequency between 12 – 15 minutes for the off peak duration.

	Southbound Towards Sandyford/Brides Glen			Northwards Towards Parnell/Broombridge		
	Mon – Fri	Sat	Sun	Mon – Fri	Sat	Sun
First Tram	05:38	06:38	07:08	05:44	06:44	07:14
Last Tram	00:49	00:49	23:49	00:32	00:32	23:32

Table 2.1: Green Line LUAS Frequency at Beechwood (Source: LUAS)

2.3.17 The subject site will also benefit from the improved connectivity through the LUAS Cross City service, providing connections to Dublin City Centre North, Phibsborough and Broombridge.

Figure 2.12: Walking Routes to LUAS Green Line Stops

Public Transport – Bus

2.3.18 The Sandford Road site is ideally located to avail of a multitude of existing bus services including the 11, 61, 44 adjacent to the subject site along the Milltown Road and Sandford Road. All the other routes listed in **Table 2.2** below run along the R138 Stillorgan Road; Bus Stop No. 775 is approximately 600m away from the subject site. Details of existing bus services with direction and frequency are provided in the **Table 2.2** below.

2.3.19 Further connections to bus routes such as Go-Ahead route no. 18, from Palmerstown to Sandymount, with bus stops serving the route north west to the

subject site in Ranelagh town centre, can be made using the services listed in **Table 2.2** below.

Dublin Bus Route No.	Direction	Mon-Fri	Sat	Sun
		Frequency (No. of Services)		
11	Wadelai Park to Sandyford Business Park	43	34	27
61	Eden Quay to Whitechurch	17	15	13
44	DCU to Enniskerry	17	16	14
7b	Wadelai Park to Sandyford Business Park	4	0	0
7d	Eden Quay to Whitechurch	1	0	0
25x	UCD Belfield to Lucan	2	0	0
39	Burlington Road to Ongar	38	35	31
39a	UCD Belfield to Ongar	96	79	61
41x	UCD Belfield toKnocksedan	3	0	0
46a/e	Phoenix Park to Black Rock Station, Dun Laoighre	81	61	58
67x/66x	UCD Belfield to Celbridge, Maynooth	17	0	0
116	Parnell Square to Whitechurch	1	0	0
118	Kiltiernan – Eden Quay	2	0	0
145	Heuston Rail Station to Ballywaltrim	96	65	44
155	Ikea to Bray Rail Station	53	53	47

Table 2.2: Bus Service Frequency (No. of Services)
(Source: Dublin Bus and Go-Ahead Ireland)

2.3.20 In addition to the bus services listed above, Aircoach stops 773 and 779 are both easily accessible on the R138 Stillorgan Road, providing residents with a direct connection to Dublin Airport.

2.3.21 In conclusion, the site is already strategically located to avail of excellent sustainable travel options in the form of public transport as well as walking and cycling links. A number of current schemes being developed by the National Transport Authority will see further improvements to infrastructure and services thereby increasing the attractiveness of the use of sustainable modes as means for accessing the development.

2.4 LOCAL AMENITIES

2.4.1 The subject development site is very well placed in terms of the availability of local amenities. There are a number of schools within walking distance of the subject site including Saint Mary's National School, Sandford Park School, The Teresian School and Sandford Parish National School. A number of colleges such as Alexandra College Dublin and Gonzaga College SJ are located in the vicinity of the subject site.

2.4.2 Furthermore, the subject site benefits from good access to leisure facilities such as Milltown Golf Club and Elm Park Golf and Sports Club. The subject site is close to

retail facilities such as Tesco Express and SuperValu. The site also benefits from being within the vicinity of the Donnybrook, Ranelagh, Milltown, Clonskeagh and Rathmines neighbourhood centres, which provide many local amenities.

2.4.3 There are also a number of healthcare facilities surrounding the subject site which include the Glenmalure Day Hospital, Clonskeagh Hospital and the Donnybrook Primary Care Centre.

2.5 ROAD SAFETY REVIEW

2.5.1 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.

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

2.5.3 In reference to **Figure 2.13** and **Table 2.3** overleaf, of 23 no. recorded incidents, only 4 were serious, the most recent of which occurred in 2016.

2.5.4 A cluster of 13 incidents have occurred at the R117 Milltown Road / R117 Sandford Road / R824 Eglinton Road signalised junction. Of these incidents, the only 2 serious incidents at the junction, in addition to another 4 minor incidents all occurred over 10 years ago between 2005 - 2008. The remaining 7 incidents at the junction between 2011 and 2016 have all been minor collisions. The junction has since been upgraded to enhance the safety of all road users.

Ref	Severity	Year	Vehicle	Circumstances	Day	Time	Casualty
1	Minor	2011	Car	Rear end, straight	Tuesday	1900-2300	1
2	Minor	2015	Bicycle	Other	Friday	1000-1600	1
3	Minor	2006	Motorcycle	Head-on right turn	Friday	1000-1600	1
4	Minor	2007	Car	Other	Sunday	0700-1000	1
5	Minor	2010	Bicycle	Other	Sunday	2300-0300	1
6	Minor	2015	Bicycle	Other	Wednesday	1900-2300	1
7	Serious	2016	Motorcycle	Angle, both straight	Tuesday	1900-2300	1
8	Serious	2013	Bicycle	Other	Tuesday	0700-1000	1
9	Minor	2011	Car	Other	Wednesday	0700-1000	1
10	Minor	2008	Bus	Rear end, straight	Saturday	2300-0300	1
11	Minor	2005	Motorcycle	Angle, right turn	Thursday	1600-1900	1
12	Minor	2006	undefined	Angle, right turn	Thursday	1900-2300	1
13	Minor	2006	Car	Rear end, left turn	Thursday	1000-1600	1
14	Minor	2006	Car	Other	Saturday	1000-1600	1

15	Serious	2006	Bicycle	Other	Monday	0700-1000	1
16	Serious	2008	undefined	Angle, both straight	Tuesday	1000-1600	1
17	Minor	2011	Car	Other	Tuesday	2300-0300	1
18	Minor	2012	Car	Pedestrian	Wednesday	1000-1600	1
19	Minor	2012	Bus	Other	Saturday	2300-0300	1
20	Minor	2012	Car	Other	Saturday	1000-1600	1
21	Minor	2013	Motorcycle	Head-on conflict	Sunday	1600-1900	1
22	Minor	2015	Goods Vehicle	Angle, both straight	Saturday	1000-1600	3
23	Minor	2016	Bicycle	Other	Sunday	1600-1900	1

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

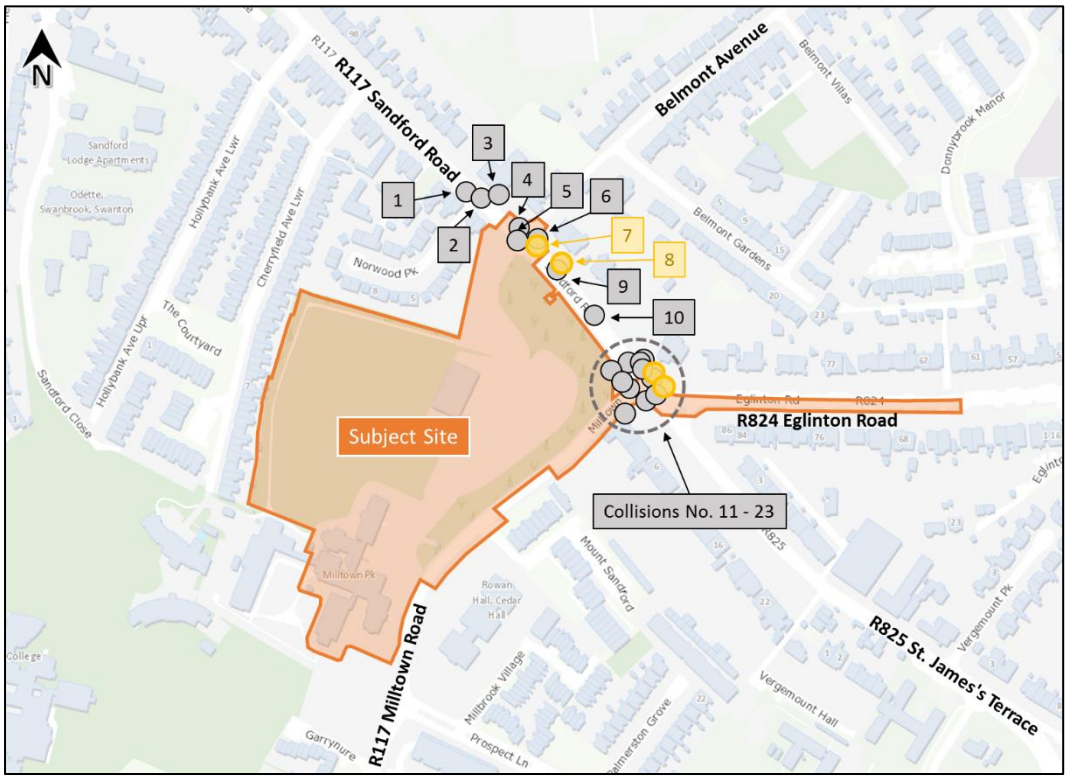


Figure 2.13: Collision Records (Source: www.rsa.ie)

2.5.5 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).

2.6 PROPOSED TRANSPORT INFRASTRUCTURE

Cycle Network Proposals

2.6.1 The subject site is located within the "Dublin South CENTRAL" as outlined within the Greater Dublin Area Cycle Network Plan (published by the NTA in 2013). The South CENTRAL Sector *"extends outward from the city centre through Ranelagh and fans out to include the areas of Clonskeagh, Milltown, Goatstown, Dundrum, Ballinteer, Sandyford and Stepaside".* In the vicinity of the subject site the Plan

proposals include the following key routes as indicated in **Figure 2.14** below: -

- **Primary Route 11:** This will directly serve the subject site which will run along Sandford Road. Travelling Northwest bound, route 11 will connect the subject site to Dublin City Centre via Ranelagh. Whereas travelling south bound it will connect the site to Clonskeagh. This scheme will include segregated cycle facilities along the Sandford Road as well as enhanced pedestrian crossing facilities at junctions along the route such as the Eglington Road/Sandford Road/Clonskeagh Road/Milltown Road junction as well as an upgrade to the existing site access junction on Sandford Road incorporating Belmont Avenue. It is anticipated that this scheme may be delivered via a Section 38 (of the Roads Act) Process in 2021/22.
- **Orbital Route SO3:** From Rathgar and Dartry to Milltown, Clonskeagh and Ballsbridge, mostly along the proposed Dodder Valley Greenway. This route links to UCD at Clonskeagh. There is a connection from Tallaght via Route 9A at Oldbridge Road in Templeogue. The greenway is currently under construction in a number of phases by South Dublin and Dublin City Council.
- **Secondary Route 11B:** This will directly serve the subject site. It will run from Sandford Road along Milltown Road and Lower Churchtown Road and will connect the subject site to Churchtown and Dundrum.

Figure 2.14: Proposed Cycle Routes (Source: Proposed Cycle Network Dublin South West Sheet N7 GDA Cycle Network Plan)

Bus Connects

2.6.2 In July 2018 the National Transport Authority (NTA) published a consultation report entitled 'Dublin Area Bus Network Redesign Public Consultation Report'. The report introduces a number of significant changes to the bus services within Dublin including: -

- *"Services to be arranged along seven cross-city super-frequent spines*
- *Dramatic increase in the numbers of orbital services*
- *Increase in the number of all-day high-frequency services*
- *Move to a simplified two-fare system*
- *A new route numbering system".*

"Under the proposals, the level of bus service will increase by 27%. This includes services on 11 brand-new orbital routes that will operate on a 15-minute frequency or better, in the north, south and west of the network area."

2.6.3 Since the initial BusConnects proposals, the final network redesign (September 2020) has been published following three rounds of public consultations. The proposed development site is ideally located to benefit from the enhanced accessibility levels that will be delivered by the BusConnects. The subject site will be directly serviced by the following BusConnects proposed routes.

- **E-Spine:** will serve the site with frequency of every 4-5 minutes in peak period. It will run along Stillorgan Road approximately 600m away from the subject site and connects the site to Ballymun, City Centre and Foxrock Church.
- **Route 86:** will directly serve and connect the site to Ticknock, Goatstown and Mountjoy Square with a frequency of every 30 minutes.
- **Route 87:** will directly serve and connect the site to Belarmine, Dundrum and Mountjoy Square with a frequency of every 60 minutes.
- **Route 88:** will directly serve and connect the site to Enniskerry-Belarmine, Dundrum and Mountjoy Square with a frequency of every 60 minutes.

2.6.4 **Figure 2.15** below illustrates the BusConnects proposed routes that will serve the subject site.

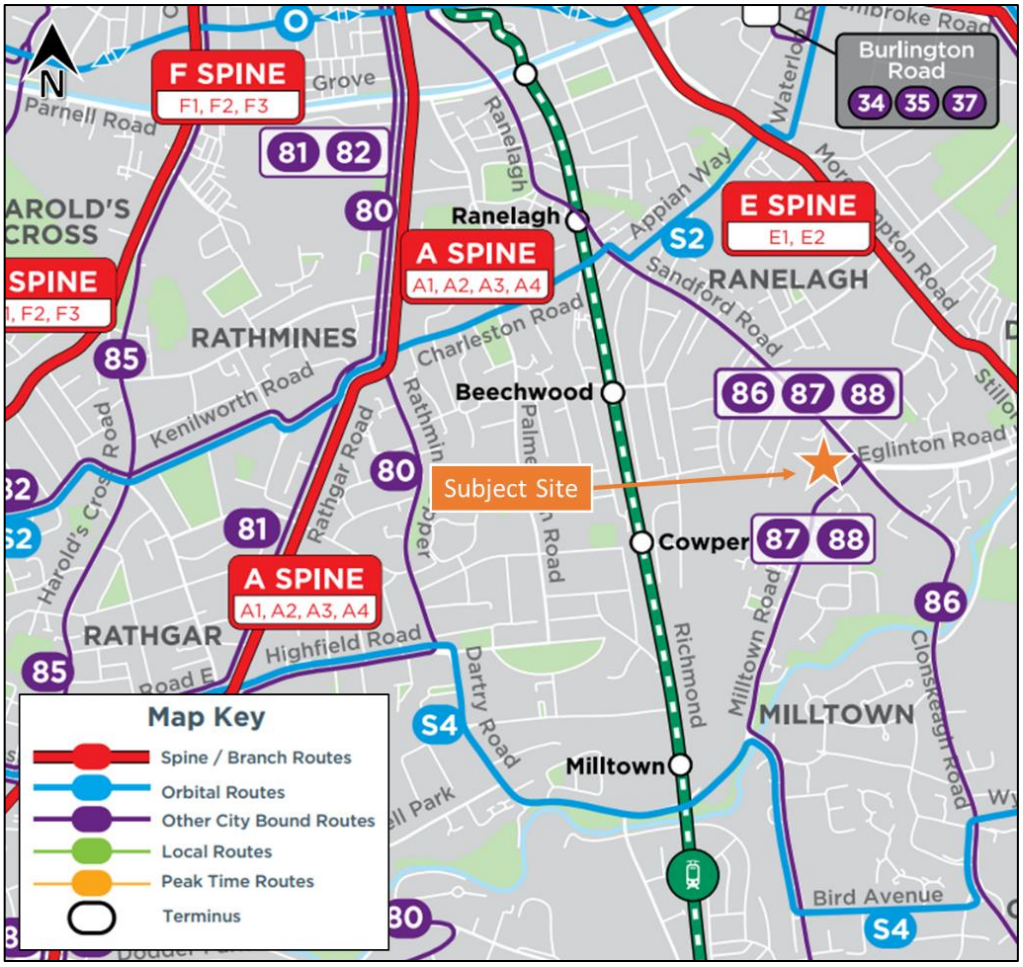


Figure 2.15: Proposed Bus Services (Source: BusConnects)

2.6.5 A separate **Drawing No. 190226-DBFL-TR-ST-DR-C-1003** is submitted with the Application Package which illustrates proposed transportation linkages.

Luas & Metro

2.6.6 According to current proposals by the NTA & TII, the proposed MetroLink will operate from Charlemont, immediately south of the Grand Canal, and will provide links to City Centre locations and Dublin Airport, terminating in Swords.

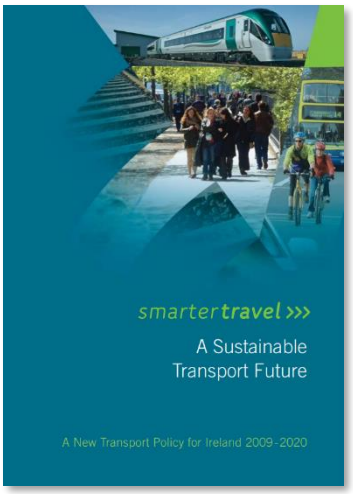
2.6.7 Residents of the proposed development will be able to avail of the proposed Metro Line through the Luas Green Line Stops, Cowper, Beechwood (1km from the subject site), Ranelagh or Milltown and interchange at the Charlemont Luas Stop to access the underground metro.

2.6.8 Other proposed extensions to the Luas network include a Lucan Line operating from the City Centre to Lucan and the extension of the Green Line south from Brides Glen to Bray. **Figure 2.16** shows the existing Luas network with the proposed service extensions and Metro Line.

Figure 2.16: Proposed LUAS and Metro Extension (Source: NTA)

3.0 POLICY FRAMEWORK

3.1 SMARTER TRAVEL – A SUSTAINABLE TRANSPORT FUTURE



3.1.1 *Smarter Travel* was published in 2009 by the Department of Transport which represents the national policy documentation outlining a broad vision for the future and establishes objectives and targets for transport. The document examines past trends in population and economic growth and transport concluding that these trends are unsustainable into the future.

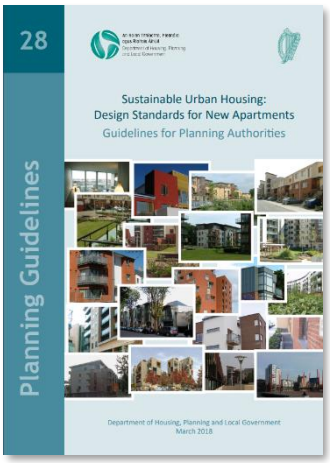
3.1.2 In order to address the unsustainable nature of current travel behaviour, *Smarter Travel* sets down a number of key goals and targets for 2020 - including:

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

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

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

3.2 SUSTAINABLE URBAN HOUSING: DESIGN STANDARDS FOR NEW APARTMENTS – DECEMBER 2020



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

3.2.2 With the demand for housing increasing, this means that there is a need for an absolute minimum of 275,000 new homes in Ireland's cities by 2040. It is therefore critical to ensure that apartment living is an increasingly attractive and desirable housing option for a range of household types and tenures.

3.2.3 These Guidelines apply to all housing developments that include apartments that may be made available for sale, whether for owner occupation or for individual lease. They also apply to housing developments that include apartments that are built specifically for rental purposes, whether as 'build to rent' or as 'shared accommodation'.

3.2.4 Cycling provides a flexible, efficient and attractive transport option for urban living and these guidelines require that this transport mode is fully integrated into the design and operation of all new apartment development schemes.

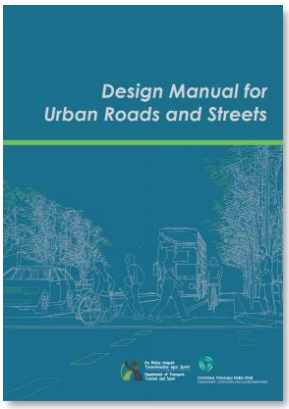
3.2.5 The quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria. There are three types of locations set out that will determine the level of parking provided. The **Central and/or Accessible Urban Locations** comprise of apartments in more central locations that are well served by public transport. These locations have a default policy for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances. The **Intermediate Urban Locations** comprise of apartments in suburban/urban locations served by public transport or close to town centres or employments areas. These locations require that planning authorities must

consider a reduced overall car parking standard and apply an appropriate maximum cap parking standard. The **Peripheral and/or Less Accessible Urban Locations** comprise of apartments located in relatively peripheral or less accessible urban locations, one car parking space per unit, together with an element of visitor parking should generally be required.

3.2.6 The proposed development is considered to be within an *"Central Urban Location"* as designated within the DHPLG standards, on the basis of proximity to high capacity urban public transport stops such as Beechwood Luas stop.

3.2.7 For all types of location, where it is sought to eliminate or reduce car parking provision, it is necessary to ensure, where possible, the provision of an appropriate number of drop off, service, visitor parking spaces and parking for the mobility impaired. Provision is also to be made for alternative mobility solutions including facilities for car sharing club vehicles and cycle parking and secure storage.

3.3 DESIGN MANUAL FOR URBAN ROADS AND STREETS (DMURS) - 2013



3.3.1 DMURS provides guidance relating to the design of urban roads and streets. It presents a series of principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes with regard to street networks and individual streets.

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

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

3.3.4 The manual emphasizes that narrow carriageways are one of the most effective design measures that calm traffic. Standard width of an arterial and link street is 3.25m, however, this may be reduced to 3m where lower design speeds are being applied. Desirable footpath widths are between 2m – 4m. The 2m width should be implemented to allow for low to moderate pedestrian activity. A 3m – 4m footpath should be implemented to allow for moderate to high pedestrian activity.

3.3.5 In accordance with the manual, a number of shared surface streets (homezones) have been implemented within the development design to promote pedestrian and cyclist priority where vehicle activity is deemed sufficiently low.

3.3.6 The focus of the manual is to create a place – based sustainable street network that balances the pedestrian and vehicle movements. The manual references the different types of street networks, including arterial streets, link streets, local streets, and highlights the importance of movement.

3.4 TRANSPORT STRATEGY FOR THE GREATER DUBLIN AREA 2016-2035

3.4.1 The Transport Strategy for the Greater Dublin Area 2016-2035 is a document compiled by the National Transport Authority which sets out the Strategic Transport Plan for the Greater Dublin Area for the period up to 2035. This sets out an integrated long-term strategy for the area and includes new public transport proposals such as DART and Luas expansion and also a new Metro route.

3.4.2 This document will influence transport planning across the region until 2035 and replaces 'A Platform for Change – An Integrated Transportation Strategy for the Greater Dublin Area 2000 to 2016'. It thereby underpins all transportation strategies, traffic management schemes and development plans prepared by Dublin City Council during this timeframe.

3.4.3 The Strategy sets out a clear hierarchy of transport users, commencing with the sustainable modes of travel such as walking, cycling and public transport users at the very top of the hierarchy. The Strategy adopts the general principle that these users should have their safety and convenience needs considered first and that the hierarchy is applied where a large share of travel is (or could be) made by

walking, cycling and public transport.

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

3.5 DUBLIN CITY COUNCIL DEVELOPMENT PLAN 2016-2022

3.5.1 The Dublin City Development Plan sets out a new approach to meet the needs and aspirations of citizens of Dublin and the country, not only for the 6-year life of the plan, but for the long term. This approach is based on the principles of sustainability and resilience on the social, economic and environmental fronts.

3.5.2 The Development Plan's Strategic Approach in response to the challenges facing the economy of the city and its role as the national and regional economic engine are as follows:

- Developing enterprise, particularly the services sector which is the critical sector for the city;
- Developing academic medical centres providing excellence in research, care and teaching in the medical and health sectors;
- Promoting the development of the three innovation corridors identified in the Economic Development Action Plan for the Dublin City Region;
- Improving the general attractiveness of a city for people and investors as a key part of maintaining competitiveness and creating a vibrant place that attracts and retains creative people within the city; and
- Providing appropriate office and commercial spaces as the workplaces for the new knowledge and services economy and enables the city to compete as an attractive location internationally

3.5.3 The Dublin City Council Development Plan 2016-2022 states that it is the policy of Dublin City Council:

- "To promote and enhance the city's competitiveness and address deficits, to improve the business environment so that existing jobs are supported and employment generated, and be creative and practical in its responses to present economic challenges."

- "To recognise the crucial need for the planning and sustainable development system to be agile and responsive in the face of challenging and rapidly changing circumstances."
- "Dublin City Council will promote sustainable development by balancing complex sets of economic, environmental or social goals in planning decisions."

3.5.4 The Dublin City Council Development Plan 2016-2022 states the following objectives:

- "To examine the need and opportunity for new development and financing models that will allow desirable developments to go ahead in the short-term while ensuring that the optimum development of the site will be achieved in stages."
- "To examine how key economic generators could have greater spin-off benefits for their surrounding areas and to actively promote their development."

3.5.5 A range of multimodal policies and objectives are outlined in the development plan to achieve these targets and includes the following;

- *"**MT7:** To improve the city's environment for walking and cycling through the implementation of improvements to thoroughfares and junctions and also through the development of new and safe routes, including the provision of foot and cycle bridges. Routes within the network will be planned in conjunction with Green Infrastructure Objectives and on foot of (inter alia) the NTA's Cycle Network Plan for the Greater Dublin Area, and the National Cycle Manual having regard to policy GI5 and objective GIO18."*
- *"**MT8:** To work with, and actively promote, initiatives by relevant agencies and stakeholders such as An Taisce's 'Green Schools' initiative and the NTAs Smarter Travel Unit, to promote active travel in schools and communities, recognising the health and social benefits of walking and cycling as well as the environmental benefits."*
- *"**MT9:** To promote Bike and Ride at public transport hubs by providing secure, dry, bike parking facilities."*
- *"**MT10:** To provide 30kph speed limits and traffic calmed areas at appropriate locations throughout the city and subject to stakeholder*

consultation."

- *"**MT11:** To continue to promote improved permeability for both cyclists and pedestrians in existing urban areas in line with the National Transport Authority's document "Permeability – a best practice guide". Also, to carry out a permeability and accessibility study of appropriate areas in the vicinity of all Luas, Rail and BRT routes and stations, in cooperation with Transport Infrastructure Ireland and the National Transport Authority."*

4.0 CHARACTERISTICS OF PROPOSALS

4.1 OVERVIEW

4.1.1 The proposed development site consists of approximately 4.26 hectares of developable land which currently comprises former institutional buildings associated with the Jesuit Community, located in the southern portion of the subject site.

4.1.2 In summary, the project comprises the development of 671 no. residential apartment units, of which 67 no. units are build to sell and 604 no. units are built to rent, in addition to one 400m^2 creche.

4.1.3 With reference to O'Mahony Pike Architects' drawing, the development schedule is summarised in **Table 4.1** below.

Unit Type		Description	Quantity	
Apartments	Build to Sell	Studio Apartment	11	67
		1 Bedroom Apartment	9	
		2 Bedroom Apartment	32	
		3 Bedroom Apartment	15	
	Build to Rent	Studio Apartment	88	604
		1 Bedroom Apartment	262	
		2 Bedroom Apartment	242	
		3 Bedroom Apartment	12	
Childcare Facility	400m^2 Creche		1	-
			Total	671

Table 4.1: Development Schedule Summary (Source: O'Mahony Pike)

4.1.4 Further details of the development proposals including the site layout, roads layout (**Figure 4.1**) and site access arrangements are illustrated in the architects' scheme drawings as submitted with this planning application.

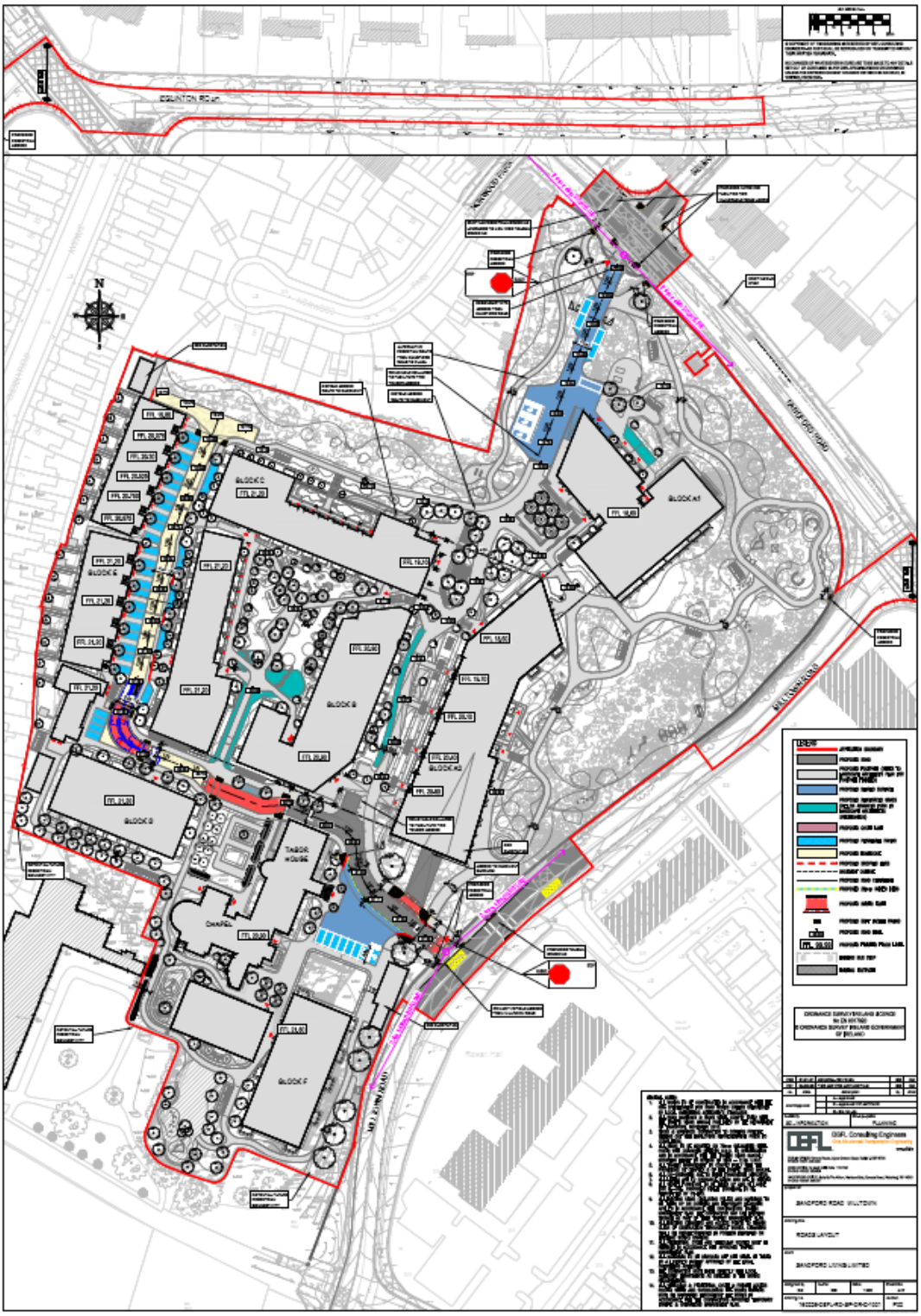


Figure 4.1: Subject Site Road Layout (Source: DBFL)

4.2 PEDESTRIAN SITE ACCESS STRATEGY

4.2.1 The Design Manual for Urban Roads and Streets (DMURS) identifies the importance of connectivity for pedestrians within residential areas. The document states '*The creation of vibrant and active places requires pedestrian activity. This in turn*

requires walkable street networks that can be easily navigated and are well connected.'

4.2.2 DMURS references that 'Sustainable neighbourhoods are areas where an efficient use of land, high quality urban design and effective integration in the provision of physical and social infrastructure such as public transport, schools, amenities and other facilities combine to create places people want to live in'.

4.2.3 The document highlights that residential locations that have been constructed in accordance with the principles of segregation, and that increased walking distances for residents, have a significant influence on mode choice as a lack of connectivity is one of the key factors that discourage people from walking.

4.2.4 The proposed development site will have excellent connectivity for pedestrians to access the residential units, with a number of connecting paths that route through the proposed central courtyard, the plaza area and parkland along the east of the site, as shown in **Figure 4.2** below. This would enable pedestrians to route easily through the site with no barriers or segregated area to hinder movement.

4.2.5 In addition to the demarcated routes through the development site, pedestrian priority will be emphasized through different material finishes on shared surface streets to lower vehicle speeds throughout the development.

4.2.6 Pedestrians and cyclists will be able to access or egress the site from a number of proposed/future pedestrian/cyclist access locations (**Figures 4.2** and **4.3**): -

- 2 no. accesses on the R117 Sandford Road on the northeastern boundary of the site;
- 2 no. accesses on the R117 Milltown Road on the eastern boundary of the site (a signalised pedestrian crossing is proposed at the site of one of the accesses);
- The facilitation of 3 no. potential future accesses along the southern boundary of the site, if required in the future to connect to neighbouring lands; and
- 1 no. new pedestrian gate at junction of R117 Sandford Road and R117 Milltown Road.

4.2.7 The internal road layout has been designed with pedestrians and cyclists as a priority; many courtesy crossings are provided following pedestrian desire lines in

addition to the low vehicle speeds throughout the development indicated through different surface finishes.

4.2.8 Accordingly, the subject site will be highly accessible to both pedestrians and cyclists with permeable connections provided to the neighbouring lands via these access / egress junctions. There shall be 1 pedestrian gate provided at the corner of Sandford Road/Milltown Road also as part of the scheme.

Figure 4.2: Pedestrian Permeability at Subject Site

4.3 CYCLIST SITE ACCESS STRATEGY

4.3.1 The subject site will be highly permeable to cyclists as shown in **Figure 4.3** below. Cyclist paths will connect the site accesses to surface level bicycle parking, building entry points and the dedicated cyclist ramp to the basement where further secure bicycle parking is located. Various ramps are provided throughout the site design to ensure cyclist accessibility is improved.

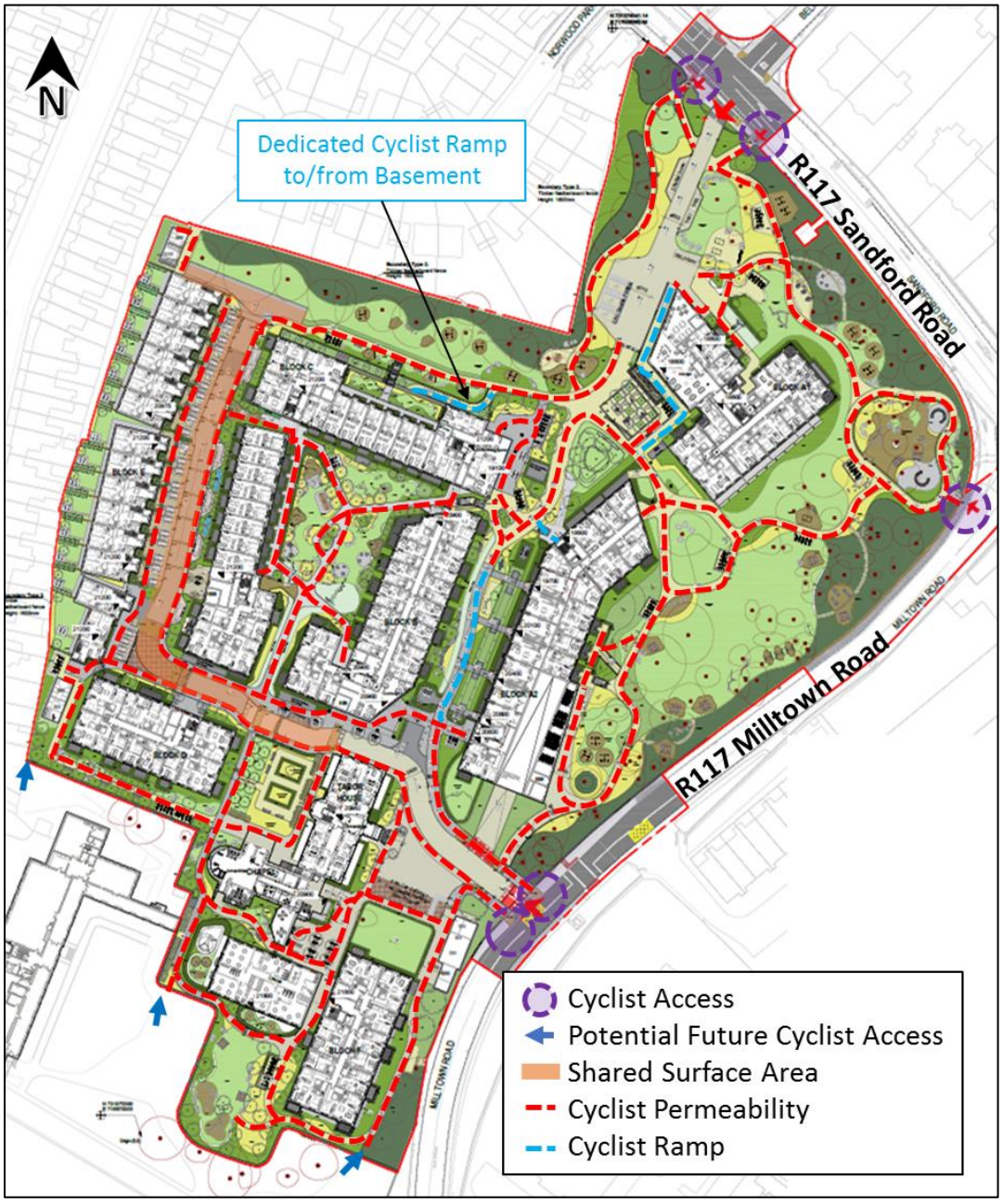


Figure 4.3: Cyclist Permeability at Subject Site

4.4 VEHICULAR SITE ACCESS STRATEGY

4.4.1 The subject site will benefit from one principal vehicle access location (**Figure 4.4**) which will be provided on the R117 Milltown Road on the southeastern boundary of the site and a secondary access on the R117 Sandford Road on the northeastern boundary of the site, principally for emergencies, deliveries and taxis and a small element of mobility impaired parking.

4.4.2 The two site access junctions have been designed in accordance with DMURS as well as the TII DN-GEO-03060 'Geometric Design of Junctions' 2017. These guidelines and standards, in particular DMURS, were reviewed in order to provide a junction design for this development that adequately caters for the residents within the development. DMURS promotes a more permeable road network approach with more frequent minor junctions. Therefore, considering the large scale of this residential development, it was considered appropriate to provide two vehicular access junctions. These two access junctions will increase permeability for pedestrians and cyclists as well as reducing traffic issues of queuing and delay within the development.

Milltown Road Site Access

4.4.3 A new site access junction is proposed on the R117 Milltown Road to service the proposed development. A signalised toucan crossing has also been designed adjacent to the site access as shown in **Figure 4.8** below.

4.4.4 The Milltown Road access (**Figure 4.4**) will act as the primary vehicular site access which leads to the basement car park. This site access will accommodate general vehicular traffic accessing and egressing from the subject site, with the exception of delivery vehicles, taxis and set/down pick up for Block A1. The junction has been sited so as to maximise visibility from the site access in both directions along Milltown Road (R117) whilst also ensuring approximately 110m separation from the existing access to the Jesuit's Milltown Park Facility/Junction with Prospect Lane.

4.4.5 The basement vehicular ramp access will connect with the internal street network via a priority junction immediately east of the Milltown Road site access thereby decreasing the volume of traffic using the internal street network and creating an environment that is highly accessible, safe and attractive for pedestrians rather than being dominated by vehicular movements.

4.4.6 A number of surface level car parking spaces are accessible via the Milltown Road site access; 34 no. of these car parking spaces are located within a shared surface area to the west of the site to service residents of Block E of the development and 8 no. car parking spaces (including 1 mobility impaired space) are located adjacent to Tabor House.

4.4.7 Of the car parking spaces located adjacent to Tabor House, 3 no. spaces will be designated for creche use. Further reference to the quantum of car parking required for the creche facility is made in Section 4.8 where an internal trip generation exercise has been conducted.

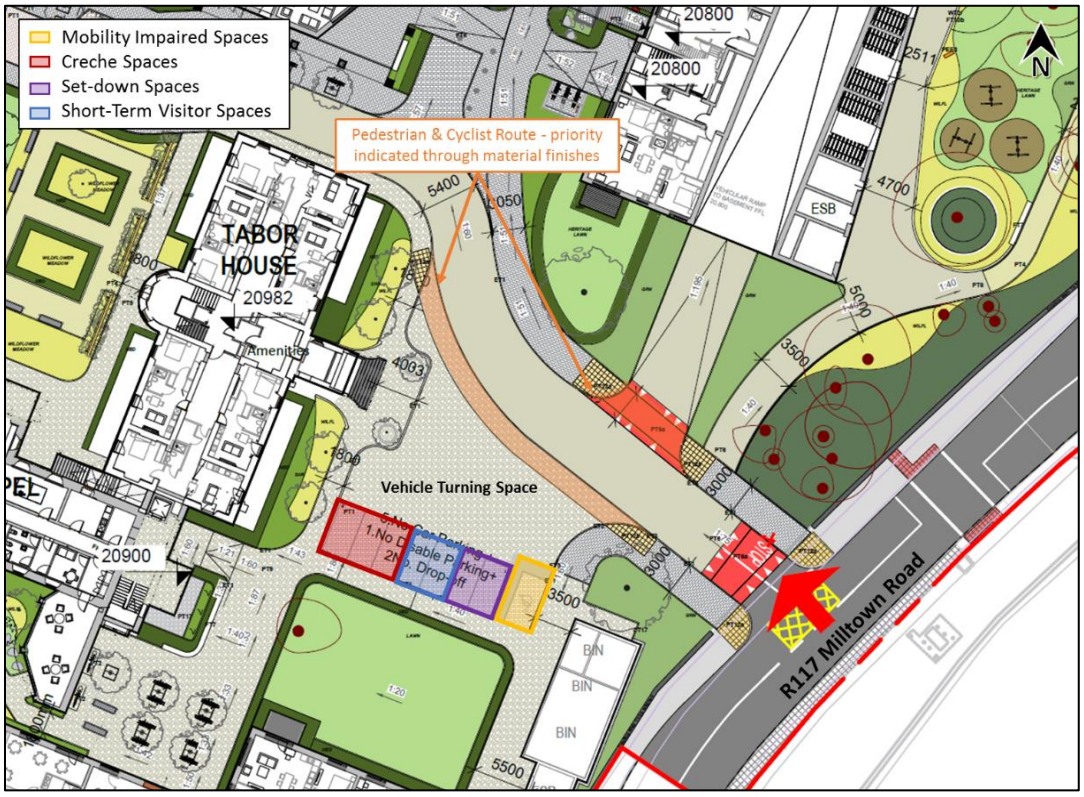


Figure 4.4: Milltown Road Site Access

Shared Surface Area

4.4.8 The shared surface area (**Figure 4.5**) to the west of the subject site will be a 4.8m wide shared carriageway with a 1.2m buffer strip for pedestrian use if required but the low volume and speeds of traffic movements will render this section of the internal street network appropriate for shared use by pedestrians/cyclists and vehicles. This section of the proposed street network has been designed to place pedestrians and cyclists at the top of the hierarchy of road users in accordance with the principles of DMURS.

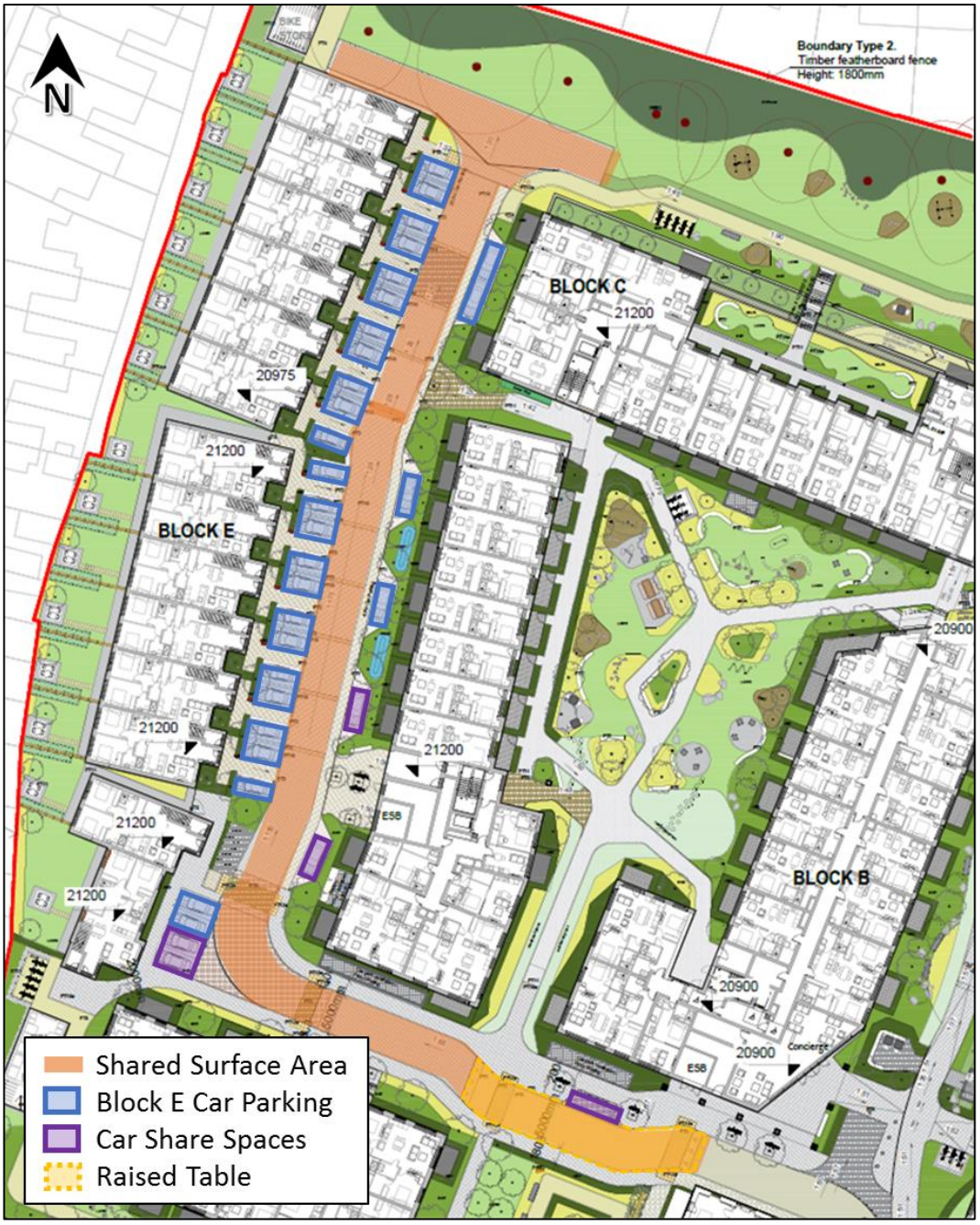


Figure 4.5: Extent of Shared Surface Area within Development

4.4.9 The proposed shared surface will only be accessed by vehicles belonging to residents of Block E of the development, as the remainder of the development residents will have car parking within the basement car park. Block E (**Figure 4.5**) contains 28 no. duplex apartment units (14 no. 2-bed apartments and 14 no. 3-bed apartments), all of which will be Build to Sell (BTS).

Sandford Road Site Access

4.4.10 The Sandford Road access is a secondary access in terms of vehicular movement connecting to the proposed northern plaza area. The access will prioritize the movement of pedestrians and cyclists and will provide a key link between Sandford Road and the development for sustainable modes.

4.4.11 It is anticipated that the Sandford access will be of limited use for deliveries to Block A1, taxi/visitor drop off, deliveries and emergency access. A small number of car parking spaces (taxi, set-down, mobility impaired) will be accessible via the Sandford Road access (**Figure 4.6**). As outlined in the internal trip generation exercise in section 4.8, no more than 8 vehicles are anticipated to utilize this access in the worst-case peak hour scenario. Bollards will prevent vehicles from accessing the plaza area (**Figure 4.7**) and the central courtyard which has been implemented since the tri-partite meeting.

4.4.12 As shown in **Figure 4.7** below, the site layout will be highly accessible to pedestrians and cyclists with continuous routes between site accesses, the northern plaza, the internal courtyard and areas of resident amenity and open space. Both residents of the Sandford Road site and visitors or employees of the site will benefit from the enhanced pedestrian and cyclist environment created at the subject site.

4.4.13 The Sandford Road access will perform a significant role in conveying pedestrians and cyclists to and from the site. As such, it is proposed to upgrade the controlled crossing point across Sandford Road to a toucan crossing as part of the development proposals. A dedicated two-way cyclist ramp will be accessible from the Sandford Road access, leading cyclists to the cycle parking areas within the development basement car park.

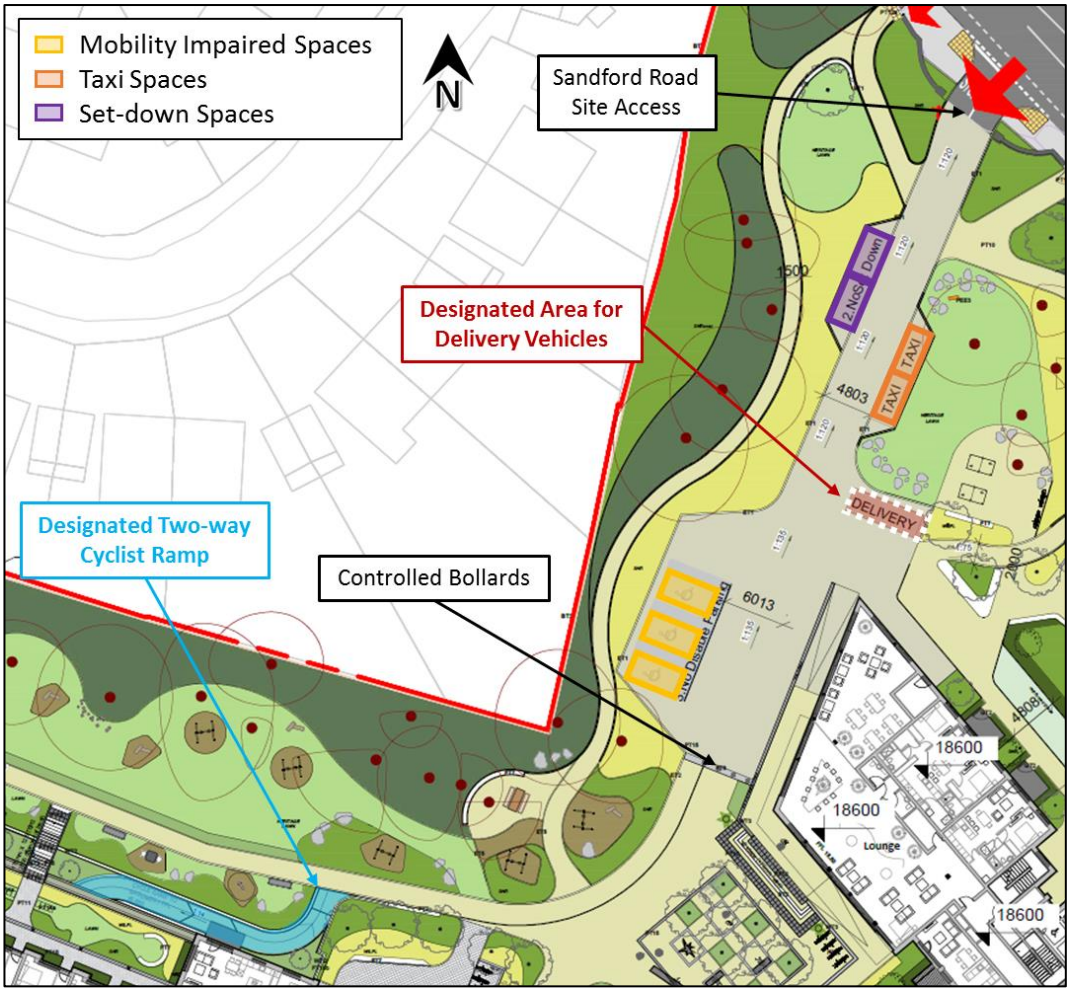


Figure 4.6: Sandford Road Site Access

Figure 4.7: Northern Plaza 3D Visuals (Source: Cameo & Partners)

4.4.14 Both site accesses and the internal road layout allow for fire tender access and maneuverability throughout the plaza areas of the subject site. There shall be no

through route for general or service vehicles between the Sandford Road and Milltown Road accesses.

4.4.15 Detailed site access junction drawings for both site accesses are presented within this planning application package within the proposed roads layout, an extract of which is shown in **Figure 4.8** below. Refer to **DBFL Drawing No. 190226-DBFL-RD-SP-DR-C-1001.**

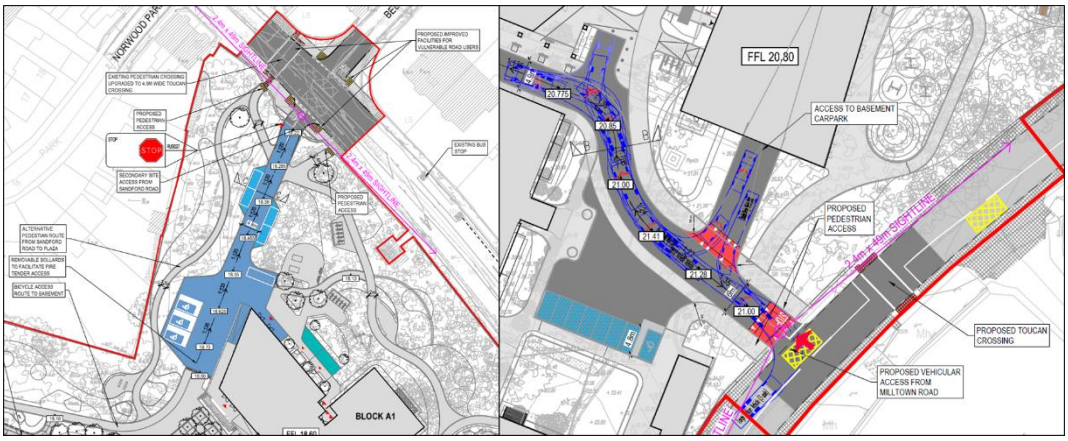


Figure 4.8: Extract of Subject Site Road Layout [Left: Sandford Road, Right: Milltown Road]

4.5 TAXI/DELIVERY SITE ACCESS STRATEGY

4.5.1 As shown in **Figure 4.6** above, a small number of taxi and set-down/collection vehicle spaces have been assigned within the development. Of these spaces, 2 no. taxi spaces and 2 no. set-down spaces will be accessible via the Sandford Road site access at the northern boundary of the site. An additional 2 no. set-down spaces are accessible via the Milltown Road site access, located at the start of the shared surface area and immediately adjacent to Tabor House.

4.5.2 The set-down/collection spaces will be available for use by delivery vehicles for example with those accessible via Sandford Road serving only Block A1. The 2 no. set-down spaces located near to Tabor House will serve the remainder of the development due to their proximity to the Block B reception, Blocks C and D as well as Tabor House.

4.6 SERVICE SITE ACCESS STRATEGY

4.6.1 **Figure 4.9** below shows an extract of **DBFL Drawing No. 190226-DBFL-RD-ST-SK-C-1007.** The figure shows the swept path analysis and access route for ESB service vehicles to the subject site's ESB sub stations.

4.6.2 All servicing requirements can be accommodated via the principal site access on Milltown Road. Two ESB sub stations are located in the vicinity of the site access, thereby requiring minimal vehicle movements to reach them, with another ESB sub station located in Block C of the development and another ESB station located nearby to the Block B reception area.

Figure 4.9: Service Vehicle Access Route

4.6.3 **Figure 4.10** below shows the fire tender access route throughout the subject site which connects the Sandford Road and Milltown Road accesses and permeates into the shared surface area as well as the internal development courtyard. The swept

path analysis for the fire tender route has been shown on **DBFL Drawing 190226-DBFL-RD-SP-DR-C-1002.**

Figure 4.10: Fire Tender Access Route

4.7 REFUSE SITE ACCESS STRATEGY

4.7.1 Waste storage and collection arrangements at the proposed development have been prepared with due consideration of the proposed site layout and location as well as best practice standards, local and national waste management requirements including those of DCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- EMR Waste Management Plan 2015 – 2021;

- Dublin City Council Development Plan 2016 – 2022 (Appendix 10);
- DCC, Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste (2013); and
- DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2020).

4.7.2 Residential bin holding areas have been designated within the basement car park and at surface level, immediately south of the Milltown Road site access to facilitate servicing of the proposed development. All wastes will be collected on at least a weekly basis.

4.7.3 The residential waste rooms are located in the development's basement level. A total of 4 No. waste rooms are provided throughout the basement, adjacent to the site cores (**Figure 4.12**). The residential waste room locations have been selected to minimise the required distances the tenants must travel from the building cores. In addition to the basement waste rooms, 5 No. residential waste rooms are located on the ground level of the development (**Figure 4.11**).

4.7.4 Waste generated by the development creche will be disposed of in the nearby waste rooms, adjacent to the Milltown Road site access.

Figure 4.11: Surface Level Residential Waste Collection Areas

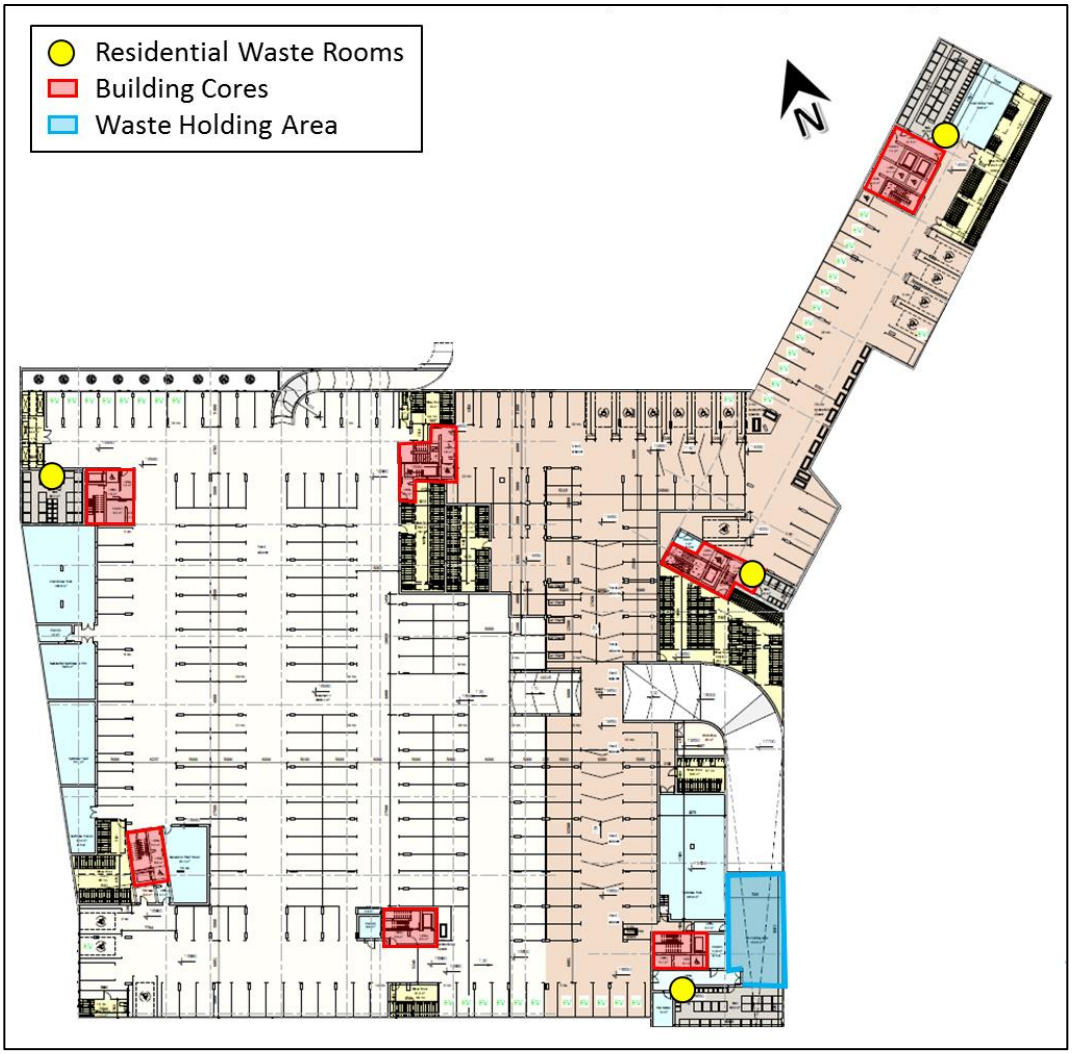


Figure 4.12: Basement Level Residential Waste Rooms

4.7.5 Further detail on the development site access strategy has been provided within the Parking Strategy Report submitted alongside this TTA.

4.8 CAR PARKING PROVISION

4.8.1 Dublin City Council has published car parking guidelines contained within the *Dublin City Development Plan 2016-2022*. Section 16 within the development plan provides parking guidance for residential developments stating the following requirement: -

- Apartments – 1 space per unit;
- Creche – 1 space per class;

4.8.2 Reference has been made to the following:-

- Table 16.1 of the current Dublin City Development Plan 2016-2022; and

- Chapter 4 of *Sustainable Urban Housing: Design Standards For New Apartments Guidelines For Planning Authorities*, as published by the Department of Housing, Planning and Local Government (DHPLG), December 2020.

4.8.3 It is considered that the subject development site is located within an ***"Central Urban Location"*** as designated within the DHPLG standards, on the basis of proximity to high capacity urban public transport stops.

4.8.4 The subject site is considered to be within walking distance (i.e. up to 10 minutes or 800-1,000m) to/from high capacity urban public transport stops (such as Luas).

4.8.5 Both the Ranelagh and Beechwood Luas Stops are easily accessible from the subject site, with the Beechwood Luas Stop being within 1km from the subject site; additionally Dublin Bus routes number 11, 44 and 61 are serviced from a bus stop immediately opposite the proposed development on the R117 Sandford Road.

4.8.6 For such residential developments located within an ***"Central Urban Location",*** the DHPLG design standards state in reference to local authority development management requirements that;

> *"the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated"*

4.8.7 Accordingly, the opportunity is available to provide a reduced quantum of car parking for the proposed 671 no. residential accommodation units and 400m^2 creche.

4.8.8 In reference to the above development standards and the proposed schedule, **Table 4.3** below establishes that a maximum of 676 no. car parking spaces will be required on-site to serve the proposed development as per the DCC Development Plan Standards.

4.8.9 In addition, as per the DCC Parking Standards, the following provisions are to be allocated:

- 5% of the total car parking provision allocated as mobility impaired parking;
- 10% of the total car parking provision allocated as electric vehicle charging stations; and
- Motorcycle parking spaces provided at a quantum of 4% of the total car parking provision.

Land Use Description	No. of Units / GFA	DCC Parking Standards (Zone 2)		DHPLG Parking Guidelines	
		Long Stay	Short Stay	Long Stay	Short Stay
Apartment	671	1 space per unit	-	*"minimized, substantially reduced or wholly eliminated"*	
Creche	400m²	1 space per class		N/A	

Table 4.2: Car Parking Standards

Land Use Description	No. of Units / GFA	DCC Development Parking Requirement		DHPLG Parking Requirement		Development Parking Provision	
		Long Stay	Short Stay	Long Stay	Short Stay	No. Spaces	Combined
Apartment	671	671	0	*"minimized, substantially reduced or wholly eliminated"*		325	
Creche	400m²	5	0	N/A		3	13
Car Share	-	-	-	N/A		10 (5 GoCar + 5 Development Car Share)	
Collection/ Drop-Off						4	6
Taxi						2	
Total		**676**				**344**	
Total Car Parking Ratio* = 0.50 Spaces/Unit							

**Ratio excludes creche, drop-off and taxi spaces*

Table 4.3: Car Parking Requirements & Provision

4.8.10 In reference to the architect's scheme drawings the following level of car parking is to be provided on-site to serve the proposed development;

- Surface Parking: Apartments – 49 no. spaces, including;
  - 4 no. mobility impaired spaces;
  - 3 no. visitor spaces;
  - 2 no. taxi spaces;
  - 4 no. set down spaces;
  - 5 no. car share spaces (GoCar); and
  - 3 no. creche spaces.
- Basement Car Park: Apartments – 295 no. spaces, including;
  - 14 no. mobility impaired spaces;
  - 5 no. car sharing spaces (development managed spaces); and

- 35 no. electric vehicle charging spaces (3 of which are mobility impaired spaces).

4.8.11 The proposed development will have a car parking ratio of 0.50 parking spaces (excluding creche, taxi and set-down spaces) per residential apartment unit for the 671 units. In total 344 no. on-site dedicated car parking spaces are to be provided as part of the subject development proposals.

Shared Surface Area

4.8.12 As previously outlined, the proposed shared surface will only be accessed by vehicles belonging to residents of Block E of the development. According to the DCC parking requirements for zone 2, the subject development proposals are required to provide 28 no. car parking spaces for the 28 no. BTS duplex apartment units within the development.

4.8.13 Taking the above standards into consideration, a ratio of 1 car parking space to every residential apartment has been provided for the BTS portion of the development which equates to a car parking provision of 28 no. spaces for Block E. An additional 5 no. GoCar spaces have been provided and 1 no. visitor space, giving a total of 34 no. car parking spaces in the shared space. The management of these visitor parking spaces as well as others is set out in further detail in the Parking Strategy report submitted as part of the planning application documentation.

4.8.14 A trip generation exercise has been conducted to estimate the likely traffic flows in and out of the proposed development (BTS) during the morning and evening peak hour periods using data from TRICS. Based on the below trip rates, potential peak hour traffic generation is calculated based on the 28 no. Block E duplex apartment units. **Table 4.4** summarizes the predicted peak hour AM and PM traffic generated by the Block E apartment units.

Land Use BTS Apartments	Unit	AM Peak Hour 08:15 – 09:15			PM Peak Hour 16:45 – 17:45		
		Arr	Dep	Total	Arr	Dep	Total
Trip Rates	Per Unit	0.054	0.214	0.268	0.204	0.066	0.271
Vehicle Trips	28	2	6	8	6	2	8

Table 4.4: Proposed Development Trip Rates & Vehicle Trips

4.8.15 Based on the peak hour vehicle trips shown above, the maximum number of vehicles using the shared space in the hour will be 8 no. vehicles. The shared surface within the proposed development has been designed with reference to the Design Manual for Urban Roads and Streets (DMURS) and as such it has been ensured that vehicles will be driving at 20km/h or less to guarantee the safety of pedestrians and cyclists throughout the shared surface.

4.8.16 Utilising the generated vehicle trips for the development and the excel-based traffic model predicting the distribution of the vehicular traffic, the traffic movements within the internal street layout of the proposed development was determined, as shown in **Figure 4.13** below.

4.8.17 As can be seen from the figure below, the majority (92 – 96%) of vehicular traffic from the Milltown Road site access uses the basement car park, accessible via a ramp adjacent to the site entrance. Therefore, the development basement traffic does not require entry into the shared surface area. In the event that a U-turn manoeuvre needs to be performed, ample space is provided directly opposite the vehicle ramp to the basement within the internal road layout.

4.8.18 The proposed shared surface within the Sandford Road development contains residential parking for only Block E of the development, which contains 28 no. duplex apartment units. As such this area will only be accessed by vehicles belonging to residents of these apartments, vehicles servicing this part of the development and the 5 no. GoCars located within the shared space.

4.8.19 Given that the maximum number of vehicles using the shared surface area at any one time will be 8 no. vehicles and the appropriate design guidelines have been used to design this area for pedestrians, cyclists and vehicles, the shared surface is considered a safe environment for all users.

Tabor House Car Parking

4.8.20 A second internal trip generation exercise has been conducted to estimate the likely traffic flows generated by the 400m^2 creche located within the development, during the morning and evening peak hour periods using data from TRICS. Based on the below trip rates, potential peak hour traffic generation is calculated based on the 400m^2 creche. As the creche is anticipated to serve residents of the Sandford Road development and those residing in the immediate local catchment, the vehicle trip rates generated by the creche have been discounted by a factor of 0.6. **Table 4.5**

summarizes the predicted peak hour AM and PM traffic generated by the development creche.

Land Use Creche	GFA	AM Peak Hour 08:15 – 09:15			PM Peak Hour 16:45 – 17:45		
		Arr	Dep	Total	Arr	Dep	Total
Trip Rates	Per 100m²	2.511	2.248	4.759	1.957	2.352	4.309
Vehicle Trips	400m²	4	4	8	3	4	7

Table 4.5: Proposed Development Creche Trip Rates & Vehicle Trips

4.8.21 The trip generation exercise demonstrates that a creche of this size would not generate more than 8 two-way vehicle trips in the worst case peak hour scenario. The majority of these trips would be attributed to drop-off / collection parking, rather than long-term parking.

4.8.22 The 3 no. designated creche car parking spaces immediately north of Block F and the 400m² creche would accommodate the low car parking demand generated by the creche. This provision is deemed sufficient to accommodate the creche parking demands and is compliant with the DCC maximum of 5 no. spaces. The Tabor House car parking spaces can be utilized by visitors to the site's residential units at the times which the creche is not operational. The management of these parking spaces as well as others is set out in further detail in the Parking Strategy report submitted as part of the planning application documentation.

4.8.23 The Tabor House parking area will be treated with a different surface finish to establish pedestrian and cyclist priority and low vehicle speeds in this area. Please refer to the landscaping drawings produced by Cameo.

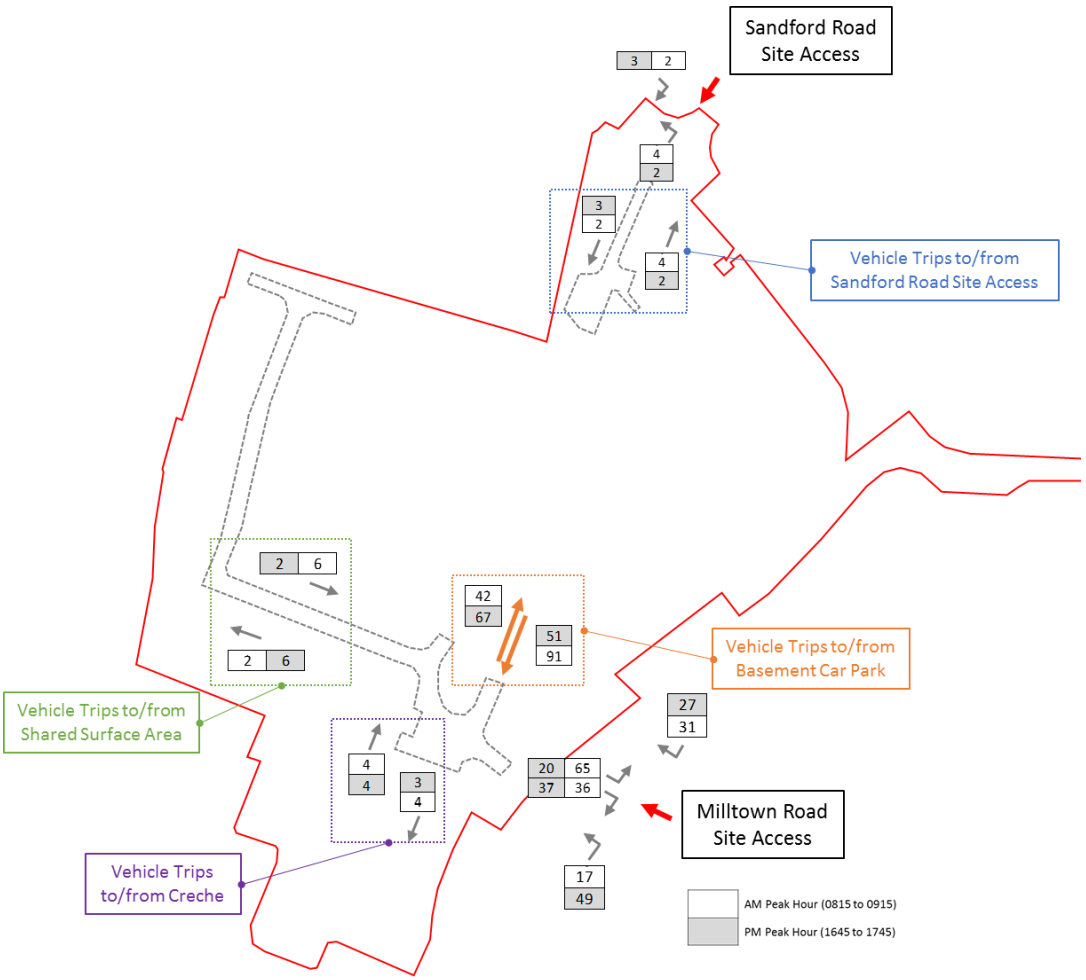


Figure 4.13: Proposed Development Vehicle Trips

Mobility Impaired Parking

4.8.24 The appropriate level of mobility impaired parking provision for the proposed development will also be provided in accordance with Dublin City Development Plan 2016-2022 requirements. The Development Plan requires a provision equivalent to 5% of the total number of car parking spaces provided for the development.

4.8.25 The subject development site provides 18 no. mobility impaired parking spaces for apartment unit residents. Therefore, the development provision meets the Development Plan requirements and complies with the requirement to locate the mobility impaired spaces in close proximity to the proposed apartment blocks' entry points. Of these spaces, 4 will be located at surface level and the remaining 14 will be located within the development basement as shown in **Figure 4.14** below. Of the mobility impaired spaces at basement level, 3 no. will also be EV charging spaces.

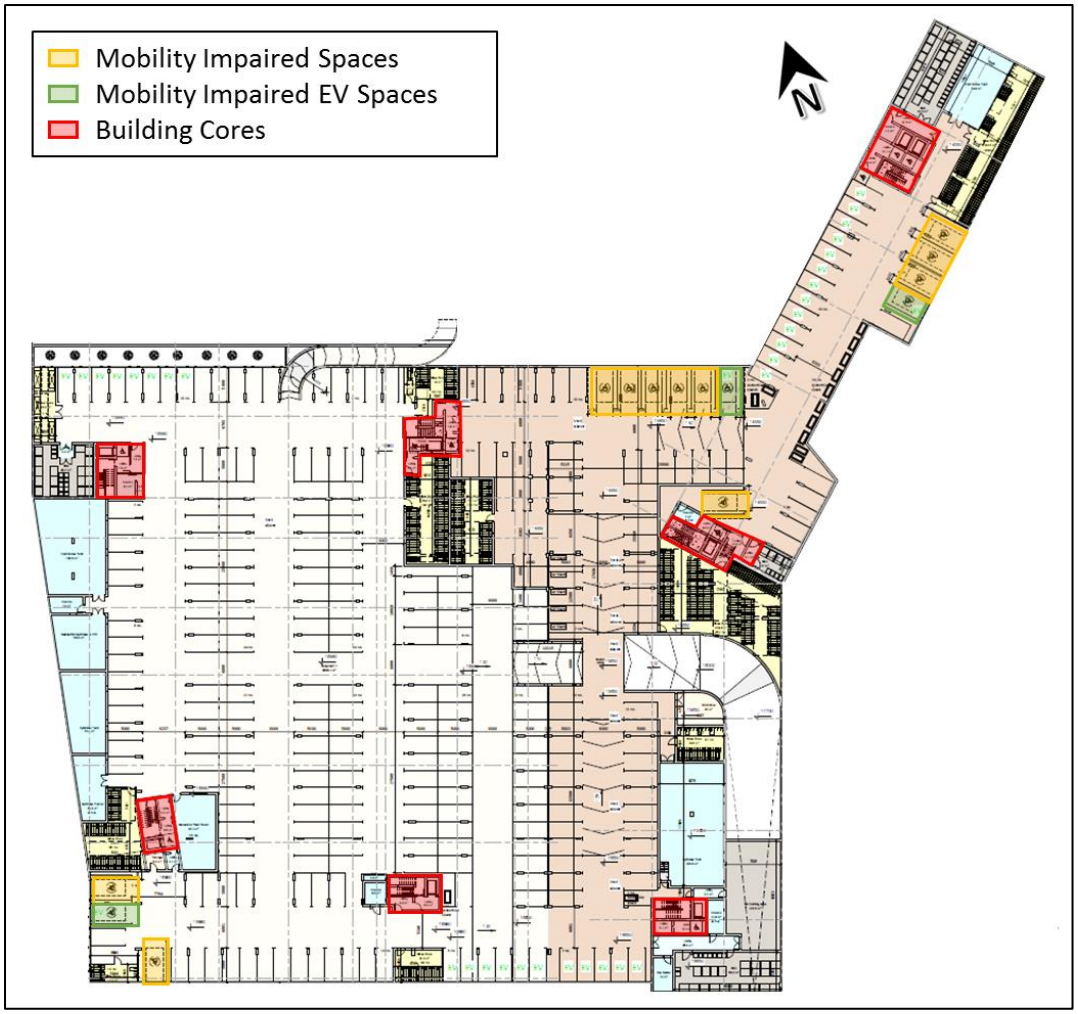


Figure 4.14: Mobility Impaired Parking Spaces within Basement

Car Share

4.8.26 As part of the Sandford Road development, a total of 10 No. car share spaces will be provided. Of this provision, 5 No. spaces will be designated as GoCar spaces and 5 no. spaces will be managed as development car share spaces available for use by the BTR residents.

4.8.27 As shown in **Figure 4.15** below, 5 no. of the aforementioned car share spaces (GoCar) will be located at surface level with the remaining 5 no. spaces being located at basement level.

Figure 4.15: Car Share Spaces at Subject Site

Electric Vehicle Charging Stations

4.8.28 A total of 10% of the development's car parking provision will be fitted out with electric vehicle charging stations as shown in **Figure 4.16** below. This is equivalent to 35 No. spaces and is compliant with *Dublin City Development Plan 2016-2022* Standards. The remaining on-site car parking will benefit from having the EV infrastructure implemented thereby enabling easy retro fitting of charge points in the future as and when they may be required. As mentioned above, 3 no. of the EV charging spaces will also be mobility impaired spaces.

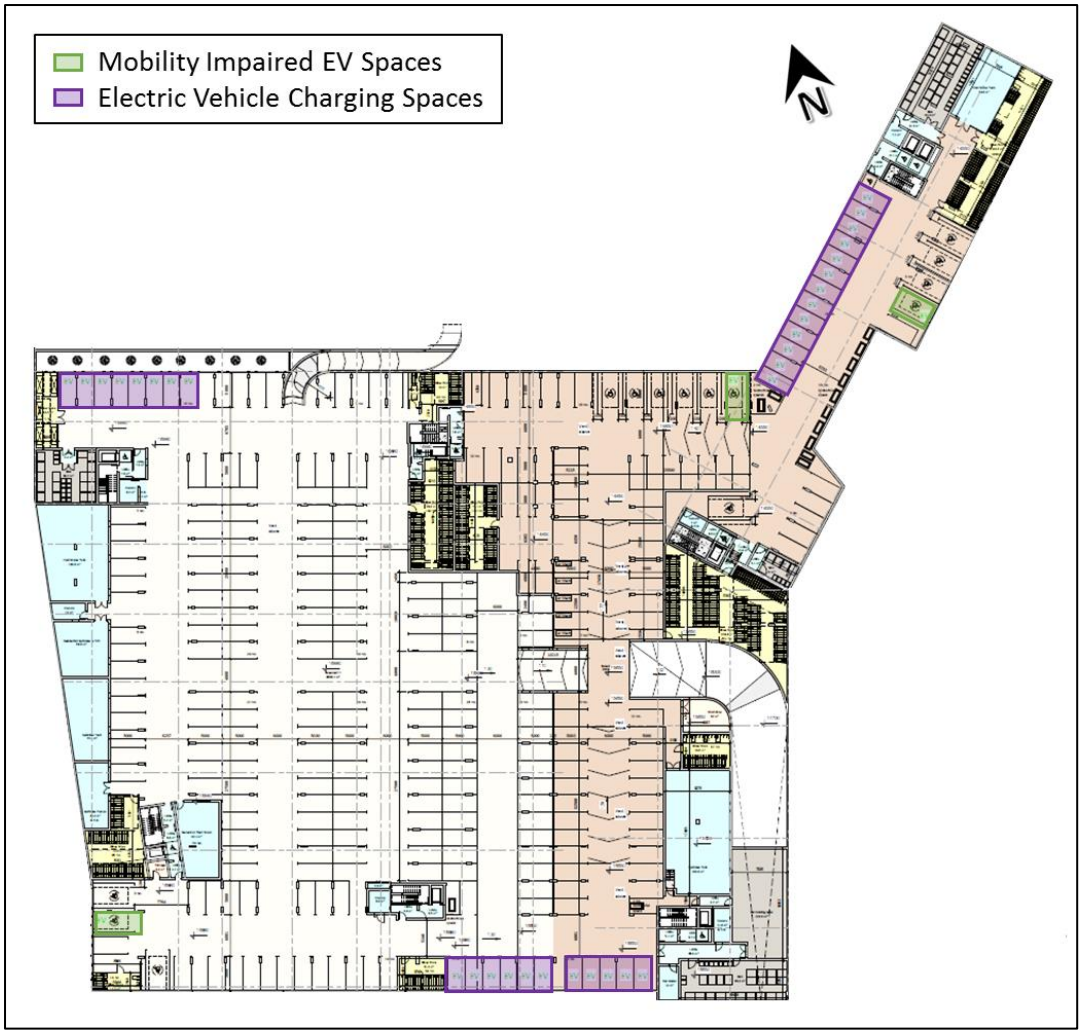


Figure 4.16: Electric Vehicle Charging Spaces within Basement

Motorcycle Parking

4.8.29 In compliance with the Dublin City Development Plan 2016-2022 Standards, a total of 14 No. motorcycle spaces will be provided within the development basement as shown in **Figure 4.17** below.

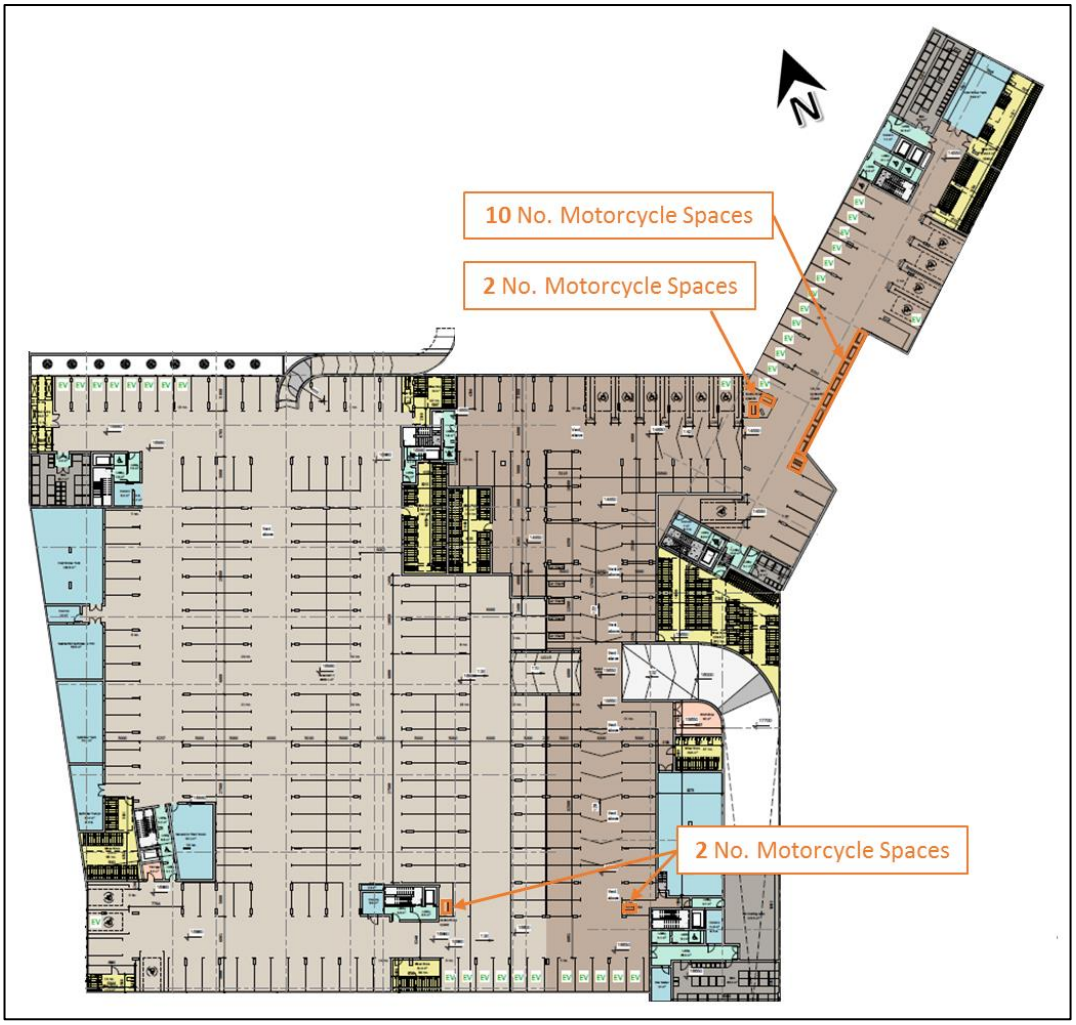


Figure 4.17: Motorcycle Parking Spaces at Subject Site

4.9 CAR PARKING PROVISION FOR APARTMENTS

4.9.1 With the objective of establishing whether this parking ratio (approximately 0.50/unit) would be appropriate to accommodate the likely demand generated for car parking at the subject Sandford Road development, DBFL have reviewed the following data sources; -

- Review of 2016 Census Data – Car Ownership trends;
- Review of 2016 Census Data – Existing Modal Split trends; and
- Review of National Transport Authority– National Household Survey 2017.

Car Ownership and Usage

4.9.2 In order to determine an appropriate parking provision for the subject development the current demand for car parking within the surrounding area of the proposed development site was researched using the 2016 CSO data and in particular the

level of current car ownership. The 2016 CSO small area map has been reviewed. Apartment blocks within seven small areas similar to the proposed development were assessed. These Small Areas represent similar attributes to the proposed apartment units in terms of being located within an urban environment, similar distance from the City Centre as well as having good availability of Dublin Bus routes and their proximity to the Green Line LUAS.

4.9.3 A total of 684 units were included in this assessment. The CSO data for Apartments who do not own a car in this area is presented in **Table 4.6** below.

Small Area	No. Apts	No. Houses	No. Households with No Car	% of Households with No Car	Equivalent Rate of Parking Ownership (Space/Unit)
1	89	10	27	27%	0.73
2	60	20	22	28%	0.73
3	53	14	21	31%	0.69
4	141	30	34	20%	0.80
5	78	5	8	10%	0.90
6	105	0	18	17%	0.83
7	65	14	9	11%	0.89
				Average	0.79

Table 4.6: 2016 CSO Car Ownership Data

4.9.4 **Table 4.6** highlights that the level of households that do not own a car within the particular census small area varies between a low 10% in Area 5 to a higher 31% in Area 3. The overall average level of car parking ownership within these locations is 0.79 spaces per unit. It is noted that these apartments are typically based on past development standards that adhered to the 1 car space per unit for apartment blocks and also based on a different commercial model with parking spaces designated to units as part of the sale agreement.

4.9.5 It should also be considered that whilst many households own a car, they may not avail of their car for commuting purposes and may use their vehicle infrequently. Using a vehicle for commuting purposes could also be hindered by a commuter's destination, for example, does their place of work have restricted car parking allocation in force. Therefore, in order to assess the level of daily use for commuters who drive their vehicle to work, the 2016 CSO data was again reviewed for the modal split for people travelling to Work, School or College. This was assessed for the same 7 small areas as previously discussed. The results of this assessment are detailed in **Table 4.7** below.

Small Area	No. Commuters	% Households with No Car	No. Commuters that Drive	% Commuters that Drive
1	170	27%	47	28%
2	129	28%	39	30%
3	109	31%	28	26%
4	273	20%	78	29%
5	111	10%	43	39%
6	140	17%	48	34%
7	135	11%	46	34%
			Average	31%

Table 4.7: 2016 CSO Data – Percentage of Commuters that use their Vehicle

4.9.6 **Table 4.7** above, outlines that although car ownership within these locations is at an average 79%, the percentage of commuters that use their vehicle to drive to work, college or school is lower at an average of 31% over all areas assessed. This highlights that although commuters may own vehicles within these areas, a high proportion of them avail of other, more sustainable, modes of travel for commuting purposes. The proposed development is located adjacent to the Sandford Road and Milltown Road with close proximity to good public transport routes and stops with the Beechwood Luas Stop located 1km from the subject site.

4.9.7 The level of car ownership (0.79) with reduced **car usage for commuting (0.31)** within the CSO small areas indicates that the development proposal of a parking provision of 0.50 per residential apartment unit is reasonable.

Modal Split for Small Areas

4.9.8 The same seven Census Small Areas were assessed to identify the modal split within the subject area. The assessment reveals that car is the predominant mode of transport with 31% driving and 4% as car passengers. Walking and cycling is the second most prominent mode of transport with a modal share of 27% and 11% respectively. All commuting journeys made by Luas and Bus within the assessed areas, forms modal share of 13% and 7% respectively. **Figure 4.18** below depicts the modal split within the area.

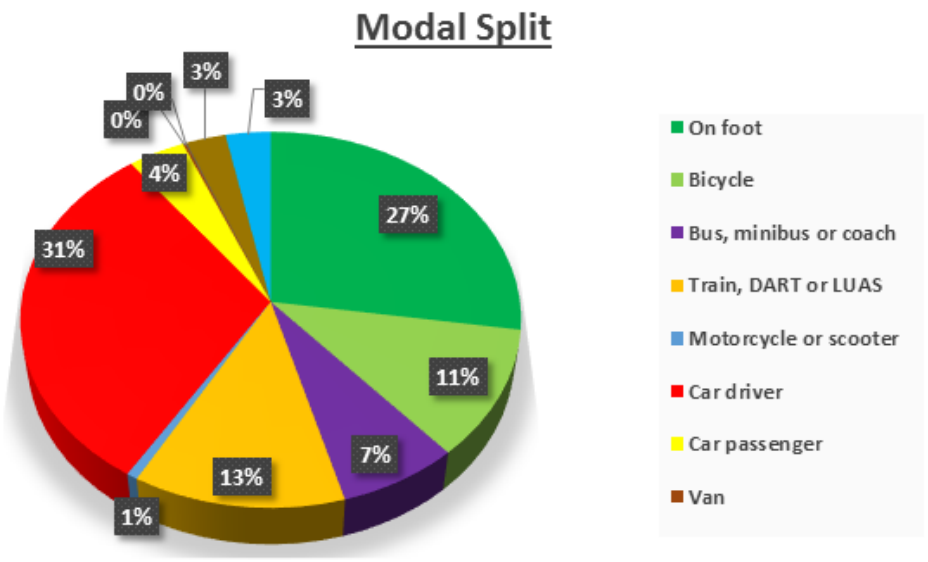


Figure 4.18: Existing Modal Split (Source: CSO)

4.9.9 In summary, existing levels of car ownership and usage would indicate a trend towards the use of sustainable travel modes by residents of apartment developments in the Dublin area. It is imperative that viable travel alternatives are provided and encouraged. This will have the impact of reducing demand for use of the private vehicle and subsequent requirements for car parking. To this end a Mobility Management Plan has been produced for the development and should be read in conjunction with this report.

National Household Survey 2017

4.9.10 The National Transport Authority (NTA) has undertaken National Household Travel Survey (2017) which is a representative study of Ireland's travel habits. The main aim of this study is to obtain accurate data describing the typical travel habits of the representative sample of the Irish population throughout the week, across all regions of the country and including number of trips made daily, the mode and time of travel, the distance travelled and the journey purpose.

4.9.11 This intensive study reveals that within the Dublin City region, there is an upsurge in cycling for the 18-34-year age group which indicates that cycling is a more popular mode of transport for this age group with approximately 15% modal share. Walking is also popular mode of transport for the same age group with approximately 30% modal share. The study also reveals that travel by car is about

0.34 for the 25-34-year age group. This has a strong correlation with the CSO data analysis for car usage 0.31 and age demographics which indicated that the main age group in the Ranelagh area is 25-34.

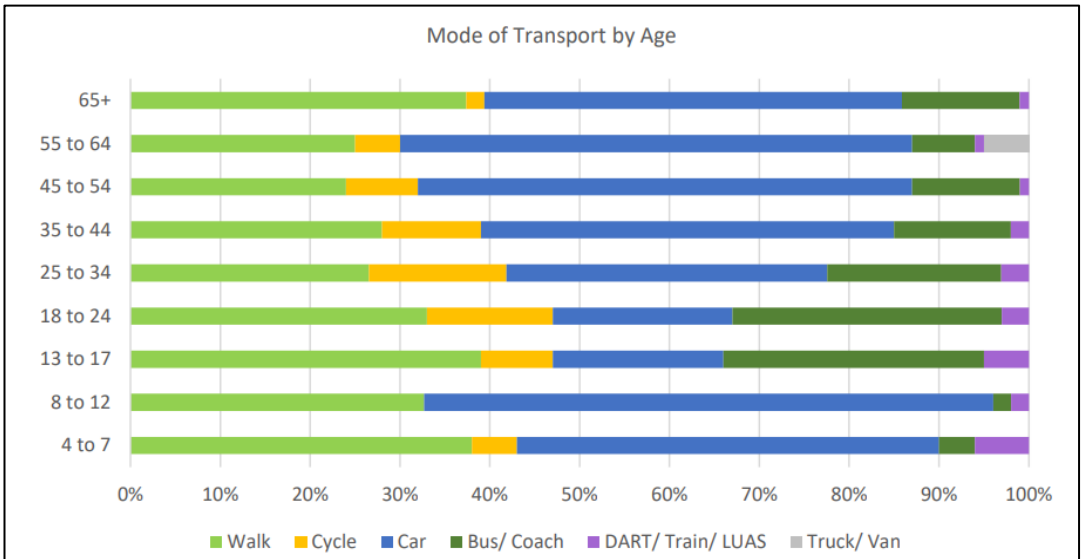


Figure 67: Mode of Transport by Age: Dublin City

Figure 4.19: Mode of Transport by Age-GDA (National Household Travel Survey 2017)

4.9.12 Similarly, the proposed parking of 0.50 per residential apartment unit, is deemed appropriate considering access to sustainable modes of travel in the area. Further, provisions made in this subject development such as an excess in the provision of cycle parking, GoCar availability within the subject site, Parking Management and an MMP to govern the development when operated, all contribute to the suitability of the 0.50 per residential apartment unit parking proposal. The Parking Strategy included within this pre-application package includes more detail to further justify the proposed development car parking ratio and provision.

Comparison with Development Standards

4.9.13 **Table 4.8** below compares the *Dublin City Development Plan 2016-2022* standards with the car parking provision at the proposed development.

4.9.14 Residential car parking is provided at a ratio of 0.50 car parking spaces per residential apartment unit, a reduced quantum from the DCC standard of one car parking space per residential unit. This reduced provision leans towards the DHPLG requirement, considering the proposed developments highly accessible urban characteristics.

Land Use		DCC Requirements	Proposed Car Parking	
Residential	BTR Apartments	671	258	325
	BTS Apartments		67	
	Car Share – GoCar	-	5	10
	Car Share – Development Car Share	-	5	
Other	Creche	5	3	9
	Drop-off / Collection Spaces	-	4	
	Taxi Spaces	-	2	
Total		**676**	**344**	
Total Car Parking Ratio = 0.50 Spaces/Unit				

Table 4.8: Comparison of Car Parking Requirements & Provision

4.10 CYCLE PARKING

4.10.1 A generous provision of secure and accessible bicycle parking will be a key component of the transportation offering at the development. Whilst DCC have detailed requirements in this regard, the requirements of the DHPLG Sustainable Urban Housing Standards generally exceed those of local authorities.

4.10.2 The DHPLG requirements are generally viewed as somewhat excessive. Application of these requirements results in an overall requirement of 1335 no. spaces based on the current schedule of accommodation.

4.10.3 Recent experience in the determination of an appropriate provision for bicycle parking would suggest that the provision for the site should be between the local authority and the DHPLG standards.

4.10.4 Dublin City Council has published cycle parking guidelines contained within the Dublin City Development Plan 2016-2022. The development plan states that the number of bicycle stands required for the development is one space per apartment unit. Accordingly, a total of 697 no. cycle parking spaces are required to be provided for the apartment units.

4.10.5 As outlined in **Table 4.10** below, the provision of a total of 1361 dedicated bicycle spaces to be provided for the apartments and development creche would comply with the minimum requirements outlined within the Dublin City Council development standards.

Land Use Description	DCC Parking Requirements (Zone 2)	DHPLG Requirements	
	Long Stay	Long Stay	Short Stay
Apartments	1 space per unit	1 space per bedroom	1 space per 2 units
Creche	1 per 3 children	N/A	N/A

Table 4.9: Cycle Parking Requirements

Land Use Description	No. Units (Beds) /GFA	DCC Parking Requirements	DHPLG Requirements		Development Cycle Parking Provision	
		Long Stay	Long Stay	Short Stay	Long Stay	Short Stay
Apartments	671 (999)	671	999	336	999	336
Creche	400m^2	26	-	-	26	
Total		**697**	**1335**		**1361**	

Table 4.10: Cycle Parking Requirements & Provision

4.10.6 Therefore, given the DCC requirements and considering the DHPLG cycle parking standards, a provision of 1361 no. cycle parking spaces is proposed for this development site. Of this provision, 999 no. are long stay cycle spaces (1.5 cycle spaces per residential unit) and 336 no. spaces are intended as short stay cycle parking spaces for visitors to the development (0.5 cycle spaces per residential unit), with 9 no. spaces of the provision being provided as cargo bicycle spaces. The long stay cycle spaces will be located within the basement car park, as such they will be covered and secure, with an additional 5 no. secure and covered bicycle shelters located at surface level.

4.10.7 Of the cargo bicycle spaces, 4 no. spaces will be available at surface level and 5 no. will be at basement level in a secure bicycle shelter.

4.10.8 For employees and visitors to the creche, 26 no. cycle parking spaces have been allocated; 2 no. of these spaces will be cargo bicycle spaces which will be situated in close proximity to the creche building. These proposals exceed DCC requirements and are therefore compliant with the DCC requirements.

4.10.9 Included within the generous cycle parking provision proposed within the development, are bicycle parking spaces in the form of the 'BLEEPER bike' scheme. Approx. 10 no. BLEEPER bikes have been positioned within the proposed development ground for use by residents. These 10 no. spaces are included within the 1361 no. cycle parking provision for the subject site. This scheme allows for a stationless bike sharing scheme. This scheme uses a phone application and bikes can be picked up and left anywhere that traditional bicycle parking is permitted. They do not require custom built docking bays.

4.10.10 **Figures 4.20** and **4.21** illustrate the layout of on-site proposed cycle parking spaces both on surface and within the basement.

Figure 4.20: Bicycle Parking Layout on Surface

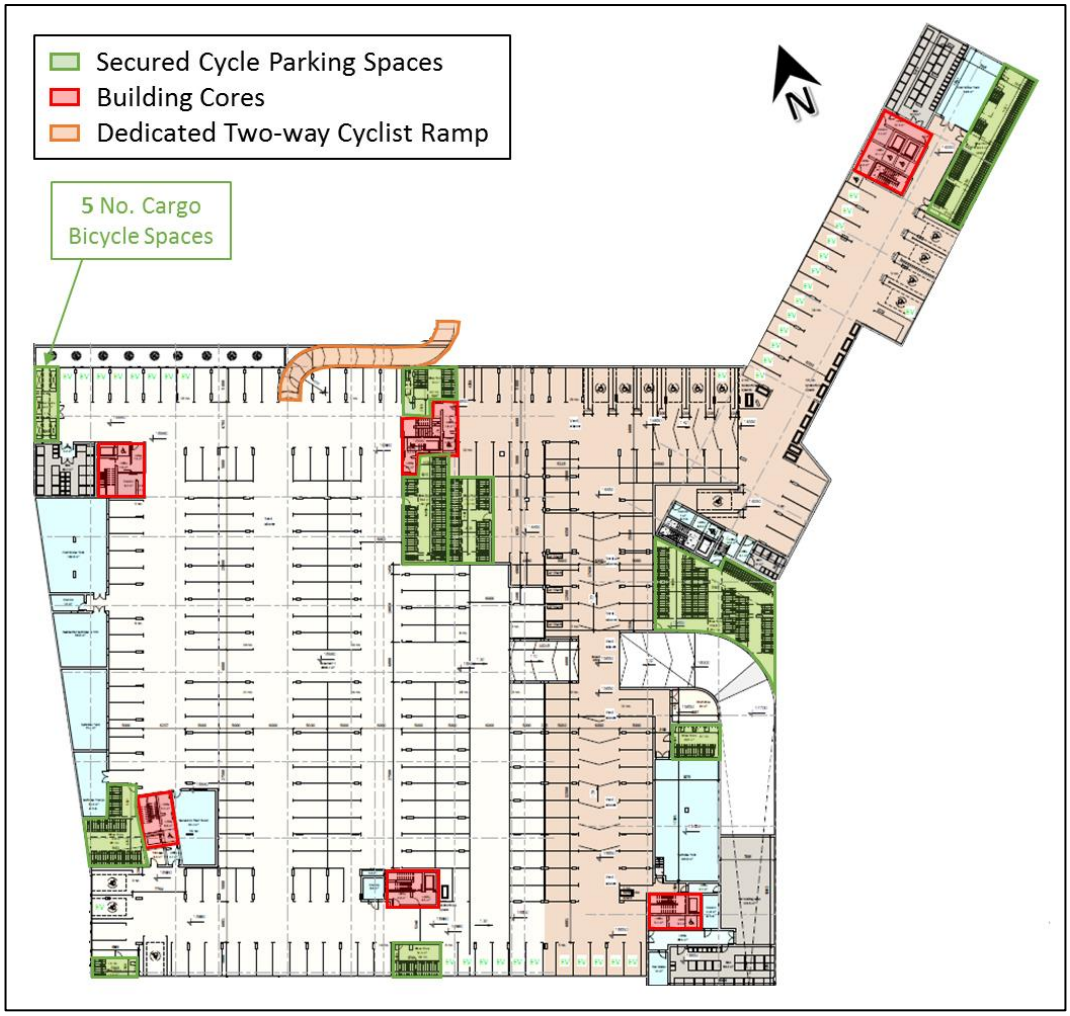


Figure 4.21: Bicycle Parking Layout within Basement

4.11 INITIATIVES FOR SUSTAINABLE TRAVEL

4.11.1 Policy documents in Ireland, as referenced in **Section 3** of this report, highlight the importance of travel by more sustainable means (Walking, Cycling, Public Transport) and that reduction in car use is key to the improvement of travel and mobility within the country. Promoting sustainable travel, therefore, is a vital element for this development.

4.11.2 It is acknowledged, however, that homeowners may require a vehicle of some sort for purposes other than commuting on an everyday basis and simply reducing car parking to 0.50 spaces per residential apartment unit would not be realistic without implementing alternative measures to accommodate residents and visitors alike. Therefore, the following sustainable alternative arrangements could be proposed should car parking and car ownership be reduced within the development for the Build-to-Rent residents:

- Car Club (GoCar);

- Mobility Management Plan;
- Increased Cycle Parking (Including Initiatives such as Bleeper Bike);
- Parking Management; and
- Sustainable Travel Initiatives.

Car Club

4.11.3 A Car Club provides its members with quick and easy access to a vehicle for short term hire. The GoCar is a well-established and successful car club operator in Dublin. This service has been recommended in recent developments as a means for car sharing where car parking is reduced. GoCar would provide a number of permanent vehicles within close proximity to the development or within the development itself where residents would have availability to use.

4.11.4 A recent survey undertaken by GoCar indicated that the main uses of the service was for day trips, family trips and big shopping trips. The survey also highlighted that the average use of a car was for 1 hour a day. GoCar also offer more favorable rates for long distance travel.

4.11.5 Approx. 10 no. car parking spaces have been allocated to car sharing for residents, of which 5 no. will be operated by GoCar and a further 5 spaces will be available for the development's own car share club.

4.11.6 A Letter of Intent from GoCar has been provided to support this planning application.

Mobility Management Plan

4.11.7 An outline Mobility Management Plan has been prepared, within a separate document, and should be read in conjunction with this document. The MMP will be developed further at operation stage by the management company who will have a more active role than a management company from a traditional apartment development.

Generous Cycle Parking Provision

4.11.8 Increasing cycle parking is an excellent alternative measure to further encourage a modal shift from the use of private vehicle as encouraged through a reduced car parking provision. A total of 1361 no. cycle spaces are proposed for this development with a total of 671 no. residential units being proposed. It is noted that the provision of cycle parking proposed within the development is more than

adequate to accommodate residents and visitors to the site. As shown in **Figures 4.20** and **4.21** above, all the long stay cycle spaces are located in secured locations either in the development basement or throughout surface level bicycle shelters. Dedicated pedestrian and cyclist paths connect building entrances to bicycle parking locations and site accesses, as shown in **Figure 4.3** above.

Sustainable Travel Initiatives

4.11.9 **Section 2** of this report outlines the initiatives for sustainable travel that are proposed within close proximity of the development site such as BusConnects routes, the National Cycle Network routes as well as overall improvements to the walking and cycling network. These will provide additional enhancements for sustainable travel throughout the area.

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 TRAFFIC SURVEYS

5.1.1 In order to establish the existing local road networks traffic characteristics and subsequently enable the identification of the potential impact of the proposed residential development, traffic surveys were conducted on Tuesday 11th February 2020.

5.1.2 The aforementioned traffic surveys (weekday classified junction turning counts) were conducted by IDASO for a 12-hour period between 07:00 AM to 19:00 PM. The traffic count data collected from these surveys are included within **Appendix A**. The surveys undertaken were Junction Turning Counts (JTC) on each approach to the junction. JTCs were carried out at three junctions within close proximity to the proposed development site. The following three locations were included within the survey (**Figure 5.1**):

- **Junction 1** – Northern Site Access / R117 Sandford Road / Belmont Avenue;
- **Junction 2** – R117 Sandford Road / R825 St. James's Terrace / R117 Milltown Road / R824 Eglinton Road; and
- **Junction 3** – Southern Site Access / R117 Milltown Road / Mount Sandford.

Figure 5.1: Traffic Survey Locations

5.1.3 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 these local junctions was created by DBFL. Base traffic flows and the Flow Diagrams for all scenarios are illustrated within **Appendix C.**

5.2 TRAFFIC GROWTH

5.2.1 An Opening Year of 2022 has been assumed for this assessment. In accordance with TII (NRA) Guidance, Future Design years (+5 and +15 years) of 2027 and 2037 have also been adopted.

5.2.2 The TII Project Appraisal Guidelines (PAG) have been utilized to determine the traffic growth forecast rates. The traffic growth forecast rates within the PAG ensures local and regional variations and demographic patterns are accounted for.

5.2.3 Table 6.1 within the PAG provides Annual National Traffic Growth Factors for the different regions within Ireland. The subject site lies within 'Dublin' with the growth factors as outlined within **Table 5.1** below.

Metropolitan Area	Low Sensitivity Growth Rates				Central Growth Rates				High Sensitivity Growth Rates			
	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

Table 5.1: National Traffic Growth Forecasts: Annual Growth Factors
(Extract from Table 6.1 PAG)

5.2.4 Applying the annual factors (medium growth) as outlined in **Table 5.1** above for the adopted Opening Year of 2022 and Future Horizon Years of 2027 (+5 years) and 2037 (+15 years), the following growth rates have been adopted to establish corresponding 2022, 2027 and 2037 baseline network flows: -

- 2020 to 2022 – 1.0327 (or 3.27%);
- 2020 to 2027 – 1.1191 (or 11.91%); and
- 2020 to 2037 – 1.2169 (or 21.69%).

5.2.5 Traffic flow diagrams for the 2022, 2027 and 2037 flows are illustrated in **Appendix C** of this report.

5.3 TRIP GENERATION

Proposed Development Trips

5.3.1 A review of trip generation factors contained within the TRICS database was carried

out. TRICS data is primarily UK based, although a number of Irish sites have recently been included and the number of Irish sites continues to expand. Nevertheless, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

5.3.2 Notwithstanding the above, internal research undertaken by TRICS has shown that there is no direct evidence of trip rate variation by country or region. The use of English, Scottish or Welsh data can be equally applicable to Ireland if users take into account important site selection filtering factors such as levels of population, location type, local public transport provision, and development size and car ownership level, amongst others.

5.3.3 Data supplied for inclusion in TRICS undergoes a procedure of validation testing, and there is no evidence from this procedure suggesting that data from Ireland bears any significant fundamental differences to that from the other countries included. Consequently, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

5.3.4 **Table 5.2** below includes the predicted trip generations and our estimate of the likely traffic flows in and out of the proposed development during the morning and evening peak hour periods using data from TRICS.

Land Use	Unit/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
BTS Apartments	Per Unit	0.054	0.214	0.268	0.204	0.066	0.271
BTR Apartments	Per Unit	0.072	0.144	0.215	0.104	0.085	0.188
Creche	Per 100m^2	2.511	2.248	4.759	1.957	2.352	4.309

Table 5.2: Proposed Development Trip Rates (TRICS)

5.3.5 Based on the above trip rates, potential peak hour traffic generation is calculated based on 671 no. apartments and one 400m^2 creche. **Table 5.3** summarises the predicted peak hour AM and PM traffic generated by the proposed development. The creche use within the development is not anticipated to generate notable external vehicle trips as it will be predominately catering towards the residents of the Sandford site and the local catchment within the community. As such the trip rates for the creche land use have been discounted by a factor of 0.6. The TRICS output files are included in **Appendix B** of this report.

Land Use	Units /GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
BTS Apartments	67	4	14	18	14	4	18
BTR Apartments	604	43	87	130	63	51	114
Creche	400m^2	4	4	8	3	4	7
Total	**671**	**51**	**105**	**156**	**80**	**59**	**139**

Table 5.3: Proposed Development Vehicle Trips

5.4 COMMITTED DEVELOPMENTS

5.4.1 Following a review of DCC online planning portal, DBFL have established the extent of existing third party developments, as located within the area of influence of the subject Sandford Road site, which currently benefit from a planning permission but have yet to be constructed/occupied.

5.4.2 Fully permitted developments in the nearby areas which include a car parking provision, and thereby generating vehicle trips which can contribute to the traffic flows along the road corridors modelled as part of this assessment have been considered. The committed developments taken into consideration have been chosen based upon the vehicle trips from committed vehicles which could potentially route through the local roads modelled as part of this traffic assessment (R117 Sandford Road, R117 Milltown Road, R825 St. James's Terrace and R824 Eglinton Road).

5.4.3 A number of committed developments within the proposed development's traffic catchment propose no car parking or no change in the net car parking available as part of the development. These developments are not deemed to generate any vehicle trips and as such have not been included in the subject site's traffic model.

5.4.4 DBFL have subsequently included the following third-party development proposals as a 'committed development' within the network assessment.

Committed Development – ABP Ref. PL29S.307267

5.4.5 East of the subject development, planning permission was granted for 148 no. residential apartment units (Ref. PL29S.307267) at Eglington Road in Donnybrook,

Dublin 4.

5.4.6 Its location relative to the subject site is shown on **Figure 5.2** below. This committed development is bounded by Donnybrook Road to the east; the development's site access will be via Brookvale Road.

5.4.7 DBFL consider that the permitted development may generate an impact on the local road network and as such it is included as a committed development.

5.4.8 In order to determine the level of traffic generated by this third-party residential development, DBFL utilised the vehicle trips included within the committed development's Traffic Assessment and Parking Strategy Report. **Table 5.4** below shows the vehicle trips generated by the Eglinton Road development which depart/arrive via the R824 Eglinton Road, and are therefore distributed on the subject site assessed traffic network.

Land Use	Units/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
BTS Apartments	148	1	5	6	3	1	4

Table 5.4: Committed Development (ABP Ref. PL29S.307267) Traffic Generation

5.4.9 In reality, the development may be delivered in a phased manner, however for the purposes of conducting a conservative assessment of the traffic impacts of the development it has been assumed that the entire development will be constructed by 2022.

Committed Development – ABP Ref. PL29S.307375

5.4.10 West of the subject development at Sandford Close, planning permission was granted (Reg. Ref. 2189/20) for the demolition of the southern portion of the Sandford Lodge residential development in order to construct 36 no. residential apartment units in the form of 2 no. three storey terraces. The location of the committed development relative to the subject site is shown in **Figure 5.2** below.

5.4.11 The Sandford Lodge development has been granted by DCC and An Bord Pleanála (Ref. PL29S.307375) and therefore has been included in the traffic assessment of the proposed development in order to provide a robust assessment.

5.4.12 In order to determine the level of traffic generated by this third-party residential development, DBFL utilised the same trip rates as those utilised for the proposed subject development for the Build-to-Sell (BTS) apartment land uses as shown in **Table 5.2** above. **Table 5.5** below summarises the predicted peak hour AM and PM traffic generated by the committed residential development.

Land Use	Units/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
BTS Apartments	36	2	8	10	7	2	9

Table 5.5: Committed Development (ABP Ref. PL29S.307375) Traffic Generation

Committed Development – DCC Ref. 2582/16

5.4.13 To the north of the subject site, planning permission was granted by DCC (Reg. Refs. 2582/16, 3312/20) for the demolition of existing sheds and the construction of 4 no. detached houses at 91 Belmont Avenue. The location of the committed development relative to the subject site is shown in **Figure 5.2** below.

5.4.14 In order to determine the level of traffic generated by this third-party residential development, DBFL used TRICS to generate trip rates for houses as shown in **Table 5.6** below. **Table 5.6** below also summarises the minimal predicted peak hour AM and PM traffic generated by the committed residential development.

Land Use - Houses	Units/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
Trip Rates	4	0.124	0.337	0.461	0.338	0.166	0.503
Vehicle Trips		0.5	1.3	1.8	1.4	0.7	2.1

Table 5.6: Committed Development (DCC Ref. 2582/16) Traffic Generation

Committed Development – ABP Ref. 300024-17

5.4.15 Located on the R825 Clonskeagh Road, southeast of the subject development, planning permission was granted for the development of the Paper Mills site, bounded by the River Dodder to the East. The development proposes the construction of 116 no. apartments with the associated car parking provided at basement and surface level. The location of the committed development relative

to the subject site is shown in **Figure 5.2** below.

5.4.16 The Paper Mills development site has been granted by DCC (Refs. 3159/17, 2308/16,2620/14) and An Bord Pleanála (Ref. 300024-17) and therefore has been included in the traffic assessment of the proposed development in order to provide a robust assessment.

5.4.17 In order to determine the level of traffic generated by this third-party residential development, DBFL utilised the same trip rates as those utilised for the proposed subject development for the Build-to-Sell (BTS) apartment land uses as shown in **Table 5.2** above. **Table 5.7** below summarises the predicted peak hour AM and PM traffic generated by the committed residential development.

Land Use	Units/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
BTS Apartments	116	6	25	31	24	8	32

Table 5.7: Committed Development (ABP Ref. 300024-17) Traffic Generation

Figure 5.2: Location of Committed Developments

5.4.18 In addition to the aforementioned permitted developments, a number of nearby residential and mixed developments have been granted by DCC (3301/20, 2115/19, 3513/20). These committed developments are not considered to impact the surrounding road network as they propose a 'car-free' development or no net change in the number of car parking spaces proposed. As such these developments

have not been included within the transportation assessment for the proposed development due to their lack of impact on the surrounding road network.

5.5 TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Trips

5.5.1 The distribution of the proposed development's generated vehicle movements as proposed by DBFL is presented in Figure 2 of **Appendix C** of this report. The associated residential vehicle trips have been assigned to the surrounding road network based on the surveyed traffic movements passing the site based on the following assumptions.

5.5.2 In the Opening Year 2022, we have assumed that the full development of 671 residential units will be complete and occupied in order to provide a conservative assessment of the development's traffic impacts. In this 2022 scenario we have assumed the following distribution (as per the existing traffic surveys) for the subject residential development:

- 4% of all AM vehicle trips will travel northwest on the R117 Sandford Road;
- 34% of all AM vehicle trips will travel south on the R117 Milltown Road;
- 62% of all AM vehicle trips will travel northeast on the R117 Milltown Road;
- 4% of all PM vehicle trips will travel northwest on the R117 Sandford Road;
- 62% of all PM vehicle trips will travel south on the R117 Milltown Road; and
- 34% of all PM vehicle trips will travel northeast on the R117 Milltown Road.

5.6 ASSESSMENT SCOPE

5.6.1 Two different traffic scenarios have been assessed, namely (a) the 'Base' (Do Nothing) traffic characteristics and (b) the 'Post Development' (Do Something) traffic characteristics.

5.6.2 The proposed development traffic flows have then been added to the network's 'Base' (Base + Committed Development) traffic flows to establish the new 'Post' Development traffic flows. Base Flows for the future design years were based on Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections published by Transport Infrastructure Ireland (TII).

5.6.3 In summary the following scenarios are considered at the residential site at Sandford Road:

Do Nothing

- A1 – 2022 Base Flows + Committed Developments
- A2 – 2027 Base Flows + Committed Developments
- A3 – 2037 Base Flows + Committed Developments

Do Something

- B1 – 2022 Do Nothing (A1) + Proposed Development Flows
- B2 – 2027 Do Nothing (A2) + Proposed Development Flows
- B3 – 2037 Do Nothing (A2) + Proposed Development Flows

Assessment Periods

5.6.4 The weekday AM and PM peak hour flows have been identified in traffic survey as occurring between 08:15 - 09:15 and 16:45 - 17:45 respectively. These peak hour periods form the basis of the network assessments.

Network Vehicle Flows

5.6.5 The following Figures as included in **Appendix C** present the vehicle flows across the local road network for each of the adopted development assessment scenarios:

- Figure 11 – 2022 Do Nothing (A1)
- Figure 13 – 2027 Do Nothing (A2)
- Figure 15 – 2037 Do Nothing (A3)
- Figure 12 – 2022 Do Something (B1)
- Figure 14 – 2027 Do Something (B2)
- Figure 16 – 2037 Do Something (B3)

5.7 IMPACT OF PROPOSALS

5.7.1 The Institute of Highways and Transportation document 'Guidelines for Traffic Impact Assessments' states that the impact of a proposed development upon the local road network is considered material when the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively. When such levels of impact are generated, a more detailed assessment should be undertaken to ascertain the specific impact upon the network's operational

performance. These same thresholds are reproduced in the TII document entitled Traffic and Transport Assessment Guidelines (2014).

5.7.2 In accordance with the IHT and NRA guidelines, assessments have been undertaken to establish the potential level of impact upon the key junctions of the local road network. To enable this calculation to be undertaken, the analysis took account of the following:

- 2022 Opening Year (Do Nothing & Do Something);
- 2027 Future Design Year Scenario (Do Nothing & Do Something); and
- 2037 Future Design Year Scenario (Do Nothing & Do Something).

5.7.3 **Table 5.8** details the percentage impact of the relevant key junctions (illustrated in **Figure 5.3**) for the 2022, 2027 and 2037 design years. The following junctions have been included within the transport assessment:

- **Junction 1** – Northern Site Access / R117 Sandford Road / Belmont Avenue;
- **Junction 2** – R117 Sandford Road / R825 St. James's Terrace / R117 Milltown Road / R824 Eglinton Road; and
- **Junction 3** – Southern Site Access / R117 Milltown Road / Mount Sandford.

Figure 5.3: Junctions included in Analysis

Junction ID	Location	2022		2027		2037	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Northern Site Access / R117 Sandford Road / Belmont Avenue	3.63%	1.88%	3.36%	1.74%	3.09%	1.60%
2	R117 Sandford Road / R825 St. James's Terrace / R117 Milltown Road / R824 Eglinton Road	3.57%	2.06%	3.30%	1.90%	3.04%	1.75%
3	Southern Site Access / R117 Milltown Road / Mount Sandford	10.47%	10.23%	9.66%	9.44%	8.89%	8.68%

Table 5.8: Network Impact Assessment

5.7.4 The resulting percentage in traffic flows for the 2022, 2027 and 2037 (with full development) is established as exceeding the 10% impact threshold for Junction 3 only.

5.7.5 **Figure 5.4** below illustrates the volume of two-way vehicle trips to/from the proposed development site that will travel through Junction 1 – Junction 3 inclusive in the 2037 Future Year for the AM and PM peak respectively.

Figure 5.4: Increase in Vehicle Trips Generated Through Key Site Junctions 2037 Do Something – 671 Units

5.7.6 As Junction 3 did exceed the 10% threshold required under the Institution of Highways and Transportation document 'Guidelines for Traffic Impact Assessments', a junction performance analysis has been conducted as required by the guidance document. These analyses are assessed and detailed in Chapter 6.

5.8 CONSTRUCTION ACTIVITIES POTENTIAL IMPACT

5.8.1 In general, the impact of the construction period will be temporary in nature and less significant than the final post development operational stage.

5.8.2 All construction activities will be governed by a Construction Traffic Management Plan (CTMP), the details of which will be agreed with Dublin City Council prior to the commencement of construction activities on site. The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction phase upon the public (off-site), visitors to the subject site (on-site) and internal (on-site) workers environments, are fully considered and proactively managed/programmed thereby ensuring that safety is maintained at all times, disruption is minimised and undertaken within a controlled hazard free/minimised environment.

5.8.3 During the general excavation of the foundations there may be additional HGV movements from the site. All suitable material will be used for construction and fill activities where possible and appropriate. All spoil material will be removed to a registered landfill site which will be agreed in advance with Dublin City Council.

5.8.4 In addition to the traffic generated by the disposal of surplus subsoil from the site, there will be traffic generated from deliveries of construction materials and equipment. It should be noted that construction traffic generated during the development works tends to be at off-peak hours. Such trips would generally be spread out over the full working day and are unlikely to be higher than the peak hour predicted for the operational stage.

5.8.5 Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff.
- 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.

5.8.6 On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic. The traffic surveys conducted by IDASO in February 2020 established the morning peak hour as occurring between 08:15 – 09:15. These employees will generally depart after 16:00. Appropriate on-site parking and compounding will be provided to prevent overflow onto the local network. Deliveries will be actively controlled and subsequently arrive at a dispersed rate during the course of the working day.

5.8.7 Based upon the experience of similar developments, a development of this type and scale would at a maximum necessitate approximately 40 staff on site at any one time, subsequently generating no more than 30 two-way vehicle trips during the peak AM and PM periods over the period of the phased construction works. Although the number of staff and light goods vehicles, transporting staff, will fluctuate over the period of construction works, the consideration of the worst-case scenario (40 staff members, 30 LGVs) provides a conservative assessment of the resultant traffic and transportation impacts of the subject development during the construction phase.

5.8.8 It is anticipated that the proposed development would be constructed over a period of approximately 34 months. Following the completion of the initial site clearance works, the generation of HGV movements during the build period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic periods. For this scale of development, we do not expect two-way HGV vehicle movements to exceed 16 vehicles per hour during the busiest period of construction 'build' works (**Table 5.9**).

	HGV	LGV	Total (vehs)	Total (pcus)
Daily	**64**	**60**	**124**	**207**
AM Peak Hour	16	3	19	40
Afternoon Peak	16	0	16	37
PM Peak Hour	16	3	19	40

Table 5.9: Projected Construction Traffic Flows

5.8.9 Based on a preliminary review of the existing survey data and proposed site levels we estimate that approximately 80,000 m^3 of material will require excavation. Whilst an element of the material will be reused on-site (10,000 m^3) it is still

predicted that approx. 70,000 m^3 of material will be require removal during the construction phase earthworks. This equates to 4,375 truckloads based on a tipper truck capacity of 16m^3. At 8 loads removed per hour, 16 two-way HGV movements per hour and 64 loads removed per day this equates to 68 days of earthmoving works as part of the adopted worst-case assessment to clear the entire site in one single construction activity.

Material to be excavated and removed off site	70,000 m^3
Total no. truckloads to be removed	4,375
Loads removed per day	64
Loads removed per hour	8
Two-way HGV movements per hour	16
Days of earthmoving works	68
Weeks of earthmoving activity	14

**Assumptions:* 1 HGV vehicle = 2.3 PCUs, Tipper truck capacity = 16m^3, 2 tipper trucks excavating at any one time, trucks departing every 20 minutes.*

Table 5.10: Construction Phase Earthworks

5.8.10 For the proposed Sandford Road development 3 foundation options have been considered. This transportation assessment has assumed the worst-case option for the above listed volume of material requiring removal and therefore HGV truckloads generating a traffic impact. Furthermore, the level of development assumed in the opening year would result in a greater traffic impact than that generated as a result of the most onerous of the 3 foundation options thereby providing a conservative and comprehensive assessment of the traffic impacts resulting from the subject site.

5.8.11 **Table 5.11** below compares the quantum of soil requiring removal per foundation option considered and the resulting number of HGV loads and inbound and outbound trips required to remove this quantum of soil. As shown below, option 3 results in the highest number of inbound and outbound trips and this has been the construction traffic scenario adopted within this assessment.

Foundation Option No.	Foundation Option Description	Quantum of Soil Removal (Inc. road and civil works)	Quantum of Trip Generation to Remove Soil

1	Standard Pad & Strip Foundations to All Blocks incl. Basement	70,000m³	4,375 loads 8,750 trips inbound & outbound
2	Pads & Strips to All Blocks except Bored Piles to Block D & F	64,000m³	4,000 loads 8,000 trips inbound & outbound
3	Pads & Strips to All Blocks except Ground Improvement to Block E	70,000m³	**4,375 loads** **8,800 trips inbound & outbound**

Table 5.11: Foundation Options Traffic Generation Comparison

5.8.12 In the absence of a final construction programme it is difficult to assess the exact impact during the construction period. Nevertheless, the following estimates have been made in respect of the construction period impacts given the assumption for a fully built and occupied development by the year 2022:

- Appropriate on-site parking and compounding will be provided to prevent overflow onto the local network.
- It is likely that some numbers of the construction team will be brought to/from the site in vans/minibuses, which will serve to reduce the trip generation potential.
- Delivery vehicles to and from the site will be spread across the course of the working day, therefore, the number of HGVs travelling during the peak hours will be relatively low.

5.8.13 Site offices and compound will be located within the site boundary. The site will be able to accommodate employee and visitor parking throughout the construction period. Initially, hard-standing parking areas will be provided and as the development progresses, employees will use constructed car-parking spaces, as they become available.

5.8.14 Finally, truck wheel washes will be installed at construction entrances and any specific recommendations with regard to construction traffic management made by Dublin City Council will be adhered to.

6.0 NETWORK ANALYSIS

6.1 INTRODUCTION

6.1.1 The operational assessment of the junction network has been undertaken using the Transport Research Laboratory (TRL) computer package PICADY for one priority junction.

6.1.2 When considering priority-controlled and roundabout 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.

6.1.3 For the PICADY analyses a 90-minute AM and PM period has been simulated, from 08:00 to 09:30 and 16:30 to 18:00, respectively. The traffic flows were entered using an Origin-Destination table for the peak hours.

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

- 2022 Opening Year (671 residential units);
- 2027 Interim Year (671 residential units); and
- 2037 Future Horizon Year (671 residential units).

6.1.5 The following key junctions have been analysed as illustrated in **Figure 6.1** below:

- **Junction 3** – Southern Site Access / R117 Milltown Road three-arm priority-controlled junction.

Figure 6.1: Junctions Included Within PICADY Analysis

6.2 JUNCTION 3: SOUTHERN SITE ACCESS / R117 MILLTOWN ROAD PRIORITY CONTROLLED JUNCTION

6.2.1 The proposed three arm priority-controlled junction has been analysed for all of the modelling scenarios using the Junctions 9 PICADY software package. The results of the operational assessment of this junction during the weekday morning and evening peaks for the Do Nothing and Do Something scenarios are summarised in **Table 6.1** below.

6.2.2 In the "Do Something" scenarios the three arms were labelled as follows within the PICADY model, as shown in **Figure 6.2** below:

Arm A: R117 Milltown Road South

Arm B: Southern Site Access

Arm C: R117 Milltown Road North

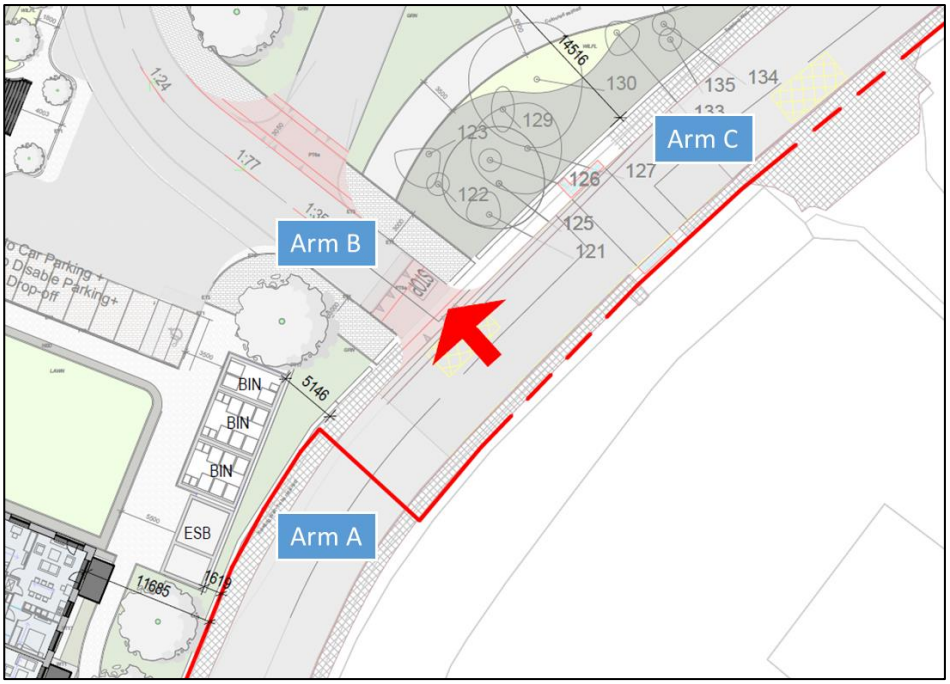


Figure 6.2: Junction 3 Priority Controlled Junction

Do Minimum Scenario

6.2.3 As there is no existing site access from the R117 Milltown Road onto the proposed development site at present, PICADY analysis for the "Do Minimum" Scenario are omitted for the Southern Site Access / R117 Milltown Road three-arm priority-controlled junction.

Do Something Scenario

6.2.4 The PICADY results (**Table 6.1**) indicate that the Southern Site Access / R117 Milltown Road three-arm priority-controlled junction will operate within capacity for the 2022 "Do Something" AM peak hour with a maximum RFC value of 0.12 being recorded on the left-turning site access arm (to C), with a corresponding queue of 0.1 pcus. For the corresponding PM peak hour, a maximum RFC value of 0.11 will occur on the northern arm of the R117 Milltown Road, with a corresponding queue of 0.2 pcus.

Year Scenario	Period	Arm	Description	Queue (pcu)	Delay (s)	RFC
2022 DS	AM Peak	A	R117 Milltown Road South	-	-	-
		B	Southern Site Access (To C)	0.1	7.25	0.12
			Southern Site Access (To A)	0.1	12.43	0.11
		C	R117 Milltown Road North	0.2	5.30	0.10
	PM Peak	A	R117 Milltown Road South	-	-	-
		B	Southern Site Access (To C)	0.0	6.90	0.04

			Southern Site Access (To A)	0.1	9.19	0.09
		C	R117 Milltown Road North	0.2	4.17	0.11
2027 DS	AM Peak	A	R117 Milltown Road South	-	-	-
		B	Southern Site Access (To C)	0.1	7.45	0.12
			Southern Site Access (To A)	0.1	13.07	0.12
		C	R117 Milltown Road North	0.2	5.22	0.10
	PM Peak	A	R117 Milltown Road South	-	-	-
		B	Southern Site Access (To C)	0.0	6.97	0.04
			Southern Site Access (To A)	0.1	9.51	0.09
		C	R117 Milltown Road North	0.3	4.06	0.11
2037 DS	AM Peak	A	R117 Milltown Road South	-	-	-
		B	Southern Site Access (To C)	0.2	7.70	0.12
			Southern Site Access (To A)	0.2	13.88	0.12
		C	R117 Milltown Road North	0.3	5.08	0.11
	PM Peak	A	R117 Milltown Road South	-	-	-
		B	Southern Site Access (To C)	0.0	7.06	0.04
			Southern Site Access (To A)	0.1	9.90	0.09
		C	R117 Milltown Road North	0.3	3.95	0.13

Table 6.1: 2022, 2027 and 2037 Do Something Analysis for Junction 3

6.2.5 For the 2037 Future Horizon Year "Do Something" scenario the PICADY results (**Table 6.1**) also indicate that the Southern Site Access / R117 Milltown Road priority-controlled junction will operate within capacity for the 2037 "Do Something" AM peak hour with a maximum RFC value of 0.12 on both the left-turning and right-turning site access arms, with a corresponding queue of 0.2 pcus for both arms. For the 2037 "Do Something" PM peak hour a maximum RFC value of 0.13 occurs along the northern arm of the R117 Milltown Road, with a corresponding queue of 0.3 pcus.

6.2.6 To conclude, the Southern Site Access / R117 Milltown Road priority-controlled junction will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest RFC recorded across the assessment occurred for the 2037 Do Something PM peak hour with an RFC of only 0.13, significantly lower than the 0.85 RFC threshold indicating a poorly performing junction. As the above assessment analyses junction operation during the AM and PM peak hours, it represents a worst case scenario.

6.2.7 A copy of the PICADY output file can be found in **Appendix D**.

7.0 SUMMARY AND CONCLUSION

7.1 OVERVIEW

7.1.1 DBFL Consulting Engineers (DBFL) have been commissioned to prepare a Traffic and Transport Assessment (TTA) for a proposed residential development at a site located on Sandford Road, Milltown, Dublin 6.

7.1.2 The proposal seeks permission for the provision of 671 no. residential apartment units, of which 67 no. are Built to Sell units and 604 no. are Build to Rent units, and one 400m^2 accompanying creche.

7.1.3 The purpose of this TTA was 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.

7.1.4 This TTA had carried out a range of assessments for an Opening Year of 2022 and a Future Horizon Year assessment of 2037. It is estimated that all 671 no. proposed residential units will be built and occupied by 2022 to provide a conservative and robust assessment of the proposed development's traffic impacts. Six different assessments have been analysed as follows: -

Do Nothing

- A1 – 2022 Base Flows + Committed Developments
- A2 – 2027 Base Flows + Committed Developments
- A3 – 2037 Base Flows + Committed Developments

Do Something

- B1 – 2022 Do Nothing (A1) + Proposed Development Flows
- B2 – 2027 Do Nothing (A2) + Proposed Development Flows
- B3 – 2037 Do Nothing (A2) + Proposed Development Flows

7.1.5 Based upon the information and analysis detailed within this TTA it has been demonstrated that;

- The site of the proposed residential development is ideally located to maximise access to / from the site by sustainable forms of travel including walking, cycling and public transport.

- The proposals are in accordance with the land use zoning for the subject development site.

- Two appropriately located, sized and designed vehicular site access junctions are being provided on the R117 Sandford Road and the R117 Milltown Road.

- The new site access junctions and priority junctions within the local street network will benefit from an appropriate level of visibility splays ensuring their safe operation.

7.1.6 Traffic generated by the proposed development was established in a percentage impact assessment on the surrounding key site junctions to assess the impact of a proposed development upon the local road network to investigate if the level of traffic generated surpasses 10%, on normal and congested networks, respectively. When such levels of impact are generated a more detailed assessment is undertaken to ascertain the specific impact upon the network's operational performance.

7.1.7 For the key junctions it can be seen that the proposed development (671 units) in 2037 would result in the following:

- **Junction 1** (Northern Site Access / R117 Sandford Road / Belmont Avenue): an increase of 3.09% (79 New Two-Way Vehicle Trips) in the AM peak period and 1.60% (33 New Two-Way Vehicle Trips) in the PM peak period;
- **Junction 2** (R117 Sandford Road / R825 St. James's Terrace / R117 Milltown Road / R824 Eglinton Road): an increase of 3.04% (96 New Two-Way Vehicle Trips) in the AM peak period and 1.75% (47 New Two-Way Vehicle Trips) in the PM peak period; and
- **Junction 3** (Southern Site Access / R117 Milltown Road / Mount Sandford): an increase of 8.89% (149 New Two-Way Vehicle Trips) in the AM peak period and 8.68% (133 New Two-Way Vehicle Trips) in the PM peak period.

Figure 7.1: Increase in Vehicle Trips Generated Through Key Site Junctions 2037 Do Something – 671 Units

7.1.8 Following this assessment of percentage impacts on key surrounding junctions, as Junction 3 exceeded the 10% threshold required under the Institution of Highways and Transportation document 'Guidelines for Traffic Impact Assessments', a junction performance analysis was conducted as required by the guidance document.

7.1.9 Hence the following key junction was analysed as illustrated in **Figure 7.2** below in the operational assessment component of this TTA:

- **Junction 3** – Southern Site Access / R117 Milltown Road three-arm priority-controlled junction.

Figure 7.2: Junction Included Within the PICADY Analysis

7.1.10 For the operational performance of the key off site junctions, it can be seen that the proposed development would result in the following: -

- **Junction 3** (Southern Site Access / R117 Milltown Road) for the 2022 "Do Something" Scenario will operate within capacity for the 2022 "Do Something" AM Peak scenario with a maximum RFC value of 0.12 or 12% with a corresponding queue of 0.1 pcus being recorded. For the 2022 "Do Something" PM Peak scenario the junction will operate within capacity with a maximum RFC value of 0.11 or 11% with a corresponding queue length of 0.2 pcus recorded. For the 2037 "Do Something" AM period the junction will continue to operate within capacity for the 2037 "Do Something" AM Peak scenario with a maximum RFC value of 0.12 or 12% with a corresponding queue of 0.2 pcus being recorded. For the 2037 "Do Something" PM Peak scenario the junction will continue to operate within capacity with a maximum RFC value of 0.13 or 13% with a corresponding queue length of 0.3 pcus recorded.

7.1.11 The Southern Site Access / R117 Milltown Road priority-controlled junction will operate well within capacity for all the peak hour scenarios for all the design years assessed. The highest RFC recorded across the assessment occurred for the 2037

Do Something PM peak hour with an RFC of only 0.13, significantly lower than the 0.85 RFC threshold indicating a poorly performing junction.

7.2 CONCLUSIONS

7.2.1 In conclusion, we believe that in terms of transport and traffic, An Bord Pleanála should favourably the proposed residential development on the subject site.

7.2.2 It is concluded that there are no traffic or transportation related reasons that should prevent the granting of planning permission for the proposed residential development.

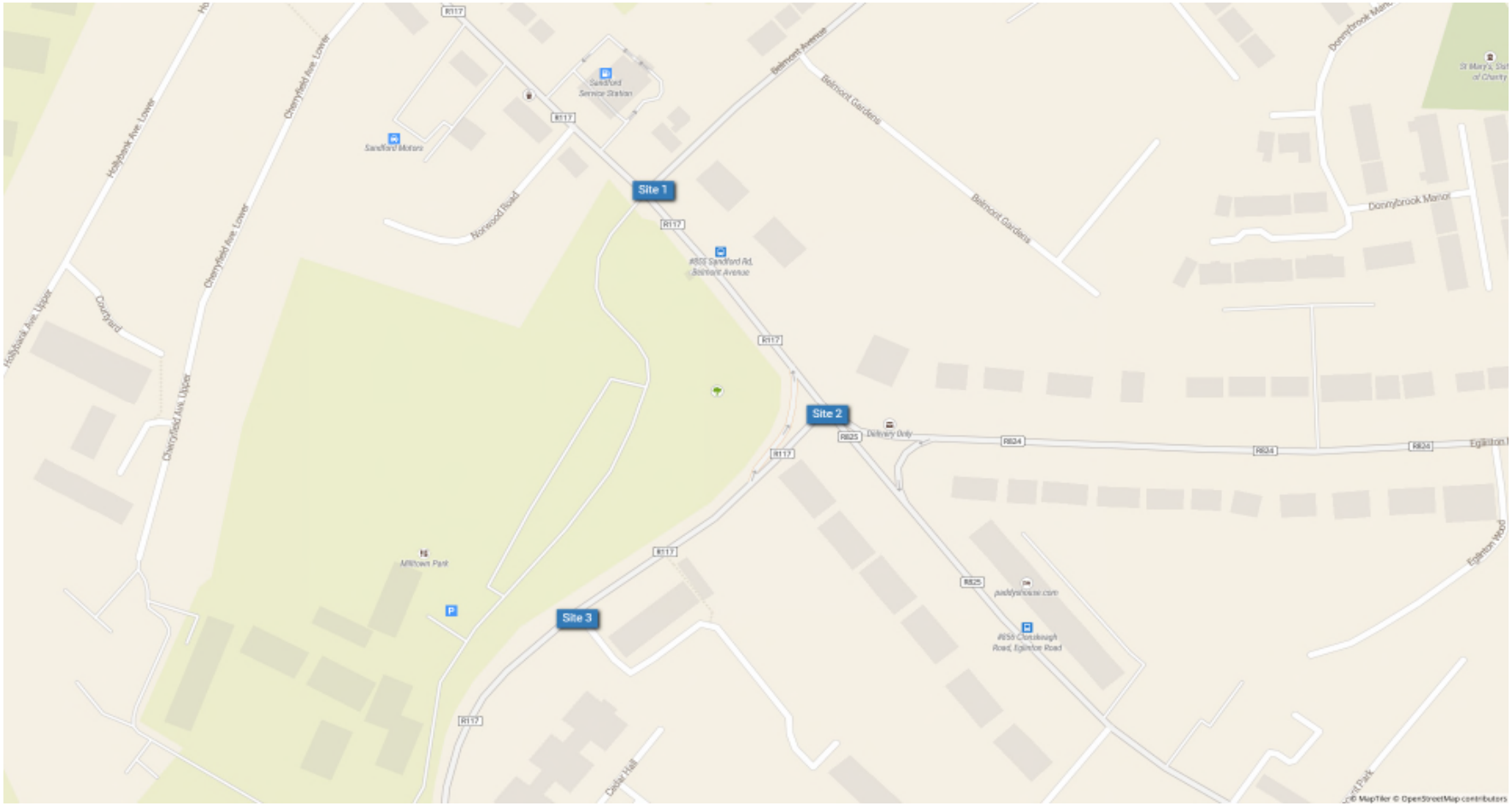
APPENDICES

APPENDIX A

Traffic Count Surveys

IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Date: Tue 11 Feb 2020



IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 1
Location: R117 Sandford Road / Blemont Ave / Sandford Road
Date: Tue 11-Feb-2020

	A => A									A => B									A => C									A => D									B => A									B => B	
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV
07:00	0	0	0	0	0	0	0	0	0	1	0	5	1	0	0	0	7	6.2	17	0	73	10	4	1	1	106	96.7	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	15	1	100	6	4	0	2	128	119.4	0	0	1	0	0	0	0	1	1	2	0	2	0	0	0	0	4	2.4	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	17	17	34	1	105	6	0	1	0	147	120.5	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	2.2	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	1	0	22	0	0	0	0	23	22.2	30	1	118	8	1	1	2	161	140.2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	2	0	51	1	0	0	0	54	52.4	96	3	396	30	9	3	5	542	476.8	0	0	1	0	0	0	0	1	1	3	0	7	0	0	0	0	10	7.6	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	34	34	34	1	91	9	6	0	0	141	116.2	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	1	0	34	1	0	0	0	36	35.2	27	1	100	3	0	0	1	132	110.8	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	2.2	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	5	0	37	0	0	0	0	42	38	47	0	112	4	1	0	2	166	130.9	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	5	0	27	2	0	0	0	34	30	60	1	133	7	1	0	3	205	159.9	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	4	2.4	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	11	0	132	3	0	0	0	146	137.2	168	3	436	23	8	0	6	644	517.8	0	0	0	0	0	0	0	0	0	3	0	12	0	0	0	0	15	12.6	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	1	0	14	0	0	0	0	15	14.2	43	2	138	9	1	0	1	194	159.9	0	0	0	0	0	0	0	0	0	1	0	8	0	0	0	0	9	8.2	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	1	0	16	0	0	0	0	17	16.2	34	0	97	8	0	0	2	141	115.8	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	1	0	16	1	0	0	0	18	17.2	35	1	79	4	1	0	2	122	95.9	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	30	1	97	8	4	0	2	142	121.4	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	3	0	53	1	0	0	0	57	54.6	142	4	411	29	6	0	7	599	493	0	0	0	0	0	0	0	0	0	1	0	26	1	0	0	0	28	27.2	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	9	3	1	1	0	14	15.8	8	1	82	9	2	0	2	104	100	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	5	4.2	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8	14	0	92	8	4	4	1	123	120	0	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	13	13	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	1	1	5	0	0	0	0	7	5.6	11	2	75	13	1	1	2	105	98.8	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	0	10	10	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5	18	1	96	16	3	0	0	134	120.5	0	0	0	0	0	0	0	0	0	0	0	8	0	1	0	0	9	9.5	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	1	26	4	1	1	0	34	34.4	51	4	345	46	10	5	5	466	439.3	0	0	0	0	0	0	0	0	0	1	0	32	3	1	0	0	37	36.7	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	1	0	4	2	0	0	0	7	6.2	6	1	83	11	5	1	1	108	107.4	0	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	13	13	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	5	8	2	95	15	3	2	2	127	125.5	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10	10	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5	13	3	89	19	3	2	0	129	120.9	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	9	1	92	19	7	0	1	129	125.7	0	0	0	0	0	0	0	0	0	1	0	9	4	1	0	0	15	14.7	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	18	5	0	0	0	24	23.2	36	7	359	64	18	5	4	493	479.5	0	0	0	0	0	0	0	0	0	1	0	36	6	1	0	0	44	43.7	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	10	3	0	0	0	13	13	4	0	93	19	1	3	0	120	121.2	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	1	0	6	1	0	0	0	8	7.2	4	2	98	14	3	1	3	125	126.4	0	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	11	11	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	8	4	128	12	1	0	1	154	146.7	0	0	0	0	0	0	0	0	0	0	1	8	1	0	0	0	10	9.4	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	2	0	5	0	0	0	0	7	5.4	14	3	118	10	1	0	1	147	135.5	0	0	0	0	0	0	0	0	0	0	0	7	4	0	0	0	11	11	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	3	0	28	4	0	0	0	35	32.6	30	9	437	55	6	4	5	546	529.8	0	0	0	0	0	0	0	0	0	0	1	29	7	0	0	0	37	36.4	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	1	10	2	0	0	0	13	12.4	4	2	110	16	4	0	0	136	133.6	0	0	0	0	0	0	0	0	0	0	0	7	3	0	0	0	10	10	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	5	0	13	1	0	0	0	19	15	3	5	114	17	0	0	3	142	139.6	0	0	1	0	0	0	0	1	1	0	0	6	1	0	0	0	7	7	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	1	0	12	2	0	0	0	15	14.2	11	2	115	9	2	1	1	141	134.3	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	1	1	10	1	0	0	0	13	11.6	13	4	98	14	2	2	1	134	125.8	0	0	0	0	0	0	0	0	0	1	1	10	2	0	0	0	14	12.6	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	7	2	45	6	0	0	0	60	53.2	31	13	437	56	8	3	5	553	533.3	0	0	1	0	0	0	0	1	1	1	1	34	6	0	0	0	42	40.6	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	18	18	2	4	115	7	0	1	0	129	126.3	0	0	0	0	0	0	0	0	0	1	0	10	1	1	0	0	13	12.7	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	2	0	19	0	0	0	0	21	19.4	12	1	133	11	0	1	2	160	153.1	0	0	0	0	0	0	0	0	0	1	0	11	1	0	0	0	13	12.2	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	1	1	8	3	0	0	0	13	11.6	5	4	136	13	2	2	0	162	159.2	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	10	9.4	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	6	1	9	1	0	0	0	17	11.6	10	2	122	9	2	3	3	151	149.7	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	9	2	54	4	0	0	0	69	60.6	29	11	506	40	4	7	5	602	588.3	0	0	0	0	0	0	0	0	0	2	1	38	3	1	0	0	45	43.3	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	2	8	0	0	0	0	10	8.8	6	1	122	7	0	1	0	137	132.9	0	0	0	0	0	0	0	0	0	1	1	4	0	1	0	0	7	6.1	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	12	12	6	2	123	16	0	0	1	148	143	0	0	0	0	0	0	0	0	0	0	1	8	1	0	0	0	10	9.4	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	2	1	8	0	2	0	0	13	11.8	10	1	109	9	3	1	1	134	129.2	0	0	0	0	0	0	0	0	0	1	0	11	1	0	0	0	13	12.2	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	8	8	13	1	135	14	0	0	1	164	154	0	0	0	0	0	0	0	0	0	1	0	11	2	1	0	0	15	14.7	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	2	3	34	2	2	0	0	43	40.6	35	5	489	46	3	2	3	583	559.1	0	0	0	0	0	0	0	0	0	3	2	34	4	2	0	0	45	42.4	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	10	3	152	19	1	0	0	185	175.7	0	0	0	0	0	0	0	0	0	1	1	5	0	0	0	0	7	5.6	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	10	5	132	12	0	0	1	160	150	0	0	0	0	0	0	0	0	0	2	1	11	2	0	0	0	16	13.8	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	1	0	7	0	0	0	0	8	7.2	23	3	111	1	0	1	2	141	124.1	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	14	14	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10	10	26	0	143	10	0	1	0	180	160.5	0	0	0	0	0	0	0	0	0	2	0	17	1	1	0	0	21	19.9	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	25	0	0	0	0	26	25.2	69	11	538	42	1	2	3	666	610.3	0	0	0	0	0	0	0	0	0	5	2	46	4	1	0	0	58	53.3	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	5	4.2	25	3	86	3	0	0	1	118	97.2	0	0	0	0	0	0	0	0	0	0	0	24	1	0	0	0	25	25	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9	9	36	4	112	2	0	0	1	155	124.8	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	0	11	10.4	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	44	3	94	3	0	0	0	144	107	0	0	0	0	0	0	0	0	0	2	0	5	0	0	0	0	7	5.4	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	5	4.2	37	4	95	3	1	0	3	143	114.5	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	2	0	22	2	0	0	0	26	24.4	142	14	387	11	1	0	5	560	443.5	0	0	0	0	0	0	0	0	0	2	1	47	1	0	0	0	51	48.8	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	0	11	10.2	52	4	108	1	0	0	1	166	123	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	8	8	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	0	10	9.2	39	6	136	2	0	0	0	183	148.2	0	0	0	0	0	0	0	0	0	0	2	11	0	0	0	0	13	11.8	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	1	0	7	3	0	0	0	11	10.2	37	0	159	5	0	0	3	204	177.4	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	12	12	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	3	0	3	1	0	0	0	7	4.6	38	5	147	5	1	0	3	199	169.1	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	20	20	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	6	0	29	4	0	0	0	39	34.2	166	15	550	13	1	0	7	752	617.7	0	0	0	0	0	0	0	0	0	0	2	47	4	0	0	0	53	51.8	0	0	0	0
12 TOT	0	0	0	0	0	0	0	0	0	48	8	517	36	3	1	0	613	572.6	995	99	5291	455	75	31	60	7006	6288	0	0	2	0	0	0	0	2	2	22	10	388	39	6	0	0	465	444.4	0	0	0	0

IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 1
Location: R117 Sandford Road / Blemont Ave / Sandford Road
Date: Tue 11-Feb-2020

B => C													B => D									C => A									C => B									C => C								
OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C
0	0	0	0	0	0	0	3	0	1	0	0	4	4.5	0	0	0	0	0	0	0	0	0	9	0	125	15	2	0	2	153	148.8	1	1	61	6	1	0	0	70	69.1	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	7	2	0	0	0	9	9	0	0	0	0	0	0	0	0	0	15	1	159	15	1	0	1	192	180.9	4	2	75	5	1	0	0	87	83.1	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	8	0	0	0	0	9	8.2	0	0	0	0	0	0	0	0	0	25	2	172	13	1	0	1	214	194.3	1	0	95	3	1	0	0	100	99.7	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	7	1	0	0	0	9	8.2	0	0	0	0	0	0	0	0	0	41	0	126	7	1	0	0	175	142.7	9	1	65	0	1	0	0	76	68.7	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2	0	25	3	1	0	0	31	29.9	0	0	0	0	0	0	0	0	0	90	3	582	50	5	0	4	734	666.7	15	4	296	14	4	0	0	333	320.6	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	9	0	0	0	0	11	9.6	0	0	0	0	0	0	0	0	0	49	4	133	6	1	0	1	194	153.9	3	1	63	1	1	0	0	69	66.5	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	1	0	4	1	0	0	0	6	5.2	0	0	0	0	0	0	0	0	0	72	4	135	6	0	0	0	217	157	15	3	110	2	0	0	0	130	116.2	0	0	0	0	0	0	0	0	0	0	0
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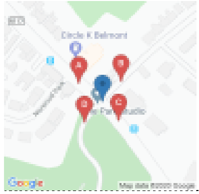

IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 1
Location: R117 Sandford Road / Blemont Ave / Sandford Road
Date: Tue 11-Feb-2020

C => D								D => A									D => B									D => C									D => D								
M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
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IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 2
Location: R117 / Eglinton Rd / R825 / Milltown Rd
Date: Tue 11-Feb-2020

	A => A									A => B									A => C									A => D									B => A									B => B	
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV
07:00	0	0	0	0	0	0	0	0	0	2	0	13	1	1	0	0	17	15.9	13	0	50	7	3	0	0	73	64.1	2	0	13	2	1	1	1	20	21.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	4	0	9	1	0	0	0	14	10.8	10	1	72	6	3	0	1	93	86.9	1	0	24	1	1	0	1	28	28.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	5	0	14	1	0	0	0	20	16	30	1	78	4	0	0	0	113	88.4	0	0	23	1	0	1	0	25	26.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	7	0	11	2	0	0	0	20	14.4	24	2	91	5	1	0	2	125	107.1	0	0	23	4	0	1	0	28	29.3	1	0	2	0	0	0	0	3	2.2	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	18	0	47	5	1	0	0	71	57.1	77	4	291	22	7	0	3	404	346.5	3	0	83	8	2	3	2	101	105.5	1	0	2	0	0	0	0	3	2.2	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	5	1	11	2	0	0	0	19	14.4	28	1	60	6	3	0	0	98	76.5	2	0	27	1	3	0	0	33	32.9	0	0	1	0	0	0	0	1	1	0	0	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	22	1	51	5	0	0	0	79	60.8	143	4	262	10	4	0	4	427	316.2	6	0	143	10	4	0	2	165	164.2	2	0	2	0	0	0	0	4	2.4	0	0	0	0	0
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09:15	0	0	0	0	0	0	0	0	0	4	0	17	2	0	0	0	23	19.8	30	1	66	7	0	0	1	105	81.4	2	0	25	4	0	0	1	32	31.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	17	0	61	4	1	0	0	83	69.9	116	3	274	22	2	0	5	422	333.4	8	1	134	13	2	0	2	160	156	0	0	1	0	0	0	0	1	1	0	0	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	1	0	61	8	2	0	0	72	72.2	50	4	219	26	5	2	3	309	274.7	4	1	145	15	6	3	2	176	181.1	0	0	1	0	0	0	0	1	1	0	0	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	6	0	63	19	7	0	0	95	93.7	32	6	201	36	8	4	2	289	271	2	1	169	19	5	1	2	199	202.6	1	0	1	0	0	0	0	2	1.2	0	0	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	2	2	76	11	3	0	1	95	94.7	27	11	245	35	3	1	2	324	300.6	5	7	220	25	2	3	2	264	262.7	2	0	0	0	0	0	0	2	0.4	0	0	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	2	1	79	19	5	0	1	107	108.3	33	9	235	26	2	2	2	309	282.8	3	5	217	25	4	1	2	257	256.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	1	27	0	0	0	0	28	27.4	1	5	57	5	0	0	0	68	64.2	0	1	48	7	1	1	0	58	59.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	24	3	0	0	0	27	27	9	1	79	3	0	0	1	93	86.2	2	0	57	10	0	1	1	71	71.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	1	23	3	0	0	0	27	26.4	3	3	69	10	1	1	0	87	84.6	2	1	80	4	1	1	0	89	88.6	0	0	0	1	0	0	0	1	1	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	3	0	16	1	0	0	1	21	19.6	7	0	64	6	2	3	1	83	83.3	1	2	72	6	0	0	1	82	81	1	0	2	0	0	0	0	3	2.2	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	3	2	90	7	0	0	1	103	100.4	20	9	269	24	3	4	2	331	318.3	5	4	257	27	2	3	2	300	300.5	1	0	2	1	0	0	0	4	3.2	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	1	0	24	0	0	0	0	25	24.2	4	2	61	9	0	0	0	76	71.6	2	0	67	4	0	1	0	74	73.7	2	0	0	0	0	0	0	2	0.4	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	17	2	0	0	0	19	19	2	2	60	7	0	0	1	72	70.2	4	2	72	7	1	0	0	86	82.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	3	0	16	1	0	0	0	20	17.6	5	1	57	4	1	1	0	69	66.2	3	1	61	12	2	0	1	80	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	14	2	0	0	0	16	16	8	3	72	12	0	0	1	96	88.8	5	1	90	6	0	0	0	102	97.4	1	0	0	0	0	0	0	1	0.2	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	4	0	71	5	0	0	0	80	76.8	19	8	250	32	1	1	2	313	296.8	14	4	290	29	3	1	1	342	332.2	3	0	0	0	0	0	0	3	0.6	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	19	3	0	0	0	22	22	4	5	73	10	2	0	0	94	88.8	4	0	91	8	0	0	0	103	99.8	1	0	0	0	0	0	0	1	0.2	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	21	1	0	0	0	22	22	12	4	75	7	0	0	0	98	86	4	1	86	4	0	0	1	96	93.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12	12	13	1	56	3	0	0	1	74	64	12	4	93	6	0	1	1	117	107.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	15	2	0	0	0	17	17	17	0	87	3	0	0	0	107	93.4	10	1	99	5	1	1	0	117	110.2	0	0	2	0	0	0	0	2	2	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	67	6	0	0	0	73	73	46	10	291	23	2	0	1	373	332.2	30	6	369	23	1	2	2	433	410.5	1	0	2	0	0	0	0	3	2.2	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	2	0	12	0	0	0	0	14	12.4	14	0	42	1	0	0	1	58	47.8	13	3	83	3	0	0	0	102	89.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	2	0	17	0	0	0	0	19	17.4	23	0	55	2	0	0	0	80	61.6	18	8	85	2	0	0	1	114	95.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	2	0	17	1	0	0	0	20	18.4	31	2	45	1	0	0	0	79	53	22	1	75	4	0	0	0	102	83.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	2	0	7	0	0	0	0	9	7.4	27	0	50	4	0	0	1	82	61.4	16	2	102	3	1	0	2	126	114.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	8	0	53	1	0	0	0	62	55.6	95	2	192	8	0	0	2	299	223.8	69	14	345	12	1	0	3	444	383.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	9	0	18	0	0	1	0	28	22.1	39	2	45	0	0	0	1	87	55.6	24	1	80	3	0	0	0	108	88.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	1	0	18	0	0	0	0	19	18.2	24	3	69	2	0	0	0	98	77	23	4	87	0	0	0	0	114	93.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	25	3	0	0	0	28	28	27	1	74	1	0	0	2	105	84.8	10	1	90	1	0	0	1	103	95.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	3	2	24	0	0	0	0	29	25.4	16	3	81	2	0	0	2	104	91.4	18	2	75	3	0	0	1	99	84.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	13	2	85	3	0	1	0	104	93.7	106	9	269	5	0	0	5	394	308.8	75	8	332	7	0	0	2	424	361.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 TOT	0	0	0	0	0	0	0	0	0	96	8	804	93	19	1	3	1024	956.2	764	79	2998	269	37	14	33	4194	3605	224	51	2704	213	32	17	24	3265	3117	11	0	11	1	0	0	0	23	14.2	0	0	0	0

IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 2
Location: R117 / Eglinton Rd / R825 / Milltown Rd
Date: Tue 11-Feb-2020

B => C													B => D									C => A									C => B									C => C									
OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C
0	0	0	0	0	0	0	6	1	0	0	1	8	9	0	0	17	3	3	0	2	25	28.5	3	1	78	7	0	0	1	90	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2	0	6	0	0	0	2	10	10.4	0	0	44	2	0	0	2	48	50	8	1	80	9	2	0	0	100	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	10	0	0	0	0	10	10	1	0	48	7	1	0	1	58	58.7	19	1	108	4	0	0	1	133	118.2	1	0	0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	12	2	0	1	2	18	20.5	1	1	59	3	2	0	2	68	69.6	25	1	87	6	1	0	0	120	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	15	1	0	0	0	16	16	0	1	69	7	0	0	0	77	76.4	36	1	75	3	0	0	0	115	85.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	8	1	2	0	0	11	12	0	0	46	7	3	0	0	56	57.5	10	0	57	5	1	0	1	74	67.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	1	1	28	0	0	0	0	30	28.6	25	1	282	11	1	0	1	321	301.9	127	8	270	15	0	0	4	424	321.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
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IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 2
Location: R117 / Eglinton Rd / R825 / Milltown Rd
Date: Tue 11-Feb-2020

C => D								D => A								D => B								D => C								D => D							
M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	2	0	0	0	0	2	2	6	0	116	4	3	0	1	130	127.7	1	0	77	10	3	1	0	92	94	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
0	7	0	0	0	0	7	7	8	2	164	8	0	0	1	183	176.4	3	1	65	10	2	0	0	81	79	1	0	3	0	0	0	0	4	3.2	0	0	0	0	0	0	0	0	0
0	9	3	0	0	0	12	12	12	2	165	4	2	0	0	185	175.2	3	0	51	7	0	0	0	61	58.6	2	0	1	0	0	0	0	3	1.4	0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	1	1	23	2	105	1	2	0	0	133	114.4	4	3	44	4	1	0	0	56	51.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	19	3	0	0	0	22	22	49	6	550	17	7	0	2	631	593.7	11	4	237	31	6	1	0	290	283.1	3	0	7	0	0	0	0	10	7.6	0	0	0	0	0	0	0	0	0
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0	12	0	0	0	0	12	12	4	0	60	3	0	0	1	68	65.8	0	0	36	6	1	0	0	43	43.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	7	0	0	0	0	7	7	4	0	56	2	0	0	0	62	58.8	2	0	48	2	0	0	2	54	54.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	48	1	0	0	0	52	49.6	14	3	212	5	2	0	1	237	226	4	0	188	4	1	0	2	199	198.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	462	38	9	0	0	524	516.9	328	57	3748	238	46	17	25	4459	4233	66	28	2229	244	58	2	3	2630	2595	7	0	13	0	0	0	0	20	14.4	0	0	0	0	0	0	0	0	0

IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 3
Location: Milltown Rd / Mount Sandford
Date: Tue 11-Feb-2020

	A => A									A => B									A => C									B => A									B => B									B => C	
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	182	24
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	3	231	19
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1.5	0	0	0	0	0	0	0	0	0	20	2	223	15
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	5	143	5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1.5	0	0	0	0	0	0	0	0	0	68	10	779	63
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	4	146	6
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	7	195	10
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	4	195	7
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	3	156	5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	0	0	0	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	159	18	692	28
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	31	4	130	10
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	4	170	10
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	174	15
09:45	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	3	2.2	0	0	2	0	0	0	0	2	2	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	5	161	18
H/TOT	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	3	2.2	1	0	2	0	0	0	0	3	2.2	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	58	16	635	53
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	142	27
10:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	1	141	12
10:30	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2.5	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	137	14
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	111	16
H/TOT	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	4	4.5	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	18	4	531	69
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	89	17
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	104	13
11:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	89	18
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	90	21
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	5	372	69
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	93	12
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	95	10
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	4	3	110	15
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	105	14
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	14	4	403	51
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	109	9
13:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	99	11
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	1.2	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	113	9
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	99	9
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	0	2	1.2	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	8	3	420	38
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	119	13
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	108	11
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	113	10
14:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105	14
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	7	445	48
15:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	101	4
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	107	7
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	81	9
15:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	72	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5	3	361	23
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	7	0	103	8
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	101	6
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	97	9
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	89	6
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	16	5	390	29
17:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	1	0.2	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	3	96	6
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	3	95	5
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	2	1	98	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	102	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	0	2	1.2	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	13	9	391	14
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	94	3
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	101	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	6	1	110	2
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5	0	97	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	18	3	402	8
12 TOT	0	0	0	0	0	0	0	0	0	1	0	9	2	1	0	0	13	12.7	7	1	12	1	0	0	0	21	14.8	0	0	13	3	1	0	0	17	17.5	0	0	1	0	0	0	0	1	1	394	87	5821	493

IDASO

Survey Name: 004 (20) 19429 Sandford Park, Miltown
Site: Site 3
Location: Milltown Rd / Mount Sandford
Date: Tue 11-Feb-2020

C => A													C => B								C => C									
OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
4	1	1	219	217.7	0	0	0	0	0	0	0	0	0	2	0	33	5	4	1	3	48	52.7	0	0	3	0	0	0	0	3	3
2	0	1	269	258.8	0	0	0	0	0	0	0	0	0	1	0	71	3	1	0	3	79	81.7	0	0	1	1	0	0	0	2	2
4	0	0	264	248.8	0	0	1	0	0	0	0	1	1	1	0	75	10	1	1	1	89	91	0	0	6	0	0	0	0	6	6
1	0	0	182	157.1	0	0	0	0	0	0	0	0	0	1	1	76	6	2	1	2	89	91.9	0	0	10	0	0	0	0	10	10
11	1	2	934	882.4	0	0	1	0	0	0	0	1	1	5	1	255	24	8	3	9	305	317.3	0	0	20	1	0	0	0	21	21
2	0	1	183	163.4	0	0	1	0	0	0	0	1	1	2	0	87	7	3	0	1	100	100.9	0	0	9	1	0	0	0	10	10
1	0	1	257	219.9	0	0	1	0	0	0	0	1	1	4	0	88	6	0	0	0	98	94.8	0	0	10	0	0	0	0	10	10
0	0	0	260	214.4	0	0	0	0	0	0	0	0	0	4	0	102	7	3	0	1	117	116.3	0	1	7	1	0	0	0	9	8.4
3	0	1	206	176.3	0	0	0	0	0	0	0	0	0	4	0	116	7	1	0	1	129	127.3	0	0	9	0	0	0	0	9	9
6	0	3	906	774	0	0	2	0	0	0	0	2	2	14	0	393	27	7	0	3	444	439.3	0	1	35	2	0	0	0	38	37.4
1	0	0	176	149.3	0	0	0	0	0	0	0	0	0	5	0	115	10	2	0	0	132	129	0	0	11	0	0	0	0	11	11
6	0	1	210	196.4	0	0	0	0	0	0	0	0	0	2	0	78	8	0	0	1	89	88.4	0	0	9	0	0	0	0	9	9
2	0	0	200	194.4	0	0	1	0	0	0	0	1	1	1	1	73	9	3	0	1	88	89.1	0	0	4	0	0	0	0	4	4
3	1	1	191	190.2	0	0	1	0	0	0	0	1	1	1	1	72	7	5	0	0	86	87.1	0	0	1	1	0	0	0	2	2
12	1	2	777	730.3	0	0	2	0	0	0	0	2	2	9	2	338	34	10	0	2	395	393.6	0	0	25	1	0	0	0	26	26
2	1	0	179	176.1	0	0	0	0	0	0	0	0	0	2	0	77	11	5	0	2	97	99.9	0	0	3	0	0	0	0	3	3
6	0	1	165	165.2	1	0	1	0	0	0	0	2	1.2	1	0	100	6	3	2	0	112	115.3	0	0	3	0	0	0	0	3	3
4	1	0	163	160.9	0	0	1	0	0	0	0	1	1	1	0	86	12	3	0	1	103	104.7	0	0	3	3	0	0	0	6	6
3	1	1	135	136.4	0	0	1	0	0	0	0	1	1	1	1	94	19	2	1	0	118	118.9	0	0	5	0	0	0	0	5	5
15	3	2	642	638.6	1	0	3	0	0	0	0	4	3.2	5	1	357	48	13	3	3	430	438.8	0	0	14	3	0	0	0	17	17
9	2	2	120	128.5	0	0	0	0	0	0	0	0	0	0	0	94	9	1	1	0	105	106.8	0	0	1	0	0	0	0	1	1
2	0	0	122	120.6	0	0	0	0	0	0	0	0	0	1	2	97	15	3	1	3	122	125.8	0	0	2	1	0	0	0	3	3
2	1	0	114	113.5	0	0	0	0	0	0	0	0	0	2	2	97	13	6	0	0	120	120.2	0	0	0	0	0	0	0	0	0
4	2	0	123	123.2	0	0	0	0	0	0	0	0	0	0	0	102	14	7	0	1	124	128.5	0	0	2	0	0	0	0	2	2
17	5	2	479	485.8	0	0	0	0	0	0	0	0	0	3	4	390	51	17	2	4	471	481.3	0	0	5	1	0	0	0	6	6
3	1	1	112	114.2	0	0	0	0	0	0	0	0	0	0	1	118	16	4	3	0	142	147.3	0	0	0	1	0	0	0	1	1
1	0	1	111	109.3	0	0	0	0	0	0	0	0	0	1	1	110	14	3	0	2	131	133.1	0	0	1	0	0	0	0	1	1
4	0	0	136	133	0	0	0	0	0	0	0	0	0	2	5	117	18	2	0	0	144	140.4	0	0	0	0	0	0	0	0	0
3	0	0	127	124.7	1	0	0	0	0	0	0	1	0.2	3	1	121	13	2	1	2	143	144.3	0	0	0	0	0	0	0	0	0
11	1	2	486	481.2	1	0	0	0	0	0	0	1	0.2	6	8	466	61	11	4	4	560	565.1	0	0	1	1	0	0	0	2	2
2	0	1	123	123.4	0	0	1	0	0	0	0	1	1	1	2	118	16	3	0	0	140	139.5	0	0	0	0	0	0	0	0	0
2	0	1	119	116.4	0	0	0	0	0	0	0	0	0	2	2	125	17	7	0	2	155	157.7	0	0	2	1	0	0	0	3	3
4	3	1	132	137.7	0	0	1	0	0	0	0	1	1	0	2	125	18	2	0	2	149	150.8	0	0	2	0	0	0	0	2	2
0	0	0	109	108.2	0	0	0	0	0	0	0	0	0	5	1	98	13	2	1	1	121	119.7	0	0	2	1	0	0	0	3	3
8	3	3	483	485.7	0	0	2	0	0	0	0	2	2	8	7	466	64	14	1	5	565	567.7	0	0	6	2	0	0	0	8	8
2	0	1	139	137.8	0	0	0	0	0	0	0	0	0	1	1	124	16	2	1	0	145	145.9	0	0	4	0	0	0	0	4	4
3	1	0	129	127.6	0	0	0	0	0	0	0	0	0	2	0	99	22	1	1	1	126	127.2	0	0	1	0	0	0	0	1	1
1	0	0	129	126.3	1	0	0	0	0	0	0	1	0.2	4	1	139	11	1	1	0	157	155	0	0	1	0	0	0	0	1	1
3	0	0	122	123.5	0	0	2	1	0	0	0	3	3	2	3	142	16	0	0	2	165	163.6	0	0	2	0	0	0	0	2	2
9	1	1	519	515.2	1	0	2	1	0	0	0	4	3.2	9	5	504	65	4	3	3	593	591.7	0	0	8	0	0	0	0	8	8
2	1	2	114	115.3	0	0	0	0	0	0	0	0	0	3	0	150	16	0	1	2	172	172.9	0	0	4	0	0	0	0	4	4
1	0	1	119	118.3	0	0	1	0	0	0	0	1	1	5	1	148	15	1	0	2	172	169.9	0	0	4	0	0	0	0	4	4
0	0	0	90	90	0	0	0	0	0	0	0	0	0	3	3	134	21	4	0	3	168	168.8	0	0	0	0	0	0	0	0	0
0	0	0	76	75.4	0	0	0	0	0	0	0	0	0	5	2	170	19	0	0	0	196	190.8	0	0	0	0	1	0	0	1	1.5
3	1	3	399	399	0	0	1	0	0	0	0	1	1	16	6	602	71	5	1	7	708	702.4	0	0	8	0	1	0	0	9	9.5
1	0	2	121	117.9	0	0	0	0	0	0	0	0	0	6	1	176	16	6	0	0	205	202.6	0	0	1	0	0	0	0	1	1
1	1	0	111	111.6	0	0	0	0	0	0	0	0	0	9	1	168	10	0	0	2	190	184.2	0	0	0	0	0	0	0	0	0
0	1	1	112	111.3	0	0	0	0	0	0	0	0	0	15	6	173	17	0	1	2	214	201.7	0	0	1	0	0	0	0	1	1
2	0	0	105	100	0	0	1	0	0	0	0	1	1	13	3	173	11	5	1	0	206	197.6	0	0	3	0	0	0	0	3	3
4	2	3	449	440.8	0	0	1	0	0	0	0	1	1	43	11	690	54	11	2	4	815	786.1	0	0	5	0	0	0	0	5	5
0	0	2	111	108	0	0	0	0	0	0	0	0	0	16	5	155	7	0	1	1	185	171.5	0	0	4	0	0	0	0	4	4
1	0	0	106	103.1	0	0	1	0	0	0	0	1	1	22	9	182	5	3	0	1	222	201.5	0	0	2	0	0	0	0	2	2
2	1	1	105	106.1	1	0	3	0	0	0	0	4	3.2	31	4	159	12	1	0	0	207	180.3	0	0	2	0	0	0	0	2	2
1	0	0	113	108.3	0	0	1	0	0	0	0	1	1	24	2	169	7	1	0	2	205	187.1	0	0	1	0	0	0	0	1	1
4	1	3	435	425.5	1	0	5	0	0	0	0	6	5.2	93	20	665	31	5	1	4	819	740.4	0	0	9	0	0	0	0	9	9
0	0	0	102	98	0	0	0	0	0	0	0	0	0	28	4	160	6	0	0	1	199	175.2	0	0	0	0	0	0	0	0	0
2	0	1	109	108.2	1	0	0	0	0	0	0	1	0.2	29	6	168	3	1	0	0	207	180.7	0	0	0	0	0	0	0	0	0
2	0	0	121	116.6	0	0	2	0	0	0	0	2	2	19	1	185	3	0	0	1	209	194.2	0	0	0	0	0	0	0	0	0
0	0	2	106	104	1	0	2	0	0	0	0	3	2.2	25	4	152	9	0	0	1	191	169.6	0	0	1	0	0	0	0	1	1
4	0	3	438	426.8	2	0	4	0	0	0	0	6	4.4	101	15	665	21	1	0	3	806	719.7	0	0	1	0	0	0	0	1	1
104	19	29	6947	6685	6	0	23	1	0	0	0	30	25.2	312	80	5791	551	106	20	51	6911	6743	0	1	137	11	1	0	0	150	149.9

APPENDIX B

TRICS Database Outputs

Calculation Reference: AUDIT-638801-200324-0317

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	2 days
	SF	SUFFOLK	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	RI	EAST RIDING OF YORKSHIRE	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	2 days
09	NORTH		
	TV	TEES VALLEY	1 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days
12	CONNAUGHT		
	GA	GALWAY	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	8 days
17	ULSTER (NORTHERN IRELAND)		
	AN	ANTRIM	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: 9 to 340 (units:)
Range Selected by User: 6 to 493 (units:)

Parking Spaces Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/11 to 21/06/19

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	1 days
Tuesday	11 days
Wednesday	3 days
Thursday	2 days
Friday	3 days

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

Selected survey types:

Manual count	20 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)	16
Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	2

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

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	20 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:

10,001 to 15,000	4 days
15,001 to 20,000	1 days
20,001 to 25,000	4 days
25,001 to 50,000	10 days
50,001 to 100,000	1 days

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

Population within 5 miles:

50,001 to 75,000	4 days
125,001 to 250,000	3 days
250,001 to 500,000	4 days
500,001 or More	9 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	9 days
1.1 to 1.5	11 days

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

Travel Plan:

No	20 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	20 days

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

LIST OF SITES relevant to selection parameters

1 AN-03-C-02 BLOCK OF FLATS ANTRIM
SUMMERHILL AVENUE
BELFAST
KNOCK
Edge of Town
Residential Zone
Total Number of dwellings: 22
Survey date: FRIDAY *28/11/14* *Survey Type: MANUAL*

2 CA-03-C-02 BLOCK OF FLATS CAMBRIDGESHIRE
WESTFIELD ROAD
PETERBOROUGH
NETHERTON
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 44
Survey date: TUESDAY *18/10/11* *Survey Type: MANUAL*

3 CA-03-C-03 BLOCKS OF FLATS CAMBRIDGESHIRE
CROMWELL ROAD
CAMBRIDGE

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 82
Survey date: MONDAY *18/09/17* *Survey Type: MANUAL*

4 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*

5 DL-03-C-08 FLATS DUBLIN
FINGLAS ROAD
DUBLIN
FINGLAS
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 340
Survey date: FRIDAY *30/09/11* *Survey Type: MANUAL*

6 DL-03-C-09 FLATS DUBLIN
OLD FINGLAS ROAD
DUBLIN
GLASNEVIN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 201
Survey date: THURSDAY *29/09/11* *Survey Type: MANUAL*

7 DL-03-C-11 BLOCK OF FLATS DUBLIN
WYCKHAM WAY
DUBLIN
DUNDRUM
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Number of dwellings: 96
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

8 DL-03-C-12 BLOCK OF FLATS DUBLIN
BOOTERSTOWN AVENUE
DUBLIN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 47
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 DL-03-C-13 BLOCK OF FLATS DUBLIN
SANDYFORD ROAD
DUBLIN

Neighbourhood Centre (PPS6 Local Centre)
Built-Up Zone
Total Number of dwellings: 52
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

10 DL-03-C-14 BLOCKS OF FLATS DUBLIN
BALLINTEER ROAD
DUBLIN
DUNDRUM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 140
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

11 DL-03-C-15 BLOCKS OF FLATS DUBLIN
MONKSTOWN ROAD
DUBLIN
MONKSTOWN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 20
Survey date: WEDNESDAY *01/10/14* *Survey Type: MANUAL*

12 DL-03-C-16 BLOCKS OF FLATS DUBLIN
BOTANIC AVENUE
DUBLIN
DRUMCONDRA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 31
Survey date: TUESDAY *22/11/16* *Survey Type: MANUAL*

13 EB-03-C-01 BLOCKS OF FLATS CITY OF EDINBURGH
MYRESIDE ROAD
EDINBURGH
CRAIGLOCKHART
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 32
Survey date: TUESDAY *26/05/15* *Survey Type: MANUAL*

14 ES-03-C-01 BLOCK OF FLATS EAST SUSSEX
OLD SHOREHAM RD
BRIGHTON
HOVE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 71
Survey date: TUESDAY *26/09/17* *Survey Type: MANUAL*

15 GA-03-C-01 FLATS GALWAY
BALLYLOUGHANE ROAD
GALWAY

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 34
Survey date: THURSDAY *31/10/13* *Survey Type: MANUAL*

16 MS-03-C-02 BLOCKS OF FLATS MERSEYSIDE
SOUTH FERRY QUAY
LIVERPOOL
BRUNSWICK DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total Number of dwellings: 184
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

17 MS-03-C-03 BLOCK OF FLATS MERSEYSIDE
MARINERS WHARF
LIVERPOOL
QUEENS DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total Number of dwellings: 9
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

18 RI-03-C-01 FLATS EAST RIDING OF YORKSHIRE
465 PRIORY ROAD
HULL

Edge of Town
Residential Zone
Total Number of dwellings: 20
Survey date: TUESDAY *13/05/14* *Survey Type: MANUAL*

19 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*

20 TV-03-C-02 FLATS TEES VALLEY
ACKLAM ROAD
MIDDLESBROUGH
LINTHORPE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 85
Survey date: WEDNESDAY *29/06/11* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BE-03-C-02	Greater London Area
BT-03-C-01	Greater London Area
BT-03-C-02	Greater London Area
EN-03-C-01	Greater London Area
EN-03-C-02	Greater London Area
EN-03-C-03	Greater London Area
HG-03-C-01	Greater London Area
HG-03-C-02	Greater London Area
HK-03-C-03	Greater London Area
HO-03-C-04	Greater London Area
HV-03-C-02	Greater London Area
NH-03-C-01	Greater London Area
RD-03-C-04	Greater London Area
TH-03-C-04	Greater London Area

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	20	78	0.041	20	78	0.214	20	78	0.255
08:00 - 09:00	20	78	0.049	20	78	0.248	20	78	0.297
09:00 - 10:00	20	78	0.068	20	78	0.113	20	78	0.181
10:00 - 11:00	20	78	0.044	20	78	0.069	20	78	0.113
11:00 - 12:00	20	78	0.054	20	78	0.059	20	78	0.113
12:00 - 13:00	20	78	0.072	20	78	0.078	20	78	0.150
13:00 - 14:00	20	78	0.075	20	78	0.077	20	78	0.152
14:00 - 15:00	20	78	0.080	20	78	0.079	20	78	0.159
15:00 - 16:00	20	78	0.118	20	78	0.066	20	78	0.184
16:00 - 17:00	20	78	0.139	20	78	0.073	20	78	0.212
17:00 - 18:00	20	78	0.226	20	78	0.064	20	78	0.290
18:00 - 19:00	20	78	0.176	20	78	0.070	20	78	0.246
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.142			1.210			2.352

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:	9 - 340 (units:)
Survey date date range:	01/01/11 - 21/06/19
Number of weekdays (Monday-Friday):	20
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	14

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

Calculation Reference: AUDIT-638801-200622-0657

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : D - AFFORDABLE/LOCAL AUTHORITY FLATS
VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	BT	BRENT	1 days
	EN	ENFIELD	1 days
	HA	HARROW	1 days
	HG	HARINGEY	1 days
02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
	WO	WORCESTERSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
10	WALES		
	CF	CARDIFF	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 15 to 160 (units:)
Range Selected by User: 6 to 339 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 26/09/19

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	1 days
Thursday	5 days
Friday	2 days

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

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	8
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	3

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

Selected Location Sub Categories:

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

Secondary Filtering selection:

Use Class:

C3	12 days

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

Population within 1 mile:

15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	6 days
50,001 to 100,000	4 days

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

Population within 5 miles:

100,001 to 125,000	1 days
125,001 to 250,000	2 days
250,001 to 500,000	5 days
500,001 or More	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	9 days
1.1 to 1.5	3 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	2 days
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	8 days
2 Poor	2 days
3 Moderate	1 days
4 Good	1 days

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

LIST OF SITES relevant to selection parameters

1 BT-03-D-01 BLOCKS OF FLATS BRENT
FLOWERS CLOSE
DOLLIS HILL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 160
Survey date: THURSDAY *26/06/14* *Survey Type: MANUAL*

2 CF-03-D-01 BLOCKS OF FLATS CARDIFF
TYN-Y-PARC ROAD
CARDIFF
WHITCHURCH
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 24
Survey date: FRIDAY *07/10/16* *Survey Type: MANUAL*

3 CH-03-D-01 BLOCK OF FLATS CHESHIRE
HEATH LANE
CHESTER
BOUGHTON HEATH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: THURSDAY *24/05/12* *Survey Type: MANUAL*

4 EN-03-D-01 BLOCKS OF FLATS ENFIELD
CHURCHILL COURT
EDMONTON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 66
Survey date: MONDAY *16/11/15* *Survey Type: MANUAL*

5 ES-03-D-06 FLATS & HOUSES EAST SUSSEX
WELLINGTON ROAD
BRIGHTON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 15
Survey date: THURSDAY *16/10/14* *Survey Type: MANUAL*

6 HA-03-D-01 BLOCKS OF FLATS HARROW
THE MALL
KINGSBURY
KINGSBURY CIRCLE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 88
Survey date: THURSDAY *17/07/14* *Survey Type: MANUAL*

7 HC-03-D-06 BLOCKS OF FLATS HAMPSHIRE
HANNAY RISE
SOUTHAMPTON
THORNHILL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 66
Survey date: TUESDAY *24/11/15* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8	HG-03-D-03	BLOCKS OF FLATS		HARINGEY
	COMMERCE ROAD			
	WOOD GREEN			
	WOODSIDE PARK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		90	
	Survey date: FRIDAY		*26/09/14*	*Survey Type: MANUAL*
9	LN-03-D-02	FLATS		LINCOLNSHIRE
	ADDISON DRIVE			
	LINCOLN			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		22	
	Survey date: WEDNESDAY		*01/07/15*	*Survey Type: MANUAL*
10	NT-03-D-02	BLOCK OF FLATS		NOTTINGHAMSHIRE
	WATCOMBE ROAD			
	NOTTINGHAM			
	CARRINGTON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		22	
	Survey date: TUESDAY		*23/06/15*	*Survey Type: MANUAL*
11	WM-03-D-02	BLOCKS OF FLATS		WEST MIDLANDS
	BRANCH ROAD			
	BIRMINGHAM			
	KINGS NORTON			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		84	
	Survey date: MONDAY		*09/11/15*	*Survey Type: MANUAL*
12	WO-03-D-02	BLOCKS OF FLATS		WORCESTERSHIRE
	CRANHAM DRIVE			
	WORCESTER			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total No of Dwellings:		18	
	Survey date: THURSDAY		*22/05/14*	*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/D - AFFORDABLE/LOCAL AUTHORITY FLATS
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	12	57	0.039	12	57	0.073	12	57	0.112
08:00 - 09:00	12	57	0.069	12	57	0.158	12	57	0.227
09:00 - 10:00	12	57	0.079	12	57	0.101	12	57	0.180
10:00 - 11:00	12	57	0.083	12	57	0.109	12	57	0.192
11:00 - 12:00	12	57	0.085	12	57	0.072	12	57	0.157
12:00 - 13:00	12	57	0.073	12	57	0.085	12	57	0.158
13:00 - 14:00	12	57	0.064	12	57	0.061	12	57	0.125
14:00 - 15:00	12	57	0.074	12	57	0.089	12	57	0.163
15:00 - 16:00	12	57	0.117	12	57	0.104	12	57	0.221
16:00 - 17:00	12	57	0.109	12	57	0.074	12	57	0.183
17:00 - 18:00	12	57	0.102	12	57	0.088	12	57	0.190
18:00 - 19:00	12	57	0.086	12	57	0.057	12	57	0.143
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.980			1.071			2.051

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.*

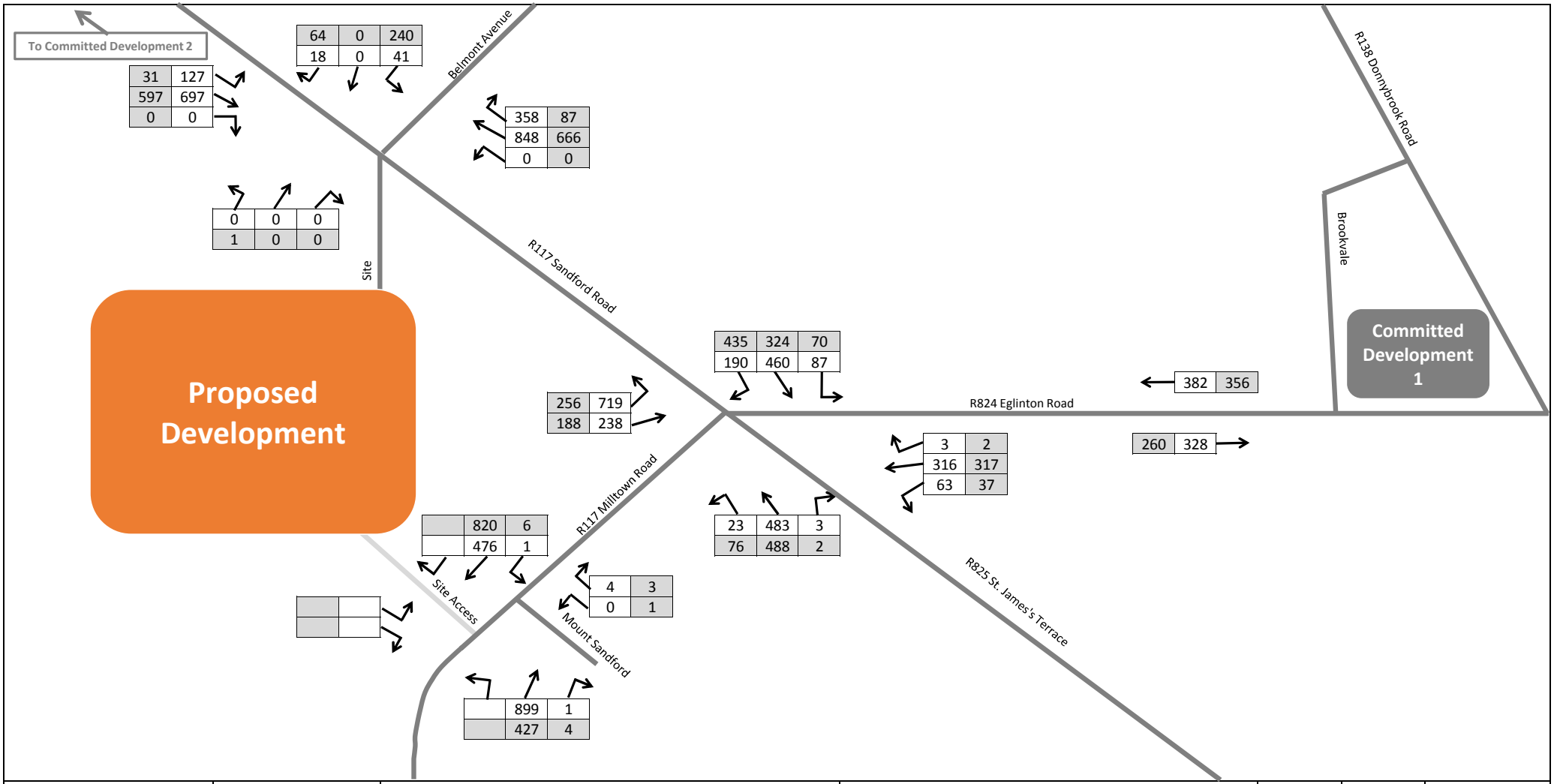
Parameter summary

Trip rate parameter range selected:	15 - 160 (units:)
Survey date date range:	01/01/12 - 26/09/19
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

APPENDIX C

Traffic Flow Diagrams



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2020 Surveyed Flows

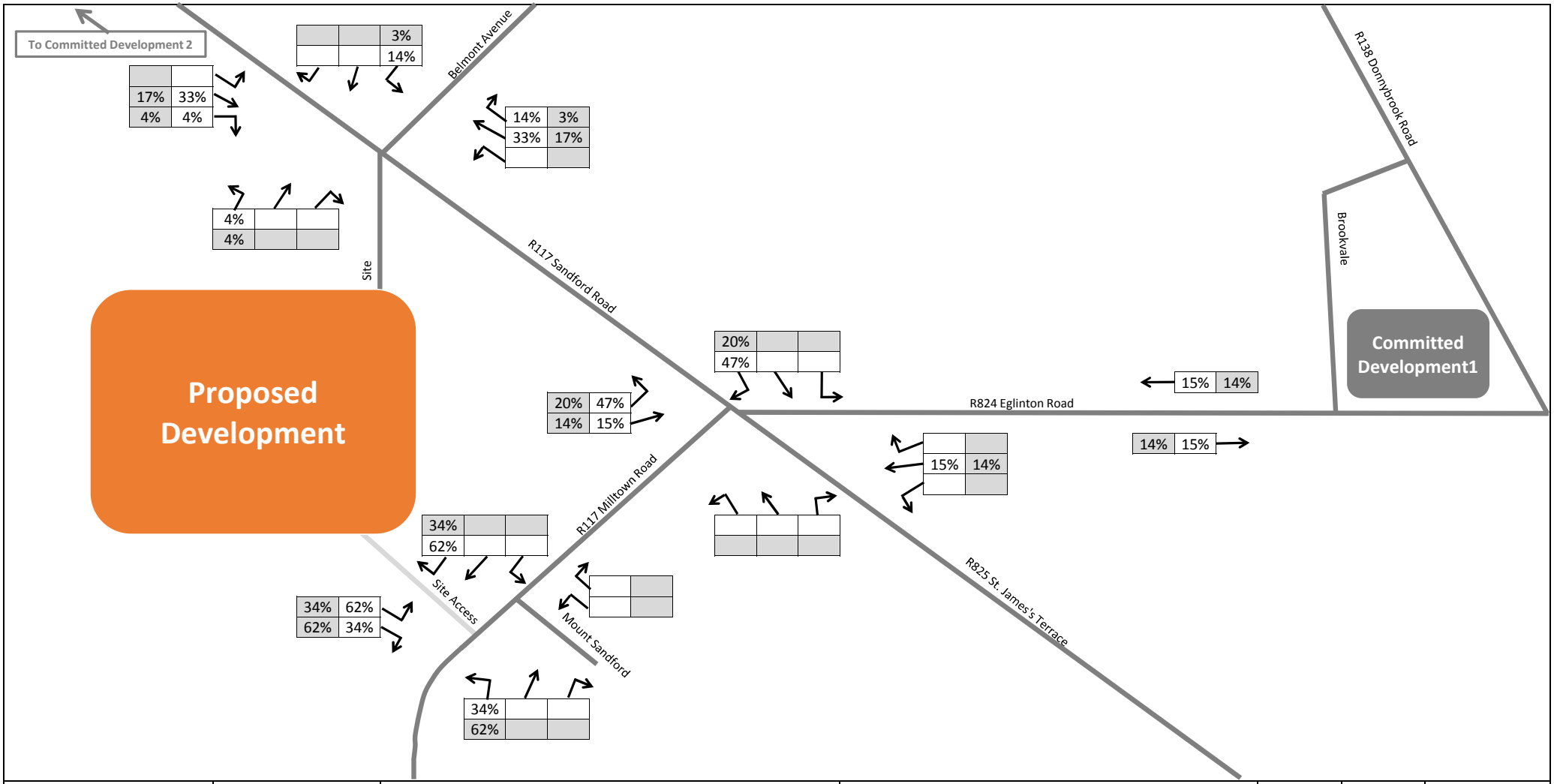
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 1

Rev: -



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
Trip Distribution

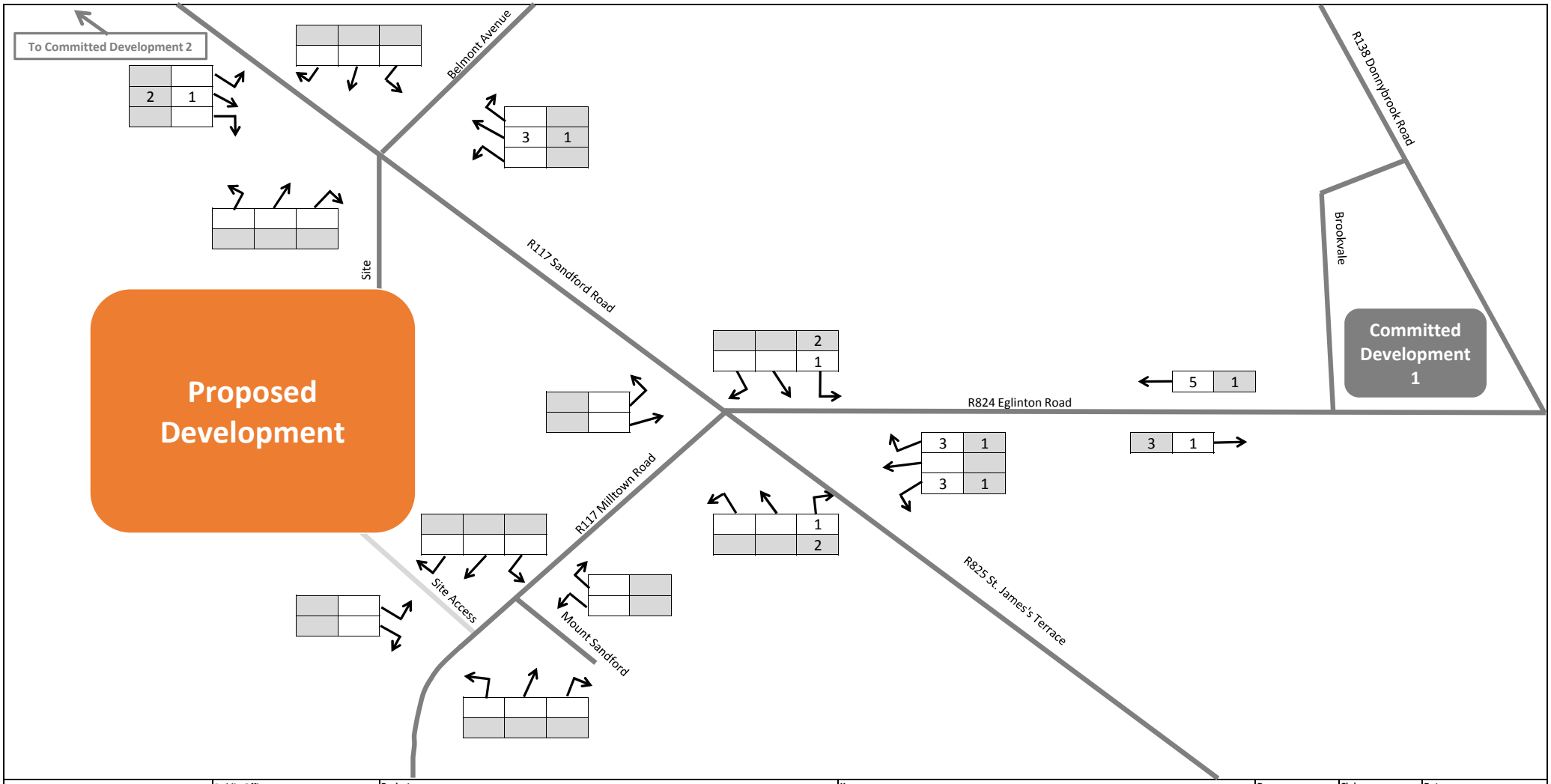
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 2

Rev: -



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Project :
Proposed Residential Development
Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 1 New Trips

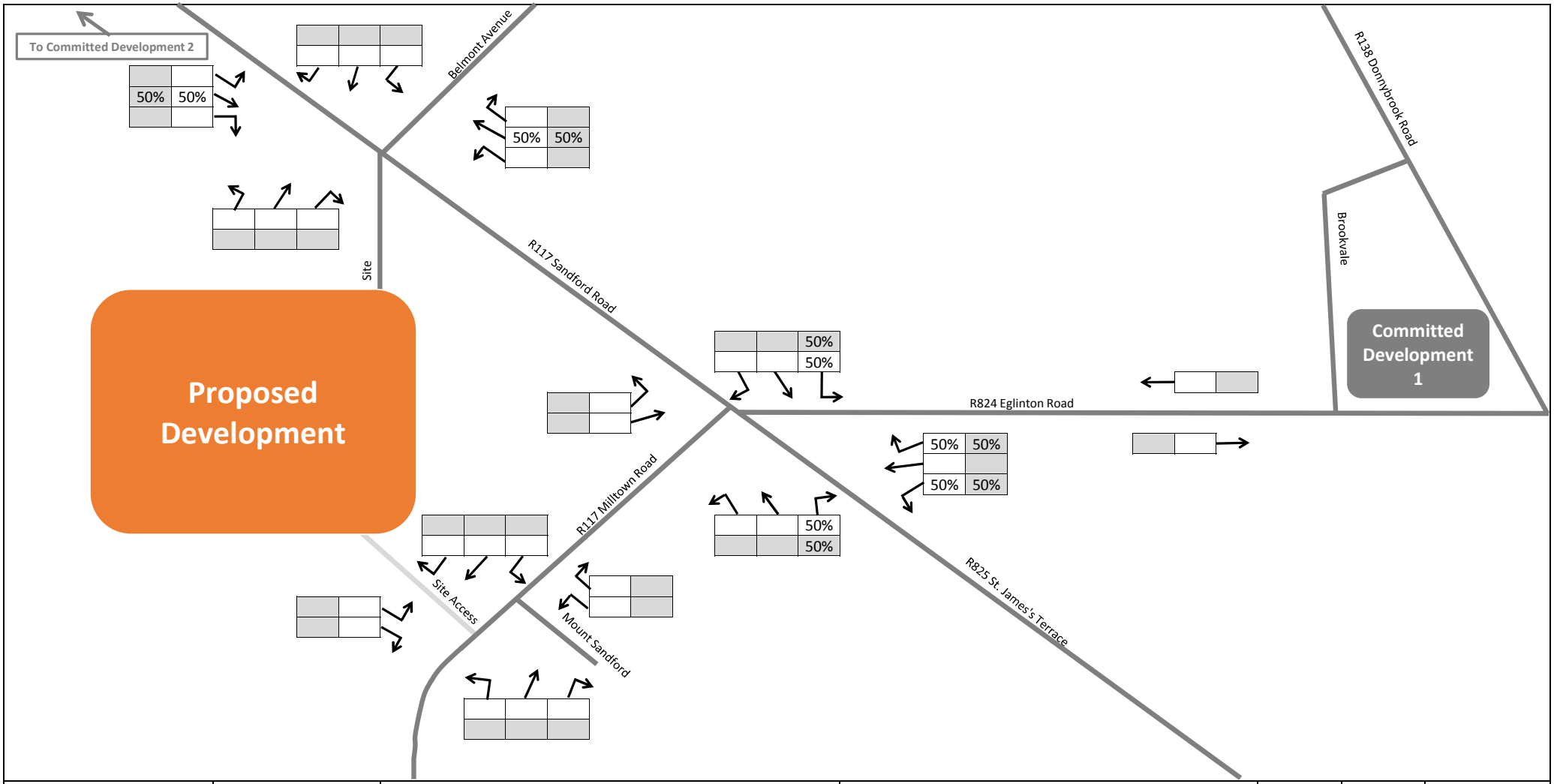
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 3

Rev: -



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 1 Distribution

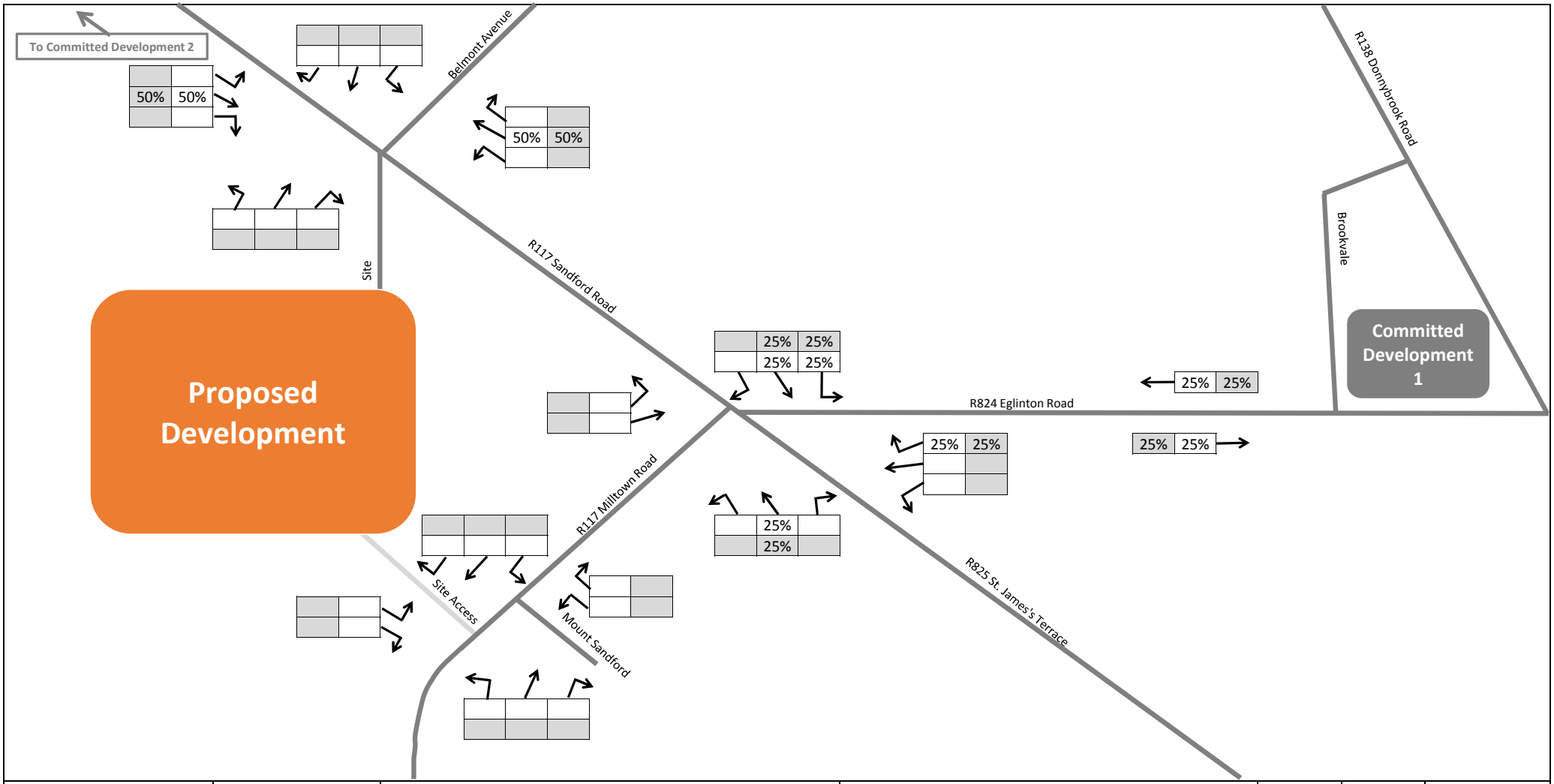
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 4

Rev: -



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Proposed Residential Development
Sandford Road, Milltown, Dublin 6

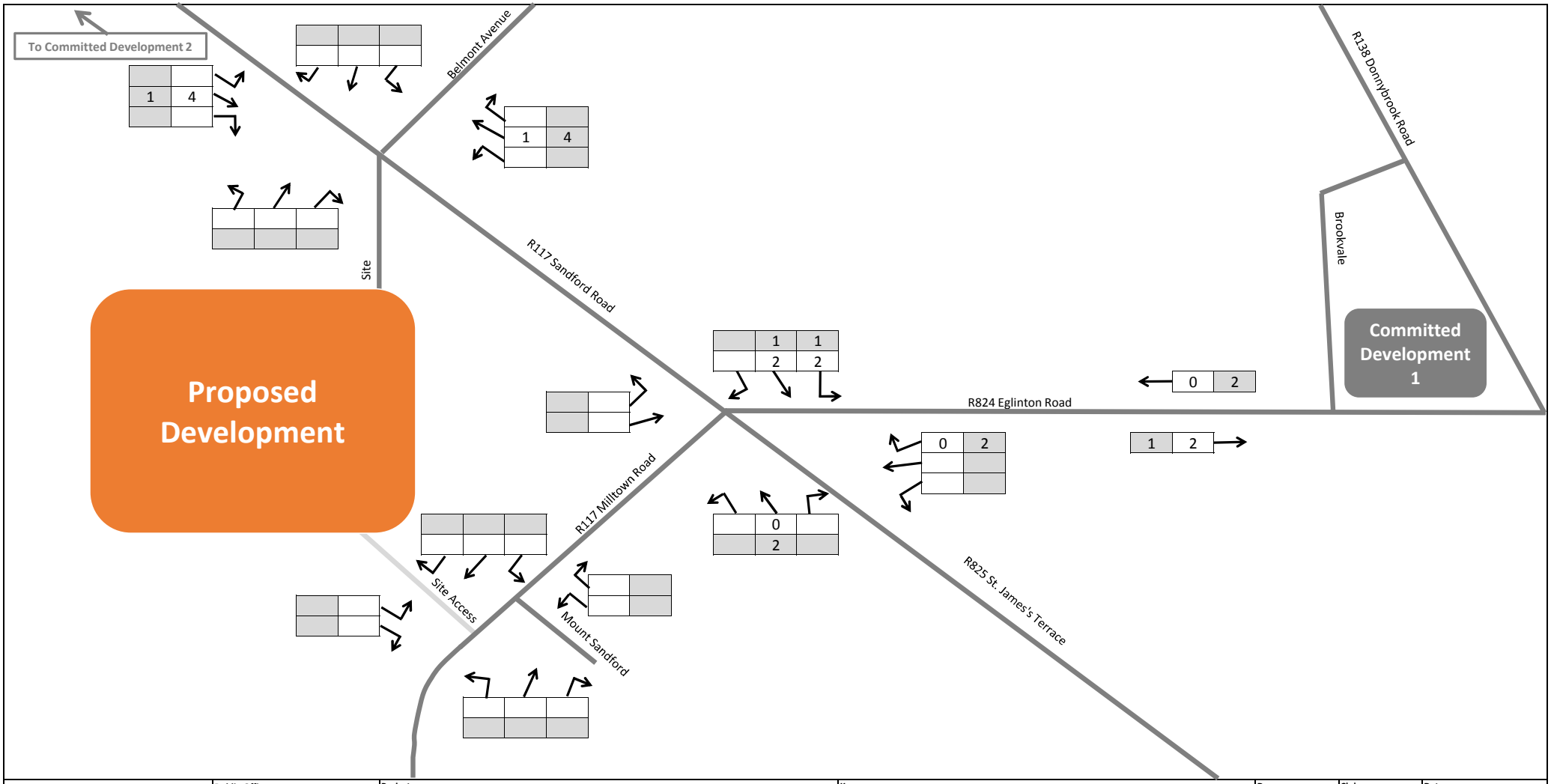
DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 2 Distribution

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure:	Rev:
5	-



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 2 New Trips

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

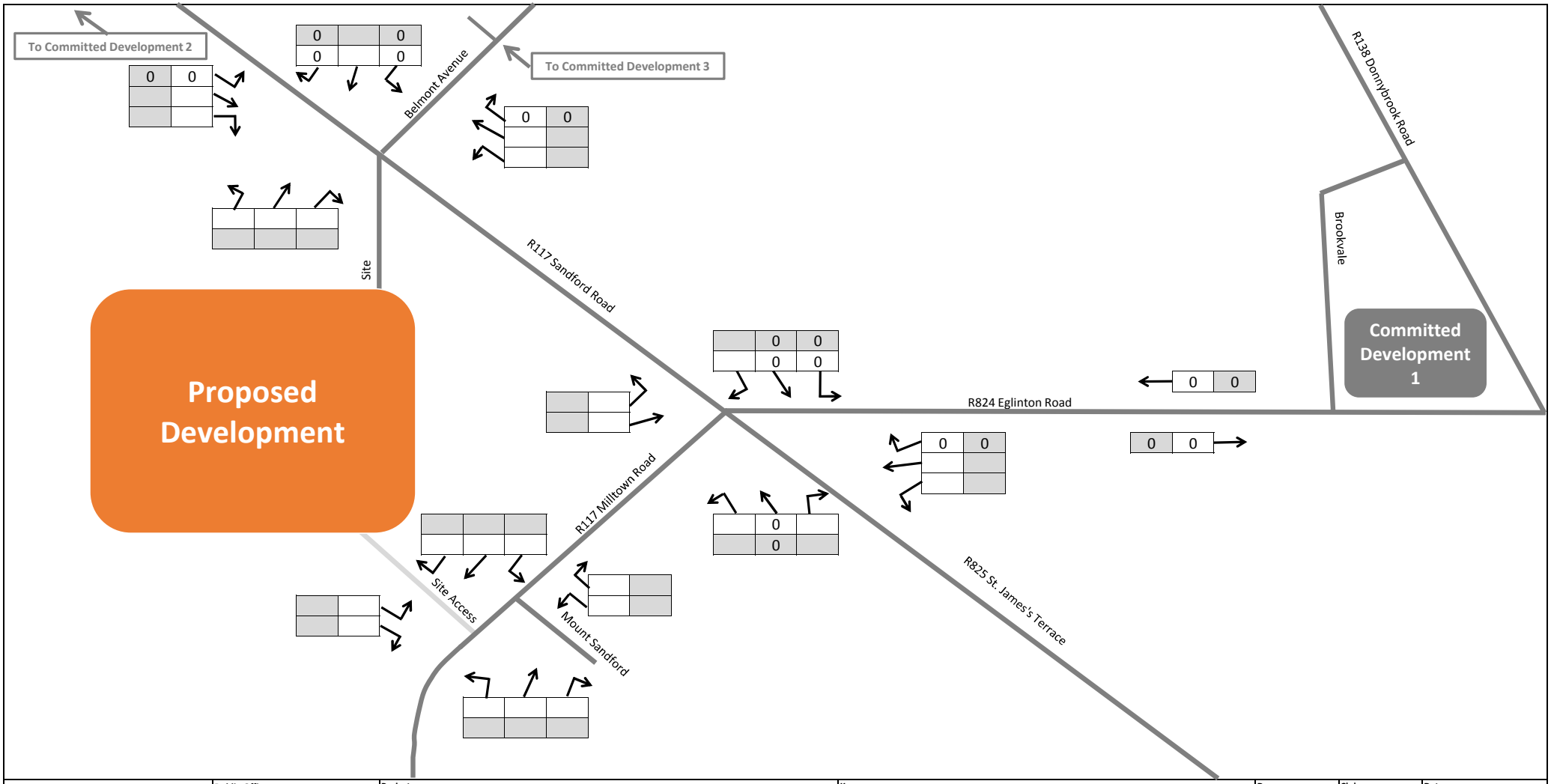
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
2	8	7	2

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 6

Rev: -



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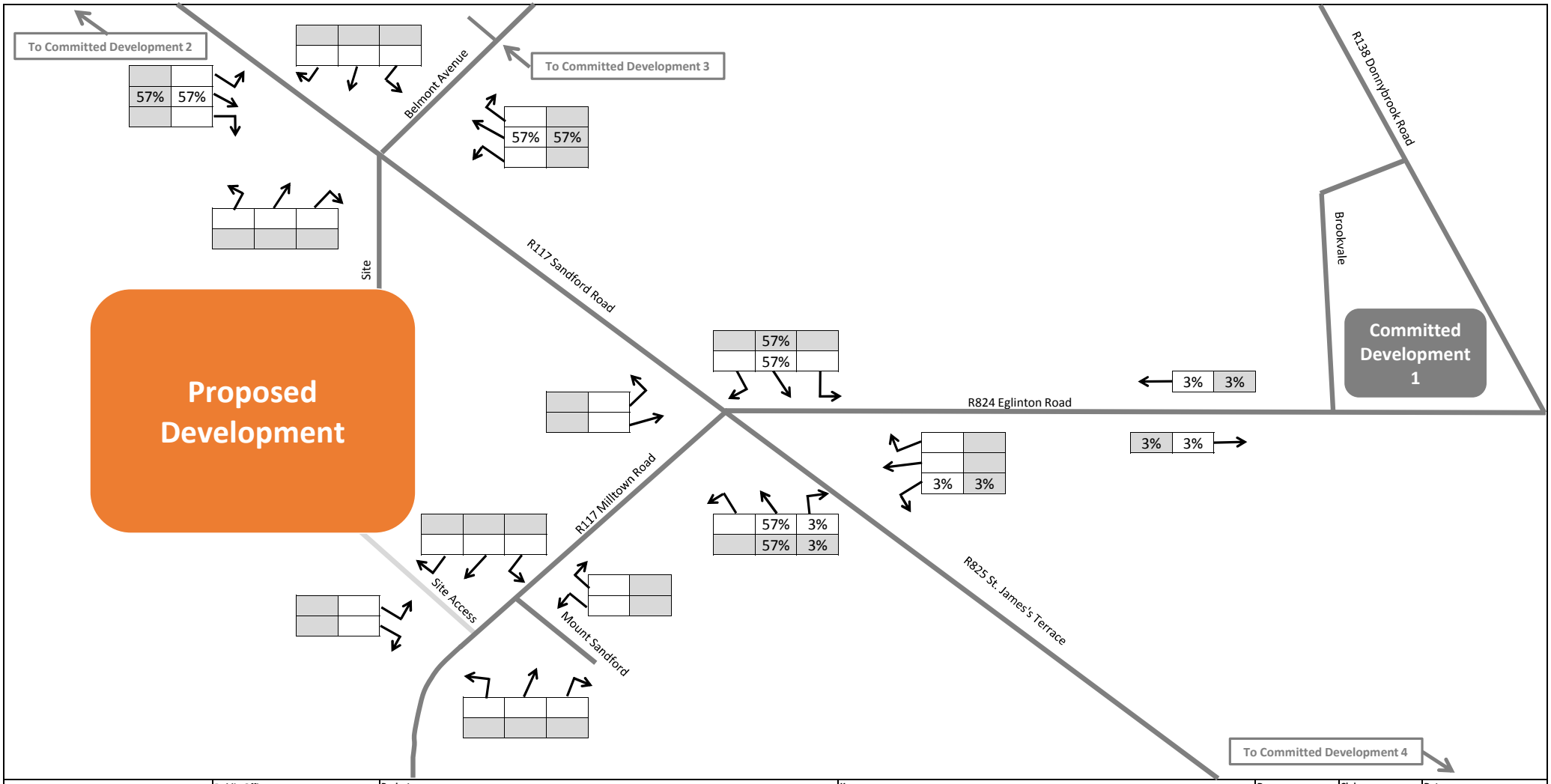
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
0	1	1	1



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Project :
Proposed Residential Development
Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 4 Trip Distribution

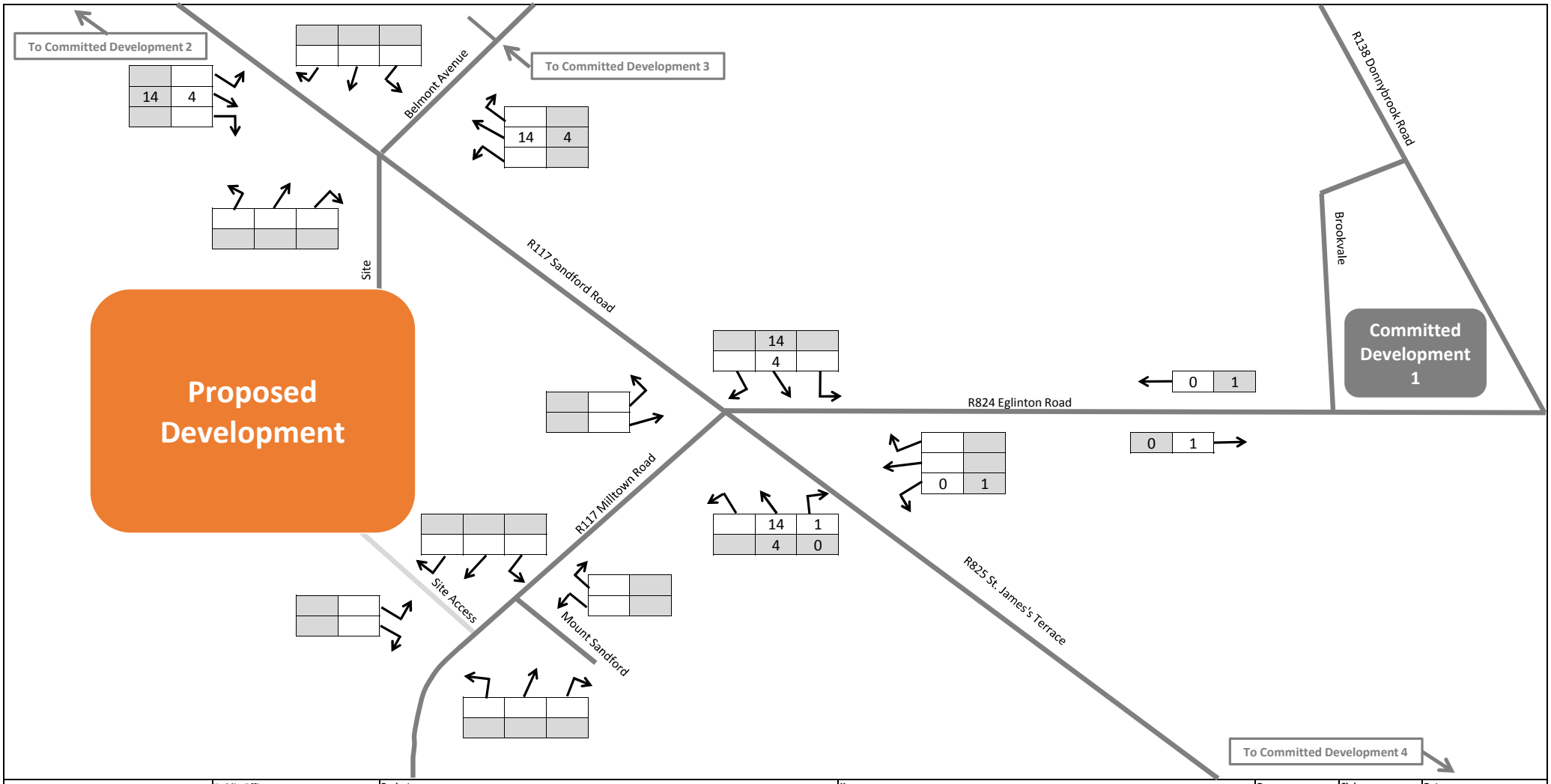
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 8

Rev: -



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 4 New Trips

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

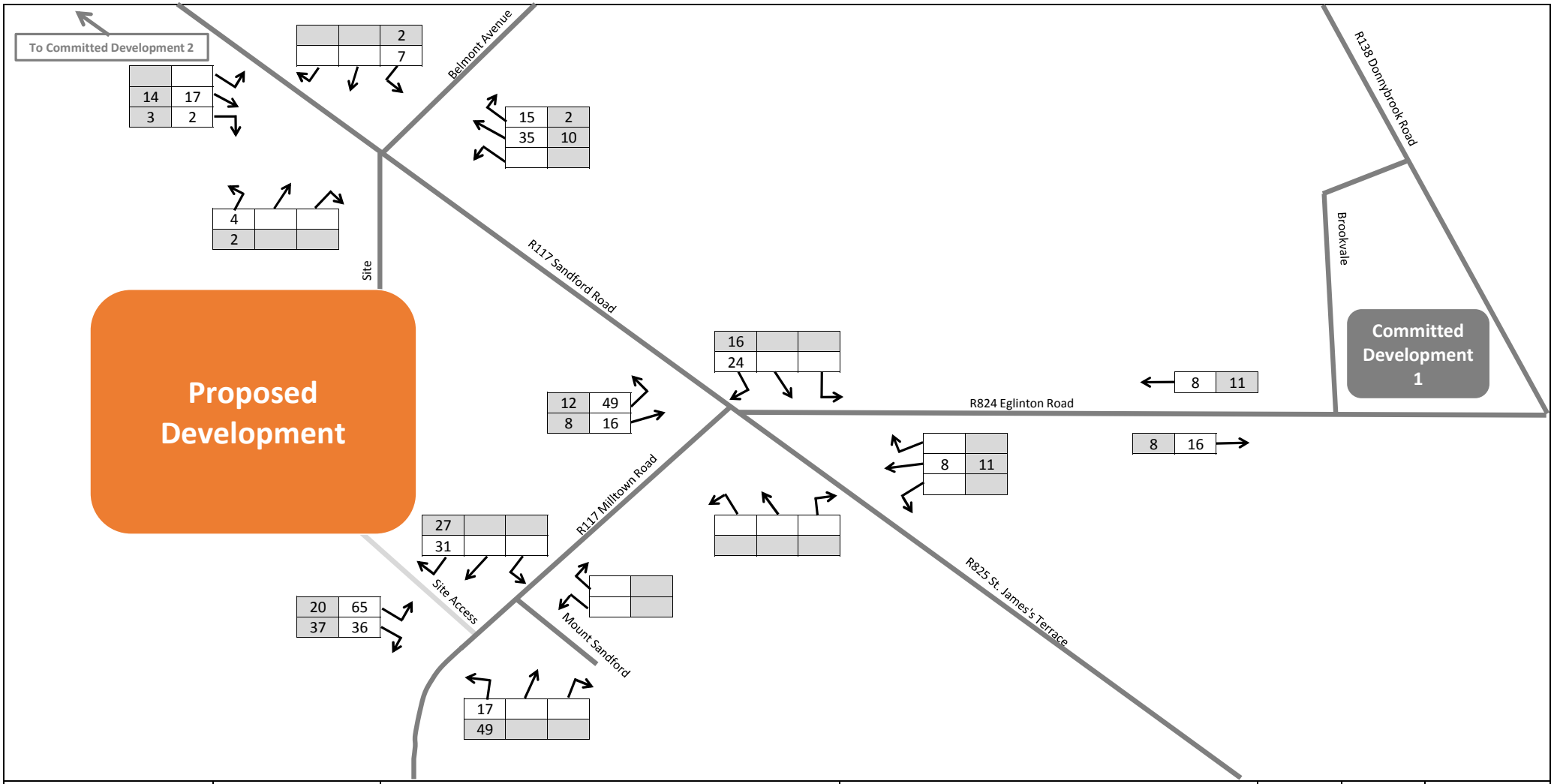
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
6	25	24	8

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 9

Rev: -



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Project :

Proposed Residential Development
Sandford Road, Milltown, Dublin 6

DRG. Title :

Network Traffic Flows - Vehicles
2022 New Trips

Key:

AM Peak Hour (0815 to 0915)

PM Peak Hour (1645 to 1745)

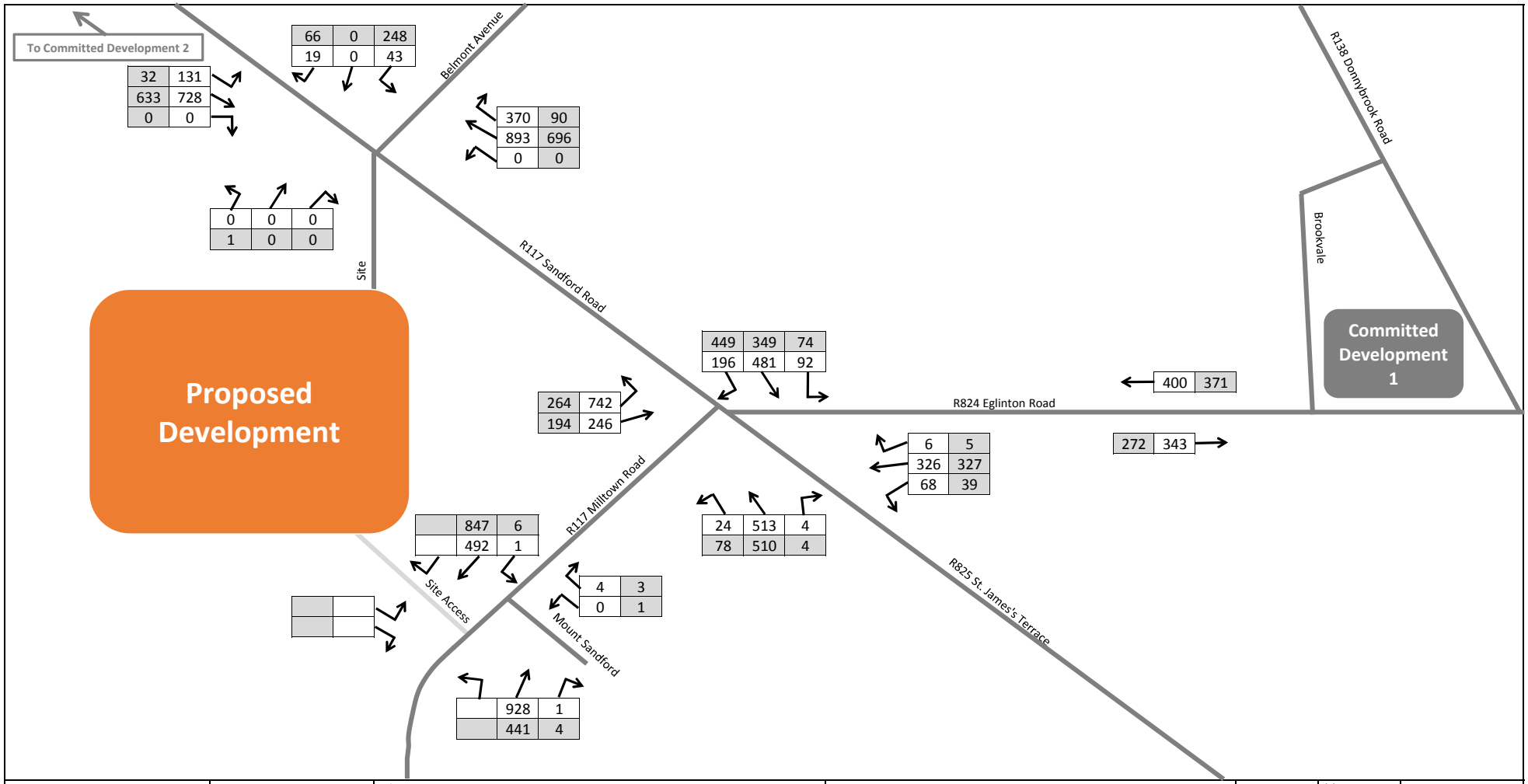
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
51	105	79	59

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 10

Rev: -



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2022 Base Flows

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

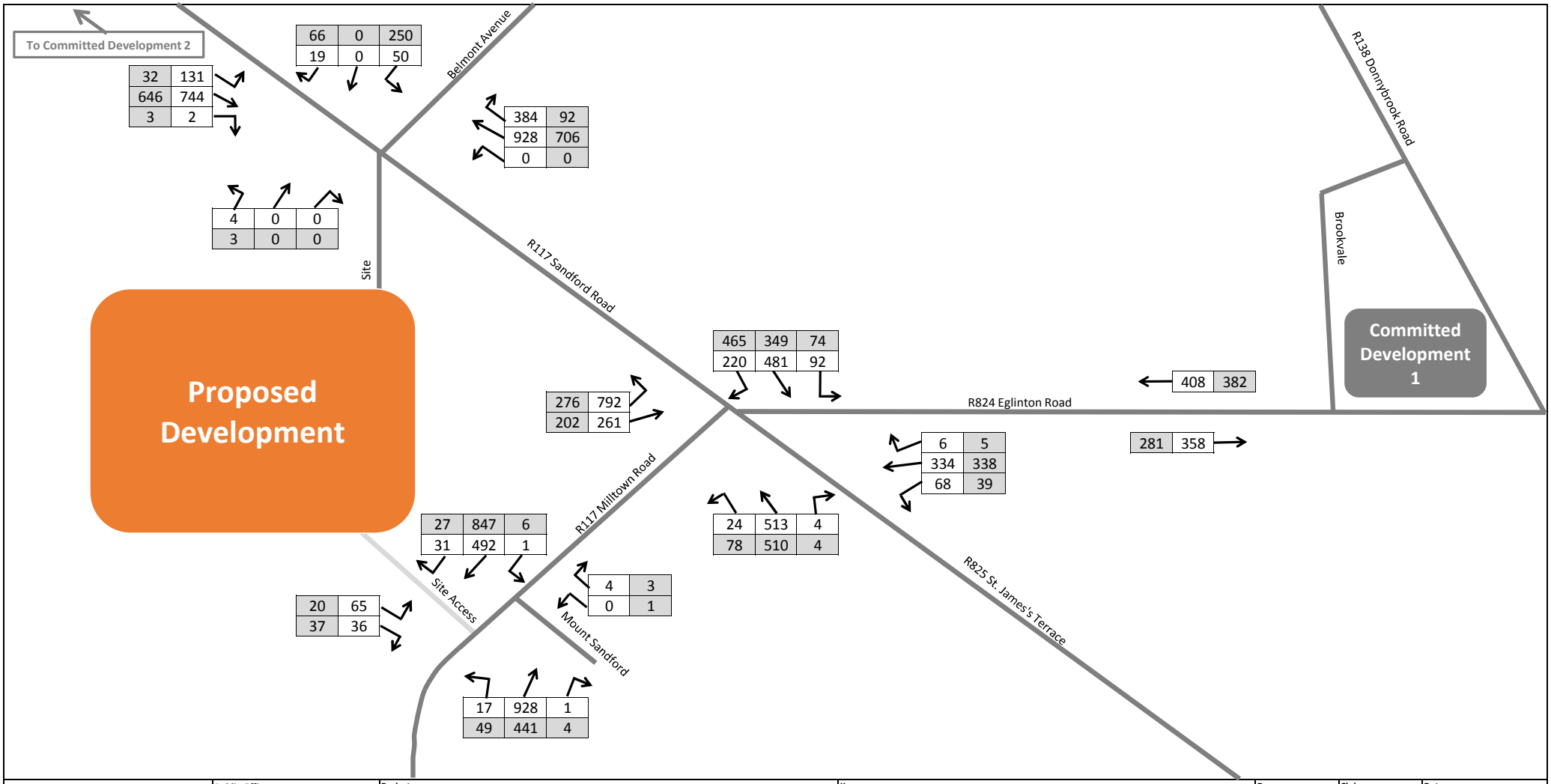
2016-2030 Medium Growth		
2022	1.0162	**1.0327**

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 11

Rev: -



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2022 Proposed Development Flows

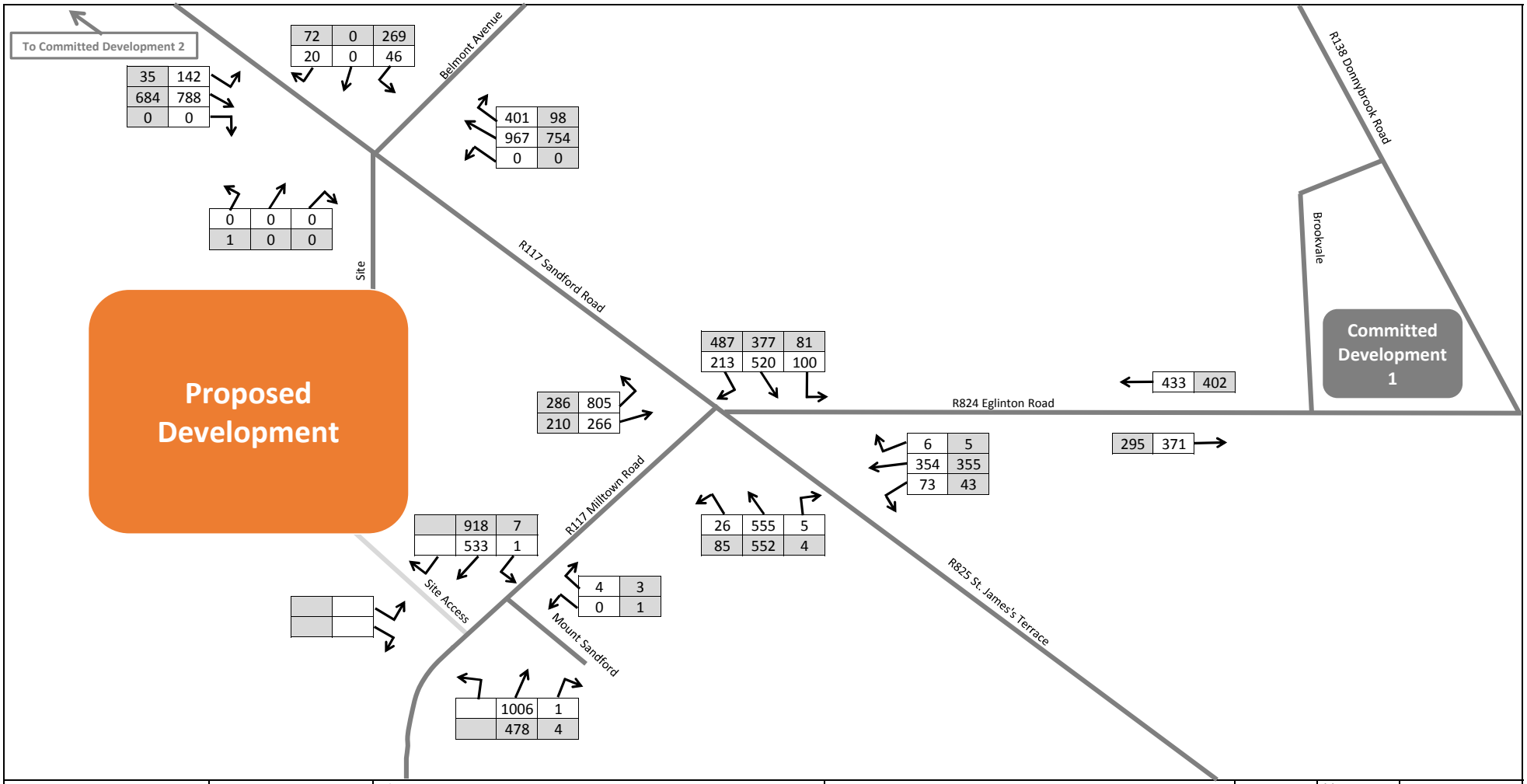
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 12

Rev: -



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Project :
Proposed Residential Development
Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2027 Base Flows

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

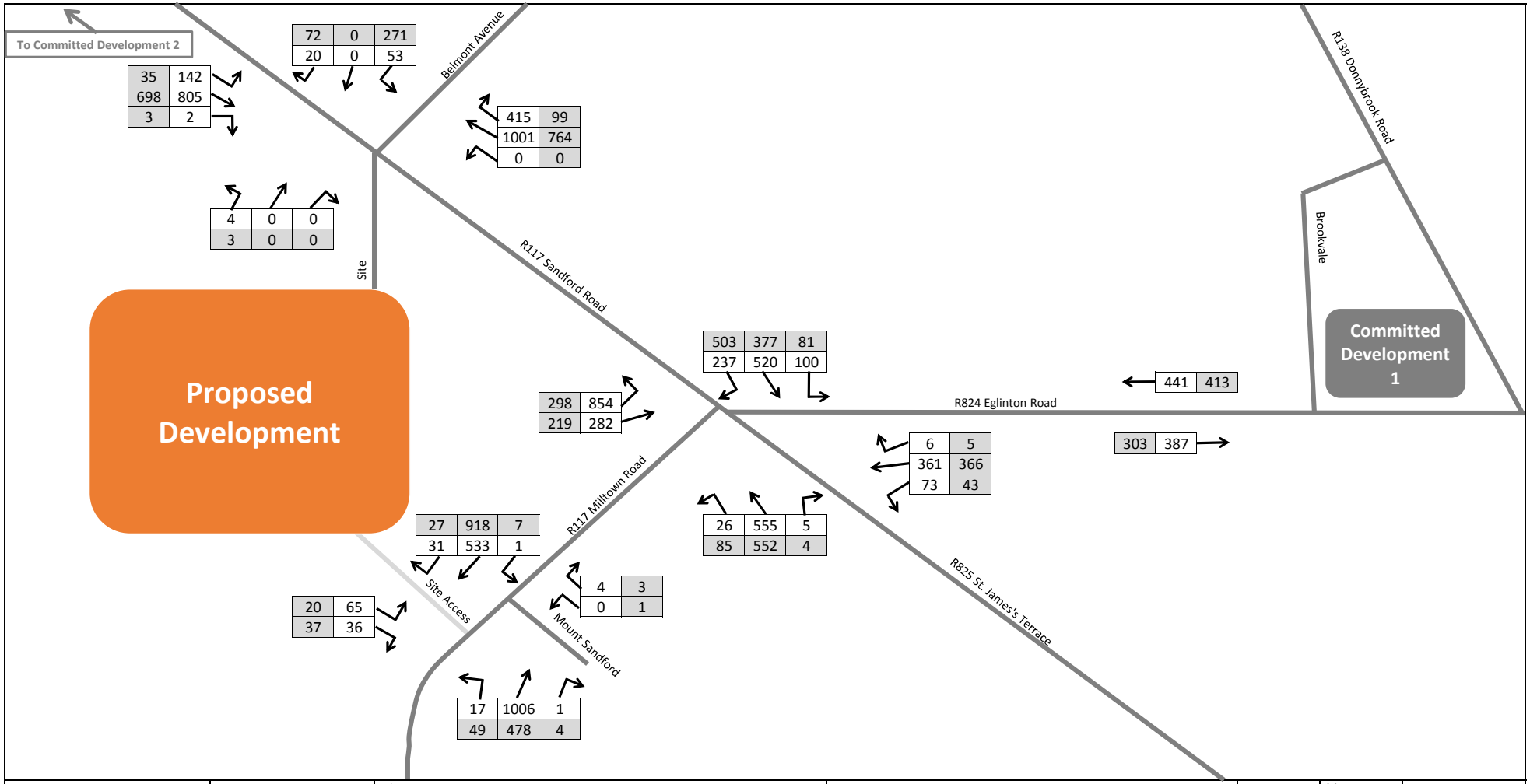
2016-2030 Medium Growth		
2027	1.0162	**1.1191**

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 13

Rev: -



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Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2027 Proposed Development Flows

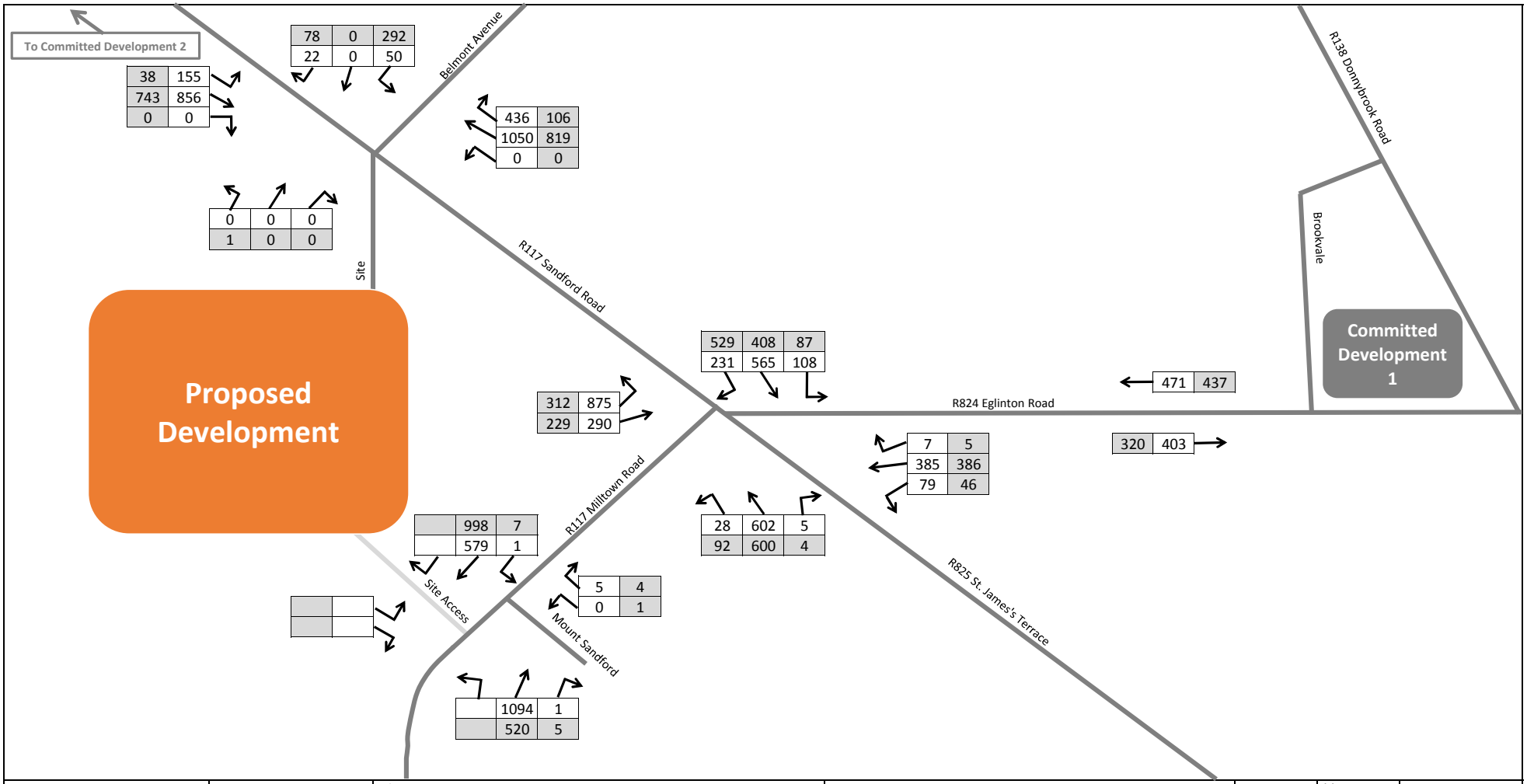
Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 14

Rev: -



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Project :
Proposed Residential Development
Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2037 Base Flows

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

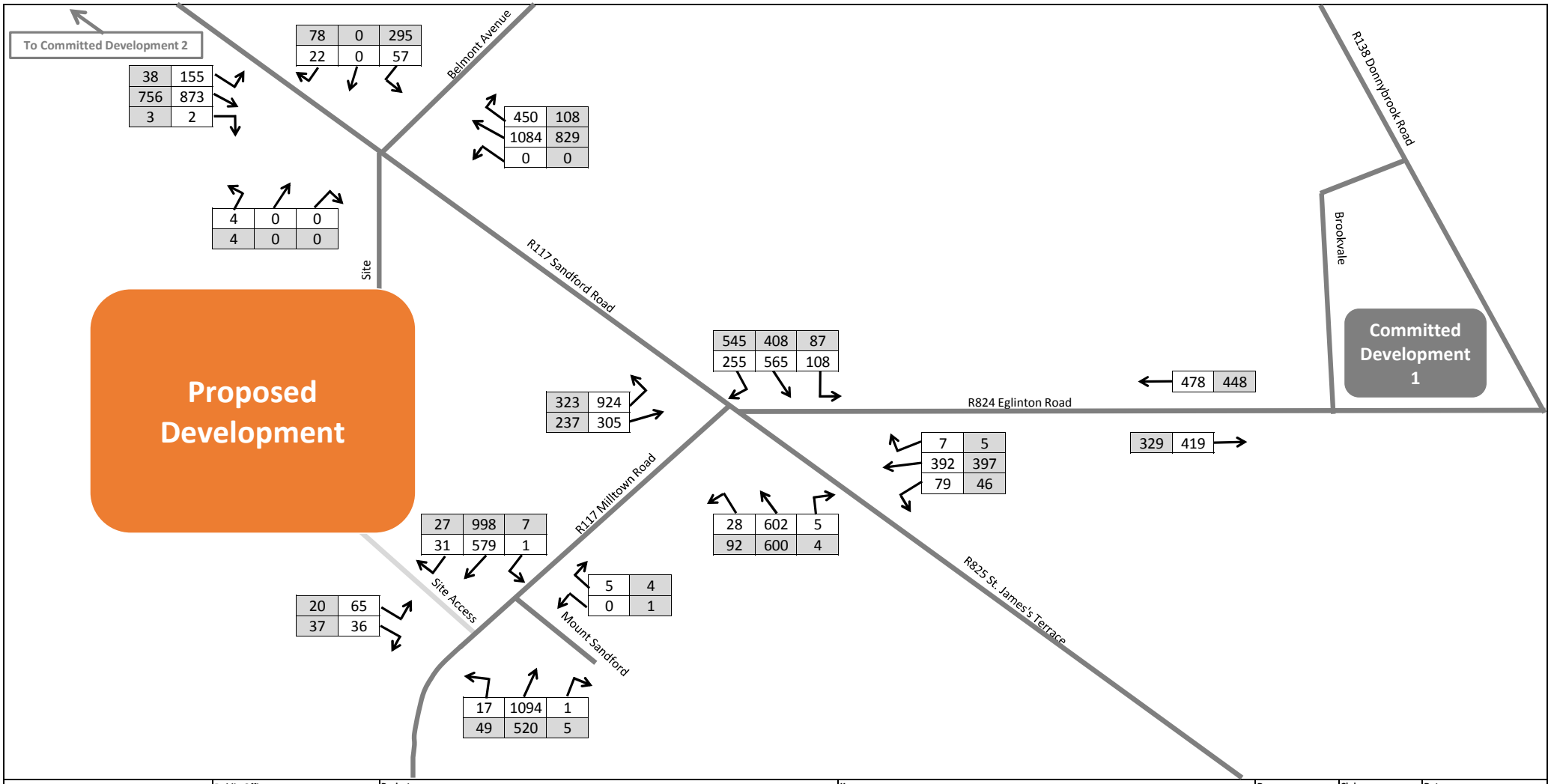
2030-2040 Medium Growth		
2037	1.0051	**1.2169**

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 15

Rev: -



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Project :
Proposed Residential Development
Sandford Road, Milltown, Dublin 6

DRG. Title :
Network Traffic Flows - Vehicles
2037 Proposed Development Flows

Key:
AM Peak Hour (0815 to 0915)
PM Peak Hour (1645 to 1745)

Dwn:	Ckd:	Date:
HG	RJK	12/08/2021

Ref: p190226\calc\excel\Traffic\190226 Traffic Model

Figure: 16

Rev: -

APPENDIX D

PICADY Outputs

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: R117 Milltown Road - Site Access.j9
Path: G:\2019\p190226\calcs\picady
Report generation date: 12/08/2021 16:05:13

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Nothing - DN 2022							
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-A								
Stream A-B								
Stream A-C								
	Do Nothing - DN 2027							
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-A								
Stream A-B								
Stream A-C								
	Do Nothing - DN 2037							
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-A								
Stream A-B								
Stream A-C								

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Something - DS 2022							
Stream B-C	0.1	7.25	0.12	A	0.0	6.90	0.04	A
Stream B-A	0.1	12.43	0.11	B	0.1	9.19	0.09	A
Stream C-AB	0.2	5.30	0.10	A	0.2	4.17	0.10	A
Stream C-A								
Stream A-B								
Stream A-C								
	Do Something - DS 2027							
Stream B-C	0.1	7.45	0.12	A	0.0	6.97	0.04	A
Stream B-A	0.1	13.07	0.12	B	0.1	9.51	0.09	A
Stream C-AB	0.2	5.22	0.10	A	0.3	4.06	0.11	A
Stream C-A								
Stream A-B								
Stream A-C								
	Do Something - DS 2037							
Stream B-C	0.2	7.70	0.12	A	0.0	7.06	0.04	A
Stream B-A	0.2	13.88	0.12	B	0.1	9.90	0.09	A
Stream C-AB	0.3	5.08	0.11	A	0.3	3.95	0.13	A
Stream C-A								
Stream A-B								
Stream A-C								

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

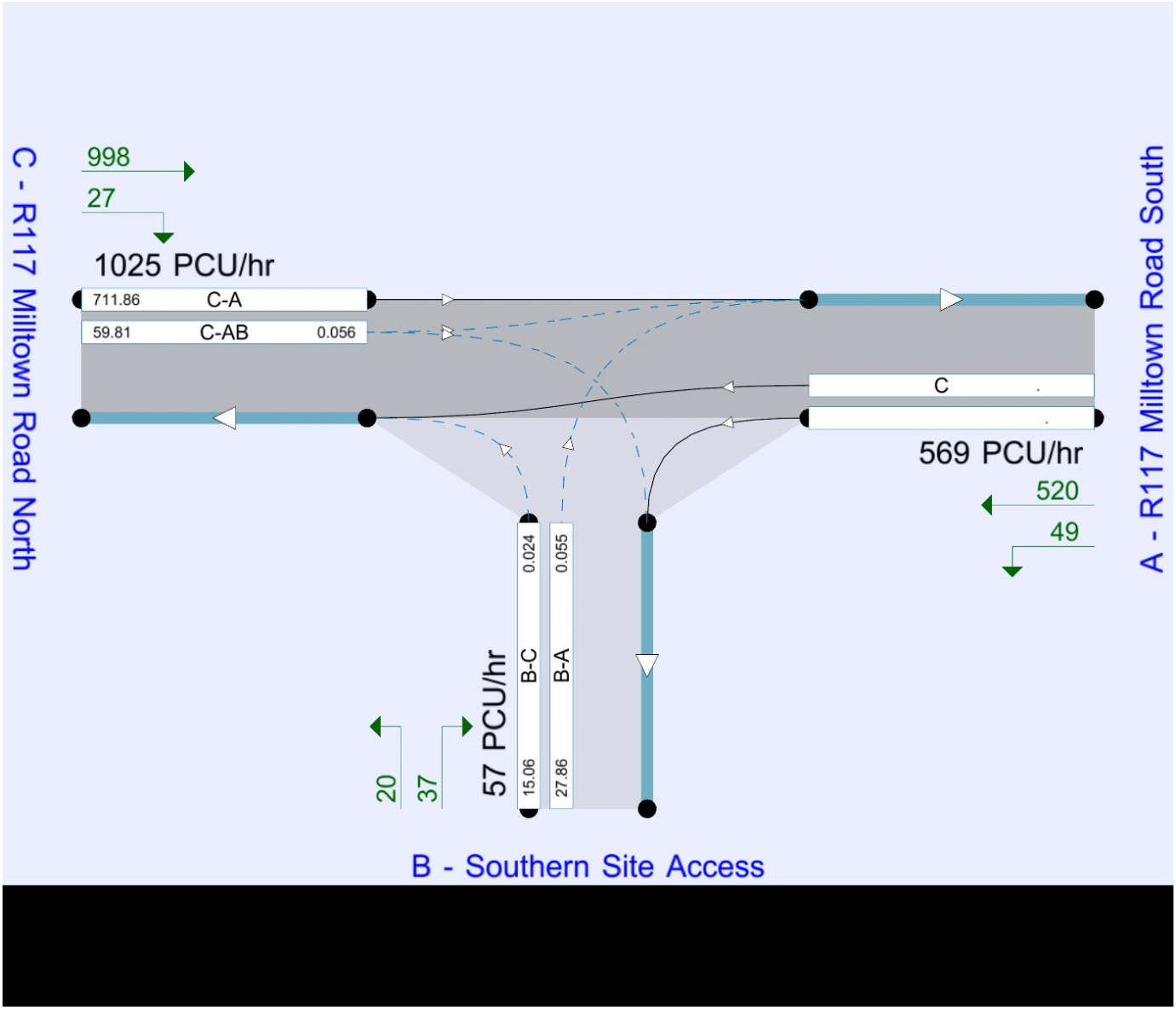
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	08/04/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HEADOFFICE"gendyh
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

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
DN 2022	AM	ONE HOUR	08:00	09:30	15	✓
DN 2022	PM	ONE HOUR	16:30	18:00	15	✓
DS 2022	AM	ONE HOUR	08:00	09:30	15	✓
DS 2022	PM	ONE HOUR	16:30	18:00	15	✓
DN 2027	AM	ONE HOUR	08:00	09:30	15	✓
DN 2027	PM	ONE HOUR	16:30	18:00	15	✓
DS 2027	AM	ONE HOUR	08:00	09:30	15	✓
DS 2027	PM	ONE HOUR	16:30	18:00	15	✓
DN 2037	AM	ONE HOUR	08:00	09:30	15	✓
DN 2037	PM	ONE HOUR	16:30	18:00	15	✓
DS 2037	AM	ONE HOUR	08:00	09:30	15	✓
DS 2037	PM	ONE HOUR	16:30	18:00	15	✓

Do Nothing - DN 2022, 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 Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	604.049	0.059	0.150	0.094	0.214
1	B-C	746.816	0.062	0.156	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DN 2022	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	928.00	100.000
B - Southern Site Access		ONE HOUR	✓	0.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	492.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	0.000	928.000
	B - Southern Site Access	0.000	0.000	0.000
	C - R117 Milltown Road North	492.000	0.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.00	1.00
	B - Southern Site Access	0.33	0.33	0.33
	C - R117 Milltown Road North	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					451.47	677.20
A-B					0.00	0.00
A-C					851.55	1277.32

Main Results for each time segment

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-C	0.00	0.00	0.00	0.00	637.87	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	464.42	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	540.12	0.000	0.00	0.0	0.0	0.000	A
C-A	370.40	370.40	92.60	0.00			370.40				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	698.65	698.65	174.66	0.00			698.65				

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-C	0.00	0.00	0.00	0.00	616.72	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	437.32	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	522.22	0.000	0.00	0.0	0.0	0.000	A
C-A	442.30	442.30	110.57	0.00			442.30				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	834.25	834.25	208.56	0.00			834.25				

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-C	0.00	0.00	0.00	0.00	587.48	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	399.85	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	497.46	0.000	0.00	0.0	0.0	0.000	A
C-A	541.70	541.70	135.43	0.00			541.70				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	1021.75	1021.75	255.44	0.00			1021.75				

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-C	0.00	0.00	0.00	0.00	587.48	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	399.85	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	497.46	0.000	0.00	0.0	0.0	0.000	A
C-A	541.70	541.70	135.43	0.00			541.70				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	1021.75	1021.75	255.44	0.00			1021.75				

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-C	0.00	0.00	0.00	0.00	616.72	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	437.32	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	522.22	0.000	0.00	0.0	0.0	0.000	A
C-A	442.30	442.30	110.57	0.00			442.30				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	834.25	834.25	208.56	0.00			834.25				

Main results: (09:15-09:30)

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-C	0.00	0.00	0.00	0.00	637.87	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	464.42	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	540.12	0.000	0.00	0.0	0.0	0.000	A
C-A	370.40	370.40	92.60	0.00			370.40				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	698.65	698.65	174.66	0.00			698.65				

Do Nothing - DN 2022, 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 Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	604.049	0.059	0.150	0.094	0.214
1	B-C	746.816	0.062	0.156	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DN 2022	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	441.00	100.000
B - Southern Site Access		ONE HOUR	✓	0.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	847.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	0.000	441.000
	B - Southern Site Access	0.000	0.000	0.000
	C - R117 Milltown Road North	847.000	0.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.00	1.00
	B - Southern Site Access	0.33	0.33	0.33
	C - R117 Milltown Road North	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					777.22	1165.83
A-B					0.00	0.00
A-C					404.67	607.00

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0.00	0.00	0.00	0.00	695.04	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	494.17	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	588.54	0.000	0.00	0.0	0.0	0.000	A
C-A	637.67	637.67	159.42	0.00			637.67				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	332.01	332.01	83.00	0.00			332.01				

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-C	0.00	0.00	0.00	0.00	684.99	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	472.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	580.03	0.000	0.00	0.0	0.0	0.000	A
C-A	761.44	761.44	190.36	0.00			761.44				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	396.45	396.45	99.11	0.00			396.45				

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-C	0.00	0.00	0.00	0.00	671.10	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	443.35	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	568.26	0.000	0.00	0.0	0.0	0.000	A
C-A	932.56	932.56	233.14	0.00			932.56				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	485.55	485.55	121.39	0.00			485.55				

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-C	0.00	0.00	0.00	0.00	671.10	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	443.35	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	568.26	0.000	0.00	0.0	0.0	0.000	A
C-A	932.56	932.56	233.14	0.00			932.56				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	485.55	485.55	121.39	0.00			485.55				

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-C	0.00	0.00	0.00	0.00	684.99	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	472.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	580.03	0.000	0.00	0.0	0.0	0.000	A
C-A	761.44	761.44	190.36	0.00			761.44				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	396.45	396.45	99.11	0.00			396.45				

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-C	0.00	0.00	0.00	0.00	695.04	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	494.17	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	588.54	0.000	0.00	0.0	0.0	0.000	A
C-A	637.67	637.67	159.42	0.00			637.67				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	332.01	332.01	83.00	0.00			332.01				

Do Nothing - DN 2027, 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 Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	604.049	0.059	0.150	0.094	0.214
1	B-C	746.816	0.062	0.156	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DN 2027	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	1006.00	100.000
B - Southern Site Access		ONE HOUR	✓	0.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	533.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	0.000	1006.000
	B - Southern Site Access	0.000	0.000	0.000
	C - R117 Milltown Road North	533.000	0.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.00	1.00
	B - Southern Site Access	0.33	0.33	0.33
	C - R117 Milltown Road North	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					489.09	733.64
A-B					0.00	0.00
A-C					923.12	1384.68

Main Results for each time segment

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-C	0.00	0.00	0.00	0.00	628.71	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	452.71	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	532.37	0.000	0.00	0.0	0.0	0.000	A
C-A	401.27	401.27	100.32	0.00			401.27				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	757.37	757.37	189.34	0.00			757.37				

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-C	0.00	0.00	0.00	0.00	605.79	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	423.33	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	512.96	0.000	0.00	0.0	0.0	0.000	A
C-A	479.16	479.16	119.79	0.00			479.16				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	904.37	904.37	226.09	0.00			904.37				

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-C	0.00	0.00	0.00	0.00	574.09	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	382.72	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	486.12	0.000	0.00	0.0	0.0	0.000	A
C-A	586.84	586.84	146.71	0.00			586.84				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	1107.63	1107.63	276.91	0.00			1107.63				

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-C	0.00	0.00	0.00	0.00	574.09	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	382.72	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	486.12	0.000	0.00	0.0	0.0	0.000	A
C-A	586.84	586.84	146.71	0.00			586.84				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	1107.63	1107.63	276.91	0.00			1107.63				

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-C	0.00	0.00	0.00	0.00	605.79	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	423.33	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	512.96	0.000	0.00	0.0	0.0	0.000	A
C-A	479.16	479.16	119.79	0.00			479.16				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	904.37	904.37	226.09	0.00			904.37				

Main results: (09:15-09:30)

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-C	0.00	0.00	0.00	0.00	628.71	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	452.71	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	532.37	0.000	0.00	0.0	0.0	0.000	A
C-A	401.27	401.27	100.32	0.00			401.27				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	757.37	757.37	189.34	0.00			757.37				

Do Nothing - DN 2027, 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 Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	604.049	0.059	0.150	0.094	0.214
1	B-C	746.816	0.062	0.156	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DN 2027	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	478.00	100.000
B - Southern Site Access		ONE HOUR	✓	0.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	918.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	0.000	478.000
	B - Southern Site Access	0.000	0.000	0.000
	C - R117 Milltown Road North	918.000	0.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.00	1.00
	B - Southern Site Access	0.33	0.33	0.33
	C - R117 Milltown Road North	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					842.37	1263.56
A-B					0.00	0.00
A-C					438.62	657.93

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0.00	0.00	0.00	0.00	690.70	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	484.95	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	584.86	0.000	0.00	0.0	0.0	0.000	A
C-A	691.12	691.12	172.78	0.00			691.12				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	359.86	359.86	89.97	0.00			359.86				

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-C	0.00	0.00	0.00	0.00	679.81	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	461.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	575.63	0.000	0.00	0.0	0.0	0.000	A
C-A	825.26	825.26	206.32	0.00			825.26				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	429.71	429.71	107.43	0.00			429.71				

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-C	0.00	0.00	0.00	0.00	664.75	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	429.88	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	562.88	0.000	0.00	0.0	0.0	0.000	A
C-A	1010.74	1010.74	252.68	0.00			1010.74				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	526.29	526.29	131.57	0.00			526.29				

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-C	0.00	0.00	0.00	0.00	664.75	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	429.88	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	562.88	0.000	0.00	0.0	0.0	0.000	A
C-A	1010.74	1010.74	252.68	0.00			1010.74				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	526.29	526.29	131.57	0.00			526.29				

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-C	0.00	0.00	0.00	0.00	679.81	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	461.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	575.63	0.000	0.00	0.0	0.0	0.000	A
C-A	825.26	825.26	206.32	0.00			825.26				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	429.71	429.71	107.43	0.00			429.71				

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-C	0.00	0.00	0.00	0.00	690.70	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	484.95	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	584.86	0.000	0.00	0.0	0.0	0.000	A
C-A	691.12	691.12	172.78	0.00			691.12				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	359.86	359.86	89.97	0.00			359.86				

Do Nothing - DN 2037, 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 Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	604.049	0.059	0.150	0.094	0.214
1	B-C	746.816	0.062	0.156	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DN 2037	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	1094.00	100.000
B - Southern Site Access		ONE HOUR	✓	0.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	579.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	0.000	1094.000
	B - Southern Site Access	0.000	0.000	0.000
	C - R117 Milltown Road North	579.000	0.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.00	1.00
	B - Southern Site Access	0.33	0.33	0.33
	C - R117 Milltown Road North	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					531.30	796.95
A-B					0.00	0.00
A-C					1003.87	1505.81

Main Results for each time segment

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-C	0.00	0.00	0.00	0.00	618.38	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	439.52	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	523.62	0.000	0.00	0.0	0.0	0.000	A
C-A	435.90	435.90	108.98	0.00			435.90				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	823.62	823.62	205.91	0.00			823.62				

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-C	0.00	0.00	0.00	0.00	593.45	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	407.58	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	502.51	0.000	0.00	0.0	0.0	0.000	A
C-A	520.51	520.51	130.13	0.00			520.51				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	983.48	983.48	245.87	0.00			983.48				

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-C	0.00	0.00	0.00	0.00	558.98	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	363.42	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	473.32	0.000	0.00	0.0	0.0	0.000	A
C-A	637.49	637.49	159.37	0.00			637.49				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	1204.52	1204.52	301.13	0.00			1204.52				

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-C	0.00	0.00	0.00	0.00	558.98	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	363.42	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	473.32	0.000	0.00	0.0	0.0	0.000	A
C-A	637.49	637.49	159.37	0.00			637.49				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	1204.52	1204.52	301.13	0.00			1204.52				

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-C	0.00	0.00	0.00	0.00	593.45	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	407.58	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	502.51	0.000	0.00	0.0	0.0	0.000	A
C-A	520.51	520.51	130.13	0.00			520.51				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	983.48	983.48	245.87	0.00			983.48				

Main results: (09:15-09:30)

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-C	0.00	0.00	0.00	0.00	618.38	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	439.52	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	523.62	0.000	0.00	0.0	0.0	0.000	A
C-A	435.90	435.90	108.98	0.00			435.90				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	823.62	823.62	205.91	0.00			823.62				

Do Nothing - DN 2037, 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 Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	604.049	0.059	0.150	0.094	0.214
1	B-C	746.816	0.062	0.156	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DN 2037	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	520.00	100.000
B - Southern Site Access		ONE HOUR	✓	0.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	998.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	0.000	520.000
	B - Southern Site Access	0.000	0.000	0.000
	C - R117 Milltown Road North	998.000	0.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.00	1.00
	B - Southern Site Access	0.33	0.33	0.33
	C - R117 Milltown Road North	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					915.78	1373.67
A-B					0.00	0.00
A-C					477.16	715.74

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0.00	0.00	0.00	0.00	685.77	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	474.54	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	580.68	0.000	0.00	0.0	0.0	0.000	A
C-A	751.35	751.35	187.84	0.00			751.35				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	391.48	391.48	97.87	0.00			391.48				

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-C	0.00	0.00	0.00	0.00	673.92	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	449.40	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	570.65	0.000	0.00	0.0	0.0	0.000	A
C-A	897.18	897.18	224.30	0.00			897.18				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	467.47	467.47	116.87	0.00			467.47				

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-C	0.00	0.00	0.00	0.00	657.53	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	414.64	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	556.78	0.000	0.00	0.0	0.0	0.000	A
C-A	1098.82	1098.82	274.70	0.00			1098.82				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	572.53	572.53	143.13	0.00			572.53				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0.00	0.00	0.00	0.00	657.53	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	414.64	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	556.78	0.000	0.00	0.0	0.0	0.000	A
C-A	1098.82	1098.82	274.70	0.00			1098.82				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	572.53	572.53	143.13	0.00			572.53				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0.00	0.00	0.00	0.00	673.92	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	449.40	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	570.65	0.000	0.00	0.0	0.0	0.000	A
C-A	897.18	897.18	224.30	0.00			897.18				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	467.47	467.47	116.87	0.00			467.47				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0.00	0.00	0.00	0.00	685.77	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	0.00	0.00	474.54	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	0.00	0.00	580.68	0.000	0.00	0.0	0.0	0.000	A
C-A	751.35	751.35	187.84	0.00			751.35				
A-B	0.00	0.00	0.00	0.00			0.00				
A-C	391.48	391.48	97.87	0.00			391.48				

Do Something - DS 2022, 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	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552.723	0.054	0.137	0.086	0.196
1	B-C	810.273	0.067	0.169	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DS 2022	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	945.00	100.000
B - Southern Site Access		ONE HOUR	✓	101.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	523.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	17.000	928.000
	B - Southern Site Access	36.000	0.000	65.000
	C - R117 Milltown Road North	492.000	31.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.02	0.98
	B - Southern Site Access	0.36	0.00	0.64
	C - R117 Milltown Road North	0.94	0.06	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	7.25	0.1	A	59.65	89.47
B-A	0.11	12.43	0.1	B	33.03	49.55
C-AB	0.10	5.30	0.2	A	61.57	92.36
C-A					418.34	627.51
A-B					15.60	23.40
A-C					851.55	1277.32

Main Results for each time segment

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-C	48.94	48.94	12.23	0.00	680.05	0.072	48.60	0.0	0.1	6.268	A
B-A	27.10	27.10	6.78	0.00	419.69	0.065	26.80	0.0	0.1	10.072	B
C-AB	41.25	41.25	10.31	0.00	789.23	0.052	40.90	0.0	0.1	5.291	A
C-A	352.49	352.49	88.12	0.00			352.49				
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	698.65	698.65	174.66	0.00			698.65				

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-C	58.43	58.43	14.61	0.00	654.02	0.089	58.34	0.1	0.1	6.648	A
B-A	32.36	32.36	8.09	0.00	393.98	0.082	32.27	0.1	0.1	10.945	B
C-AB	58.37	58.37	14.59	0.00	831.24	0.070	58.19	0.1	0.1	5.123	A
C-A	411.79	411.79	102.95	0.00			411.79				
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	834.25	834.25	208.56	0.00			834.25				

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-C	71.57	71.57	17.89	0.00	618.13	0.116	71.42	0.1	0.1	7.241	A
B-A	39.64	39.64	9.91	0.00	358.25	0.111	39.49	0.1	0.1	12.418	B
C-AB	84.84	84.84	21.21	0.00	880.37	0.096	84.51	0.1	0.2	4.978	A
C-A	491.00	491.00	122.75	0.00			491.00				
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	1021.75	1021.75	255.44	0.00			1021.75				

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-C	71.57	71.57	17.89	0.00	617.95	0.116	71.56	0.1	0.1	7.246	A
B-A	39.64	39.64	9.91	0.00	358.29	0.111	39.63	0.1	0.1	12.426	B
C-AB	84.98	84.98	21.24	0.00	880.53	0.097	84.97	0.2	0.2	4.984	A
C-A	490.85	490.85	122.71	0.00			490.85				
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	1021.75	1021.75	255.44	0.00			1021.75				

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-C	58.43	58.43	14.61	0.00	653.69	0.089	58.57	0.1	0.1	6.657	A
B-A	32.36	32.36	8.09	0.00	394.08	0.082	32.51	0.1	0.1	10.958	B
C-AB	58.54	58.54	14.64	0.00	831.50	0.070	58.86	0.2	0.1	5.131	A
C-A	411.62	411.62	102.91	0.00			411.62				
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	834.25	834.25	208.56	0.00			834.25				

Main results: (09:15-09:30)

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-C	48.94	48.94	12.23	0.00	679.49	0.072	49.03	0.1	0.1	6.281	A
B-A	27.10	27.10	6.78	0.00	419.91	0.065	27.19	0.1	0.1	10.087	B
C-AB	41.45	41.45	10.36	0.00	789.41	0.053	41.64	0.1	0.1	5.300	A
C-A	352.29	352.29	88.07	0.00			352.29				
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	698.65	698.65	174.66	0.00			698.65				

Do Something - DS 2022, 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	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	656.994	0.064	0.163	0.103	0.233
1	B-C	681.357	0.056	0.142	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DS 2022	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	490.00	100.000
B - Southern Site Access		ONE HOUR	✓	57.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	874.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	49.000	441.000
	B - Southern Site Access	37.000	0.000	20.000
	C - R117 Milltown Road North	847.000	27.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.10	0.90
	B - Southern Site Access	0.65	0.00	0.35
	C - R117 Milltown Road North	0.97	0.03	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	6.90	0.0	A	18.35	27.53
B-A	0.09	9.19	0.1	A	33.95	50.93
C-AB	0.10	4.17	0.2	A	81.86	122.79
C-A					720.14	1080.21
A-B					44.96	67.44
A-C					404.67	607.00

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.06	15.06	3.76	0.00	623.75	0.024	14.95	0.0	0.0	6.505	A
B-A	27.86	27.86	6.96	0.00	530.37	0.053	27.61	0.0	0.1	7.873	A
C-AB	51.64	51.64	12.91	0.00	1001.99	0.052	51.29	0.0	0.1	4.164	A
C-A	606.36	606.36	151.59	0.00			606.36				
A-B	36.89	36.89	9.22	0.00			36.89				
A-C	332.01	332.01	83.00	0.00			332.01				

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-C	17.98	17.98	4.49	0.00	612.07	0.029	17.96	0.0	0.0	6.664	A
B-A	33.26	33.26	8.32	0.00	505.80	0.066	33.20	0.1	0.1	8.378	A
C-AB	72.69	72.69	18.17	0.00	1069.47	0.068	72.52	0.1	0.1	3.972	A
C-A	713.02	713.02	178.26	0.00			713.02				
A-B	44.05	44.05	11.01	0.00			44.05				
A-C	396.45	396.45	99.11	0.00			396.45				

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-C	22.02	22.02	5.51	0.00	595.88	0.037	21.98	0.0	0.0	6.899	A
B-A	40.74	40.74	10.18	0.00	471.81	0.086	40.63	0.1	0.1	9.182	A
C-AB	120.90	120.90	30.22	0.00	1180.03	0.102	120.46	0.1	0.2	3.740	A
C-A	841.39	841.39	210.35	0.00			841.39				
A-B	53.95	53.95	13.49	0.00			53.95				
A-C	485.55	485.55	121.39	0.00			485.55				

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-C	22.02	22.02	5.51	0.00	595.77	0.037	22.02	0.0	0.0	6.901	A
B-A	40.74	40.74	10.18	0.00	471.80	0.086	40.74	0.1	0.1	9.186	A
C-AB	121.12	121.12	30.28	0.00	1180.25	0.103	121.11	0.2	0.2	3.744	A
C-A	841.18	841.18	210.29	0.00			841.18				
A-B	53.95	53.95	13.49	0.00			53.95				
A-C	485.55	485.55	121.39	0.00			485.55				

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-C	17.98	17.98	4.49	0.00	611.89	0.029	18.01	0.0	0.0	6.667	A
B-A	33.26	33.26	8.32	0.00	505.82	0.066	33.36	0.1	0.1	8.383	A
C-AB	72.90	72.90	18.22	0.00	1069.76	0.068	73.33	0.2	0.1	3.977	A
C-A	712.81	712.81	178.20	0.00			712.81				
A-B	44.05	44.05	11.01	0.00			44.05				
A-C	396.45	396.45	99.11	0.00			396.45				

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-C	15.06	15.06	3.76	0.00	623.48	0.024	15.08	0.0	0.0	6.508	A
B-A	27.86	27.86	6.96	0.00	530.42	0.053	27.92	0.1	0.1	7.883	A
C-AB	51.91	51.91	12.98	0.00	1002.21	0.052	52.08	0.1	0.1	4.170	A
C-A	606.08	606.08	151.52	0.00			606.08				
A-B	36.89	36.89	9.22	0.00			36.89				
A-C	332.01	332.01	83.00	0.00			332.01				

Do Something - DS 2027, 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	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552.723	0.054	0.137	0.086	0.196
1	B-C	810.273	0.067	0.169	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DS 2027	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	1023.00	100.000
B - Southern Site Access		ONE HOUR	✓	101.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	564.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	17.000	1006.000
	B - Southern Site Access	36.000	0.000	65.000
	C - R117 Milltown Road North	533.000	31.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.02	0.98
	B - Southern Site Access	0.36	0.00	0.64
	C - R117 Milltown Road North	0.95	0.05	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	7.45	0.1	A	59.65	89.47
B-A	0.12	13.07	0.1	B	33.03	49.55
C-AB	0.10	5.22	0.2	A	65.77	98.66
C-A					451.76	677.64
A-B					15.60	23.40
A-C					923.12	1384.68

Main Results for each time segment

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-C	48.94	48.94	12.23	0.00	669.99	0.073	48.59	0.0	0.1	6.370	A
B-A	27.10	27.10	6.78	0.00	408.98	0.066	26.79	0.0	0.1	10.353	B
C-AB	43.17	43.17	10.79	0.00	802.60	0.054	42.80	0.0	0.1	5.211	A
C-A	381.44	381.44	95.36	0.00			381.44				
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	757.37	757.37	189.34	0.00			757.37				

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-C	58.43	58.43	14.61	0.00	641.94	0.091	58.34	0.1	0.1	6.785	A
B-A	32.36	32.36	8.09	0.00	381.19	0.085	32.27	0.1	0.1	11.347	B
C-AB	62.18	62.18	15.55	0.00	849.42	0.073	61.98	0.1	0.1	5.031	A
C-A	444.84	444.84	111.21	0.00			444.84				
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	904.37	904.37	226.09	0.00			904.37				

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-C	71.57	71.57	17.89	0.00	603.19	0.119	71.42	0.1	0.1	7.444	A
B-A	39.64	39.64	9.91	0.00	342.58	0.116	39.47	0.1	0.1	13.058	B
C-AB	91.68	91.68	22.92	0.00	902.88	0.102	91.31	0.1	0.2	4.883	A
C-A	529.30	529.30	132.32	0.00			529.30				
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	1107.63	1107.63	276.91	0.00			1107.63				

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-C	71.57	71.57	17.89	0.00	603.00	0.119	71.56	0.1	0.1	7.450	A
B-A	39.64	39.64	9.91	0.00	342.62	0.116	39.63	0.1	0.1	13.069	B
C-AB	91.84	91.84	22.96	0.00	903.07	0.102	91.83	0.2	0.2	4.886	A
C-A	529.13	529.13	132.28	0.00			529.13				
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	1107.63	1107.63	276.91	0.00			1107.63				

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-C	58.43	58.43	14.61	0.00	641.57	0.091	58.58	0.1	0.1	6.796	A
B-A	32.36	32.36	8.09	0.00	381.30	0.085	32.52	0.1	0.1	11.360	B
C-AB	62.38	62.38	15.59	0.00	849.71	0.073	62.74	0.2	0.1	5.036	A
C-A	444.65	444.65	111.16	0.00			444.65				
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	904.37	904.37	226.09	0.00			904.37				

Main results: (09:15-09:30)

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-C	48.94	48.94	12.23	0.00	669.40	0.073	49.03	0.1	0.1	6.383	A
B-A	27.10	27.10	6.78	0.00	409.20	0.066	27.20	0.1	0.1	10.370	B
C-AB	43.39	43.39	10.85	0.00	802.80	0.054	43.60	0.1	0.1	5.220	A
C-A	381.22	381.22	95.30	0.00			381.22				
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	757.37	757.37	189.34	0.00			757.37				

Do Something - DS 2027, 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	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	656.994	0.064	0.163	0.103	0.233
1	B-C	681.357	0.056	0.142	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DS 2027	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	527.00	100.000
B - Southern Site Access		ONE HOUR	✓	57.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	945.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	49.000	478.000
	B - Southern Site Access	37.000	0.000	20.000
	C - R117 Milltown Road North	918.000	27.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.09	0.91
	B - Southern Site Access	0.65	0.00	0.35
	C - R117 Milltown Road North	0.97	0.03	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	6.97	0.0	A	18.35	27.53
B-A	0.09	9.51	0.1	A	33.95	50.93
C-AB	0.11	4.06	0.3	A	89.80	134.69
C-A					777.35	1166.03
A-B					44.96	67.44
A-C					438.62	657.93

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.06	15.06	3.76	0.00	619.68	0.024	14.95	0.0	0.0	6.548	A
B-A	27.86	27.86	6.96	0.00	520.35	0.054	27.61	0.0	0.1	8.032	A
C-AB	55.37	55.37	13.84	0.00	1031.72	0.054	55.01	0.0	0.1	4.054	A
C-A	656.07	656.07	164.02	0.00			656.07				
A-B	36.89	36.89	9.22	0.00			36.89				
A-C	359.86	359.86	89.97	0.00			359.86				

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-C	17.98	17.98	4.49	0.00	607.16	0.030	17.95	0.0	0.0	6.720	A
B-A	33.26	33.26	8.32	0.00	493.84	0.067	33.19	0.1	0.1	8.595	A
C-AB	78.71	78.71	19.68	0.00	1103.16	0.071	78.53	0.1	0.1	3.865	A
C-A	770.83	770.83	192.71	0.00			770.83				
A-B	44.05	44.05	11.01	0.00			44.05				
A-C	429.71	429.71	107.43	0.00			429.71				

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-C	22.02	22.02	5.51	0.00	589.77	0.037	21.98	0.0	0.0	6.973	A
B-A	40.74	40.74	10.18	0.00	457.15	0.089	40.63	0.1	0.1	9.505	A
C-AB	134.89	134.89	33.72	0.00	1222.38	0.110	134.37	0.1	0.3	3.640	A
C-A	905.57	905.57	226.39	0.00			905.57				
A-B	53.95	53.95	13.49	0.00			53.95				
A-C	526.29	526.29	131.57	0.00			526.29				

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-C	22.02	22.02	5.51	0.00	589.66	0.037	22.02	0.0	0.0	6.975	A
B-A	40.74	40.74	10.18	0.00	457.14	0.089	40.74	0.1	0.1	9.509	A
C-AB	135.16	135.16	33.79	0.00	1222.64	0.111	135.15	0.3	0.3	3.644	A
C-A	905.30	905.30	226.33	0.00			905.30				
A-B	53.95	53.95	13.49	0.00			53.95				
A-C	526.29	526.29	131.57	0.00			526.29				

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-C	17.98	17.98	4.49	0.00	606.96	0.030	18.01	0.0	0.0	6.726	A
B-A	33.26	33.26	8.32	0.00	493.85	0.067	33.37	0.1	0.1	8.601	A
C-AB	78.96	78.96	19.74	0.00	1103.51	0.072	79.48	0.3	0.1	3.871	A
C-A	770.58	770.58	192.64	0.00			770.58				
A-B	44.05	44.05	11.01	0.00			44.05				
A-C	429.71	429.71	107.43	0.00			429.71				

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-C	15.06	15.06	3.76	0.00	619.39	0.024	15.08	0.0	0.0	6.554	A
B-A	27.86	27.86	6.96	0.00	520.40	0.054	27.93	0.1	0.1	8.041	A
C-AB	55.68	55.68	13.92	0.00	1031.95	0.054	55.86	0.1	0.1	4.058	A
C-A	655.77	655.77	163.94	0.00			655.77				
A-B	36.89	36.89	9.22	0.00			36.89				
A-C	359.86	359.86	89.97	0.00			359.86				

Do Something - DS 2037, 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	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.77	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552.723	0.054	0.137	0.086	0.196
1	B-C	810.273	0.067	0.169	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DS 2037	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	1111.00	100.000
B - Southern Site Access		ONE HOUR	✓	101.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	610.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	17.000	1094.000
	B - Southern Site Access	36.000	0.000	65.000
	C - R117 Milltown Road North	579.000	31.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.02	0.98
	B - Southern Site Access	0.36	0.00	0.64
	C - R117 Milltown Road North	0.95	0.05	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	7.70	0.2	A	59.65	89.47
B-A	0.12	13.88	0.2	B	33.03	49.55
C-AB	0.11	5.08	0.3	A	71.77	107.65
C-A					487.98	731.97
A-B					15.60	23.40
A-C					1003.87	1505.81

Main Results for each time segment

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-C	48.94	48.94	12.23	0.00	658.63	0.074	48.58	0.0	0.1	6.489	A
B-A	27.10	27.10	6.78	0.00	396.90	0.068	26.78	0.0	0.1	10.691	B
C-AB	48.17	48.17	12.04	0.00	828.09	0.058	47.76	0.0	0.1	5.074	A
C-A	411.07	411.07	102.77	0.00			411.07				
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	823.62	823.62	205.91	0.00			823.62				

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-C	58.43	58.43	14.61	0.00	628.28	0.093	58.34	0.1	0.1	6.948	A
B-A	32.36	32.36	8.09	0.00	366.77	0.088	32.26	0.1	0.1	11.834	B
C-AB	66.76	66.76	16.69	0.00	869.91	0.077	66.56	0.1	0.2	4.930	A
C-A	481.61	481.61	120.40	0.00			481.61				
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	983.48	983.48	245.87	0.00			983.48				

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-C	71.57	71.57	17.89	0.00	586.30	0.122	71.41	0.1	0.2	7.688	A
B-A	39.64	39.64	9.91	0.00	324.92	0.122	39.46	0.1	0.2	13.863	B
C-AB	100.02	100.02	25.00	0.00	928.10	0.108	99.60	0.2	0.3	4.784	A
C-A	571.61	571.61	142.90	0.00			571.61				
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	1204.52	1204.52	301.13	0.00			1204.52				

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-C	71.57	71.57	17.89	0.00	586.08	0.122	71.56	0.2	0.2	7.696	A
B-A	39.64	39.64	9.91	0.00	324.96	0.122	39.63	0.2	0.2	13.877	B
C-AB	100.21	100.21	25.05	0.00	928.31	0.108	100.20	0.3	0.3	4.789	A
C-A	571.41	571.41	142.85	0.00			571.41				
A-B	18.72	18.72	4.68	0.00			18.72				
A-C	1204.52	1204.52	301.13	0.00			1204.52				

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-C	58.43	58.43	14.61	0.00	627.88	0.093	58.59	0.2	0.1	6.959	A
B-A	32.36	32.36	8.09	0.00	366.89	0.088	32.54	0.2	0.1	11.849	B
C-AB	66.99	66.99	16.75	0.00	870.23	0.077	67.40	0.3	0.2	4.937	A
C-A	481.39	481.39	120.35	0.00			481.39				
A-B	15.28	15.28	3.82	0.00			15.28				
A-C	983.48	983.48	245.87	0.00			983.48				

Main results: (09:15-09:30)

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-C	48.94	48.94	12.23	0.00	658.01	0.074	49.03	0.1	0.1	6.503	A
B-A	27.10	27.10	6.78	0.00	397.13	0.068	27.21	0.1	0.1	10.707	B
C-AB	48.45	48.45	12.11	0.00	828.34	0.058	48.66	0.2	0.1	5.081	A
C-A	410.79	410.79	102.70	0.00			410.79				
A-B	12.80	12.80	3.20	0.00			12.80				
A-C	823.62	823.62	205.91	0.00			823.62				

Do Something - DS 2037, 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	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1 - untitled	untitled	T-Junction	Two-way	0.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R117 Milltown Road South		Major
B	Southern Site Access		Minor
C	R117 Milltown Road North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R117 Milltown Road North	16.60			100.9	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Southern Site Access	One lane plus flare	8.38	6.22	6.22	6.22	6.22	✓	3.00	85	158

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	656.994	0.064	0.163	0.103	0.233
1	B-C	681.357	0.056	0.142	-	-
1	C-B	632.375	0.132	0.132	-	-

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	DS 2037	PM	ONE HOUR	16:30	18:00	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - R117 Milltown Road South		ONE HOUR	✓	569.00	100.000
B - Southern Site Access		ONE HOUR	✓	57.00	100.000
C - R117 Milltown Road North		ONE HOUR	✓	1025.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.000	49.000	520.000
	B - Southern Site Access	37.000	0.000	20.000
	C - R117 Milltown Road North	998.000	27.000	0.000

Proportions

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	0.00	0.09	0.91
	B - Southern Site Access	0.65	0.00	0.35
	C - R117 Milltown Road North	0.97	0.03	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	10	10	10
	B - Southern Site Access	10	10	10
	C - R117 Milltown Road North	10	10	10

Average PCU Per Veh

		To		
		A - R117 Milltown Road South	B - Southern Site Access	C - R117 Milltown Road North
From	A - R117 Milltown Road South	1.100	1.100	1.100
	B - Southern Site Access	1.100	1.100	1.100
	C - R117 Milltown Road North	1.100	1.100	1.100

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	7.06	0.0	A	18.35	27.53
B-A	0.09	9.90	0.1	A	33.95	50.93
C-AB	0.13	3.95	0.3	A	106.12	159.18
C-A					834.44	1251.65
A-B					44.96	67.44
A-C					477.16	715.74

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.06	15.06	3.76	0.00	615.05	0.024	14.95	0.0	0.0	6.599	A
B-A	27.86	27.86	6.96	0.00	509.02	0.055	27.60	0.0	0.1	8.221	A
C-AB	59.81	59.81	14.95	0.00	1064.48	0.056	59.42	0.0	0.1	3.939	A
C-A	711.86	711.86	177.97	0.00			711.86				
A-B	36.89	36.89	9.22	0.00			36.89				
A-C	391.48	391.48	97.87	0.00			391.48				

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-C	17.98	17.98	4.49	0.00	601.58	0.030	17.95	0.0	0.0	6.784	A
B-A	33.26	33.26	8.32	0.00	480.31	0.069	33.19	0.1	0.1	8.855	A
C-AB	93.71	93.71	23.43	0.00	1160.97	0.081	93.44	0.1	0.2	3.712	A
C-A	827.75	827.75	206.94	0.00			827.75				
A-B	44.05	44.05	11.01	0.00			44.05				
A-C	467.47	467.47	116.87	0.00			467.47				

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-C	22.02	22.02	5.51	0.00	582.82	0.038	21.98	0.0	0.0	7.060	A
B-A	40.74	40.74	10.18	0.00	440.58	0.092	40.62	0.1	0.1	9.897	A
C-AB	164.28	164.28	41.07	0.00	1286.63	0.128	163.58	0.2	0.3	3.527	A
C-A	964.26	964.26	241.07	0.00			964.26				
A-B	53.95	53.95	13.49	0.00			53.95				
A-C	572.53	572.53	143.13	0.00			572.53				

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	22.02	22.02	5.51	0.00	582.70	0.038	22.02	0.0	0.0	7.062	A
B-A	40.74	40.74	10.18	0.00	440.55	0.092	40.74	0.1	0.1	9.904	A
C-AB	164.70	164.70	41.17	0.00	1287.00	0.128	164.68	0.3	0.3	3.534	A
C-A	963.85	963.85	240.96	0.00			963.85				
A-B	53.95	53.95	13.49	0.00			53.95				
A-C	572.53	572.53	143.13	0.00			572.53				

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	17.98	17.98	4.49	0.00	601.35	0.030	18.02	0.0	0.0	6.788	A
B-A	33.26	33.26	8.32	0.00	480.31	0.069	33.38	0.1	0.1	8.864	A
C-AB	94.08	94.08	23.52	0.00	1161.49	0.081	94.78	0.3	0.2	3.718	A
C-A	827.38	827.38	206.84	0.00			827.38				
A-B	44.05	44.05	11.01	0.00			44.05				
A-C	467.47	467.47	116.87	0.00			467.47				

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.06	15.06	3.76	0.00	614.75	0.024	15.08	0.0	0.0	6.605	A
B-A	27.86	27.86	6.96	0.00	509.07	0.055	27.93	0.1	0.1	8.231	A
C-AB	60.16	60.16	15.04	0.00	1064.77	0.057	60.44	0.2	0.1	3.946	A
C-A	711.51	711.51	177.88	0.00			711.51				
A-B	36.89	36.89	9.22	0.00			36.89				
A-C	391.48	391.48	97.87	0.00			391.48				

APPENDIX E

Roads Layout

ON ORIGINAL

0 5 10 15 20 25 30 40 50mm

EGLINTON ROAD

MATCH LINE

PROPOSED PEDESTRIAN ACCESS

NORWOOD PARK

2.4m x 49m SIGHTLINE

EXISTING PEDESTRIAN CROSSING UPGRADED TO 4.0M WIDE TOUCAN CROSSING

PROPOSED IMPROVED FACILITIES FOR VULNERABLE ROAD USERS

PROPOSED PEDESTRIAN ACCESS

STOP

RUS027

SECONDARY SITE ACCESS FROM SANDFORD ROAD

EXISTING BUS STOP

PROPOSED PEDESTRIAN ACCESS

SANDFORD ROAD

ESB SUBSTATION

ALTERNATIVE PEDESTIAN ROUTE FROM SANDFORD ROAD TO PLAZA

REMOVABLE BOLLARDS TO FACILITATE FIRE TENDER ACCESS

BICYCLE ACCESS ROUTE TO BASEMENT

BICYCLE ACCESS ROUTE TO BASEMENT

FFL 19.85

FFL 20.075

FFL 20.30

FFL 20.525

FFL 20.750

FFL 20.975

BLOCK C

FFL 21.20

BLOCK E

FFL 21.20

FFL 21.20

FFL 21.20

FFL 21.20

FFL 21.20

FFL 19.10

BLOCK A1

FFL 18.60

BLOCK B

FFL 20.90

FFL 20.90

FFL 18.60

FFL 19.70

FFL 20.10

FFL 20.40

BLOCK A2

FFL 20.80

BLOCK D

FFL 21.20

TABOR HOUSE

CHAPEL

FFL 20.90

FFL 21.80

BLOCK F

REMOVABLE BOLLARDS TO FACILITATE FIRE TENDER ACCESS

ESB SUBSTATION

ACCESS TO BASEMENT CARPARK

PROPOSED PEDESTRIAN ACCESS

PROPOSED TOUCAN CROSSING

PRIMARY VEHICLE ACCESS FROM MILLTOWN ROAD

ESB SUBSTATION

POTENTIAL FUTURE PEDESTRIAN CONNECTIVITY

POTENTIAL FUTURE PEDESTRIAN CONNECTIVITY

POTENTIAL FUTURE PEDESTRIAN CONNECTIVITY

MILLTOWN ROAD

MILLTOWN ROAD

PROPOSED PEDESTRIAN ACCESS

MATCH LINE

LEGEND

- APPLICATION BOUNDARY
- PROPOSED ROAD
- PROPOSED FOOTPATH (REFER TO LANDSCAPE ARCHITECTS PLAN FOR FOOTPATH FINISHES)
- PROPOSED SHARED SURFACE
- PROPOSED REINFORCED GRASS (NETLON ADVANCED TURN TO LANDSCAPE ARCHHITECTS SPECIFICATION)
- PROPOSED CYCLE LANE
- PROPOSED PERMEABLE PAVING
- PROPOSED HOMEZONE
- PROPOSED DROPPED KERB
- BASEMENT OUTLINE
- PROPOSED ROAD CENTRELINE
- PROPOSED 25mm RAISED KERB
- PROPOSED RAISED TABLE
- PROPOSED BUFF TACTILE PAVING
- 99.99 PROPOSED ROAD LEVEL
- FFL 99.99 PROPOSED FINISHED FLOOR LEVEL
- EXISTING BUS STOP
- EXISTING FOOTPATH

GENERAL NOTES:

1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS UNLESS OVERRIDDEN BY LOCAL OVERSEEING AUTHORITY'S STANDARDS
2. ALL ROAD MARKINGS & SIGNS SHALL COMPLY FULLY WITH THE TRAFFIC SIGNS MANUAL PUBLISHED BY THE DEPARTMENT OF TRANSPORT, NOVEMBER 2015.
3. SIGNS & MARKINGS: CONTRACTOR TO CONFIRM PRECISE SETTING OUT WITH EMPLOYERS REPRESENTATIVE PRIOR TO COMPLETION.
4. ALL SIGNS TO BE MOUNTED ON 75mm GALVANISED STEEL POSTS WITH COLOURED SLEEVES U.N.O. TO SPECIFICATION AND IN ACCORDANCE WITH THE TRAFFIC SIGNS MANUAL: MOUNTING HEIGHT TO BOTTOM OF SIGN = 2.3m U.N.O.
5. ALL TRAFFIC MANAGEMENT TO COMPLY FULLY WITH THE PROVISIONS OF CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL
6. ALL CO-ORDINATES ARE TO IIRISH TRANSVERSE MERCATOR.
7. ALL LEVELS ARE TO ORDNANCE DATUM AND ARE IN METRES
8. ALL STREET FURNITURE TO BE TAKEN UP AND SET ASIDE FOR RE-USE. PROPOSED STREET FURNITURE TO BE RETROFITTED BY OTHERS.
9. ALL EXISTING SIGNS (INCLUDING POLES) AND MARKINGS TO BE TAKEN UP OR COVERED AND TEMPORARY MEASURES APPLIED IN ACCORDANCE WITH CONTRACTORS TRAFFIC MANAGEMENT PLAN. THE CONTRACTOR MAY USE EXISTING SIGNAGE AS PART OF THEIR TRAFFIC MANAGEMENT PLAN.
10. ALL EXISTING CHAMBERS AND ACCESS POINTS TO REMAIN CLEAR OF OBSTRUCTION THROUGHOUT WORKS. CHAMBERS SHALL BE REBUILT/RETAINED IN POSITION IDENTIFIED ON FINISHING WORKS DRAWING.
11. ALL PEDESTRIAN, CYCLE AND VEHICULAR ROUTES MUST BE RETAINED IN ACCORDANCE WITH APPROVED TRAFFIC MANAGEMENT PLAN.
12. ALL MATERIALS TO BE DISPOSED OFF SITE SHALL BE TAKEN TO A LICENSED FACILITY APPROVED BY THE LOCAL OVERSEEING AUTHORITY
13. THE CONTRACTOR MUST LIAISE DIRECTLY WITH LOCAL AUTHORITY DEPARTMENTS AS DIRECTED IN THE WORKS REQUIREMENTS.
14. ALL VEHICULAR & PEDESTRIAN, CYCLE & PRIVATE ACCESS ROUTES WITHIN AND SURROUNDING THE WORKS EXTENTS MUST BE MAINTAINED THROUGHOUT THE WORKS IN ACCORDANCE WITH THE CONTRACTORS APPROVED TEMPORARY TRAFFIC & OPERATIONS MANAGEMENT PLAN.

rev	date	description	by	chkd.
P02	21-01-21	GENERAL REVISION	ICD	BK
P01	04-08-20	FOR ABP PRE APP MEETING	ICD	BK

client approval: A - Approved; B - Approved with comments; C - Do not use

suitability: S2 - INFORMATION

issue purpose: PLANNING

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client: SANDFORD LIVING LIMITED

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BK	ICD	1:500	A1P

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