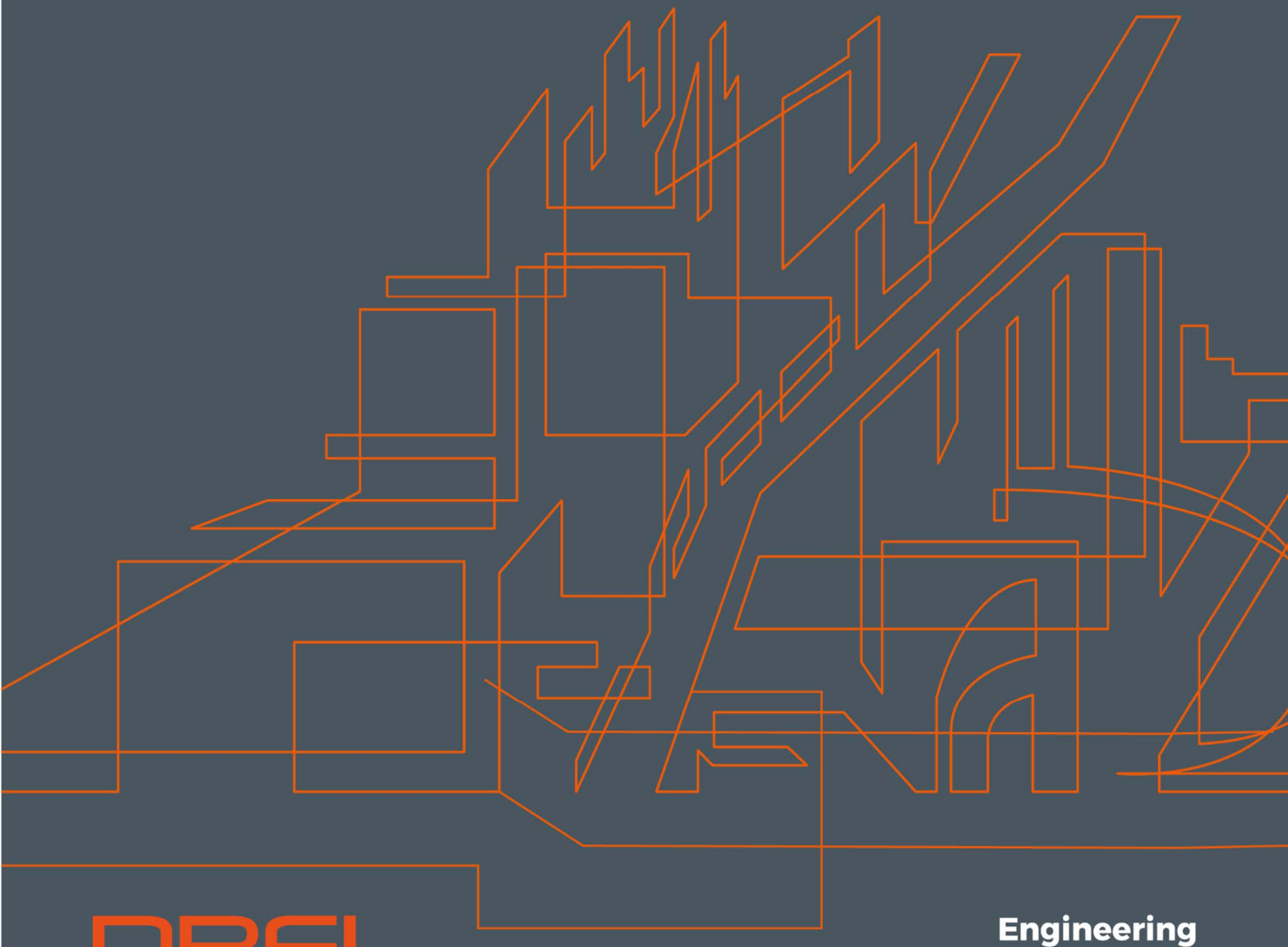
Residential-led Mixed-use Development at Sandford Road, Milltown

Traffic and Transportation Assessment

190226-X-20-BK01-L01-RP-DBFL-CE-0001

December 2025



DBFL CONSULTING ENGINEERS

Engineering Sustainable Futures

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Document Title:	**Traffic and Transportation Assessment**		
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P3	2	08/12/25	Final Issue	Jane Murphy	Helen Gendy	Robert Kelly

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1 INTRODUCTION

1.1 BACKGROUND

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

Sandford Living Limited intend to apply for permission for a Large-Scale Residential Development at a c. 4.26 hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7. Works are also proposed on Milltown Road and Sandford Road to facilitate access to the development including improvements to pedestrian facilities on an area of c. 0.16 hectares. The development's surface water drainage network shall discharge from the site via a proposed 300mm diameter pipe along Milltown Road through the junction of Milltown Road / Sandford Road prior to outfalling to the existing drainage network on Eglinton Road (approximately 200 metres from the Sandford Road / Eglinton Road junction), with these works incorporating an area of c. 0.32 hectares. The development site area, road works and drainage works areas will provide a total application site area of c. 4.74 hectares.

The development will principally consist of: the demolition of c. 4,847.5 sq m of existing structures on site including Milltown Park House (880 sq m), Milltown Park House Rear Extension (2,031 sq m), the Finlay Wing (622 sq m), the Archive (1,240 sq m) and the Link Building between Tabor House and Milltown Park House Rear Extension to the front of the Chapel (74.5 sq m); the refurbishment and reuse of Tabor House (1,575 sq m) and the Chapel (768 sq m) and the provision of a single storey glass entrance lobby to the front and side of the Chapel (52 sq m); and the provision of 562 No. residential units comprising 6 No. three-bed courtyard houses and 556 No. apartment units (70 No. studios, 176 No. one-bed units, 267 No. two-bed units and 43 No. three-bed units).

Block A1 will range in height from 5 No. storeys to 8 No. storeys and will comprise 81 No. apartment units; Block A2 will range in height from 6 No. storeys to 8 No. storeys and will comprise 139 No. apartment units; Block B will range in height from 3 No. to 7 No. storeys and will comprise 74 No. apartment units; Block C will range in height from 4 No. storeys to 7 No. storeys and will comprise 151 No. apartment units; Block D will range in height from 3 No. storeys to 5 No. storeys and will comprise 30 No. apartment units; Block E will be 2 No. storeys in height and will comprise 6 No. courtyard type houses; and Block F will range in height from 5 No. storeys to 7 No. storeys and will comprise 81 No. apartment units.

The development also includes the provision of: cultural/community space within Tabor House (4 No. storeys including lower ground floor level) and the Chapel (2 No. storeys including lower ground floor

level and mezzanine level) (1,698 sq m) with associated outdoor space (248 sq m); a café/restaurant (179 sq m) and a creche (375 sq m) within Block F with associated outdoor creche play area; ancillary residents' amenities and facilities (324 sq m) within Blocks B & C; and a single storey bin store and substation adjacent to Block F (101 sq m).

The development also provides a new access from Milltown Road (which will be the principal vehicular entrance to the site) in addition to utilising and upgrading the existing access from Sandford Road as a secondary access principally for deliveries, emergencies and taxis; new pedestrian access points; pedestrian/bicycle connections through the site; 319 No. car parking spaces (288 No. at basement level and 31 No. at surface level); set down area for deliveries; bicycle parking; 22 No. motorcycle spaces; bin storage; boundary treatments; private balconies and terraces facing all directions; hard and soft landscaping including public open space and communal open space; green/blue roofs; PV panels; substations; lighting; plant; lift cores and overruns; and all other associated site works above and below ground.

The proposed development has a gross floor space of c.50,196 sq m above ground level over a partial basement (under part of Blocks A1 and A2 and under Blocks B and C) measuring c. 10,550 sq m, which includes parking spaces, bin storage, bike storage and plant.

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

1.2 SCOPE

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-led mixed-use development.

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.

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

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 2022-2028'.

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/Ranelagh 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 were undertaken and analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed residential-led mixed-use development.
- **Trip Generation:** A trip generation exercise has been carried out to establish the potential level of vehicle trips generated by the proposed residential led mixed-use 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 2028, 2033 and 2043 development scenarios.

1.4 REPORT STRUCTURE

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 development proposals are highlighted within **Section 3**.

A summary of the principal characteristics of the proposed residential-led mixed-use development is provided in **Section 4**.

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.

The potential traffic impact of the proposals as assessed for the adopted 2028 Opening Year and the Horizon Year of 2033 and 2043 are summarised within **Section 6**.

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

2 RECEIVING ENVIRONMENT

2.1 LAND USE

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

The Dublin City Council (DCC) Development Plan 2022-2028 allocates this land as being zoned *"Zone Z12 – Institutional Land (Future Development Potential)"* as shown in (Figure 2-1).

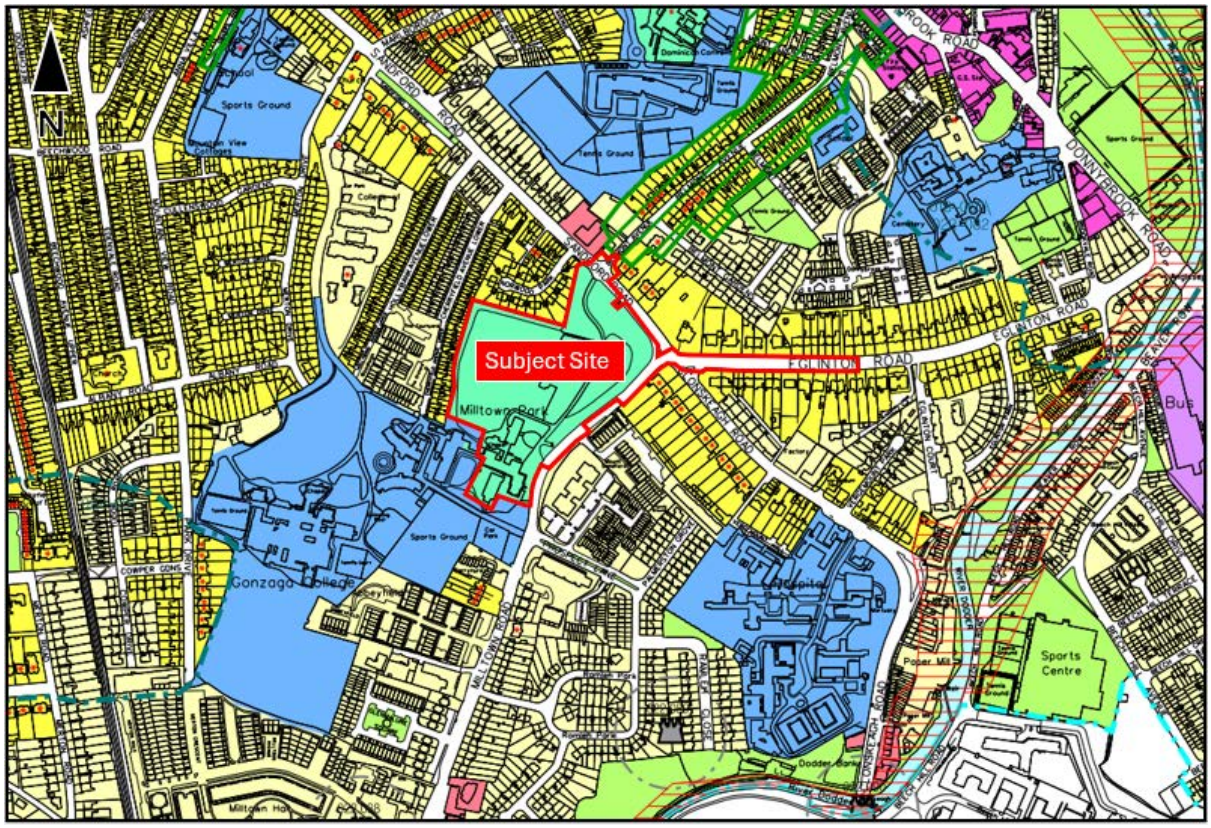


Figure 2-1: Dublin City Development Plan – Land Use Zoning (Extract of Mapset H)

2.2 LOCATION

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.

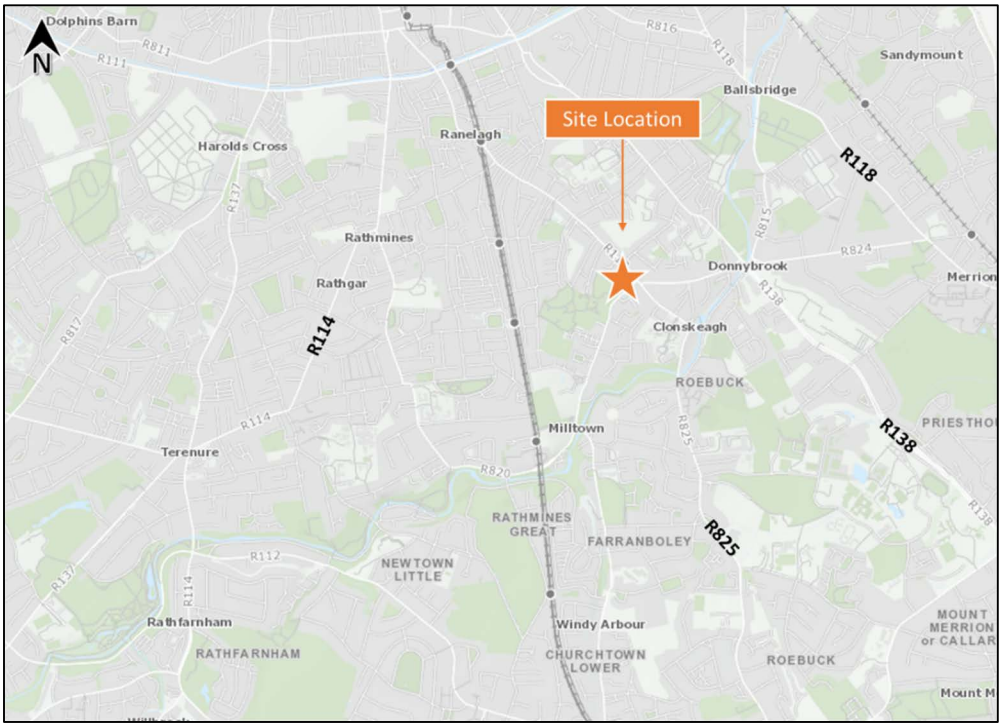


Figure 2-2: Site Location (Source: GeoHive)

Figure 2-3: Indicative Site Boundary (Source: GeoHive)

2.3 EXISTING TRANSPORTATION INFRASTRUCTURE

Road Network

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.

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.

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.

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.

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

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.

Milltown Road is a regional road with the speed limit of 50kph and pedestrian footways are 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.

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.

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

Detailed transport linkages for the existing scenarios detailing distances to surrounding Public Transport is presented in a separate Drawing No. 190226-X-04-Z00-DTM-DR-DBFL-CE-1101 submitted with the pre-planning application package.

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

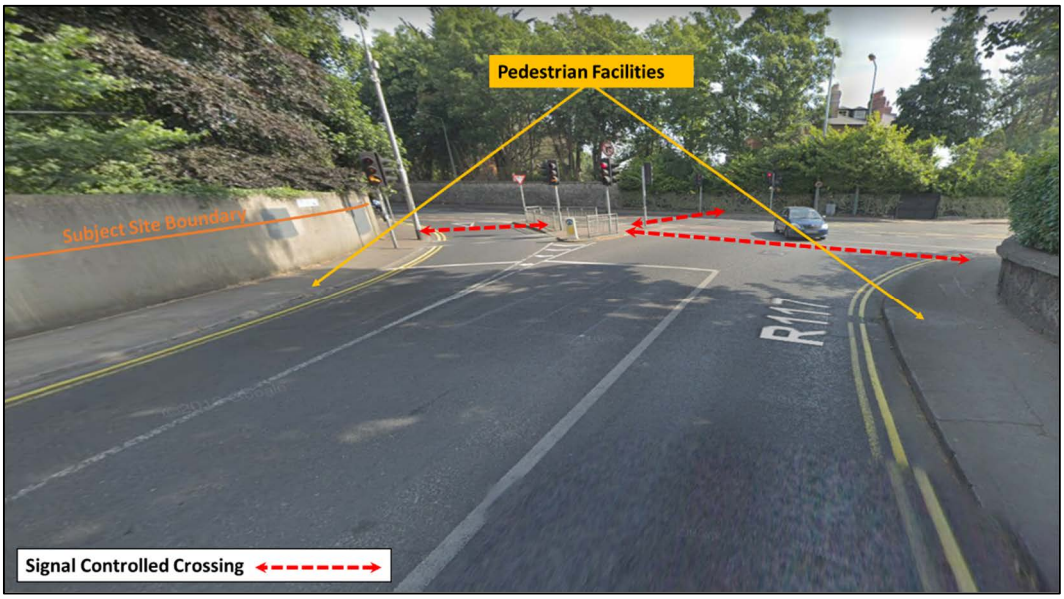


Figure 2-7: Existing Pedestrian Facilities along Milltown Road

Figure 2-8: Existing Pedestrian Facilities along Eglinton Road

Existing Cycling Facilities

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.

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.

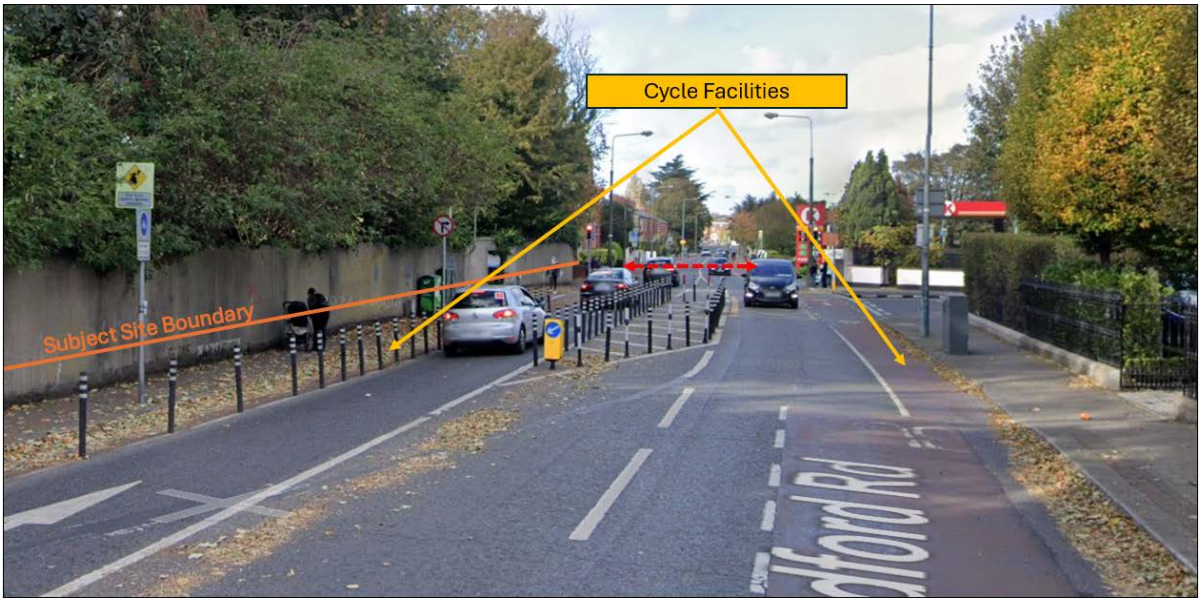


Figure 2-9: Existing Cycle Facilities along Sandford Road

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)

A separate Drawing No. 190226-X-04-Z00-DTM-DR-DBFL-CE-1101 is submitted with the Application Package which illustrates existing transportation linkages.

LUAS

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 c. 1km walking distance of the subject site. Also, Cowper and Ranelagh stops are within similar walking distance as illustrated in Figure 2-12 overleaf.

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)

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

The Sandford Road site is ideally located to avail of a multitude of existing bus services including the 11 and 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.

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.

Route No.	Direction	Mon-Fri	Sat	Sun
		Frequency (No. of Services)		
Bus Éireann				
2	Wexford to Dublin Airport	14	15	12
	Dublin Airport to Wexford	14	15	12
133	Wicklow to Busáras	23	19	19
	Busáras to Wicklow	23	19	19
X2	Wexford to Dublin Airport	1	-	-
	Dublin Airport to Wexford	1	-	-
Dublin Bus				
7B	Shankill to Mountjoy Square	5	-	-
	Mountjoy Square to Shankill	4	-	-
7D	Mountjoy Square to Dalkey	1	-	-
	Dalkey to Mountjoy Square	1	-	-
11	Sandyford Business District to Pheonix Park	43	35	30
	Pheonix Park to Sandyford Business District	41	31	27
32X	UCD Belfield to Malahide	2	-	-
	Malahide to UCD Belfield	2	-	-
39A	UCD Belfield to Ongar	109	91	77
	Ongar to UCD Belfield	114	93	77
41X	UCD Belfield to Knocksedan	3	-	-
	Knocksedan to UCD Belfield	3	-	-
44	Enniskerry to DCU	17	16	14
	DCU to Eniskerry	19	16	14
46E	Blackrock to Mountjoy Square	2	-	-
	Whitechurch to Eden Quay	18	16	14

61	Eden Quay to Whitechurch	17	15	13
84X	Newcastle to Eden Quay	11	-	-
	Hawkins Street to Newcastle	8	-	-
116	Whitechurch to Parnell Square	1	-	-
	Parnell Square to Whitechurch	1	-	-
118	Kilternan to Eden Quay	2	-	-
X25	UCD Belfield to Maynooth	3	-	-
	Maynooth to UCD Belfield	3	-	-
X27	UCD Belfield to Celbridge	2	-	-
	Celbridge to UCD Belfield	3	-	-
E1	Northwood – DCU – City Centre – Bray – Ballywaltrim	138	97	67
	Ballywaltrim – Bray – City Centre - Northwood	135	97	67
E2	Harristown – DCU – City Centre – Dún Laoghaire	125	97	67
	Dún Laoghaire - City Centre – DCU - Harristown	126	97	67
X28	UCD Belfield to Celbridge	2	-	-
	Celbridge to UCD Belfield	2	-	-
X30	UCD Belfield to Adamstown	2	-	-
	Adamstown to UCD Belfield	4	-	-
St. Kevin's Bus Service				
181	Glendalough to St. Stephen's Green	3	2	2
	St. Stephen's Green to Glendalough	3	2	2
Aircoach				
700	Leopardstown to Dublin Airport	47	56	56
	Dublin Airport to Leopardstown	50	60	60
Matthews Coach Hire				
904	Dundalk to UCD Belfield	2	-	-
	UCD Belfield to Dundalk	2	-	-
910	Grangerath to UCD Belfield	1	-	-
	UCD Belfield to Grangerath	1	-	-

Table 2-2: Bus Service Frequency (No. of Services)

(Source: Dublin Bus and Go-Ahead Ireland)

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

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

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, Sandford Parish National School, Alexandra College Dublin and Gonzaga College SJ.

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 in Ranelagh. The site also benefits from being within the vicinity of the Donnybrook, Ranelagh, Milltown, Clonskeagh and Rathmines neighbourhood centres, which provide many local amenities.

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

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 a twelve-year period, from 2005 to 2016 inclusive.

Collision data from 2016 onwards is not available as the RSA website currently states "*The RSA is in the process of reviewing its road traffic collision (RTC) data sharing policies and procedures. Record-level RTC data cannot be shared until this review is complete, but we expect this to be finalised in the coming months. At that point, we will have new policies and procedures in place for access to RTC information and data.*"

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.

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.

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 17 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)

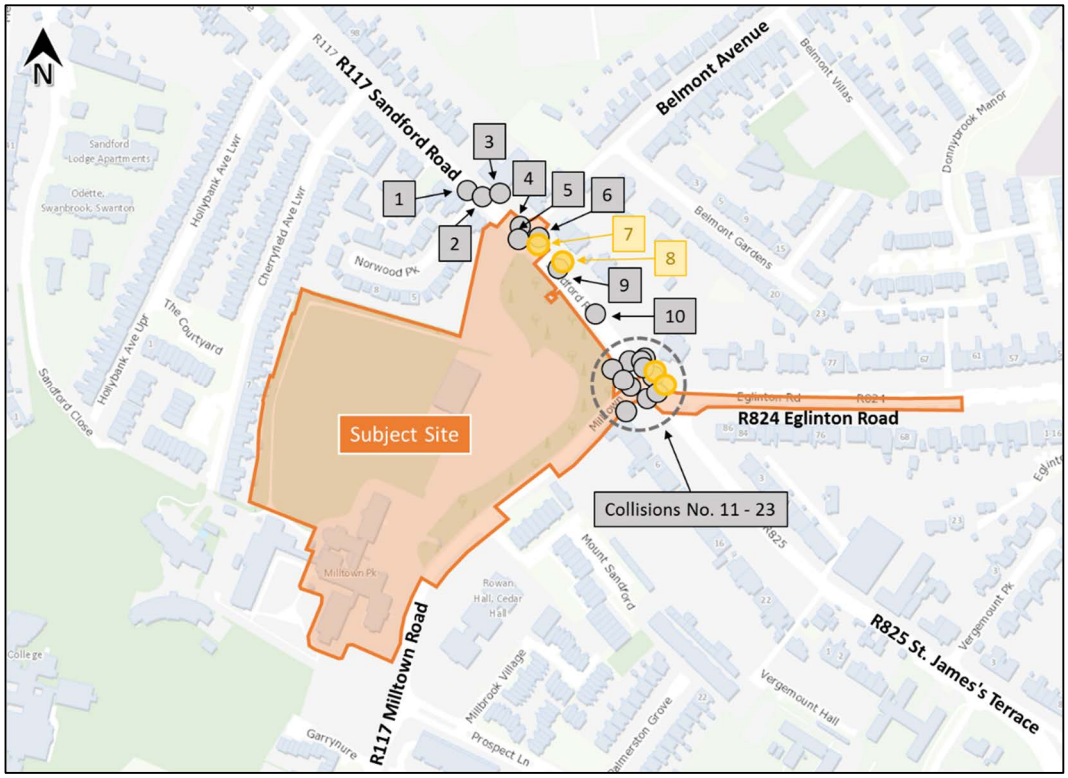


Figure 2-13: Collision Records (Source: www.rsa.ie)

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 12-year time period between 2005 and 2016.

2.6 PROPOSED TRANSPORT INFRASTRUCTURE

Cycle Network Proposals

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 2022). 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:** This will directly serve the subject site which will run along Sandford Road. Travelling Northwest bound, the primary route 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 will begin construction in 2026.

- **Orbital Route:** 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. The section of the greenway located to the south-east of the proposed development is anticipated to begin construction in 2026.
- **Secondary Route:** 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.

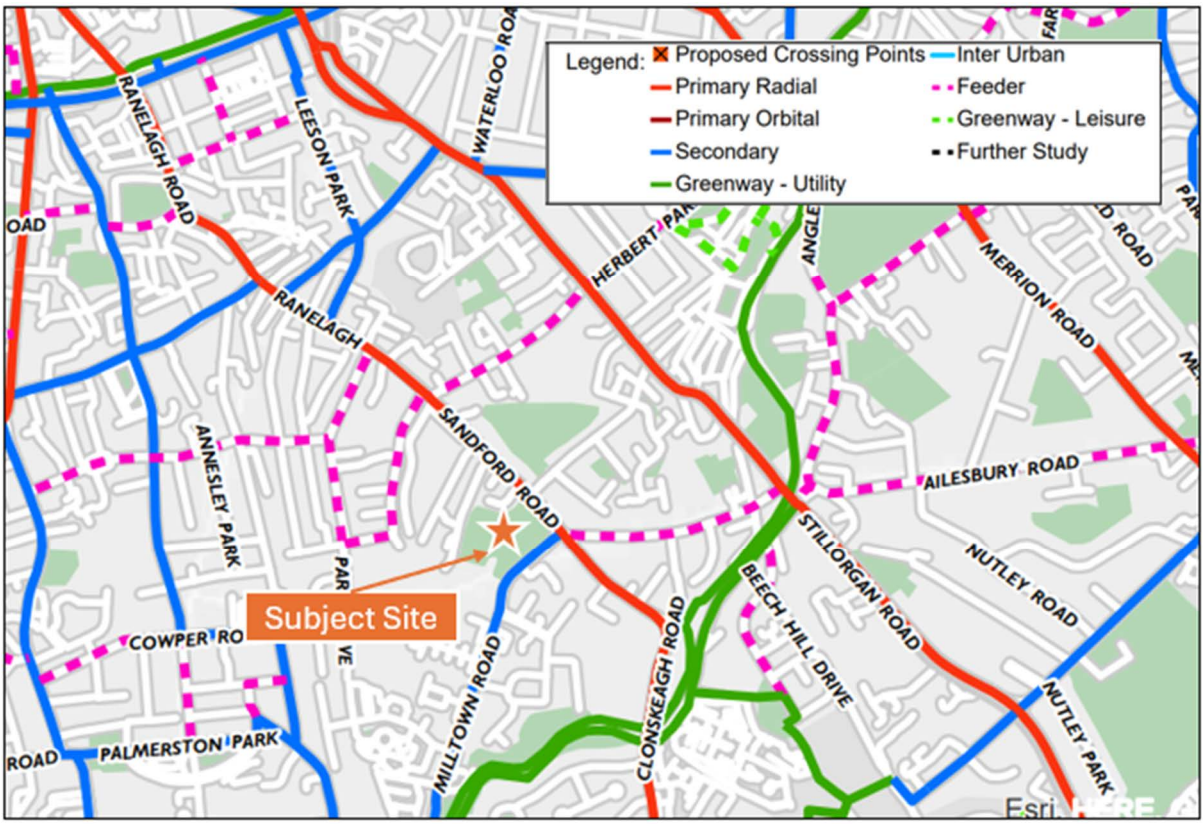


Figure 2-14: Proposed Cycle Routes (Source: Proposed Cycle Network GDA Cycle Network Plan)

Permanent Sandyford Clonskeagh to Charlemont Walking And Cycling Scheme

A permanent walking and cycling scheme will provide protected cycle paths and improved facilities for pedestrians from Beech Hill Road / Clonskeagh Bridge along Clonskeagh Road, Sandford Road, Ranelagh Village to the Charlemont Street / Adelaide Road junction. The general arrangement drawing for the scheme along the subject site's frontage on the Sandford Road and Milltown Road is shown in Figure 2.15 below.

Along this section of the R117 Sandford Road, protected cycle lanes of 1.7 – 2m width are built, segregated from the carriageway by bollards. For the Sandford Road / Milltown Road / Eglinton Road junction, there are advisory cycle lanes across the junction.

Additionally, the following is stated with regards to Milltown Road;

"*On Milltown Road the existing two traffic lanes in advance of the junction will be maintained and approximately 10m before Milltown Road meets Sandford Road the existing left turn slip will be shortened to allow for a proposed protected cycle lane along the north side of Milltown Road. This proposed cycle lane is protected by bollards and stops at the existing pedestrian crossing across Milltown Road where it meets Sandford Road. This crossing will be upgraded and the junction radii narrowed on the south east side of Milltown Road to slow down vehicles and provide a shorter crossing distance for pedestrians across Milltown Road.*"

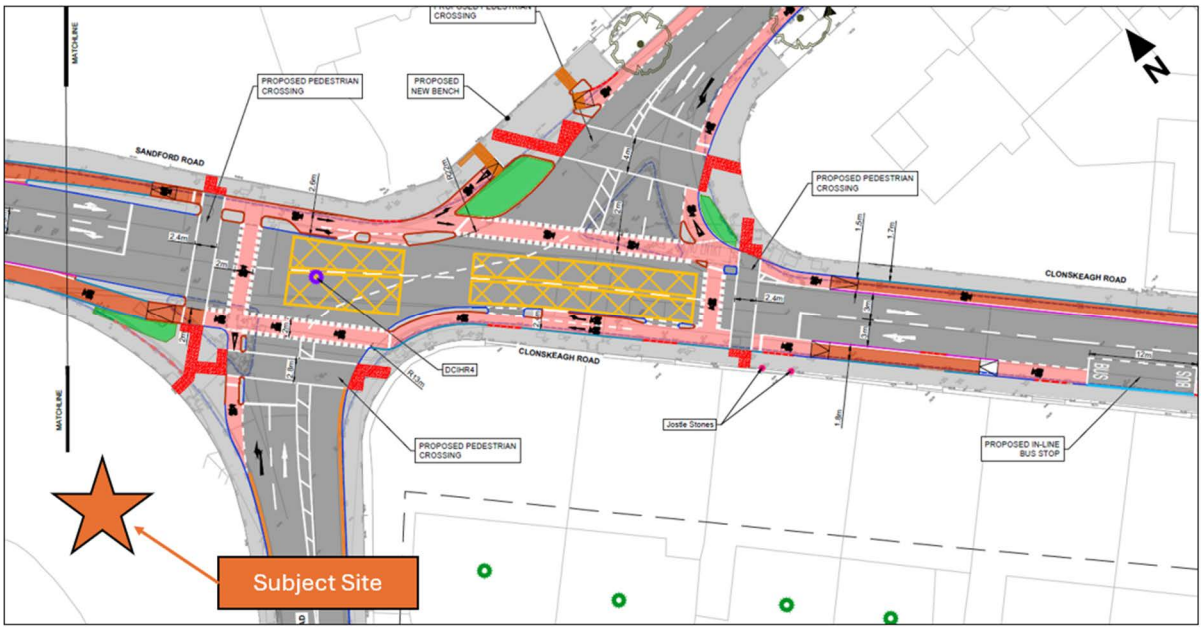


Figure 2-15: Walking & Cycling Scheme Layout at Sandford Road (Source: DCC)

In an effort to encourage the faster roll out of cycle schemes in Dublin, DCC have committed to a 'quicker-build' style rollout for parts of the Dodder Greenway. The first sections of this scheme of this new rollout are the Fitzwilliam Quay to Londonbridge Road (0.5km) and the Beatty's Avenue to Herbert Park (0.5km) routes. The aim of the 'quicker build' process is to progress these two schemes to construction and to be completed for use far sooner than regular schemes. The fast rollout of these schemes would help support the switch to sustainable modes of transport sooner and will help to link of the Dodder Greenway safely and efficiently.

The permanent scheme will provide 3km of safer walking and cycling facilities from Clonskeagh Road to Charlemont Street and will be delivered in three sections between 2025 and 2028.

Bus Connects

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."

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 currently benefits from the **E-Spine** which commenced service in January 2025. The **E-Spine** serves the site with frequency of every 4-5 minutes in peak period and runs along Stillorgan Road approximately 600m away from the subject site and connects the site to Ballymun, City Centre and Foxrock Church. The subject site will be directly serviced by the following BusConnects proposed routes.

- **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.

Figure 2-16 below illustrates the BusConnects proposed routes that will serve the subject site.

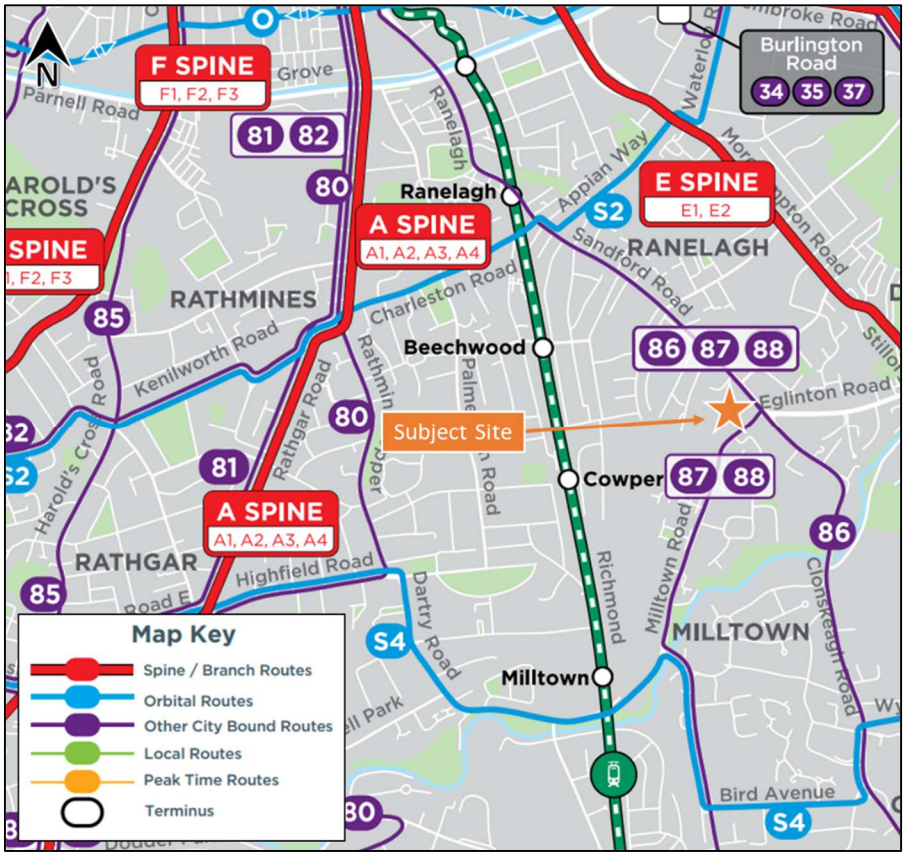


Figure 2-16: Proposed Bus Services (Source: BusConnects)

A separate Drawing No. 190226-X-04-Z00-DTM-DR-DBFL-CE-1102 is submitted with the Application Package which illustrates proposed transportation linkages.

Luas & Metro

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.

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.

Other proposed extensions to the Luas network include a Lucan Line operating from the City Centre to Lucan, the extension of the Green Line south from Brides Glen to Bray and north from Broombridge to Finglas. Figure 2-17 shows the existing Luas network with the proposed service extensions and Metro Line.

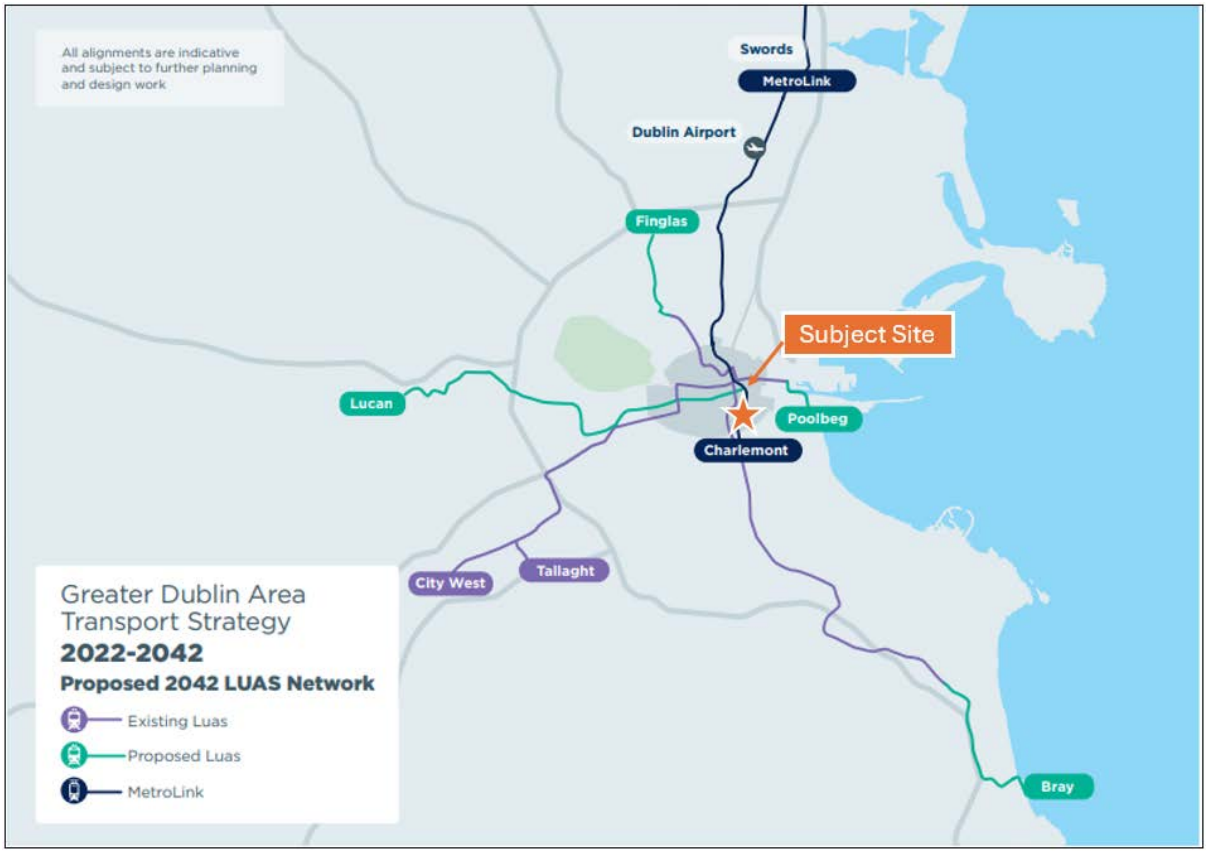


Figure 2-17: Proposed LUAS and Metro Extension (Source: NTA)

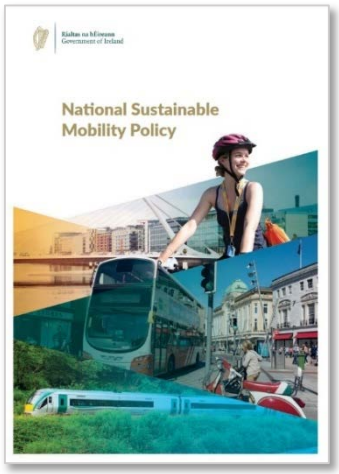
3 POLICY FRAMEWORK

3.1 Introduction

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

- *National Sustainable Mobility Policy (2022)*
- *Sustainable Residential Development and Compact Settlement Guidelines for Planning Authorities (2024)*
- *Sustainable Urban Housing: Design Standards for New Apartments (2023)*
- *Design Manual for Urban Roads and Streets (DMURS: 2019)*
- *Greater Dublin Area Transport Strategy (2022-2042)*
- *Dublin City Council Development Plan (2022-2028)*

3.2 National Sustainable Mobility Policy



The National Sustainable Mobility Policy was published in April 2022 by the Department of Transport and replaces Smarter Travel 2009. The overall aim of the Policy is to "set out a strategic framework for 2030 for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in carbon emissions by the end of this decade".

The Policy is a direct response to the fact that continued growth in demand for road transport is not sustainable due to the resulting adverse impacts of increasing congestion levels, localised air pollution, contribution to global warming and the additional negative impacts to health through promoting increasingly sedentary lifestyles. The following 3 key Policy areas and 10 goals form the basis of the National Sustainable Mobility Policy:

Safe and Green Mobility

1. Improve mobility safety
2. Decarbonise public transport
3. Expand availability of sustainable mobility in metropolitan areas
4. Expand availability of sustainable mobility in regional and rural areas

5. Encourage people to choose sustainable mobility over the private car

People Focused Mobility

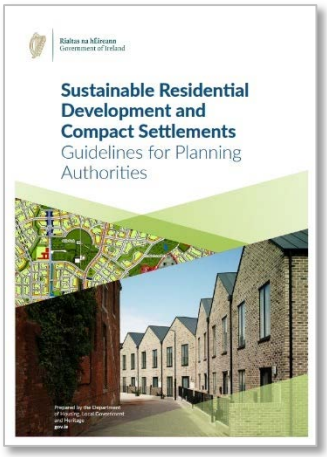
6. Take a whole journey approach to mobility, promoting inclusive access for all
7. Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model
8. Promote sustainable mobility through research and citizen

Better Integrated Mobility

9. Better integrate land use and transport planning at all levels
10. Promote smart and integrated mobility through innovative technologies and development of appropriate regulation

The policy is accompanied by an Action Plan with a total 91 actions organised by goal to be completed by 2025. Each action has been assigned to a specific government department or body with the hope of creating accountability for their implementation. The success of the policy will be measured using an annual National Household Travel Survey administered by the National Transport Authority.

3.3 Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities - (January 2024)



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

These Guidelines replace the Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities issued as Ministerial guidelines under Section 28 of the Act in 2009, which in turn replaced the Residential Density Guidelines issued in 1999. They build on and update previous guidance to take account of current Government policy and economic, social and environmental considerations. There is a renewed focus in the Guidelines on the renewal of existing settlements and on the interaction between residential density, housing standards and quality urban design and placemaking to support sustainable and compact growth.

The Guidelines include a Specific Planning Policy Requirement (SPPR) in relation to car parking. The quantum of car parking or the requirement for any such provision for new developments will be based on the accessibility characteristics of the site. There are four accessibility levels set out in the Guidelines that will determine the level of parking provided, these are as follows:

High-Capacity Public Transport Node or Interchange: Lands within 1km walking distance of an existing or planned high capacity urban public transport node or interchange, including DART or high frequency Commuter Rail; or locations within 500 metres walking distance of an existing or planned BusConnects 'Core Bus Corridor' stop.

Accessible Locations: Lands within 500 metres (i.e. up to 5–6-minute walk) of existing or planned high frequency (i.e. 10-minute peak hour frequency) urban bus services.

Intermediate Locations: Lands within 500-1,000 metres (i.e. 10–12-minute walk) of existing or planned high frequency (i.e. 10-minute peak hour frequency) urban bus services and lands within 500 metres (i.e. 6-minute walk) of a reasonably frequent (minimum 15-minute peak hour frequency) urban bus service.

Peripheral Locations: comprise of lands that do not meet the proximity or accessibility criteria detailed above. This includes all lands in Small and Medium Sized Towns and in Rural Towns and Villages.

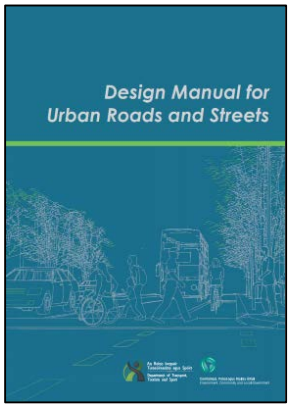
The subject Sandford Road development is classed as *accessible.* Accordingly, under SPPR 3 – Car Parking (i) the Guidelines state that for accessible locations *"car-parking provision should be substantially reduced. The maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 1.5 no. spaces per dwelling".*

The Guidelines note that the maximum car parking standards:

- Do not include bays assigned for use by a car club, designated short stay on–street Electric Vehicle (EV) charging stations or accessible parking spaces.
- The maximum car parking standards do include provision for visitor parking.

The Guidelines also set out requirements under SPPR 4 for Cycle Parking and Storage. In terms of quantity, it states that "*residential units that do not have ground level open space or have smaller terraces, a general minimum standard of 1 cycle storage space per bedroom should be applied. Visitor cycle parking should also be provided*" and that "*it will be important to make provision for a mix of bicycle parking types including larger / heavier cargo and electric bikes and for individual lockers*".

3.4 Design Manual For Urban Roads And Streets (DMURS) – 2019



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.

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.

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.

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.

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.

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.

3.5 Greater Dublin Area Transport Strategy 2022-2042

The Greater Dublin Area Transport Strategy 2022-2042 has arisen from a review of the original 2016 strategy. The updated document "*sets out the framework for investment in transport infrastructure and services over the next two years*".

The overall aim of the Transport Strategy is "*to provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth*".

Four primary objectives have been identified as part of the Greater Dublin Area Transport Strategy 2022-2042. These are:

- **An Enhanced Natural and Built Environment:** To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use.
- **Connected Communities and a Better Quality of Life:** To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.
- **A Strong Sustainable Economy:** To support economic activity and growth by improving the opportunity for people to travel for work or business where and when They need to and facilitating the efficient movement of goods.
- **An Inclusive Transport System:** To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

3.6 Dublin City Council Development Plan 2022-2028

The "Dublin City Development Plan 2022 – 2028" was adopted at a Special Council meeting on the 2nd of November 2022. The plan came into effect on the 14th of December 2022 following amendments resulting from the Stage 3 consultation period.

In the context of the subject proposals, the following are the relevant transport and development policies set out in the plan:

Sustainable Movement & Transport Policies and Objectives

- ***SMTO1:*** *To achieve and monitor a transition to more sustainable travel modes including walking, cycling and public transport over the lifetime of the development plan, in line with the city mode share targets of 26% walking/cycling/micro mobility; 57% public transport (bus/rail/LUAS); and 17% private (car/ van/HGV/motorcycle).*
- ***SMT 4:*** *To support and encourage intensification and mixed-use development along public transport corridors and to ensure the integration of high quality permeability links and public realm in tandem with the delivery of public transport services, to create attractive, liveable and high quality urban places.*
- ***SMTO12:*** *To provide publicly accessible cycle parking spaces, both standard bicycle spaces and non-standard for adapted and cargo bikes, in the city centre and the urban villages, and near the entrance to all publicly accessible buildings such as schools, hotels, libraries, theatres, churches etc. as required.*
- ***SMTO13:*** *To prepare, within two years of the adoption of the Plan, a comprehensive guide setting out design standards and requirements for cycle parking in developments.*
- ***SMTO14:*** *To promote and facilitate, in co-operation with key agencies and stakeholders, the provision of high density cycle parking facilities, as well as parking for cargo and adapted bicycles at appropriate locations, taking into consideration the NTA's GDA Cycle Network Plan, and Dublin City Council's Public Realm Strategy.*
- ***SMT 27:*** *(i) To provide for sustainable levels of car parking and car storage in residential schemes in accordance with development plan car parking standards so as to promote city centre living and reduce the requirement for car parking. (ii) To encourage new ways of addressing the transport needs of residents (such as car clubs and mobility hubs) to reduce the requirement for car parking. (iii) To safeguard the residential parking component in mixed use developments.*
- ***SMT 29:*** *To support the expansion of the EV charging network by increasing the provision of designated charging facilities for Electric Vehicles on public land and private developments in partnership with the ESB and other relevant stakeholders; and to support the Dublin Regional EV Parking Strategy.*

4 CHARACTERISTICS OF PROPOSALS

4.1 OVERVIEW

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.

In summary, the project comprises the development of 556 no. residential apartment units, 6 no. courtyard houses, one 375m^2 creche, a café/restaurant and community space.

With reference to O'Mahony Pike Architects' drawing, the development schedule is summarised in Table 4-1 below.

Unit Type	Description	Quantity	
Apartments	Studio Apartment	70	556
	1 Bedroom Apartment	176	
	2 Bedroom Apartment	267	
	3 Bedroom Apartment	43	
Houses	3 Bedroom House	6	6
Childcare Facility	375m^2 Creche	1	-
Community	1,698m^2 Community Space	1	-
Café/Restaurant	179m^2 Café/Restaurant	1	-
		Total	**562**

Table 4-1: Development Schedule Summary (Source: O'Mahony Pike)

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, DBFL Drawing No: 190226-X-04-Z00-DTM-DR-DBFL-CE-1201.

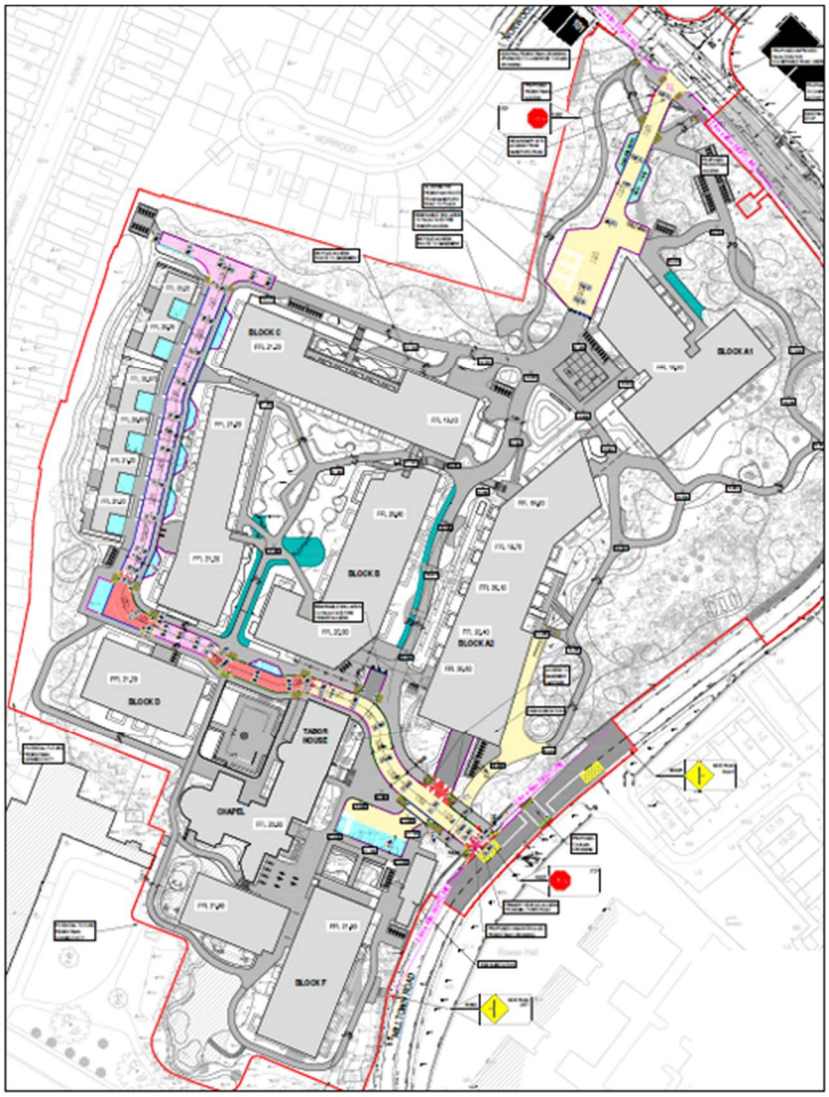


Figure 4-1: Subject Site Road Layout (Source: DBFL Drawing No: 190226-X-04-Z00-DTM-DR-DBFL-CE-1201)

4.2 PEDESTRIAN SITE ACCESS STRATEGY

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*.'

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'.

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.

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.

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

Pedestrians and cyclists will be able to access or egress the site from a number of proposed/future pedestrian/cyclist access locations (Figure 4-2 and Figure 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.

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.

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

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 and bike lift to the basement where further secure bicycle parking is located. Various ramps are provided throughout the site design to ensure cyclist accessibility is improved. The main pathway through the site is a wide active travel path that facilitates easy direct access from the Milltown Road access to the dedicated cyclist ramp.

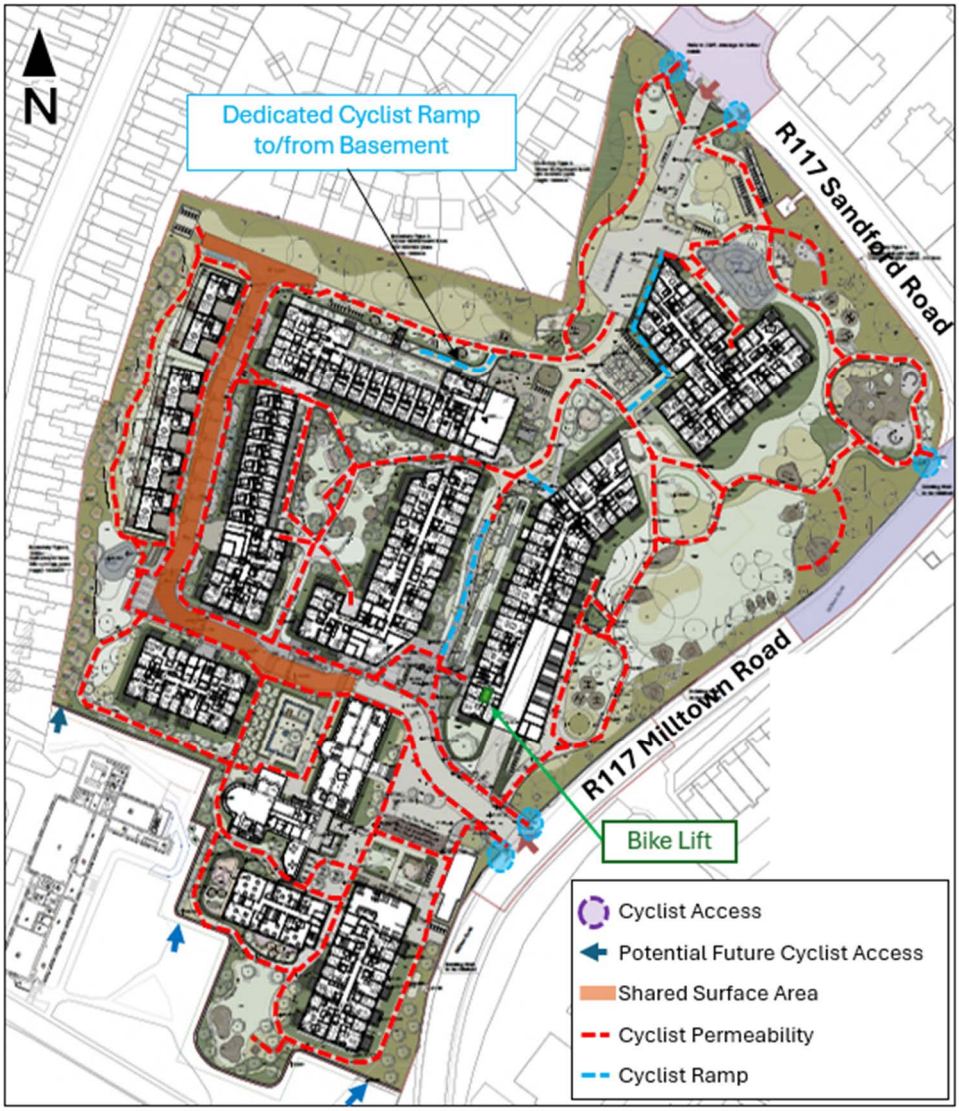


Figure 4-3: Cyclist Permeability at Subject Site

4.4 VEHICULAR SITE ACCESS STRATEGY

The subject site will benefit from one principal vehicle access location (Figure 4.4) which will be newly provided on the R117 Milltown Road on the southeastern boundary of the site and a secondary existing 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.

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 and visitors to the commercial areas of the development. DMURS promotes a more permeable road network approach with more frequent minor junctions. Therefore, considering the large scale of this proposed 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

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 4-7 below.

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.

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.

A number of surface level car parking spaces are accessible via the Milltown Road site access; 16 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.

Of the car parking spaces located adjacent to Tabor House, 2 no. spaces will be designated for creche use and 1 no. will be designated for the cafe and community units. 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.

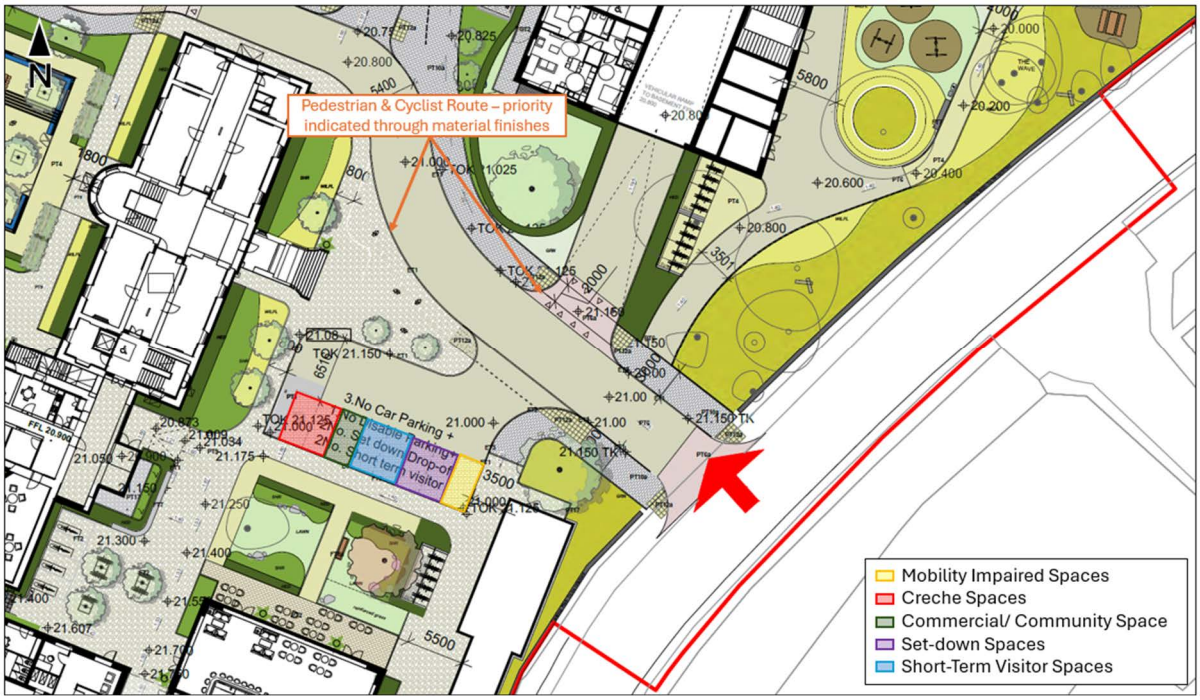


Figure 4-4: Milltown Road Site Access

Shared Surface Area

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

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 6 no. 3-bed courtyard houses units.

Sandford Road Site Access

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.

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 utilise this access in the worst-case peak hour scenario. Bollards will prevent vehicles from accessing the plaza and the central courtyard which has been implemented since the tri-partite meeting.

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.

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.

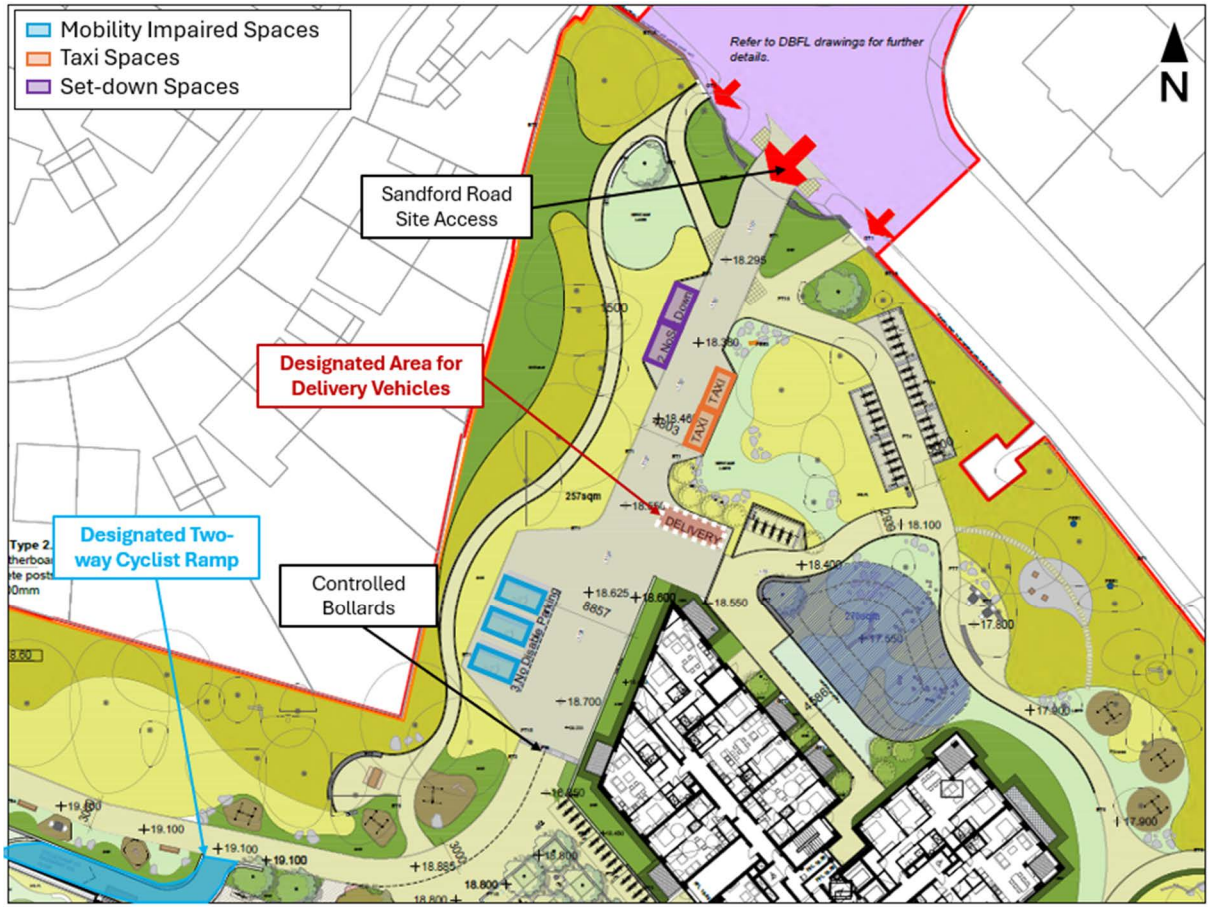


Figure 4-6: Sandford Road Site Access

Both site accesses and the internal road layout allow for fire tender access and manoeuvrability 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, however, the controlled bollards can be removed in emergencies.

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 4-7 below. Refer to DBFL Drawing No. 190226-X-04-Z00-DTM-DR-DBFL-CE-1201.

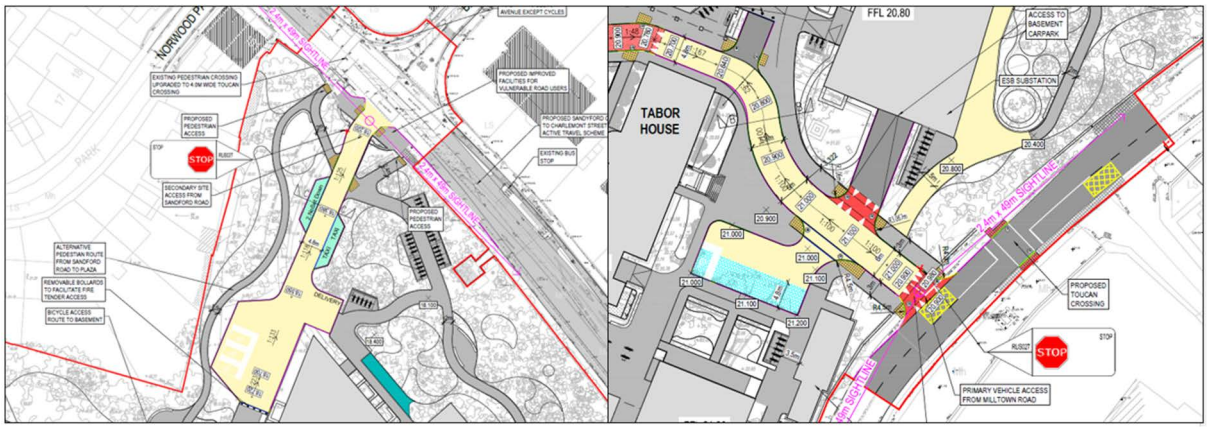


Figure 4-7: Extract of Subject Site Road Layout [Left: Sandford Road, Right: Milltown Road]

4.5 TAXI/DELIVERY SITE ACCESS STRATEGY

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.

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 and commercial and community units.

4.6 SERVICE SITE ACCESS STRATEGY

Figure 4-8 below shows an extract of DBFL Drawing No. 190226-X-04-Z00-DTM-DR-DBFL-CE-1209. The figure shows the swept path analysis and access route for ESB service vehicles to the subject site's ESB sub stations.

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 4-8: Service Vehicle Access Route

Figure 4-9 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-X-04-Z00-DTM-DR-DBFL-CE-1205.

Figure 4-9: Fire Tender Access Route

4.7 REFUSE SITE ACCESS STRATEGY

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;
- Dublin City Council Development Plan 2022 – 2028 (Appendix 10);
- DCC, Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste (2013); and

- DHPLG, Sustainable Residential Development and Compact Settlements, Guidelines for Planning Authorities (2024).

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.

The residential waste rooms are located in the development's basement level. A total of 6 No. waste rooms are provided throughout the basement, adjacent to the site cores (Figure 4-11). 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, 1 No. residential waste room is located on the ground level of the development (Figure 4-10).

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

Figure 4-10: Surface Level Residential Waste Collection Areas

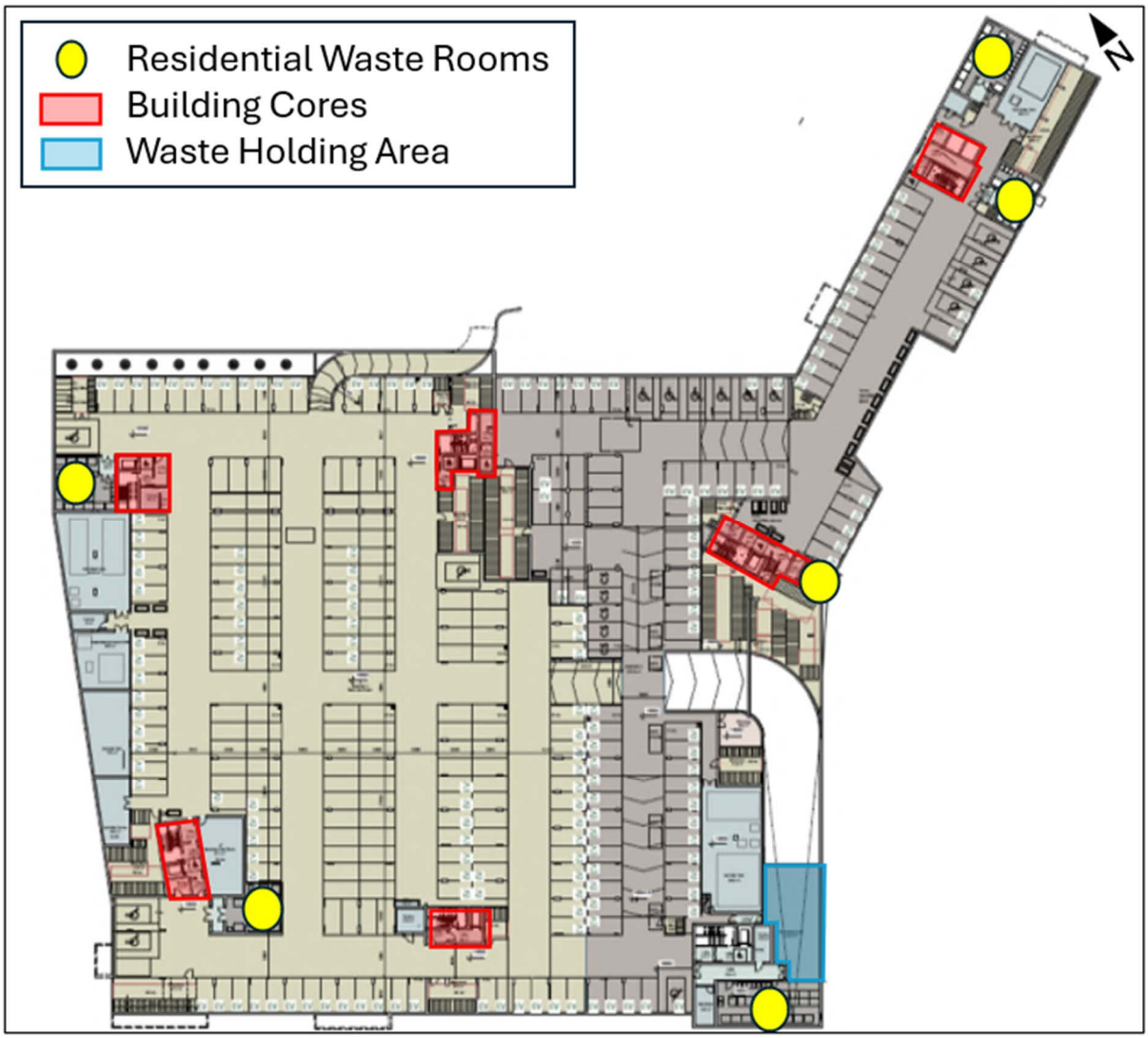


Figure 4-11: Basement Level Residential Waste Rooms

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

Dublin City Council has published car parking guidelines contained within the *Dublin City Development Plan 2022-2028*. The subject site is considered within Zone 2 as per the DCC Development Plan as it is located alongside a key public transport corridor. Section 16 within the development plan provides parking guidance for developments stating the following maximum requirement: -

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

- Community – 1 space per 275m^2
- Café/Restaurant – 1 space per 150m^2

Reference has been made to the following:-

- Table 16.1 of the current Dublin City Development Plan 2022-2028; and
- Chapter 5 of *Sustainable Residential Developments and Compact Settlements: Guidelines for Planning Authorities*, as published by the Department of Housing, Planning and Local Government (DHPLG), 2024.

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

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

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

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

"car- parking provision should be substantially reduced. The maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 1.5 no. spaces per dwelling"

Accordingly, the opportunity is available to provide a reduced quantum of car parking for the proposed 562 no. residential accommodation units, 375m^2 creche, café/restaurant and the community areas.

In reference to the above development standards and the proposed schedule, Table 4-3 below establishes that a maximum of 574 no. car parking spaces will be required on-site to serve the proposed development as per the DCC Development Plan Standards. The DCC Development Plan maximum standards include provision for short-stay parking.

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
House / Apartment	562	1 space per unit	-	*"maximum of 1.5 no. spaces per dwelling"*	
Creche	375m²	1 space per class		N/A	
Community	1,698m²	1 per 275 sqm			
Café/Restaurant	179m²	1 per 150 sqm			

Table 4-2: Car Parking Standards

Land Use Description	No. of Units / GFA	DCC Development Parking Maximum Requirement		Compact Settlements Guidelines Parking Requirement		Development Parking Provision	
		Long Stay	Short Stay	Long Stay	Short Stay	No. Spaces	Combined
House / Apartment	562	562	0	843		297 (including 18 no. accessible parking spaces)	
Creche	375m²	4	0	N/A		3	4 (incl. 1 no. accessible parking space)
Community	1,698m²	7	-			1	
Café/Restaurant	179m²	1	-				
Car Share	-	-	-	N/A		10 (5 GoCar + 5 Development Car Share)	10

Collection/ Drop-Off					4	8
Short – term visitor					2	
Taxi					2	
Total		**574**		**843**	**319**	

Table 4-3: Car Parking Requirements & Provision

Car Parking Ratio	
Residential Car Parking Ratio including Car Share and Mobility Impaired Spaces*	0.546 Spaces/Unit
Residential Car Parking Ratio excluding Car Share and Mobility Impaired Spaces* (as per Compact Settlement Guidelines)	0.496 Spaces/Unit

**Ratio excludes creche, commercial, community, drop-off, short-term visitor and taxi spaces*

Table 4-4: Car Parking Ratios

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: 31 no. spaces (including 2 no. taxi parking spaces), comprising;

- 11 no. residential spaces (6 no. long-term parking spaces for Block E residents and 5 no. visitor spaces);
- 4 no. mobility impaired spaces;
- 2 no. short-term visitor spaces;
- 4 no. set down spaces;
- 5 no. car share spaces (GoCar);
- 2 no. taxi parking spaces;
- 2 no. creche spaces; and
- 1 no. café/restaurant/community space.

Basement Car Park: Apartments – 288 no. spaces, including;

- 15 no. mobility impaired spaces;

- 4 no. car sharing spaces (development managed spaces); and
- 173 no. electric vehicle charging spaces (5 of which are mobility impaired spaces).

The proposed development will have a car parking ratio of 0.546 parking spaces (excluding creche, commercial, community, taxi and set-down spaces) per residential unit for the 562 units as per Table 4-4. In total 319 no. on-site dedicated car parking spaces are to be provided as part of the subject development proposals.

Shared Surface Area

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 6 no. car parking spaces for the 6 no. courtyard house units within the development.

Taking the above standards into consideration, a ratio of 1 car parking space to every residential house has been provided for Block E which equates to a car parking provision of 6 no. spaces for Block E. An additional 5 no. GoCar spaces and 5 no. visitor space have been provided, giving a total of 16 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.

A trip generation exercise has been conducted to estimate the likely traffic flows in and out of the proposed 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 6 no. Block E courtyard houses. Table 4-5 summarises the predicted peak hour AM and PM traffic generated by the Block E courtyard houses.

Land Use Houses	Unit	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
Trip Rates	Per Unit	0.120	0.311	0.431	0.253	0.153	0.406
Vehicle Trips	6	1	2	3	2	1	3

Table 4-5: Proposed Development Trip Rates & Vehicle Trips

As can be seen from the figure below, the majority (94%) 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.

The proposed shared surface within the Sandford Road development contains residential parking for only Block E of the development, which contains 6 no. courtyard houses. As such this area will only be accessed by vehicles belonging to residents of these houses, vehicles servicing this part of the development and the 5 no. GoCar's located within the shared space.

Given that the maximum number of vehicles using the shared surface area at any one time will be 3 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. The loading bay is located at the start of the shared area and is in close proximity to the creche, café/restaurant and community areas which it will serve.

Tabor House Area Car Parking

A second internal trip generation exercise has been conducted to estimate the likely traffic flows generated by the 375m^2 creche as well as the café/restaurant and community areas 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 for the Tabor House area of the development. 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. The trip rates for community and café/restaurant have also been discounted by a factor of 0.8 as they are not anticipated to generate notable external trips given the highly accessible nature of the development, local catchment anticipated for the uses which will avail of active and sustainable modes to reach the site. Table 4-5 summarises the predicted peak hour AM and PM traffic generated by the Tabor House area of the development.

Land Use	Units/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
Creche	375m^2	4	3	7	1	2	3
Community	1698m^2	4	2	6	3	2	5
Café/Restaurant	179m^2	1	1	2	1	1	1
Total		**9**	**6**	**15**	**5**	**4**	**9**

Note: numbers are rounded in table above

Table 4-6: Proposed Development Creche & Commercial Vehicle Trips

The trip generation exercise demonstrates that a creche, community and café/restaurant of this size would not generate more than 15 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. There are 2 no. set-down spaces located north of block F to accommodate the aforementioned drop-off / collection parking.

The 3 no. designated car parking spaces immediately north of Block F would accommodate the low car parking demand generated by the creche and community areas. 2 no. spaces will be allocated to the creche while the remaining 1 no. designated space will be allocated to the community and café/restaurant. There are also 2 no. short-term visitor parking spaces available for these uses. This provision is deemed sufficient to accommodate the parking demands and is compliant with the DCC maximum of 12 no. spaces. It is anticipated that the various land uses will have varying peak hours which further supports that the parking provision is sufficient. 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.

There is significant bicycle parking provided within the development (Section 4.10) which is expected to further reduce the vehicular trips to the development.

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.

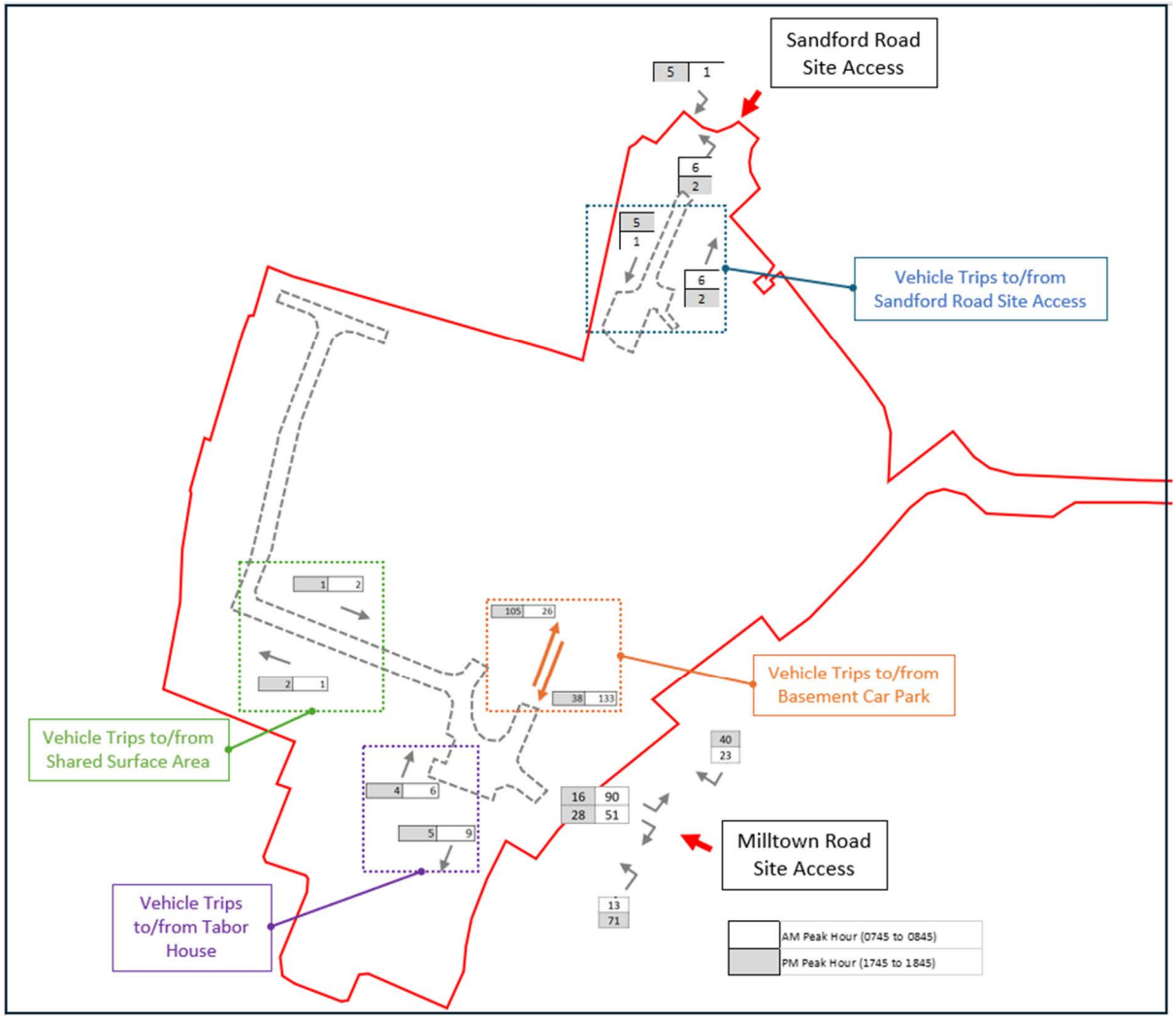


Figure 4-12: Proposed Development Vehicle Trips

Mobility Impaired Parking

The appropriate level of mobility impaired parking provision for the proposed development will also be provided in accordance with Dublin City Development Plan 2022-2028 requirements. The Development Plan requires a provision equivalent to 5% of the total number of car parking spaces provided for the development.

The subject development site provides 19 no. mobility impaired parking spaces. 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 15 will be located within the development basement as shown in Figure 4-13 below. Of the mobility impaired spaces at basement level, 5 no. will also be EV charging spaces.

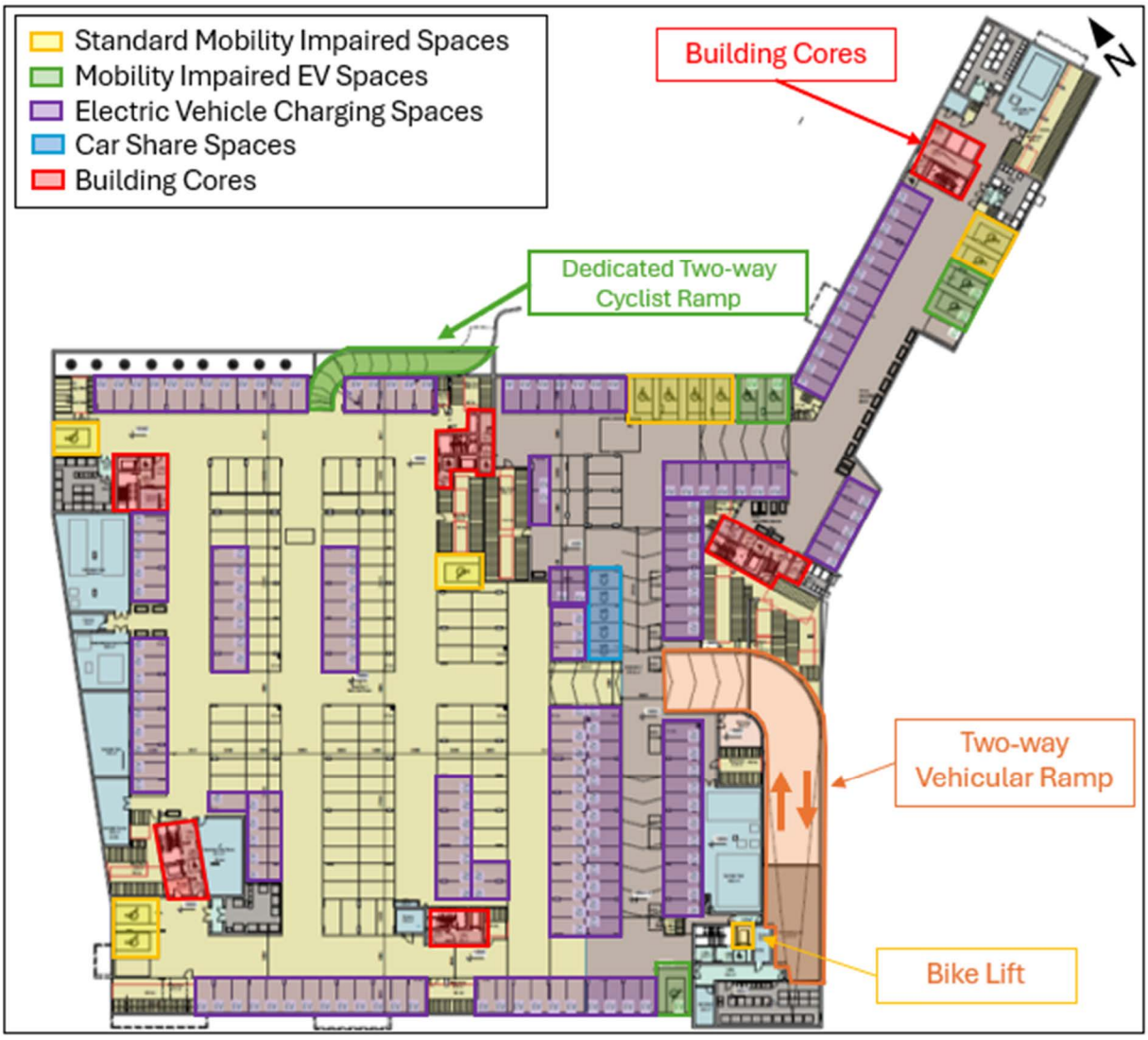


Figure 4-13: Parking Space Allocation within Basement

Electric Vehicle Charging Stations

A total of 50% of the development's car parking provision will be fitted out with electric vehicle charging stations as shown in Figure 4-13 above. This is equivalent to 173 No. spaces and is compliant with *Dublin City Development Plan 2022-2028* 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, 5 no. of the EV charging spaces will also be mobility impaired spaces.

Car Share

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.

As shown in Figure 4-14 below, 5 no. of the aforementioned car share spaces will be located at surface level with the remaining 5 no. spaces being located at basement level.

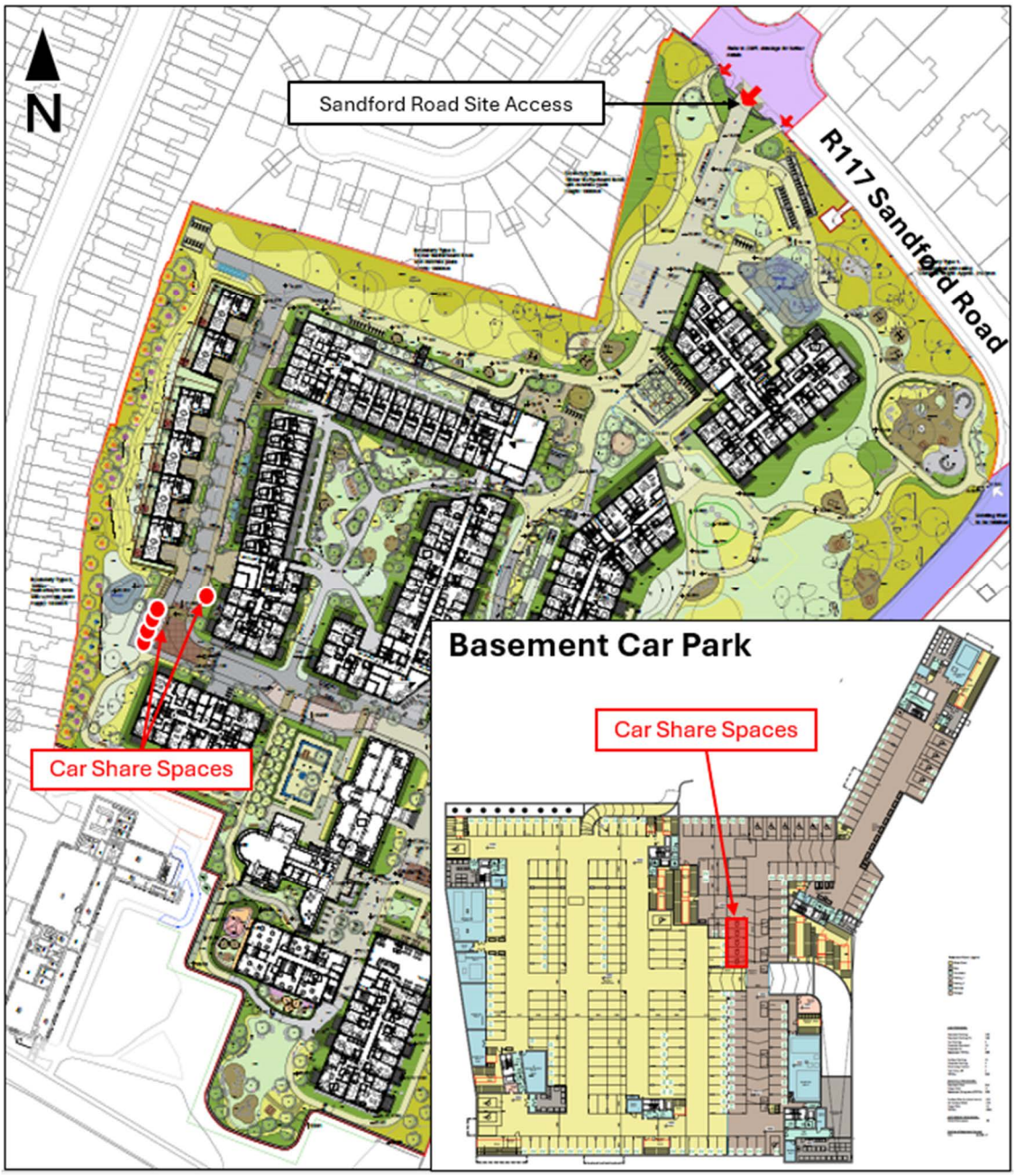


Figure 4-14: Car Share Spaces at Subject Site

Motorcycle Parking

In compliance with the Dublin City Development Plan 2022-2028 Standards, a total of 22 No. motorcycle spaces will be provided within the development basement as shown in Figure 4-15 below.

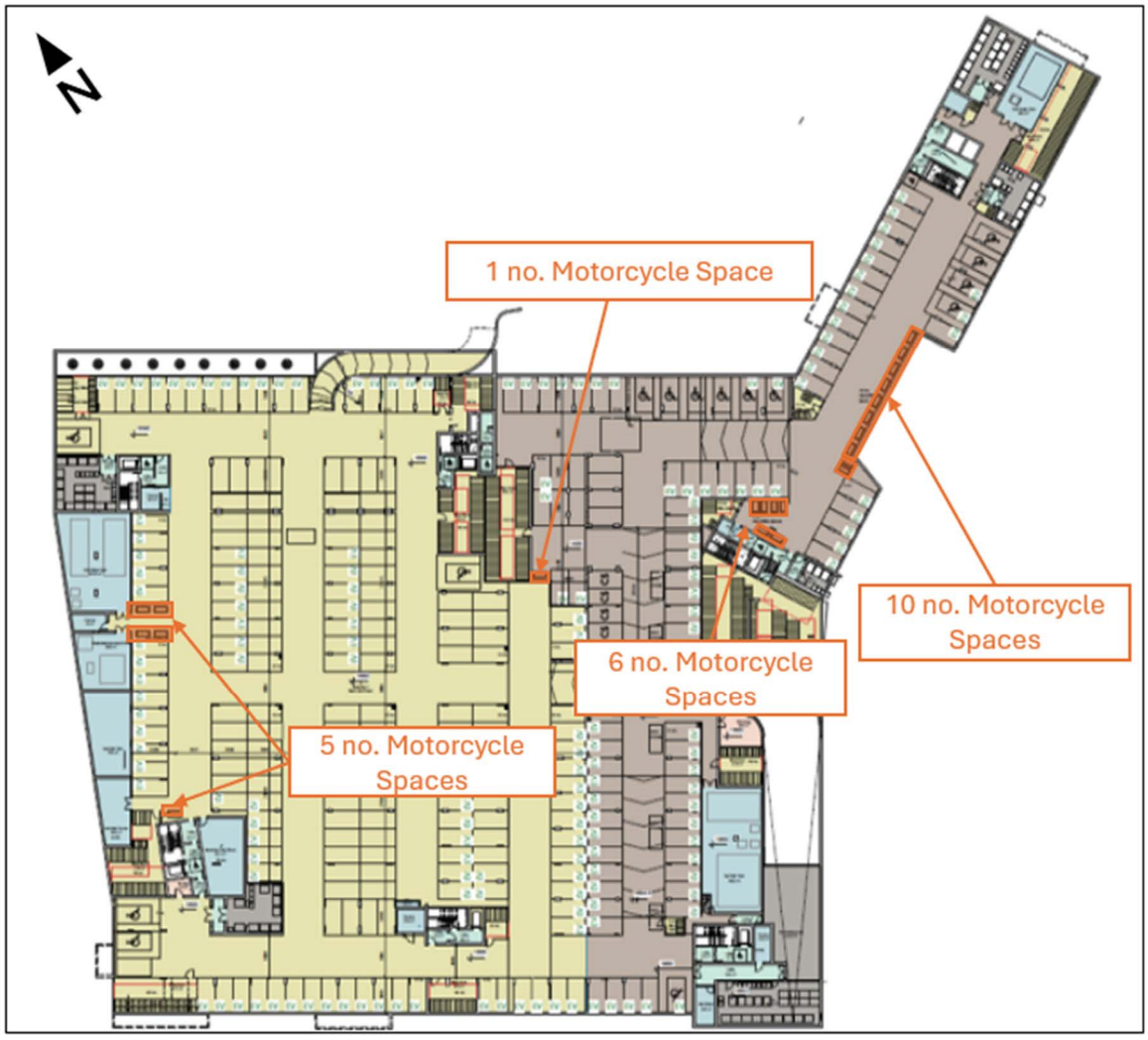


Figure 4-15: Motorcycle Parking Spaces at Subject Site

4.9 CAR PARKING PROVISION FOR APARTMENTS

With the objective of establishing whether this parking ratio (approximately 0.546/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 2022 Census Data – Car Ownership trends;
- Review of 2022 Census Data – Existing Modal Split trends; and
- Review of National Transport Authority– National Household Survey 2024.

Car Ownership and Usage

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 2022 CSO data and in particular the level of current car ownership. The 2022 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.

A total of 606 units were included in this assessment. The CSO data for Apartments who do not own a car in this area is presented in Table 4-7 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	92	11	51	50%	0.50
2	60	21	26	32%	0.68
3	58	7	27	42%	0.58
4	158	32	55	29%	0.71
5	82	5	10	11%	0.89
6	85	0	20	24%	0.76
7	71	13	22	26%	0.74
				Average	**0.70**

Table 4-7: 2022 CSO Car Ownership Data

Table 4-7 highlights that the level of households that do not own a car within the particular census small area varies between a low 11% in Area 5 to a higher 50% in Area 1. The overall average level of car parking ownership within these locations is 0.70 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.

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 2022 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 4-8 below.

Small Area	No. Commuters	% Households with No Car	No. Commuters that Drive	% Commuters that Drive
1	147	50%	27	18%
2	141	32%	29	21%
3	105	42%	18	17%
4	287	29%	52	18%
5	131	11%	34	26%
6	134	24%	35	26%
7	155	26%	40	26%
			Average	**22%**

Table 4-8: 2022 CSO Data – Percentage of Commuters that use their Vehicle

Table 4-8 above, outlines that although car ownership within these locations is at an average 70%, the percentage of commuters that use their vehicle to drive to work, college or school is lower at an average of 22% 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.

The level of car ownership (0.70) with reduced car usage for commuting (0.22) within the CSO small areas indicates that the development proposal of a parking provision of 0.546 per residential unit is reasonable.

Modal Split for Small Areas

The same seven Census Small Areas were assessed to identify the modal split within the subject area. The assessment reveals that walking is the predominant mode of transport with a 24% modal share. Driving is the second most prominent mode of transport with a modal share of 19% and 3% for car drivers and car passengers respectively. Cycling has a modal share of 11%. All commuting journeys made by Luas and Bus within the assessed areas, forms modal share of 12% and 6% respectively. Figure 4-16 below depicts the modal split within the area.

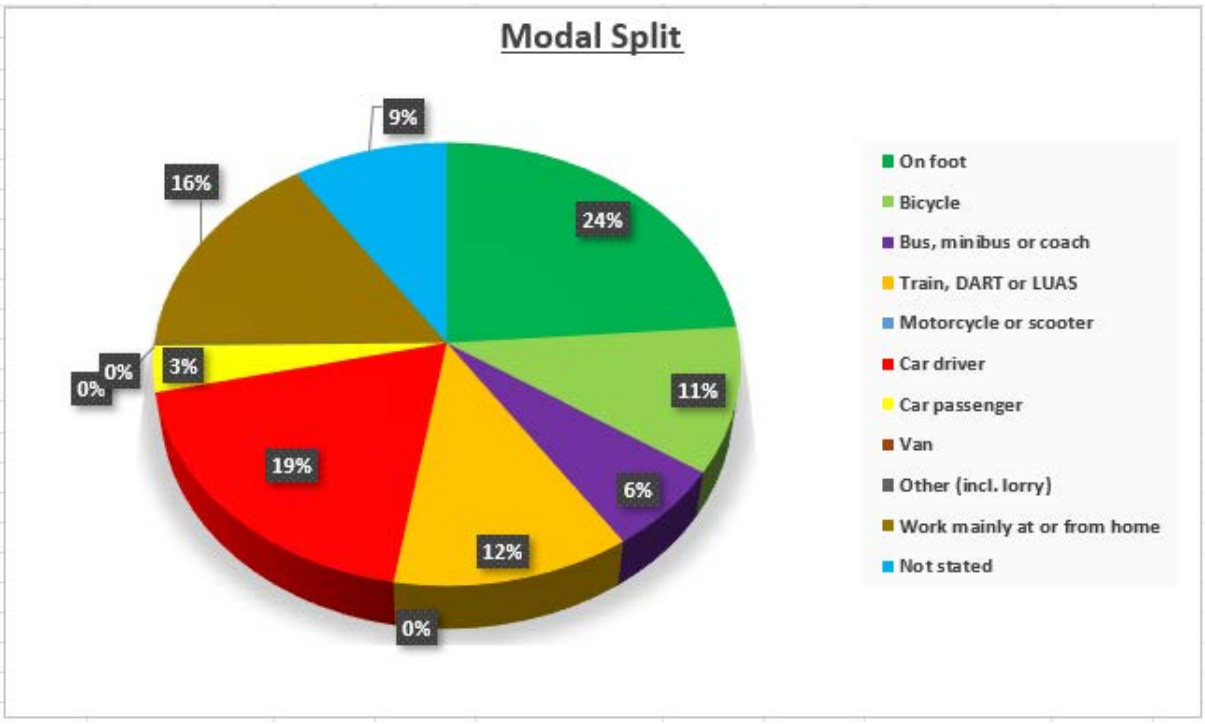


Figure 4-16: Existing Modal Split (Source: CSO)

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 2024

The National Transport Authority (NTA) has undertaken National Household Travel Survey (2024) 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. This intensive study reveals that within the Dublin City region, there is an upsurge in bus use for the 15-24-year age group which indicates that this is a more popular mode of transport for this age group with approximately 11% modal share. Walking is also popular mode of transport for the same age group with approximately 29% modal share. The study also reveals that travel by car is about 0.48 for the 15-24- year age gap and 0.55 for the 25-34-year age group.

	4-14 yrs	15-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65+ yrs
Car	64	48	55	63	69	72	66
Walk	26	29	31	25	19	16	24
Bus/Coach	3	11	6	3	3	3	6
Cycle	6	6	3	4	3	3	1
Train/DART/Luas	*	3	3	2	2	1	2
Truck/van	1	1	1	2	3	3	*
Other	*	2	1	1	2	2	1

Figure 4-17: Mode of Transport by Age-GDA (National Household Travel Survey 2024)

Similarly, the proposed parking of 0.546 per residential 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 0.546 per residential 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

Table 4-9 below compares the *Dublin City Development Plan 2022-2028* standards with the car parking provision at the proposed development.

Residential car parking is provided at a ratio of 0.546 car parking spaces per residential apartment unit, a reduced quantum from the DCC maximum 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 Description	No. of Units / GFA	Development Parking Provision			
		No. Spaces	Combined	Surface Level Parking	Basement Car Parking
House / Apartment	562	279		11	268
Mobility Impaired	-	19	19	4	15
Creche	375m²	2	3	2	-
Community	1,698m²	1		1	-
Café/Restaurant	179m²				-
Car Share	-	10 (5 GoCar + 5 Development Car Share)	10	5	5
Collection/ Drop-Off		4	8	4	-
Short – term visitor		2		2	-
Taxi		2		2	-
Total		**319**		**31**	**288**
Total Car Parking Ratio* = 0.546 Spaces/Unit					

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

Table 4-9: Comparison of Car Parking Requirements & Provision

4.10 CYCLE PARKING

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 Residential Development and Compact Settlement Guidelines generally exceed those of local authorities.

Dublin City Council has published cycle parking guidelines contained within the Dublin City Development Plan 2022-2028. The development plan minimum bicycle parking requirements are outlined in Table 4-10 below.

As outlined in Table 4-11 below, the provision of a total of 1343 dedicated bicycle spaces to be provided for the apartments and other development uses would comply with the minimum requirements outlined within the Dublin City Council development standards.

Land Use Description	DCC Parking Requirements		DHPLG Requirements	
	Long Stay	Short Stay	Long Stay	Short Stay
Apartments	1 space per bedroom	1 space per 2 no. apartments	1 space per bedroom	"visitor cycle parking should be provided"
Houses	1 per unit	1 per 5 dwellings	1 space per bedroom	"visitor cycle parking should be provided"
Creche	1 per 5 staff	1 per 10 children	N/A	N/A
Community	1 per 5 staff	1 per 100sqm		
Café/Restaurant	1 per 5 staff	1 per 10 seats		

Table 4-10: Cycle Parking Requirements

Land Use Description	No. Units (Beds)/GFA	DCC Parking Requirements		DHPLG Requirements		Development Cycle Parking Provision	
		Long Stay	Short Stay	Long Stay	Short Stay	Long Stay	Short Stay
Apartments	552	909	276	909	*"to be provided"*	1,305	
Houses	6	6	1	18	*"to be provided"*		
Creche	375m^2	4	6	-		38	
Community	1,698m^2	1	19				
Café/Restaurant	179m^2	2	1				
Total		**1,225**		**927 + visitors**		**1,343**	

Table 4-11: Cycle Parking Requirements & Provision

Therefore, given the DCC requirements and considering the DHPLG cycle parking standards, a provision of 1,343 no. cycle parking spaces is proposed for this development site. Of this provision, 959 no. are long stay cycle spaces (1.7 cycle spaces per residential unit) and 384 no. spaces are intended as short stay cycle parking spaces for visitors to the development (0.7 cycle spaces per residential unit), with 18 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.

Of the cargo bicycle spaces, 12 no. spaces will be available at surface level and 6 no. will be at basement level in a secure bicycle shelter.

For employees and visitors to the creche, commercial and community areas, 38 no. cycle parking spaces have been allocated; 8 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 by 118 spaces (9.6% excess) and are therefore compliant with the DCC requirements.

Figure 4-19 and Figure 4-20 illustrate the layout of on-site proposed cycle parking spaces both on surface and within the basement. The bike lift which is located near the vehicular access ramp is also shown in the figure below.

Figure 4-18: Bicycle Parking Layout on Surface

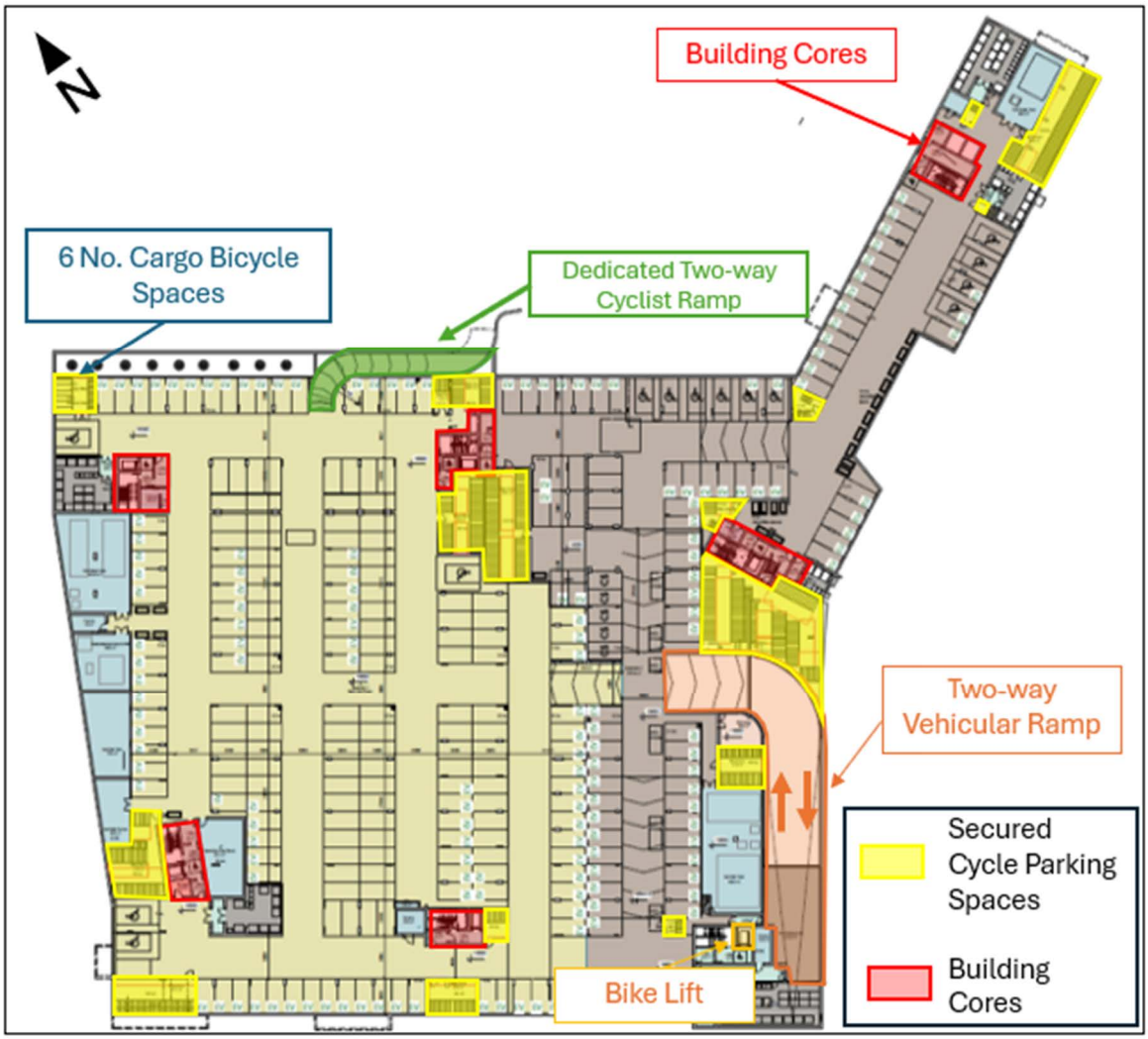


Figure 4-19: Bicycle Parking Layout within Basement

4.11 INITIATIVES FOR SUSTAINABLE TRAVEL

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.

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 0.546 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 residents:

- Car Club (GoCar);
- Mobility Management Plan;
- Increased Cycle Parking (Including Initiatives such as cargo bike spaces);
- Parking Management; and
- Sustainable Travel Initiatives.

Car Club

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.

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.

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.

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

Mobility Management Plan

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

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 1,343 no. cycle spaces are proposed for this development with a total of 562 no. residential units being proposed along with a crèche and commercial and community units. 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

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 TRIP GENERATION AND DISTRIBUTION

5.1 TRAFFIC SURVEYS

In order to establish the existing local road networks traffic characteristics and subsequently enable the identification of the potential impact of the proposed residential-led mixed-use development, traffic surveys were conducted on Thursday 11th September 2025 and Saturday 13th September 2025.

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 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

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 B.**

5.2 TRAFFIC GROWTH

An Opening Year of 2028 has been assumed for this assessment. In accordance with TII (NRA) Guidance, Future Design years (+5 and +15 years) of 2033 and 2043 have also been adopted.

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.

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)

Applying the annual factors (medium growth) as outlined in Table 5-1 above for the adopted Opening Year of 2028 and Future Horizon Years of 2033 (+5 years) and 2043 (+15 years), the following growth rates have been adopted to establish corresponding 2028, 2033 and 2043 baseline network flows:

- 2025 to 2028 – 1.0494 (or 4.94%);
- 2025 to 2033 – 1.1003 (or 10.03%); and
- 2025 to 2043 – 1.1553 (or 15.53%).

Traffic flow diagrams for the 2028, 2033 and 2043 flows are illustrated in **Appendix B** of this report.

5.3 TRIP GENERATION

Proposed Development Trips

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.

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.

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.

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. It is noted that a gym/coworking space and management suite are included in the development, however these amenities are for residents only and it is not anticipated that they will generate any vehicular trips.

Land Use	Unit/GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
Apartments	Per Unit	0.047	0.240	0.287	0.189	0.069	0.257
Houses	Per Unit	0.120	0.311	0.431	0.253	0.153	0.406
Creche	Per 100m^2	2.786	2.264	5.050	0.680	1.222	1.902
Community	Per 100m^2	0.938	0.481	1.419	0.798	0.528	1.326
Café/Restaurant	Per 100m^2	3.905	2.672	6.577	2.364	2.364	4.728

Note: numbers are rounded in table above

Table 5-2: Proposed Development Trip Rates (TRICS)

Based on the above trip rates, potential peak hour traffic generation is calculated based on 556 no. apartments, 6 no. courtyard houses, one 375m^2 creche, 1,698m^2 community uses and a 179m^2 café/restaurant.

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 trip rates for community and café/restaurant have also been discounted by a factor of 0.8 as they are not anticipated to generate notable external trips. 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
Apartments	556	26	133	159	105	38	143
Houses	6	1	2	3	2	1	2
Creche	375m^2	4	3	7	1	2	3
Community	1,698m^2	4	2	6	3	2	5
Café/Restaurant	179m^2	1	1	2	1	1	1
Total	**562**	**36**	**141**	**176**	**111**	**43**	**155**

Note: numbers are rounded in table above

Table 5-3: Proposed Development Vehicle Trips

5.4 COMMITTED DEVELOPMENTS

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.

Fully permitted developments within a 1km radius of the subject site 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. This 1km catchment is considered appropriate in determining 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).

A number of committed developments within the 1km radius 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.

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

Committed Development – ABP Ref. ABP-313048-22

South of the subject development, planning permission was granted for 97 no. residential apartment units (ACP Ref. ABP-313048-22) at Milltown Road, Dublin 4.

Its location relative to the subject site is shown on Figure 5-2 below. This committed development is bounded by Milltown Road to the east; the development's site access will be via Milltown Road.

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.

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 Milltown Road development which depart/arrive via the Milltown 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	97	5	23	28	18	7	25

Table 5-4: Committed Development (ABP Ref. ABP-313048-22) Traffic Generation

Committed Development – ABP Ref. PL29S.322089

West of the subject development at Sandford Close, planning permission was granted (Reg. Ref. PL29S.322089) for the construction of 63 no. BTR residential apartment units. The location of the committed development relative to the subject site is shown in Figure 5-2 below.

The Sandford Lodge development has been granted by DCC and An Bord Pleanála (Ref. PL29S.322089) and therefore has been included in the traffic assessment of the proposed development in order to provide a robust assessment.

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 (BTR) 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	63	4	9	12	6	4	10

Table 5-5: Committed Development (ABP Ref. PL29S.322089) Traffic Generation

Committed Development – ACP Ref. LH29S.323142

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 439 No. PBSA bedspaces and 16 No. residential apartments, the extension and renovation of the 14 No. residential dwellings 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 below.

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.

Land Use	Units/ GFA	AM Peak Hour			PM Peak Hour		
		Arr	Dep	Total	Arr	Dep	Total
Houses	14	3	5	8	5	4	9
Apartments	16	1	3	4	3	2	5
Student Accommodation	173	4	3	7	2	2	4
Total	**203**	**8**	**11**	**19**	**10**	**8**	**18**

Table 5-6 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
Houses	14	3	5	8	5	4	9
Apartments	16	1	3	4	3	2	5
Student Accommodation	173	4	3	7	2	2	4
Total	**203**	**8**	**11**	**19**	**10**	**8**	**18**

Table 5-6: Committed Development (ACP Ref. LH29S.323142) Traffic Generation

Committed Development – DCC Ref. WEB2190/24

To the west of the subject site, planning permission was granted by DCC (Reg. Refs. WEB2190/24) for a 1,431m^2 extension for a new science facility. The location of the committed development relative to the subject site is shown in Figure 5-2 below.

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 5-7 below. Table 5-7 below also summarises the minimal 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
Education	1,431m^2	16	4	20	4	5	9

Table 5-7: Committed Development (DCC Ref. WEB2190/24) Traffic Generation

Figure 5-2: Location of Committed Developments

5.5 TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Trips

The distribution of the proposed development's generated vehicle movements as proposed by DBFL is presented in Figure 2 of **Appendix B** 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.

In the Opening Year 2028, we have assumed that the full development of 562 residential units will be complete and occupied in order to provide a conservative assessment of the development's traffic impacts. In this 2028 scenario we have assumed the following distribution (as per the 2025 traffic surveys) for the subject residential development:

- 39% of all AM vehicle trips will travel northwest on the R117 Sandford Road;

- 33% of all AM vehicle trips will travel south on the R117 Milltown Road;
- 38% of all AM vehicle trips will travel northeast on the R117 Milltown Road;
- 25% of all PM vehicle trips will travel northwest on the R117 Sandford Road;
- 44% of all PM vehicle trips will travel south on the R117 Milltown Road; and
- 25% of all PM vehicle trips will travel northeast on the R117 Milltown Road.

5.6 ASSESSMENT SCOPE

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

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).

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

Do Nothing

- A1 – 2028 Base Flows + Committed Developments
- A2 – 2033 Base Flows + Committed Developments
- A3 – 2043 Base Flows + Committed Developments

Do Something

- B1 – 2028 Do Nothing (A1) + Proposed Development Flows
- B2 – 2033 Do Nothing (A2) + Proposed Development Flows
- B3 – 2043 Do Nothing (A2) + Proposed Development Flows

Assessment Periods

The weekday AM and PM peak hour flows have been identified in traffic survey as occurring between 07:45 - 08:45 and 17:45 - 18:45 respectively. These peak hour periods form the basis of the network assessments.

Network Vehicle Flows

The following Figures are included in **Appendix B** and present the vehicle flows across the local road network for each of the adopted development assessment scenarios:

- 2028 Do Nothing (A1)
- 2033 Do Nothing (A2)
- 2043 Do Nothing (A3)
- 2028 Do Something (B1)
- 2033 Do Something (B2)
- 2043 Do Something (B3)

5.7 IMPACT OF PROPOSALS

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).

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:

- 2028 Opening Year (Do Nothing & Do Something);
- 2033 Future Design Year Scenario (Do Nothing & Do Something); and
- 2043 Future Design Year Scenario (Do Nothing & Do Something).

Table 5-8 details the percentage impact of the relevant key junctions (illustrated in Figure 5-3) for the 2028, 2033 and 2043 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	2028		2033		2043	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Northern Site Access / R117 Sandford Road / Belmont Avenue	5.94%	2.53%	5.68%	2.41%	5.42%	2.30%
2	R117 Sandford Road / R825 St. James's Terrace /	5.65%	2.82%	5.43%	2.69%	5.18%	2.57%

	R117 Milltown Road / R824 Eglinton Road						
3	Southern Site Access / R117 Milltown Road / Mount Sandford	14.15%	12.79%	13.49%	12.20%	12.85%	11.62%

Table 5-8: Network Impact Assessment

The resulting percentage in traffic flows for the 2028, 2033 and 2043 (with full development) is established as exceeding the 10% impact threshold for Junction 3 only.

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 2043 Future Year for the AM and PM peak respectively.

Figure 5-4: Increase in Vehicle Trips Generated Through Key Site Junctions 2043 Do Something – 562 Units

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

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

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.

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.

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.

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.

On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic. The traffic surveys conducted by IDASO in September 2025 established the morning peak hour as occurring between 07:45 – 08:45. 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.

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.

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

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

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.

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

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 2028:

- 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.

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.

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 NETWORK ANALYSIS

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

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.

For the PICADY analyses a 90-minute AM and PM period has been simulated, from 07:30 to 09:00 and 17:30 to 19:00, respectively. The traffic flows were entered using an Origin-Destination table for the peak hours.

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:

- 2028 Opening Year (562 residential units);
- 2033 Interim Year (562 residential units); and
- 2043 Future Horizon Year (562 residential units).

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

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

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.

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

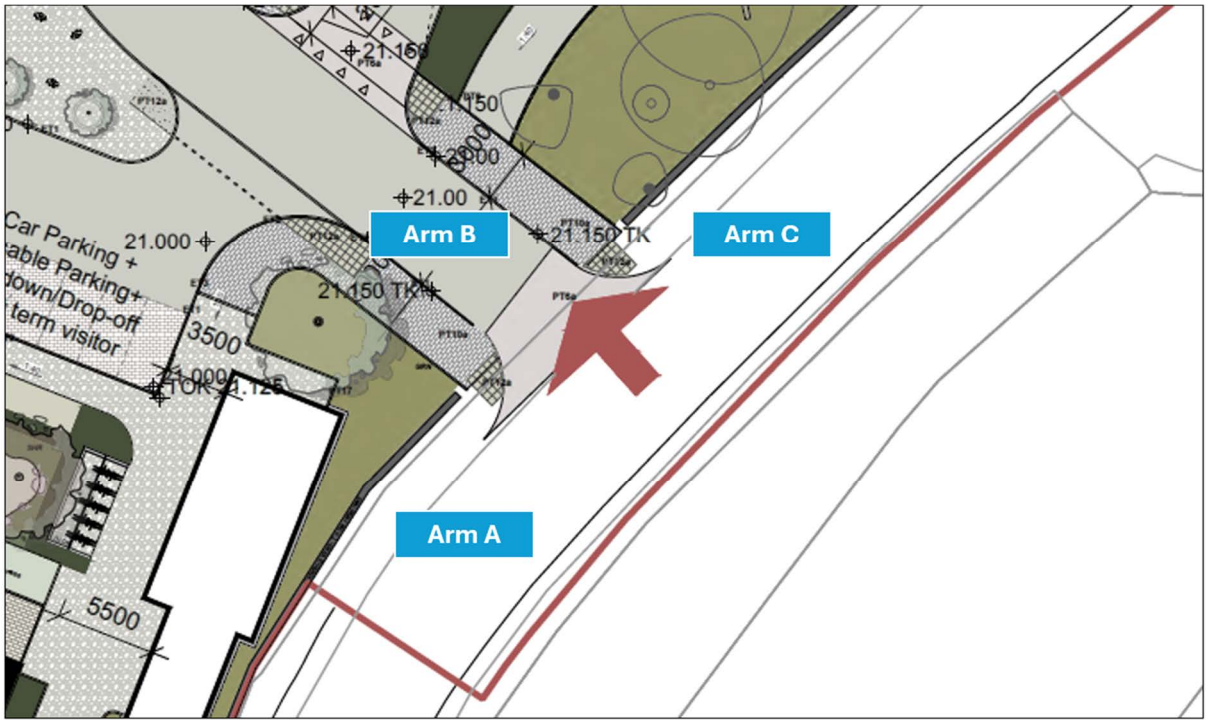


Figure 6-2: Junction 3 Priority Controlled Junction

Do Minimum Scenario

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

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 2028 "Do Something" AM peak hour with a maximum RFC value of 0.15 being recorded on the R117 Milltown Road South, with a corresponding queue of 0.2 pcus. For the corresponding PM peak hour, a maximum RFC value of 0.14 will occur on the northern arm of the R117 Milltown Road, with a corresponding queue of 0.4 pcus.

Year Scenario	Period	Arm	Description	Queue (pcu)	Delay (s)	RFC
2028 DS	AM Peak	A	R117 Milltown Road South	0.2	7.27	0.15
		B	Southern Site Access	0.2	11.91	0.14
		C	R117 Milltown Road North	0.1	5.08	0.07

	PM Peak	A	R117 Milltown Road South	0.0	6.85	0.03
		B	Southern Site Access	0.1	8.99	0.07
		C	R117 Milltown Road North	0.4	4.52	0.14
2033 DS	AM Peak	A	R117 Milltown Road South	0.2	7.37	0.16
		B	Southern Site Access	0.2	12.20	0.15
		C	R117 Milltown Road North	0.1	5.02	0.07
	PM Peak	A	R117 Milltown Road South	0.0	6.89	0.03
		B	Southern Site Access	0.1	9.16	0.07
		C	R117 Milltown Road North	0.5	4.46	0.15
2043 DS	AM Peak	A	R117 Milltown Road South	0.2	7.47	0.16
		B	Southern Site Access	0.2	12.52	0.15
		C	R117 Milltown Road North	0.1	4.96	0.07
	PM Peak	A	R117 Milltown Road South	0.0	6.94	0.03
		B	Southern Site Access	0.1	9.35	0.07
		C	R117 Milltown Road North	0.5	4.39	0.16

Table 6-1: 2028, 2033 and 2043 Do Something Analysis for Junction 3

For the 2043 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 2043 "Do Something" AM peak hour with a maximum RFC value of 0.16 on both the left-turning and right-turning site access arms, with a corresponding queue of 0.2 pcus for both arms. For the 2043 "Do Something" PM peak hour a maximum RFC value of 0.16 occurs along the northern arm of the R117 Milltown Road, with a corresponding queue of 0.5 pcus.

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 2043 Do Something PM peak hour with an RFC of only 0.16, 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.

A copy of the PICADY output file can be found in Appendix C.

7 SUMMARY AND CONCLUSION

7.1 OVERVIEW

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

The proposal seeks permission for the provision of 556 no. residential apartment units, 6 no. courtyard houses, one 375m^2 accompanying creche, a café/restaurant and community areas.

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-led mixed-use development.

This TTA had carried out a range of assessments for an Opening Year of 2028 and a Future Horizon Year assessment of 2043. It is estimated that all 562 no. proposed residential units will be built and occupied by 2028 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 – 2028 Base Flows + Committed Developments
- A2 – 2033 Base Flows + Committed Developments
- A3 – 2043 Base Flows + Committed Developments

Do Something

- B1 – 2028 Do Nothing (A1) + Proposed Development Flows
- B2 – 2033 Do Nothing (A2) + Proposed Development Flows
- B3 – 2043 Do Nothing (A2) + Proposed Development Flows

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.*

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.

For the key junctions it can be seen that the proposed development (562 units) in 2043 would result in the following:

- **Junction 1** (Northern Site Access / R117 Sandford Road / Belmont Avenue): an increase of 5.42% (87 New Two-Way Vehicle Trips) in the AM peak period and 2.30% (36 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 5.18% (113 New Two-Way Vehicle Trips) in the AM peak period and 2.57% (56 New Two-Way Vehicle Trips) in the PM peak period; and
- **Junction 3** (Southern Site Access / R117 Milltown Road / Mount Sandford): an increase of 12.85% (176 New Two-Way Vehicle Trips) in the AM peak period and 11.62% (155 New Two-Way Vehicle Trips) in the PM peak period.

Figure 7-1: Increase in Vehicle Trips Generated Through Key Site Junctions 2043 Do Something – 562 Units

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.

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

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 2043 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 2043 "Do Something" AM peak hour with a maximum RFC value of 0.16 on both the left-turning and right-turning site access arms, with a corresponding queue of 0.2 pcus for both arms. For the 2043 "Do Something" PM peak hour a maximum RFC value of 0.16 occurs along the northern arm of the R117 Milltown Road, with a corresponding queue of 0.5 pcus.*

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 2043 Do Something PM peak hour with an RFC of only 0.16, significantly lower than the 0.85 RFC threshold indicating a poorly performing junction.

7.2 CONCLUSIONS

In conclusion, we believe that in terms of transport and traffic, Dublin City Council should favourably the proposed residential-led mixed-use development on the subject site.

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

Appendix A : 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.

Calculation Reference: AUDIT-638801-250624-0621

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

01	GREATER LONDON		
	BN	BARNET	1 days
	HG	HARINGEY	1 days
	SU	SUTTON	1 days
	WF	WALTHAM FOREST	1 days
02	SOUTH EAST		
	ES	EAST SUSSEX	3 days
	HC	HAMPSHIRE	3 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	3 days
	MW	MEDWAY	1 days
	SC	SURREY	2 days
	WS	WEST SUSSEX	5 days
03	SOUTH WEST		
	GS	GLOUCESTERSHIRE	1 days
	SD	SWINDON	1 days
	SM	SOMERSET	2 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	3 days
	NF	NORFOLK	5 days
	PB	PETERBOROUGH	1 days
	SF	SUFFOLK	3 days
05	EAST MIDLANDS		
	LE	LEICESTERSHIRE	1 days
	NM	WEST NORTHAMPTONSHIRE	1 days
	NN	NORTH NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	1 days
	WM	WEST MIDLANDS	3 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	BY	BARNSLEY	1 days
	LS	LEEDS	1 days
	NY	NORTH YORKSHIRE	2 days
	SE	SHEFFIELD	1 days
08	NORTH WEST		
	AC	CHESHIRE WEST & CHESTER	3 days
	GM	GREATER MANCHESTER	1 days
09	NORTH		
	DH	DURHAM	2 days
	FU	WESTMORLAND & FURNESS	1 days
	IM	ISLE OF MAN	4 days
11	SCOTLAND		
	HI	HIGHLAND	1 days
12	CONNAUGHT		
	CS	SLIGO	2 days
	LT	LEITRIM	1 days
	MA	MAYO	1 days
14	LEINSTER		
	LU	LOUTH	1 days
	WC	WICKLOW	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	1 days
16	ULSTER (REPUBLIC OF IRELAND)		
	DN	DONEGAL	2 days
	MG	MONAGHAN	2 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

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:	8 to 1882 (units:)
Range Selected by User:	4 to 4334 (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: 01/01/16 to 18/09/24

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	10 days
Tuesday	21 days
Wednesday	16 days
Thursday	18 days
Friday	9 days

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

Selected survey types:

Manual count	72 days
Directional ATC Count	2 days

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

Selected Locations:

Edge of Town Centre	12
Suburban Area (PPS6 Out of Centre)	20
Neighbourhood Centre (PPS6 Local Centre)	42

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

Selected Location Sub Categories:

Residential Zone	37
Village	34
High Street	1
No Sub Category	2

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	22 days - Selected
Servicing vehicles Excluded	74 days - Selected

Secondary Filtering selection:

Use Class:

C3	74 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	4 days
1,001 to 5,000	26 days
5,001 to 10,000	18 days
10,001 to 15,000	5 days
15,001 to 20,000	5 days
20,001 to 25,000	5 days
25,001 to 50,000	8 days
50,001 to 100,000	3 days

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

Population within 5 miles:

5,000 or Less	3 days
5,001 to 25,000	11 days
25,001 to 50,000	12 days
50,001 to 75,000	13 days
75,001 to 100,000	7 days
100,001 to 125,000	3 days
125,001 to 250,000	13 days
250,001 to 500,000	5 days
500,001 or More	7 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	21 days
1.1 to 1.5	38 days
1.6 to 2.0	15 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	21 days
No	53 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	70 days
2 Poor	1 days
4 Good	2 days
5 Very Good	1 days

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

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

LIST OF SITES relevant to selection parameters

1 AC-03-A-04 TOWN HOUSES CHESHIRE WEST & CHESTER
LONDON ROAD
NORTHWICH
LEFTWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 24
Survey date: THURSDAY 06/06/19 Survey Type: MANUAL

2 AC-03-A-05 SEMI-DETACHED & TERRACED CHESHIRE WEST & CHESTER
MEADOW DRIVE
NORTHWICH
BARNTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 40
Survey date: FRIDAY 30/04/21 Survey Type: MANUAL

3 AC-03-A-06 DETACHED HOUSES CHESHIRE WEST & CHESTER
COMMON LANE
NEAR CHESTER
WAVERTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 99
Survey date: FRIDAY 29/04/22 Survey Type: MANUAL

4 AN-03-A-10 DETACHED & SEMI-DETACHED ANTRIM
FERRARD GRANGE
ANTRIM

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 87
Survey date: FRIDAY 07/06/24 Survey Type: MANUAL

5 BN-03-A-04 MIXED HOUSES & FLATS BARNET
SWEETS WAY
WHETSTONE

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 231
Survey date: TUESDAY 21/09/21 Survey Type: MANUAL

6 BY-03-A-01 BUNGALOWS & DETACHED BARNSLEY
CHURCH LANE
NEAR BARNSLEY
WORSBROUGH
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 19
Survey date: WEDNESDAY 09/09/20 Survey Type: MANUAL

7 CA-03-A-06 MIXED HOUSES CAMBRIDGESHIRE
CRAFT'S WAY
NEAR CAMBRIDGE
BAR HILL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 207
Survey date: FRIDAY 22/06/18 Survey Type: MANUAL

8 CA-03-A-07 MIXED HOUSES CAMBRIDGESHIRE
FIELD END
NEAR ELY
WITCHFORD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 32
Survey date: THURSDAY 27/05/21 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9 CA-03-A-08 DETACHED & SEMI-DETACHED CAMBRIDGESHIRE
GIDDING ROAD
SAWTRY

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 83
Survey date: THURSDAY *13/10/22* *Survey Type: MANUAL*

10 CS-03-A-03 MIXED HOUSES SLIGO
TOP ROAD
STRANDHILL
STRANDHILL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 30
Survey date: THURSDAY *27/10/16* *Survey Type: MANUAL*

11 CS-03-A-04 DETACHED & SEMI-DETACHED SLIGO
R292
STRANDHILL

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 63
Survey date: THURSDAY *27/10/16* *Survey Type: MANUAL*

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

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 50
Survey date: TUESDAY *28/03/17* *Survey Type: MANUAL*

13 DH-03-A-02 MIXED HOUSES DURHAM
LEAZES LANE
BISHOP AUCKLAND
ST HELEN AUCKLAND
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 125
Survey date: MONDAY *27/03/17* *Survey Type: MANUAL*

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

15 DN-03-A-07 DETACHED & SEMI-DETACHED DONEGAL
ST ORANS ROAD
BUNCRANA

Edge of Town Centre
Residential Zone
Total No of Dwellings: 9
Survey date: WEDNESDAY *29/05/19* *Survey Type: MANUAL*

16 DN-03-A-08 SEMI DETACHED & DETACHED DONEGAL
CHURCH ROAD
CARNDONAGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 36
Survey date: WEDNESDAY *30/09/20* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

17 ES-03-A-11 MIXED HOUSES EAST SUSSEX
BISHOPS LANE
RINGMER

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 105
Survey date: THURSDAY *28/09/23* *Survey Type: MANUAL*

18 ES-03-A-12 MIXED HOUSES & FLATS EAST SUSSEX
HOREBEECH LANE
HORAM

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 123
Survey date: TUESDAY *03/10/23* *Survey Type: MANUAL*

19 ES-03-A-17 MIXED HOUSES & FLATS EAST SUSSEX
RAILWAY ROAD
NEWHAVEN

Edge of Town Centre
No Sub Category
Total No of Dwellings: 145
Survey date: FRIDAY *28/06/24* *Survey Type: MANUAL*

20 FU-03-A-02 DETACHED/TERRACED HOUSING WESTMORLAND & FURNESS
MACADAM WAY
PENRITH

Edge of Town Centre
Residential Zone
Total No of Dwellings: 50
Survey date: TUESDAY *21/06/16* *Survey Type: MANUAL*

21 GM-03-A-11 TERRACED & SEMI-DETACHED GREATER MANCHESTER
RUSHFORD STREET
MANCHESTER
LEVENSHULME
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 37
Survey date: MONDAY *26/09/16* *Survey Type: MANUAL*

22 GS-03-A-02 DETACHED HOUSES GLOUCESTERSHIRE
OAKRIDGE
NEAR GLOUCESTER
HIGHNAM
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 40
Survey date: FRIDAY *23/04/21* *Survey Type: MANUAL*

23 HC-03-A-23 HOUSES & FLATS HAMPSHIRE
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 62
Survey date: TUESDAY *19/11/19* *Survey Type: MANUAL*

24 HC-03-A-30 TERRACED HOUSES HAMPSHIRE
MEUDON AVENUE
FARNBOROUGH

Edge of Town Centre
Residential Zone
Total No of Dwellings: 31
Survey date: FRIDAY *14/10/22* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

25 HC-03-A-32 MIXED HOUSES & FLATS HAMPSHIRE
GREEN LANE
FARNHAM
WEYBOURNE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 105
Survey date: THURSDAY *29/06/23* *Survey Type: MANUAL*

26 HF-03-A-07 MIXED HOUSES & BUNGALOWS HERTFORDSHIRE
BAKER STREET
POTTERS BAR

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 92
Survey date: MONDAY *25/03/24* *Survey Type: MANUAL*

27 HG-03-A-01 DETACHED & SEMI-DETACHED HARINGEY
LAWRENCE ROAD
TOTTENHAM
WEST GREEN
Neighbourhood Centre (PPS6 Local Centre)
High Street
Total No of Dwellings: 20
Survey date: TUESDAY *05/11/19* *Survey Type: MANUAL*

28 HI-03-A-14 SEMI-DETACHED & TERRACED HIGHLAND
KING BRUDE ROAD
INVERNESS
SCORGUIE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 40
Survey date: WEDNESDAY *23/03/16* *Survey Type: MANUAL*

29 IM-03-A-01 MIXED HOUSES ISLE OF MAN
BALLAKILLOWEY ROAD
COLBY
BALLAKILLOWEY
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 31
Survey date: TUESDAY *21/05/24* *Survey Type: MANUAL*

30 IM-03-A-02 MIXED HOUSES ISLE OF MAN
SHORE ROAD
KIRK MICHAEL

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 27
Survey date: THURSDAY *23/05/24* *Survey Type: MANUAL*

31 IM-03-A-03 MIXED HOUSES ISLE OF MAN
MAIN ROAD
COLBY

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 111
Survey date: TUESDAY *21/05/24* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

32 IM-03-A-04 MIXED HOUSES ISLE OF MAN
NEW CASTLETOWN ROAD
DOUGLAS

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 73
Survey date: MONDAY *20/05/24* *Survey Type: MANUAL*

33 KC-03-A-03 MIXED HOUSES & FLATS KENT
HYTHE ROAD
ASHFORD
WILLESBOROUGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 51
Survey date: THURSDAY *14/07/16* *Survey Type: MANUAL*

34 KC-03-A-06 MIXED HOUSES & FLATS KENT
MARGATE ROAD
HERNE BAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 363
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

35 KC-03-A-08 MIXED HOUSES KENT
MAIDSTONE ROAD
CHARING

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 159
Survey date: TUESDAY *22/05/18* *Survey Type: MANUAL*

36 LE-03-A-02 DETACHED & OTHERS LEICESTERSHIRE
MELBOURNE ROAD
IBSTOCK

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 85
Survey date: THURSDAY *28/06/18* *Survey Type: MANUAL*

37 LS-03-A-01 MIXED HOUSING LEEDS
SPRING VALLEY CRESCENT
LEEDS
BRAMLEY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 46
Survey date: WEDNESDAY *21/09/16* *Survey Type: MANUAL*

38 LT-03-A-02 BUNGALOWS LEITRIM
ARD ÁLAINN
CARRICK-ON-SHANNON
GALLOW'S HILL
Edge of Town Centre
Residential Zone
Total No of Dwellings: 10
Survey date: MONDAY *22/05/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

39 LU-03-A-01 TERRACED & SEMI-DETACHED LOUTH
RATHMULLAN ROAD
DROGHEDA

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 111
Survey date: TUESDAY *21/09/21* *Survey Type: MANUAL*

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

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

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

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

42 MG-03-A-02 MIXED HOUSES MONAGHAN
GLEN ROAD
MONAGHAN

Edge of Town Centre
Residential Zone
Total No of Dwellings: 76
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

43 MW-03-A-01 DETACHED & SEMI-DETACHED MEDWAY
ROCHESTER ROAD
NEAR CHATHAM
BURHAM
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 8
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

44 NF-03-A-21 MIXED HOUSES & FLATS NORFOLK
SIR ALFRED MUNNINGS RD
NEAR NORWICH
COSTESSEY
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 1882
Survey date: TUESDAY *13/10/20* *Survey Type: DIRECTIONAL ATC COUNT*

45 NF-03-A-27 MIXED HOUSES & FLATS NORFOLK
YARMOUTH ROAD
NEAR NORWICH
BLOFIELD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 93
Survey date: THURSDAY *16/09/21* *Survey Type: MANUAL*

46 NF-03-A-44 MIXED HOUSES NORFOLK
MILL LANE
NEAR NORWICH
HORSFORD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 125
Survey date: WEDNESDAY *21/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

LIST OF SITES relevant to selection parameters (Cont.)

47 NF-03-A-51 SEMI-DETACHED NORFOLK
CITY ROAD
NORWICH
LAKENHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 34
Survey date: TUESDAY *13/09/22* *Survey Type: MANUAL*

48 NF-03-A-52 MIXED HOUSES NORFOLK
LYNNSPORT WAY
KING'S LYNN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 130
Survey date: TUESDAY *07/11/23* *Survey Type: MANUAL*

49 NM-03-A-02 DETACHED & SEMI-DETACHED WEST NORTHAMPTONSHIRE
HARLESTONE ROAD
NEAR NORTHAMPTON
CHAPEL BRAMPTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 47
Survey date: TUESDAY *20/10/20* *Survey Type: MANUAL*

50 NN-03-A-01 MIXED HOUSES & FLATS NORTH NORTHAMPTONSHIRE
MAIN STREET
NEAR WELLINGBOROUGH
LITTLE HARROWDEN
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 44
Survey date: TUESDAY *20/10/20* *Survey Type: MANUAL*

51 NY-03-A-12 TOWN HOUSES NORTH YORKSHIRE
RACECOURSE LANE
NORTHALLERTON

Edge of Town Centre
Residential Zone
Total No of Dwellings: 47
Survey date: TUESDAY *27/09/16* *Survey Type: MANUAL*

52 NY-03-A-13 TERRACED HOUSES NORTH YORKSHIRE
CATTERICK ROAD
CATTERICK GARRISON
OLD HOSPITAL COMPOUND
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 10
Survey date: WEDNESDAY *10/05/17* *Survey Type: MANUAL*

53 PB-03-A-04 DETACHED HOUSES PETERBOROUGH
EASTFIELD ROAD
PETERBOROUGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 28
Survey date: MONDAY *17/10/16* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

54 SC-03-A-09 MIXED HOUSES & FLATS SURREY
AMLETS LANE
CRANLEIGH

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 136
Survey date: TUESDAY *24/05/22* *Survey Type: MANUAL*

55 SC-03-A-10 MIXED HOUSES SURREY
GUILDFORD ROAD
ASH

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 32
Survey date: WEDNESDAY *14/09/22* *Survey Type: MANUAL*

56 SD-03-A-01 SEMI DETACHED SWINDON
HEADLANDS GROVE
SWINDON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 27
Survey date: THURSDAY *22/09/16* *Survey Type: MANUAL*

57 SE-03-A-01 DETACHED & BUNGALOWS SHEFFIELD
MANOR ROAD
NEAR SHEFFIELD
WALES
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 25
Survey date: THURSDAY *10/09/20* *Survey Type: MANUAL*

58 SF-03-A-06 DETACHED & SEMI-DETACHED SUFFOLK
BURY ROAD
KENTFORD

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 38
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

59 SF-03-A-08 MIXED HOUSES SUFFOLK
STANNINGFIELD ROAD
NEAR BURY ST EDMUNDS
GREAT WHELNETHAM
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 34
Survey date: WEDNESDAY *16/09/20* *Survey Type: MANUAL*

60 SF-03-A-09 MIXED HOUSES & FLATS SUFFOLK
FOXHALL ROAD
IPSWICH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 179
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

61 SM-03-A-02 MIXED HOUSES SOMERSET
HYDE LANE
NEAR TAUNTON
CREECH SAINT MICHAEL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 42
Survey date: TUESDAY 25/09/18 Survey Type: MANUAL

62 SM-03-A-03 MIXED HOUSES SOMERSET
HYDE LANE
NEAR TAUNTON
CREECH ST MICHAEL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 41
Survey date: TUESDAY 25/09/18 Survey Type: MANUAL

63 SU-03-A-01 MIXED HOUSES & FLATS SUTTON
COLLINGWOOD ROAD
SUTTON

Edge of Town Centre
Residential Zone
Total No of Dwellings: 61
Survey date: THURSDAY 13/06/24 Survey Type: MANUAL

64 WC-03-A-02 DETACHED HOUSES WICKLOW
MARLTON ROAD
WICKLOW
FRIARSHILL
Edge of Town Centre
Residential Zone
Total No of Dwellings: 45
Survey date: MONDAY 28/05/18 Survey Type: MANUAL

65 WF-03-A-02 SEMI DETACHED & TERRACED WALTHAM FOREST
PALMERSTON ROAD
WALTHAMSTOW

Edge of Town Centre
Residential Zone
Total No of Dwellings: 9
Survey date: THURSDAY 06/06/19 Survey Type: MANUAL

66 WK-03-A-03 DETACHED HOUSES WARWICKSHIRE
BRESE AVENUE
WARWICK
GUYS CLIFFE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 23
Survey date: WEDNESDAY 25/09/19 Survey Type: MANUAL

67 WM-03-A-04 TERRACED HOUSES WEST MIDLANDS
OSBORNE ROAD
COVENTRY
EARLSDON
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 39
Survey date: MONDAY 21/11/16 Survey Type: MANUAL

68 WM-03-A-05 TERRACED & DETACHED WEST MIDLANDS
COUNDON ROAD
COVENTRY

Edge of Town Centre
Residential Zone
Total No of Dwellings: 89
Survey date: MONDAY 21/11/16 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

69 WM-03-A-07 DETACHED HOUSES WEST MIDLANDS
EVESON ROAD
STOURBRIDGE
NORTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 14
Survey date: WEDNESDAY 18/09/24 Survey Type: MANUAL

70 WS-03-A-07 BUNGALOWS WEST SUSSEX
EMMS LANE
NEAR HORSHAM
BROOKS GREEN
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 57
Survey date: THURSDAY 19/10/17 Survey Type: MANUAL

71 WS-03-A-16 DETACHED & SEMI-DETACHED WEST SUSSEX
BRACKLESHAM LANE
BRACKLESHAM BAY

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 58
Survey date: WEDNESDAY 09/11/22 Survey Type: MANUAL

72 WS-03-A-18 MIXED HOUSES & FLATS WEST SUSSEX
LONDON ROAD
HASSOCKS

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 156
Survey date: MONDAY 15/05/23 Survey Type: MANUAL

73 WS-03-A-21 MIXED HOUSES WEST SUSSEX
HILLAND ROAD
BILLINGSHURST

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 480
Survey date: THURSDAY 09/11/23 Survey Type: MANUAL

74 WS-03-A-25 PRIVATE HOUSES & FLATS WEST SUSSEX
LIDSEY ROAD
WOODGATE

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 65
Survey date: WEDNESDAY 18/09/24 Survey Type: MANUAL

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

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

	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	74	99	0.069	74	99	0.253	74	99	0.322
08:00 - 09:00	74	99	0.137	74	99	0.330	74	99	0.467
09:00 - 10:00	74	99	0.138	74	99	0.164	74	99	0.302
10:00 - 11:00	74	99	0.117	74	99	0.138	74	99	0.255
11:00 - 12:00	74	99	0.127	74	99	0.133	74	99	0.260
12:00 - 13:00	74	99	0.140	74	99	0.144	74	99	0.284
13:00 - 14:00	74	99	0.150	74	99	0.141	74	99	0.291
14:00 - 15:00	74	99	0.155	74	99	0.167	74	99	0.322
15:00 - 16:00	74	99	0.224	74	99	0.164	74	99	0.388
16:00 - 17:00	74	99	0.252	74	99	0.154	74	99	0.406
17:00 - 18:00	74	99	0.297	74	99	0.158	74	99	0.455
18:00 - 19:00	74	99	0.238	74	99	0.151	74	99	0.389
19:00 - 20:00	4	80	0.115	4	80	0.112	4	80	0.227
20:00 - 21:00	4	80	0.121	4	80	0.087	4	80	0.208
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.280			2.296			4.576

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:	8 - 1882 (units:)
Survey date date range:	01/01/16 - 18/09/24
Number of weekdays (Monday-Friday):	74
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	22
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-638801-201217-1211

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
03	SOUTH WEST		
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	LN	LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	2 days
10	WALES		
	MM	MONMOUTHSHIRE	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 185 to 860 (units: sqm)
Range Selected by User: 109 to 2350 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 27/09/19

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:

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

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

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	3
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Commercial Zone	1
Residential Zone	8

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

Secondary Filtering selection:

Use Class:

D1	9 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	5 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:

125,001 to 250,000	4 days
250,001 to 500,000	5 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	2 days
1.1 to 1.5	5 days
2.1 to 2.5	1 days

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

Travel Plan:

No	9 days

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

PTAL Rating:

No PTAL Present	9 days

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

LIST OF SITES relevant to selection parameters

1	CA-04-D-02 NURSERY			CAMBRIDGESHIRE
	EASTFIELD ROAD			
	PETERBOROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	400 sqm		
	Survey date: TUESDAY	*18/10/16*	*Survey Type: MANUAL*	
2	DS-04-D-02 NURSERY			DERBYSHIRE
	MAXWELL AVENUE			
	DERBY			
	DARLEY ABBEY			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:	415 sqm		
	Survey date: THURSDAY	*12/07/18*	*Survey Type: MANUAL*	
3	ES-04-D-01 NURSERY			EAST SUSSEX
	CONNAUGHT ROAD			
	BRIGHTON			
	HOVE			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	185 sqm		
	Survey date: FRIDAY	*22/09/17*	*Survey Type: MANUAL*	
4	LE-04-D-01 NURSERY			LEICESTERSHIRE
	WIGSTON ROAD			
	LEICESTER			
	OADBY			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:	375 sqm		
	Survey date: THURSDAY	*30/10/14*	*Survey Type: MANUAL*	
5	LN-04-D-01 NURSERY			LINCOLNSHIRE
	NEWARK ROAD			
	LINCOLN			
	SWALLOW BECK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	600 sqm		
	Survey date: TUESDAY	*31/10/17*	*Survey Type: MANUAL*	
6	MM-04-D-01 NURSERY			MONMOUTHSHIRE
	SPOONER CLOSE			
	NEWPORT			
	COEDKERNEW			
	Edge of Town			
	Commercial Zone			
	Total Gross floor area:	860 sqm		
	Survey date: FRIDAY	*27/09/19*	*Survey Type: MANUAL*	
7	TW-04-D-02 NURSERY			TYNE & WEAR
	ETTRICK GROVE			
	SUNDERLAND			
	HIGH BARNES			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	500 sqm		
	Survey date: WEDNESDAY	*28/11/12*	*Survey Type: MANUAL*	
8	TW-04-D-03 NURSERY			TYNE & WEAR
	JUBILEE ROAD			
	NEWCASTLE UPON TYNE			
	GOSFORTH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	725 sqm		
	Survey date: TUESDAY	*21/05/19*	*Survey Type: MANUAL*	
9	WL-04-D-01 NURSERY			WILTSHIRE
	SHREWSBURY ROAD			
	SWINDON			
	WALCOT			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	500 sqm		
	Survey date: THURSDAY	*22/09/16*	*Survey Type: MANUAL*	

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
KI-04-D-01	Greater London Area
RB-04-D-01	Greater London Area
RB-04-D-02	Greater London Area

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	9	507	2.325	9	507	1.031	9	507	3.356
08:00 - 09:00	9	507	2.939	9	507	2.675	9	507	5.614
09:00 - 10:00	9	507	1.228	9	507	0.965	9	507	2.193
10:00 - 11:00	9	507	0.329	9	507	0.175	9	507	0.504
11:00 - 12:00	9	507	0.570	9	507	0.570	9	507	1.140
12:00 - 13:00	9	507	1.206	9	507	0.987	9	507	2.193
13:00 - 14:00	9	507	0.921	9	507	1.513	9	507	2.434
14:00 - 15:00	9	507	0.461	9	507	0.570	9	507	1.031
15:00 - 16:00	9	507	0.987	9	507	1.075	9	507	2.062
16:00 - 17:00	9	507	1.645	9	507	1.842	9	507	3.487
17:00 - 18:00	9	507	2.061	9	507	2.522	9	507	4.583
18:00 - 19:00	9	507	0.219	9	507	0.789	9	507	1.008
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			14.891			14.714			29.605

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

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

Parameter summary

Trip rate parameter range selected:	185 - 860 (units: sqm)
Survey date date range:	01/01/12 - 27/09/19
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	3

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-638801-221202-1252

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : Q - COMMUNITY CENTRE
TOTAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
	WY	WEST YORKSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	2 days
15	GREATER DUBLIN		
	DL	DUBLIN	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 316 to 1800 (units: sqm)
Range Selected by User: 100 to 2329 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/14 to 24/05/19

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
Wednesday	2 days
Friday	2 days

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

Selected survey types:

Manual count	5 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)	2
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:

Residential Zone	2
Retail Zone	1
Village	1
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

F2(b)	5 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	3 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	2 days
250,001 to 500,000	1 days
500,001 or More	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days

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	5 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	5 days

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

LIST OF SITES relevant to selection parameters

1 DL-07-Q-01 COMMUNITY CENTRE DUBLIN
BALLYBOUGH ROAD
DUBLIN
BALLYBOUGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1800 sqm
Survey date: WEDNESDAY 23/11/16 Survey Type: MANUAL

2 NY-07-Q-01 COMMUNITY CENTRE NORTH YORKSHIRE
SHUTE ROAD
CATTERRICK GARRISON

Neighbourhood Centre (PPS6 Local Centre)
No Sub Category
Total Gross floor area: 316 sqm
Survey date: WEDNESDAY 10/05/17 Survey Type: MANUAL

3 TW-07-Q-02 COMMUNITY CENTRE TYNE & WEAR
ROSEDON WAY
NEWCASTLE
BRUNTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 880 sqm
Survey date: FRIDAY 13/11/15 Survey Type: MANUAL

4 TW-07-Q-03 COMMUNITY CENTRE TYNE & WEAR
ASKEW ROAD W
GATESHEAD
TEAMS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 750 sqm
Survey date: FRIDAY 24/05/19 Survey Type: MANUAL

5 WY-07-Q-01 COMMUNITY CENTRE WEST YORKSHIRE
WATERLOO LANE
LEEDS
BRAMLEY
Neighbourhood Centre (PPS6 Local Centre)
Retail Zone
Total Gross floor area: 625 sqm
Survey date: MONDAY 19/10/15 Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DL-07-Q-01	City

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	471	0.319	2	471	0.000	2	471	0.319
08:00 - 09:00	5	874	1.144	5	874	0.641	5	874	1.785
09:00 - 10:00	5	874	1.030	5	874	0.595	5	874	1.625
10:00 - 11:00	5	874	0.297	5	874	0.549	5	874	0.846
11:00 - 12:00	5	874	0.320	5	874	0.458	5	874	0.778
12:00 - 13:00	5	874	0.892	5	874	0.755	5	874	1.647
13:00 - 14:00	5	874	0.343	5	874	0.480	5	874	0.823
14:00 - 15:00	5	874	0.412	5	874	0.160	5	874	0.572
15:00 - 16:00	5	874	0.892	5	874	0.709	5	874	1.601
16:00 - 17:00	4	1014	0.567	4	1014	0.715	4	1014	1.282
17:00 - 18:00	4	1014	0.469	4	1014	0.838	4	1014	1.307
18:00 - 19:00	3	1102	0.908	3	1102	0.424	3	1102	1.332
19:00 - 20:00	3	1102	0.121	3	1102	1.059	3	1102	1.180
20:00 - 21:00	3	1102	0.030	3	1102	0.242	3	1102	0.272
21:00 - 22:00	2	1213	0.000	2	1213	0.041	2	1213	0.041
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			7.744			7.666			15.410

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:	316 - 1800 (units: sqm)
Survey date date range:	01/01/14 - 24/05/19
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	-1
Surveys manually removed from selection:	1

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.

DBFL Ormond House Dublin Licence No: 638801

Calculation Reference: AUDIT-638801-250704-0755

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : K - CAFE
TOTAL VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	HG	HARINGEY	1 days
	SU	SUTTON	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
08	NORTH WEST		
	GM	GREATER MANCHESTER	2 days
09	NORTH		
	TW	TYNE & WEAR	2 days

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

Primary Filtering selection:

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

Parameter:	Gross floor area
Actual Range:	38 to 325 (units: sqm)
Range Selected by User:	38 to 325 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 06/06/24

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

Selected survey days:

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

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

Selected survey types:

Manual count	7 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:

Town Centre	7

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

Selected Location Sub Categories:

Retail Zone	1
Built-Up Zone	4
High Street	2

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	10 days - Selected
Servicing vehicles Excluded	1 days - Selected

Secondary Filtering selection:

Use Class:

E(b)	7 days

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

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

20,001 to 25,000	1 days
25,001 to 50,000	3 days
50,001 to 100,000	3 days

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

Population within 5 miles:

125,001 to 250,000	1 days
500,001 or More	6 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	6 days
1.1 to 1.5	1 days

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

Travel Plan:

No	7 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	5 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 GM-06-K-01 CAFÉ GREATER MANCHESTER
DEANSGATE
MANCHESTER

Town Centre
Built-Up Zone
Total Gross floor area: 200 sqm
Survey date: TUESDAY *19/04/22* *Survey Type: MANUAL*

2 GM-06-K-02 CAFÉ GREATER MANCHESTER
DEANSGATE
MANCHESTER

Town Centre
Built-Up Zone
Total Gross floor area: 38 sqm
Survey date: WEDNESDAY *20/09/23* *Survey Type: MANUAL*

3 HG-06-K-01 CAFÉ HARINGEY
MUSWELL HILL BROADWAY
MUSWELL HILL

Town Centre
High Street
Total Gross floor area: 58 sqm
Survey date: FRIDAY *10/06/22* *Survey Type: MANUAL*

4 NF-06-K-01 CAFÉ NORFOLK
SAINT GILES STREET
NORWICH

Town Centre
Built-Up Zone
Total Gross floor area: 82 sqm
Survey date: TUESDAY *20/09/22* *Survey Type: MANUAL*

5 SU-06-K-01 COSTA COFFEE SUTTON
THE GAS WORKS
SUTTON

Town Centre
High Street
Total Gross floor area: 180 sqm
Survey date: TUESDAY *04/06/24* *Survey Type: MANUAL*

6 TW-06-K-01 COSTA COFFEE TYNE & WEAR
NORTHUMBERLAND STREET
NEWCASTLE UPON TYNE

Town Centre
Retail Zone
Total Gross floor area: 325 sqm
Survey date: WEDNESDAY *06/09/23* *Survey Type: MANUAL*

7 TW-06-K-02 CAFÉ TYNE & WEAR
DEAN STREET
NEWCASTLE UPON TYNE

Town Centre
Built-Up Zone
Total Gross floor area: 90 sqm
Survey date: THURSDAY *07/09/23* *Survey Type: MANUAL*

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/K - CAFE
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	181	1.289	3	181	0.552	3	181	1.841
07:00 - 08:00	4	150	1.664	4	150	0.998	4	150	2.662
08:00 - 09:00	7	139	1.542	7	139	1.542	7	139	3.084
09:00 - 10:00	7	139	3.392	7	139	2.261	7	139	5.653
10:00 - 11:00	7	139	3.905	7	139	2.672	7	139	6.577
11:00 - 12:00	7	139	2.055	7	139	2.672	7	139	4.727
12:00 - 13:00	7	139	2.364	7	139	1.953	7	139	4.317
13:00 - 14:00	7	139	2.364	7	139	2.364	7	139	4.728
14:00 - 15:00	7	139	1.439	7	139	1.233	7	139	2.672
15:00 - 16:00	7	139	1.131	7	139	1.747	7	139	2.878
16:00 - 17:00	6	149	0.898	6	149	0.898	6	149	1.796
17:00 - 18:00	5	160	0.375	5	160	0.375	5	160	0.750
18:00 - 19:00	4	150	1.165	4	150	1.165	4	150	2.330
19:00 - 20:00	2	182	1.928	2	182	3.306	2	182	5.234
20:00 - 21:00	2	182	0.000	2	182	0.000	2	182	0.000
21:00 - 22:00	1	38	0.000	1	38	5.263	1	38	5.263
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			25.511			29.001			54.512

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

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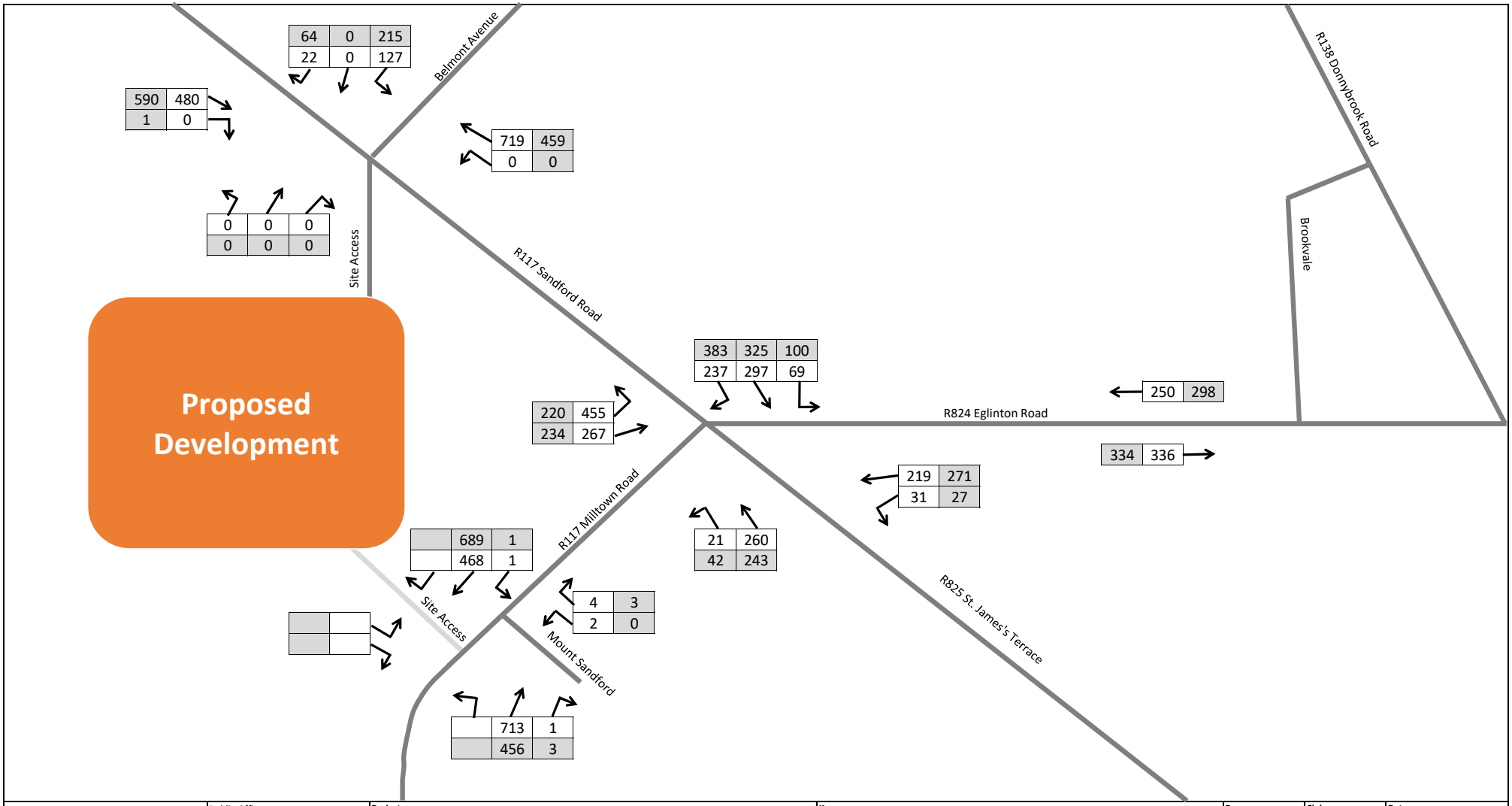
Parameter summary

Trip rate parameter range selected:	38 - 325 (units: sqm)
Survey date date range:	01/01/16 - 06/06/24
Number of weekdays (Monday-Friday):	7
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 B : Traffic Flow Diagrams



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

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

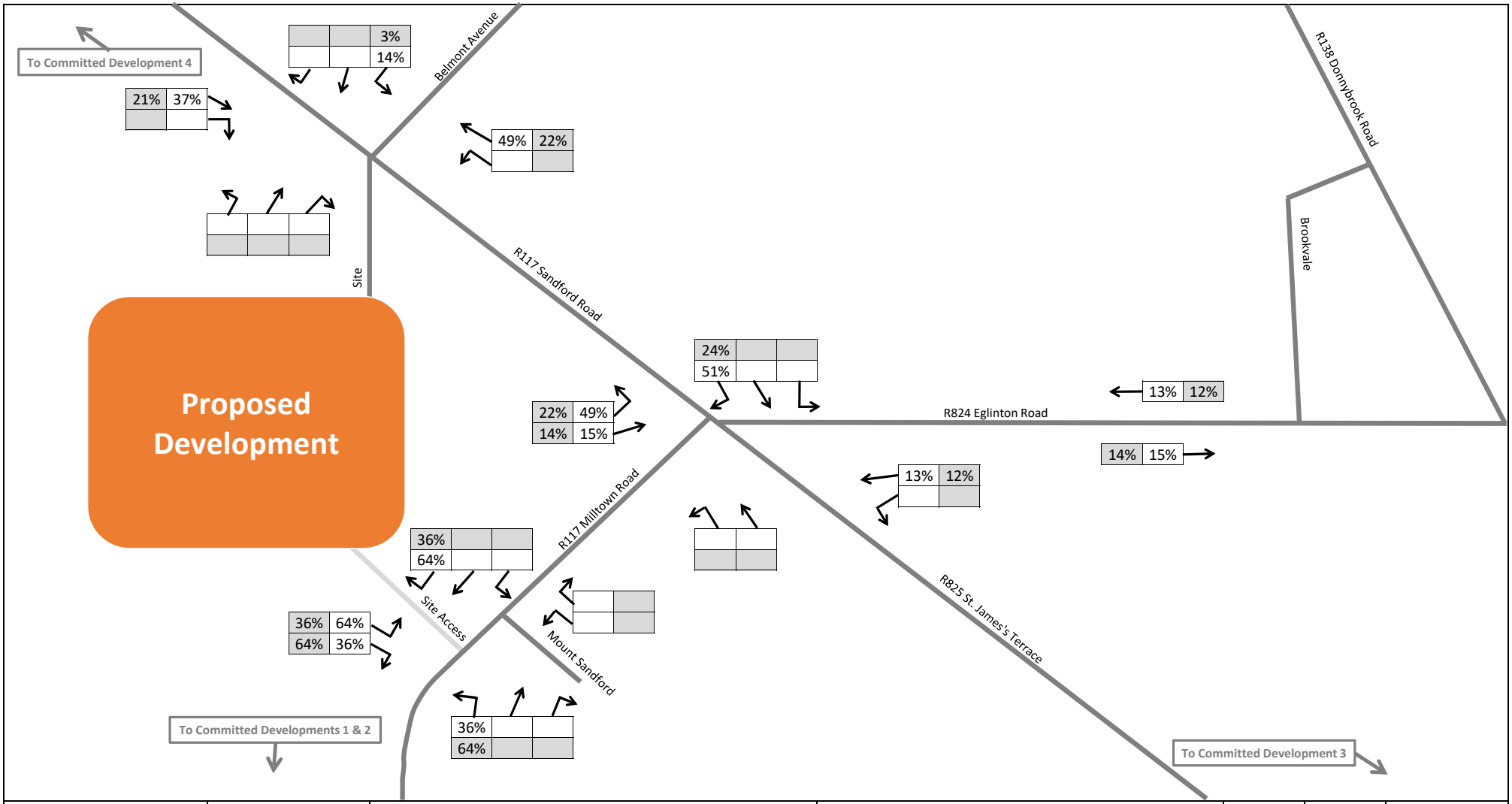
DRG. Title :
Network Traffic Flows - Vehicles
2025 Surveyed Flows

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure:	Rev:
1	-



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

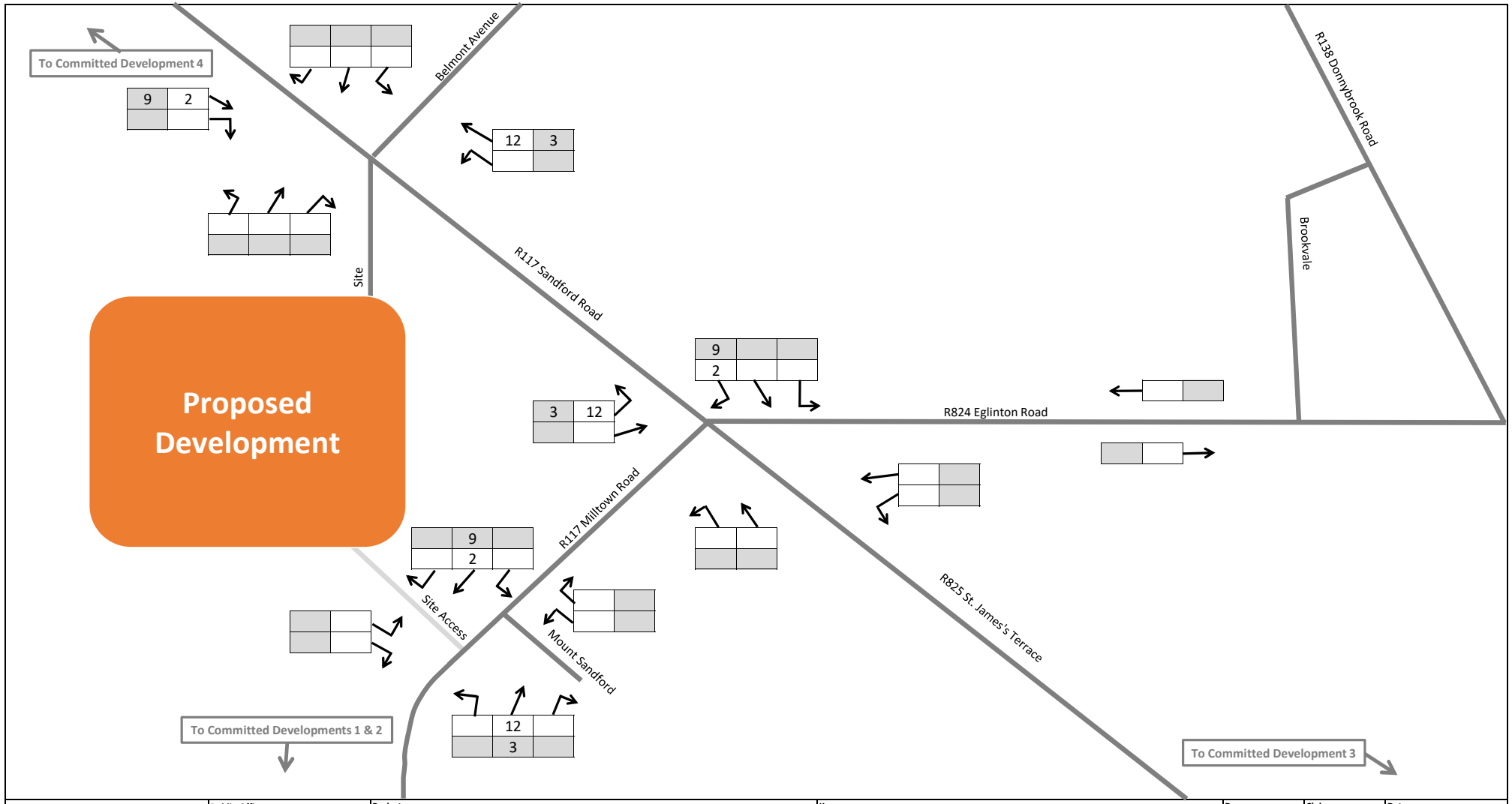
DRG. Title :
Network Traffic Flows - Vehicles
Trip Distribution

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure:	Rev:
2	-



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website: www.dbfl.ie

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

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

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

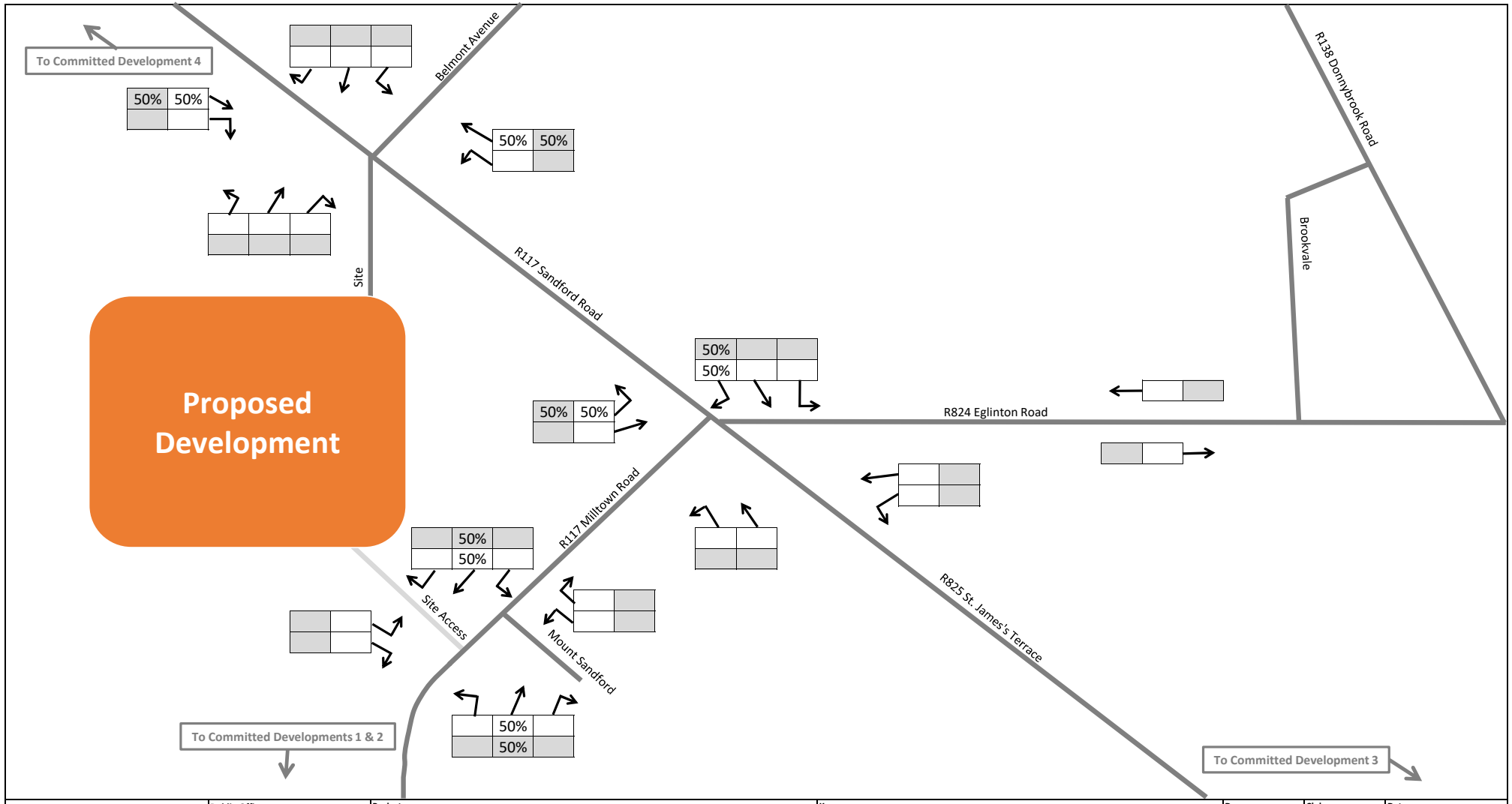
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
5	23	18	7

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 5

Rev: -



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

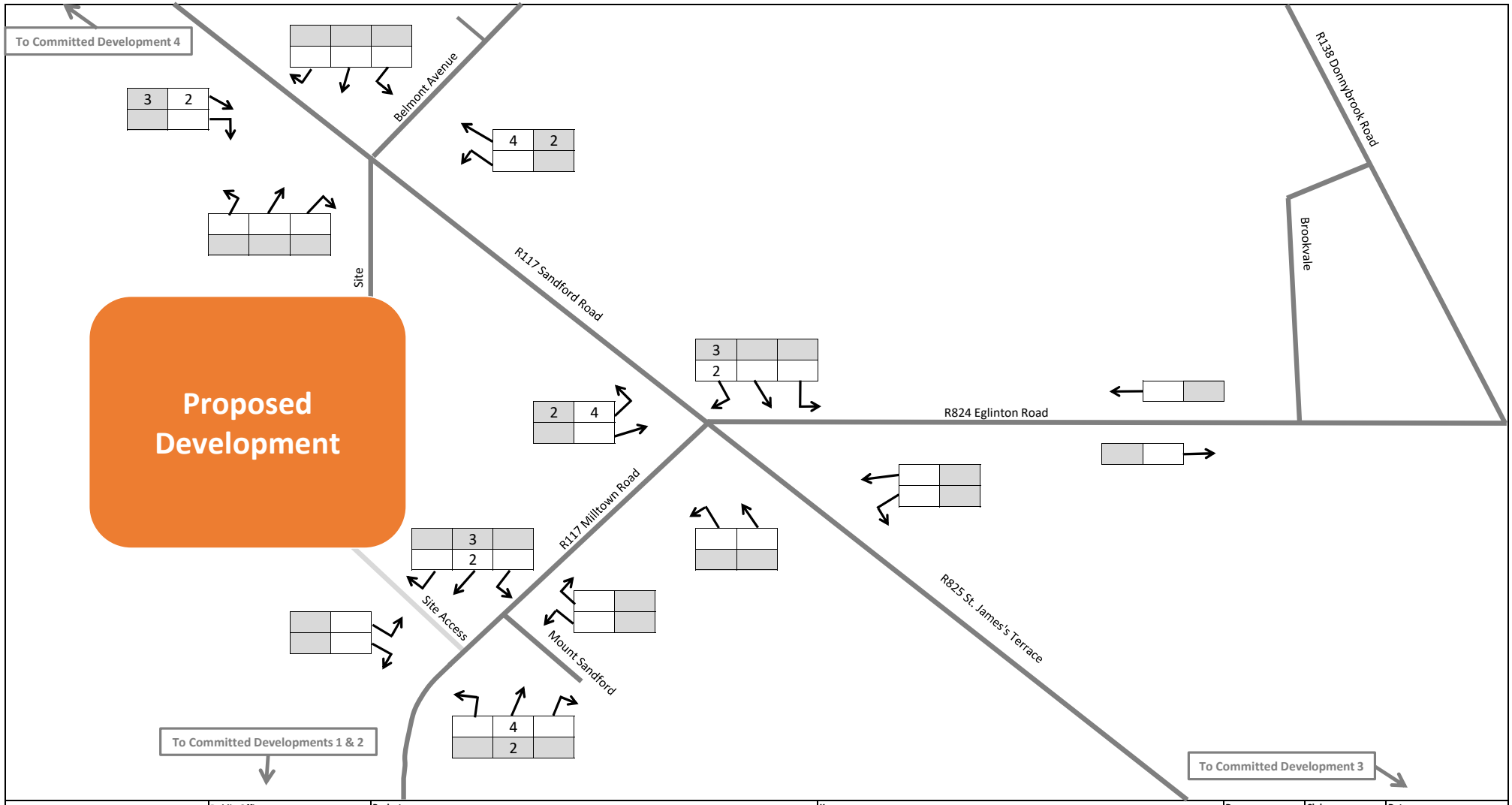
DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 1 Distribution

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure:	Rev:
6	-



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

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

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

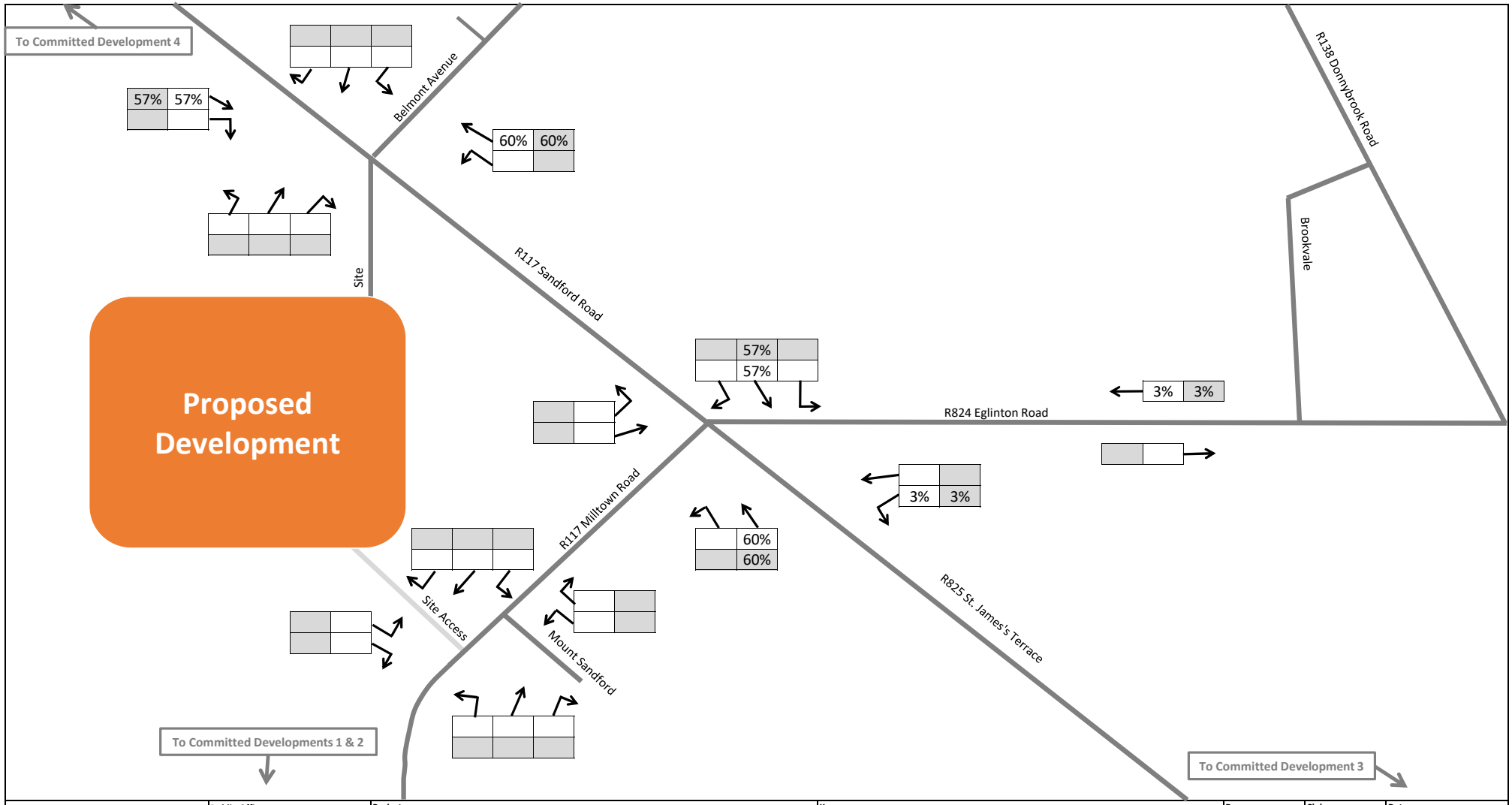
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
4	9	6	4

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 7

Rev: -



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

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 3 Trip Distribution

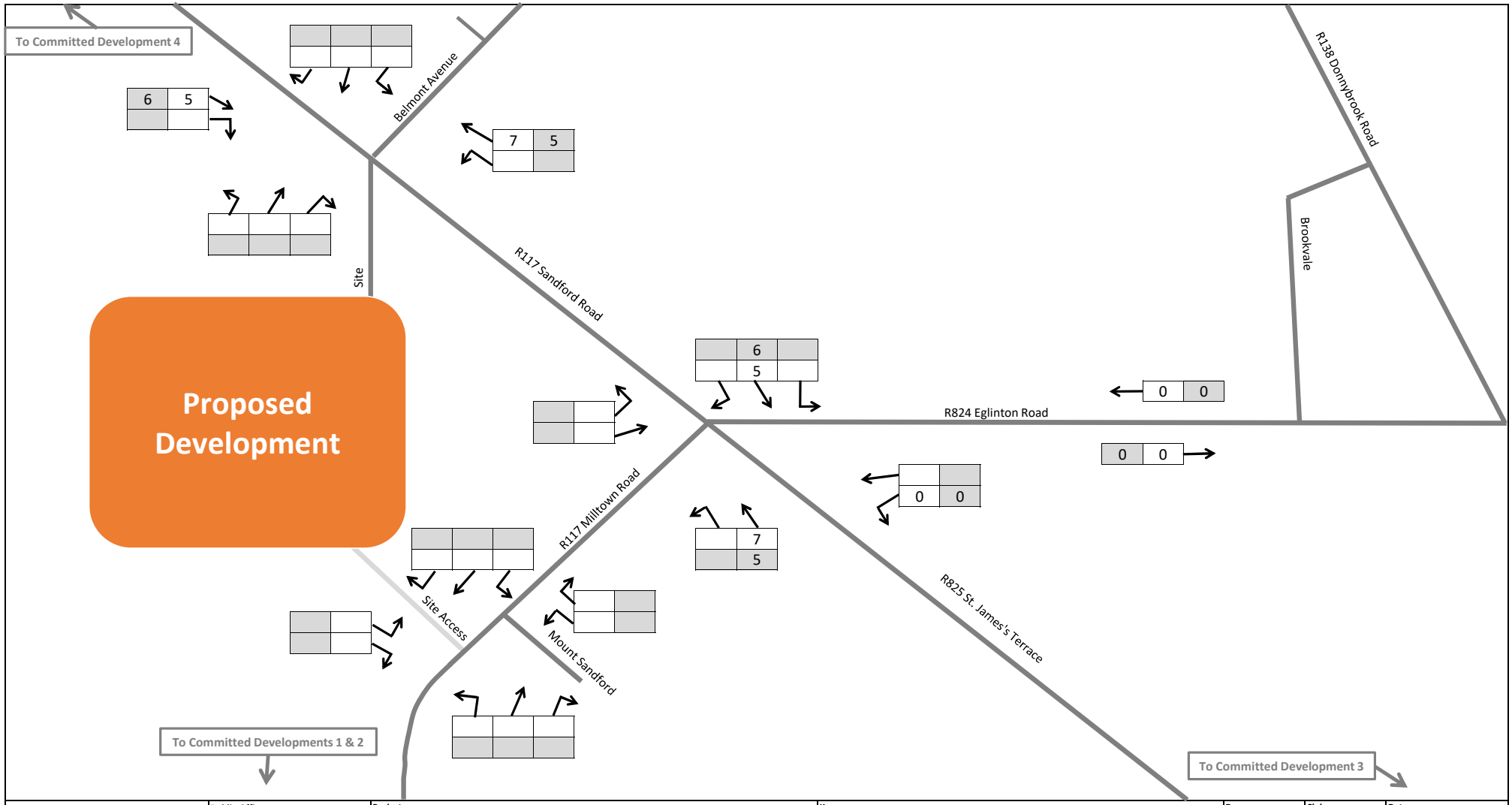
Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 8

Rev: -



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

DRG. Title :
Network Traffic Flows - Vehicles
Committed Development 3 New Trips

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

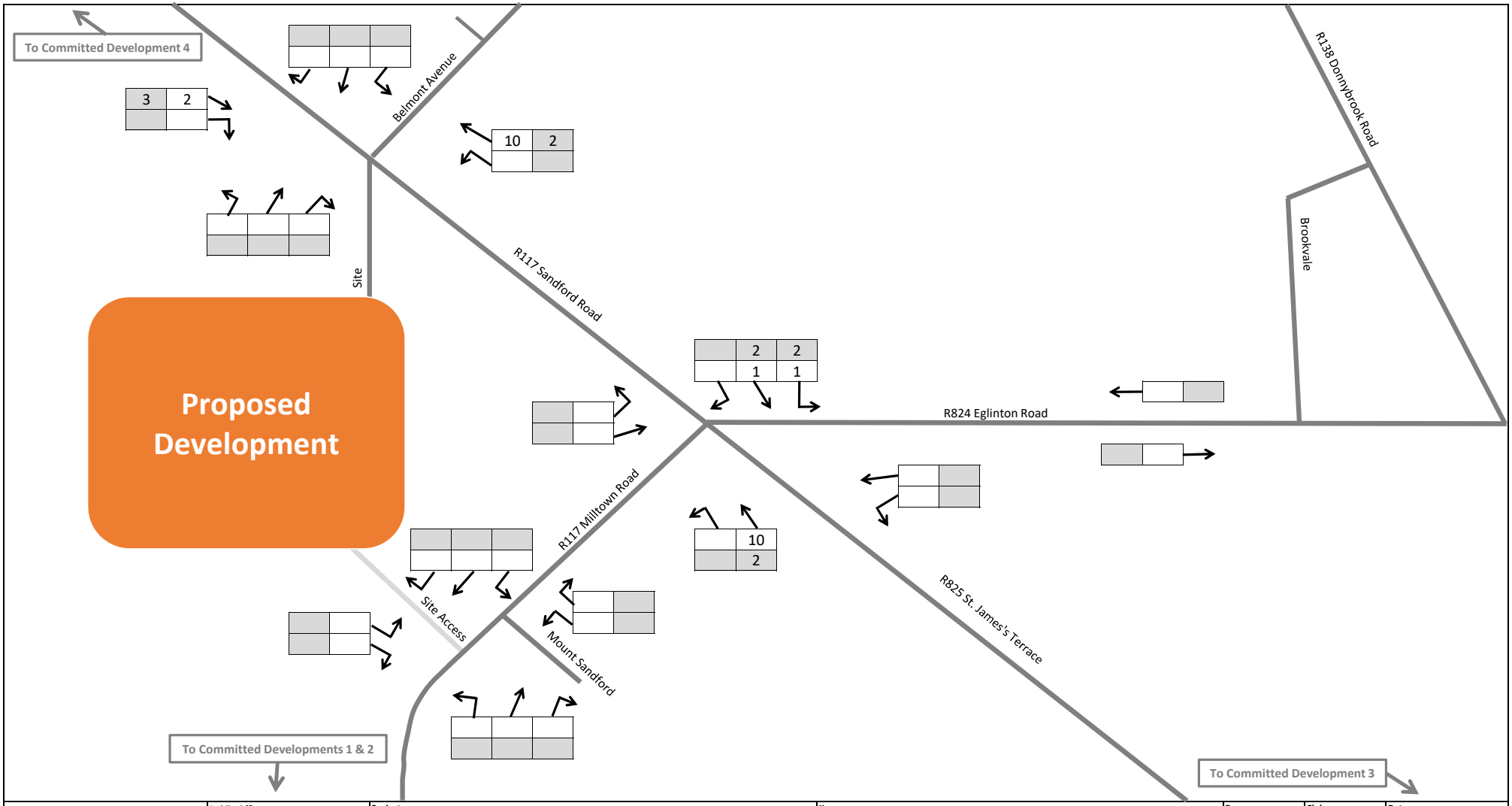
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
8	11	10	8

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 9

Rev: -



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Proposed Residential Development
Sandford Road, Milltown, Dublin 6

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

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

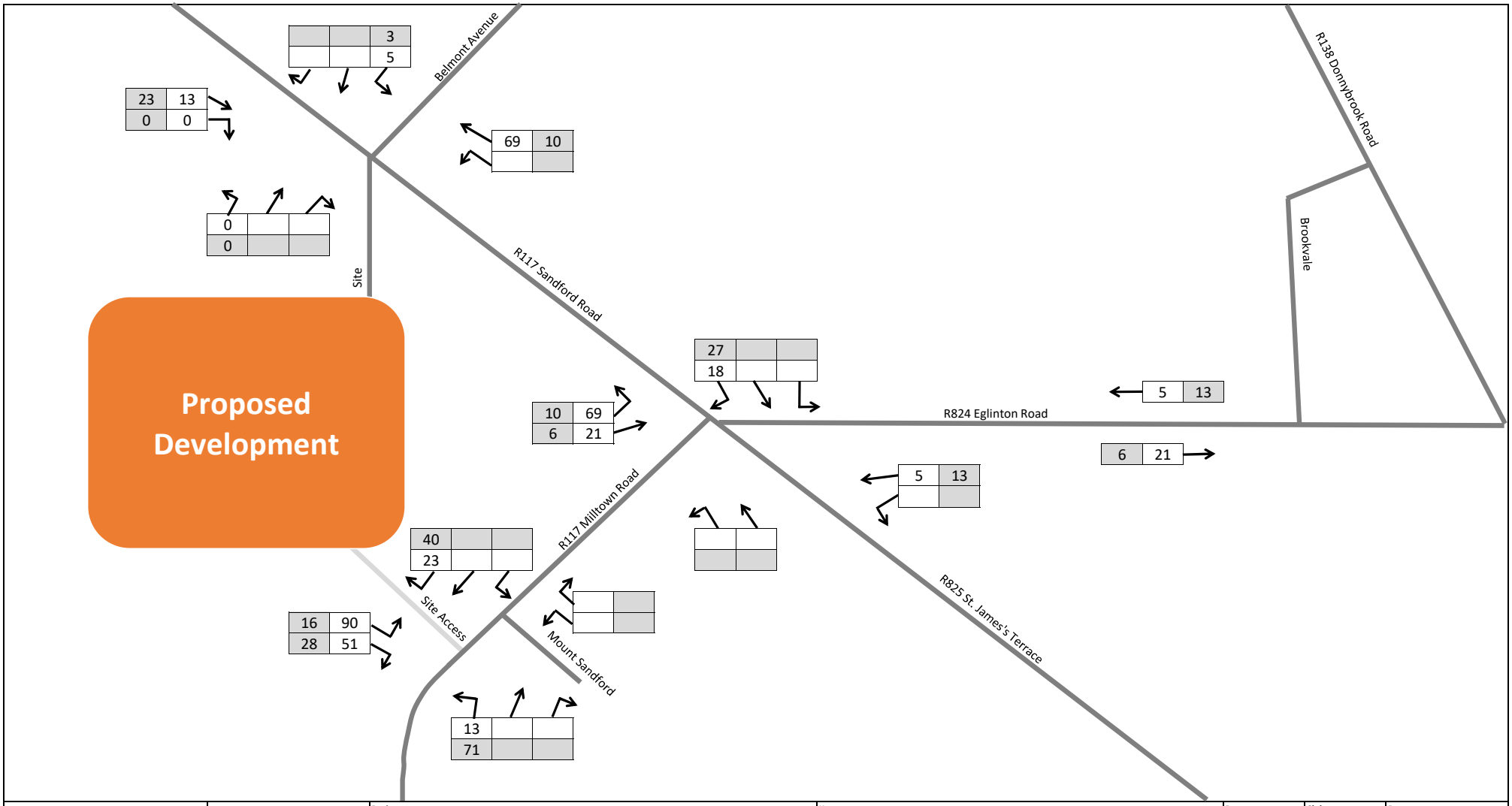
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
16	4	4	5

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 10

Rev: -



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

DRG. Title :
Network Traffic Flows - Vehicles
2027 New Trips

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

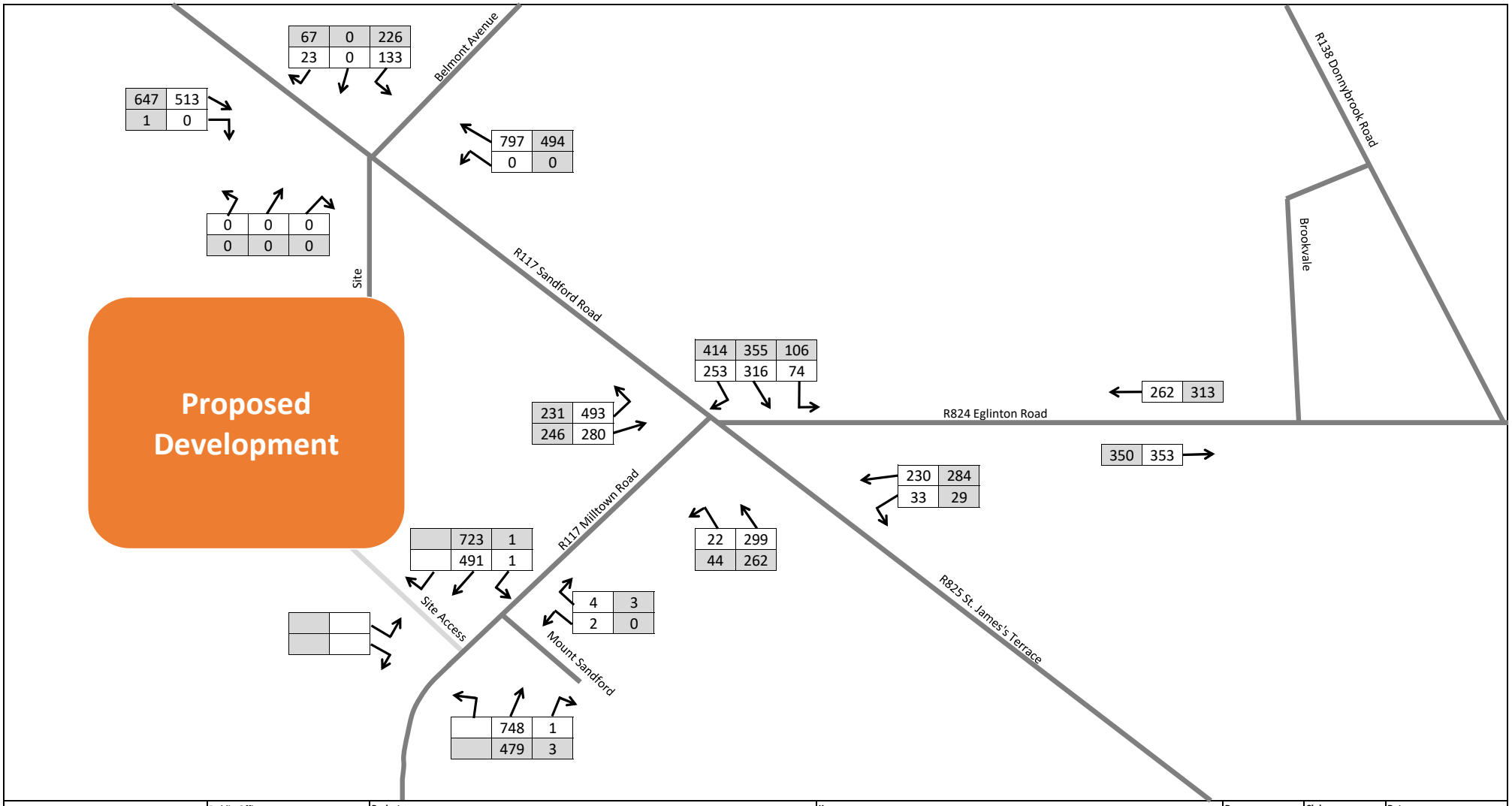
AM Peak		PM Peak	
Arr	Dep	Arr	Dep
36	141	111	43

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 11

Rev: -



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

DRG. Title :
Network Traffic Flows - Vehicles
2028 Base Flows

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

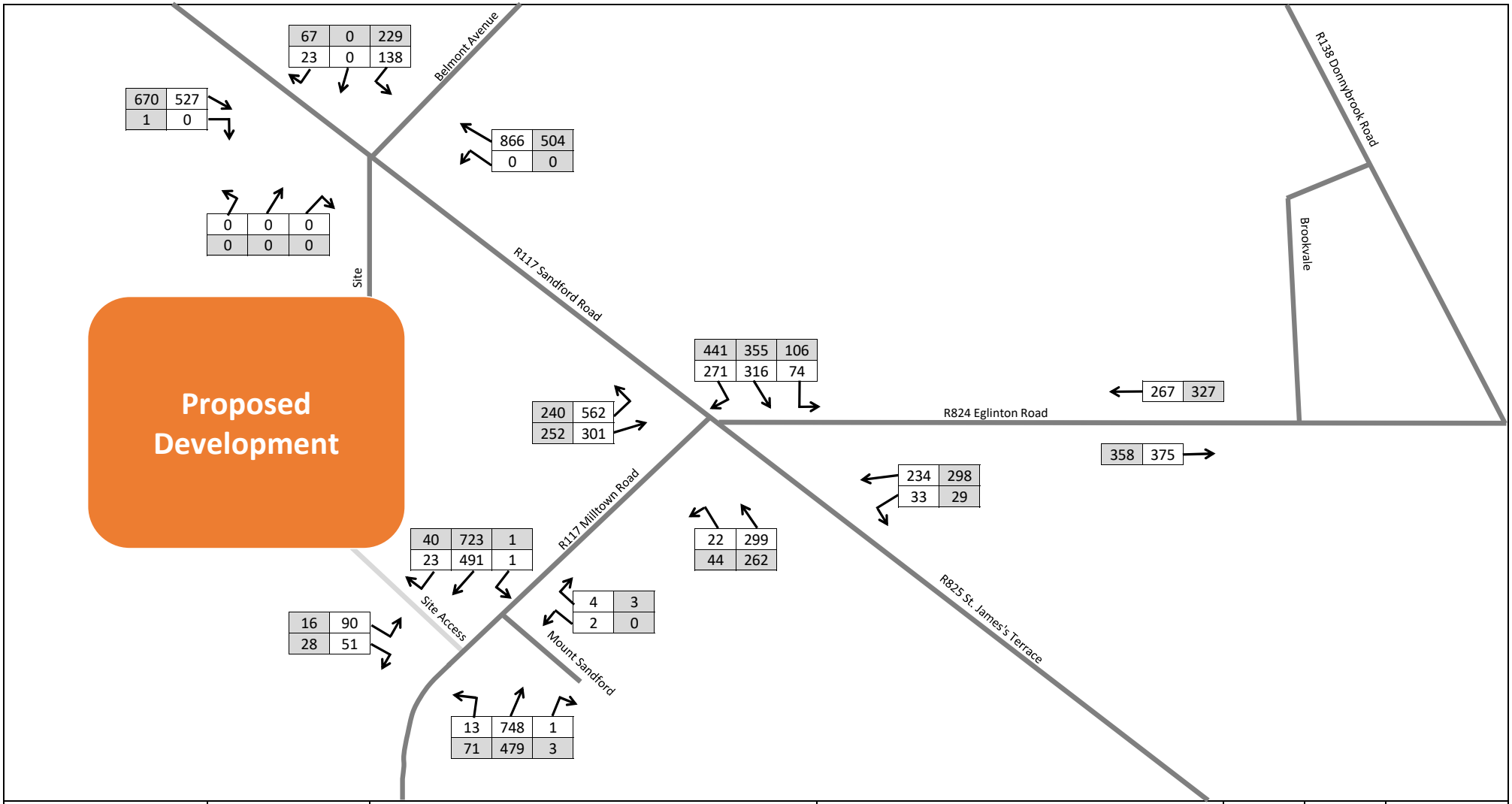
2016-2030 Medium Growth		
2028	1.0162	**1.0494**

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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
2028 Proposed Development Flows

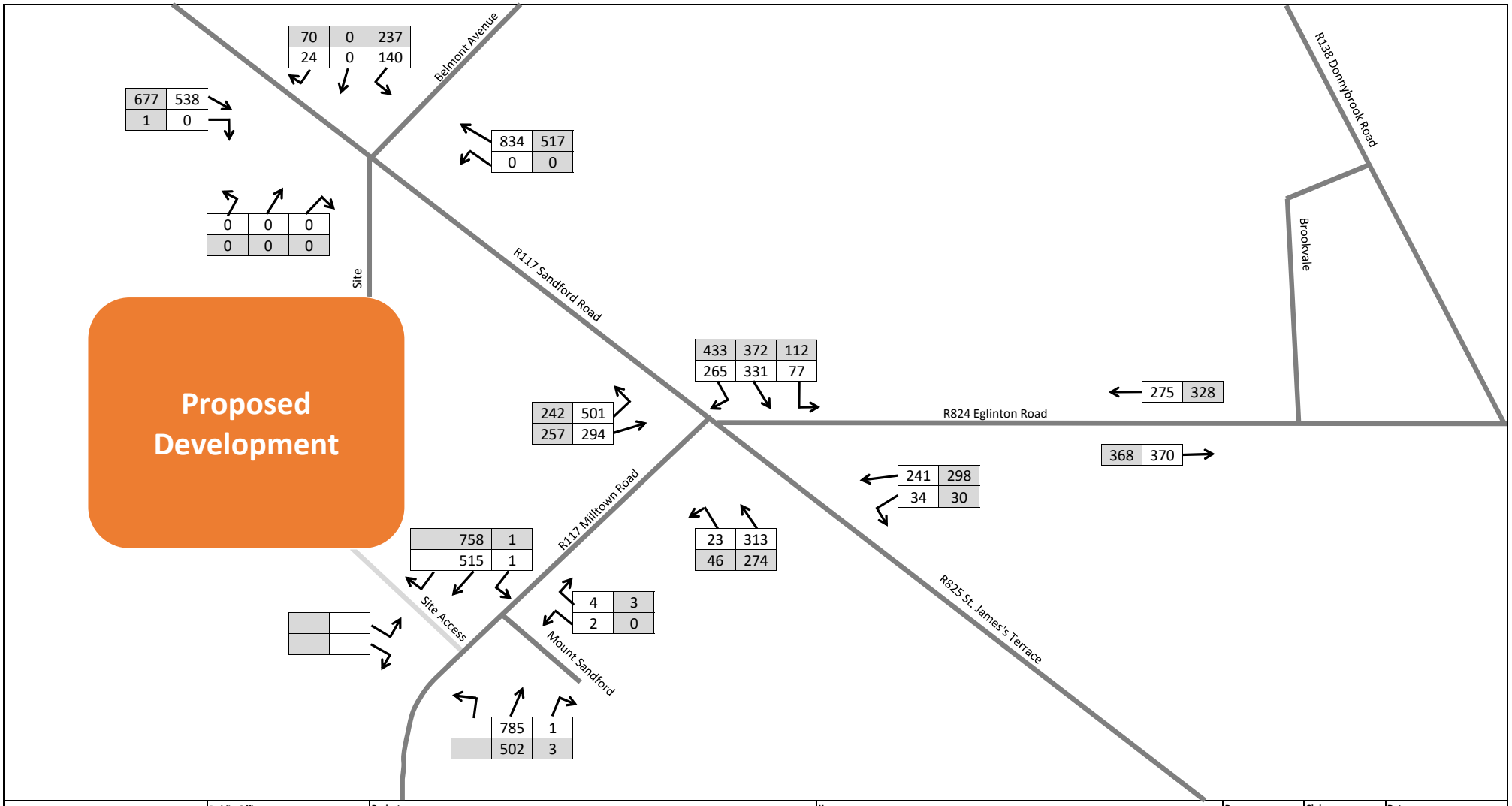
Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 13

Rev: -



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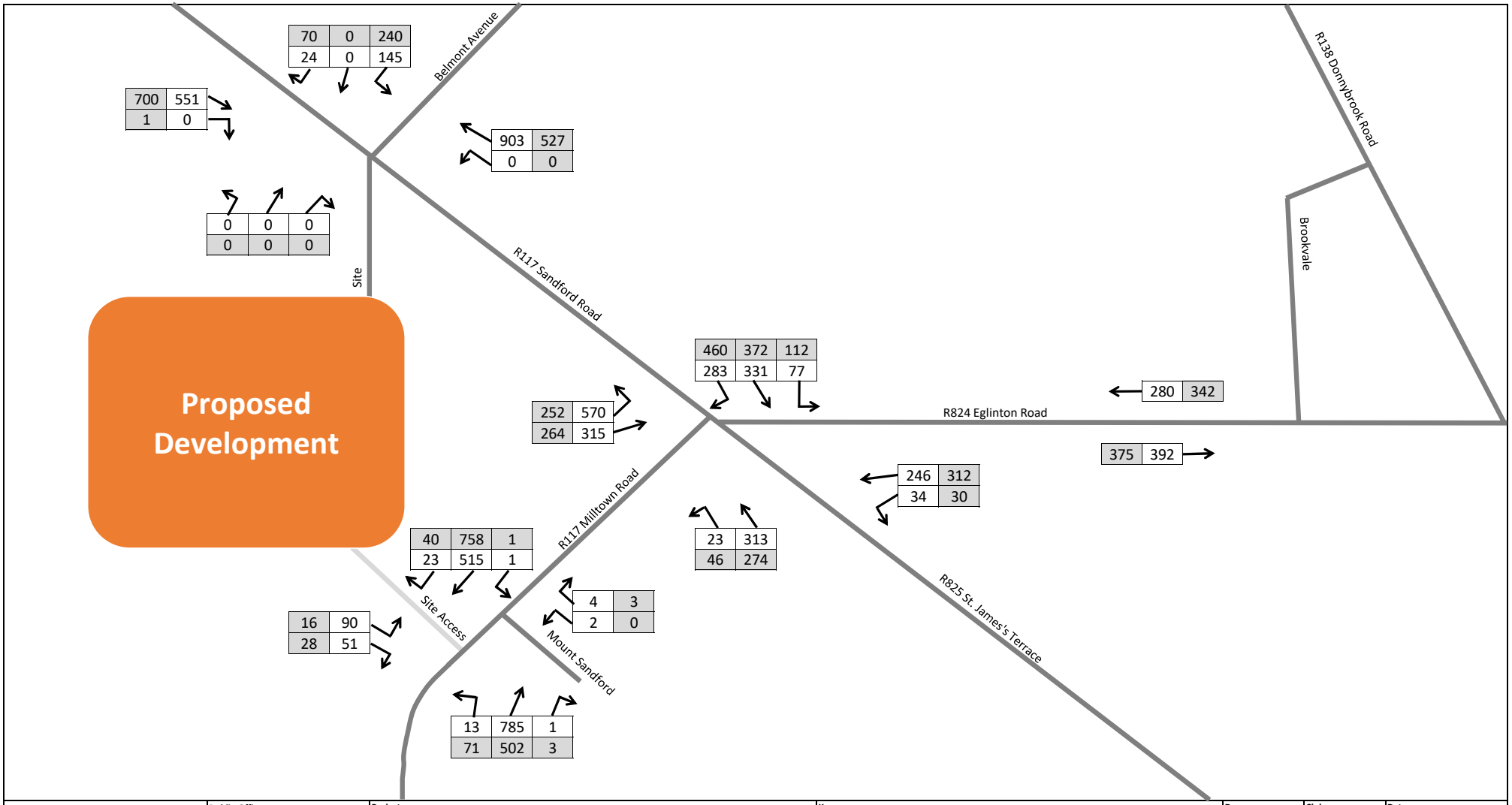
Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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
2033 Proposed Development Flows

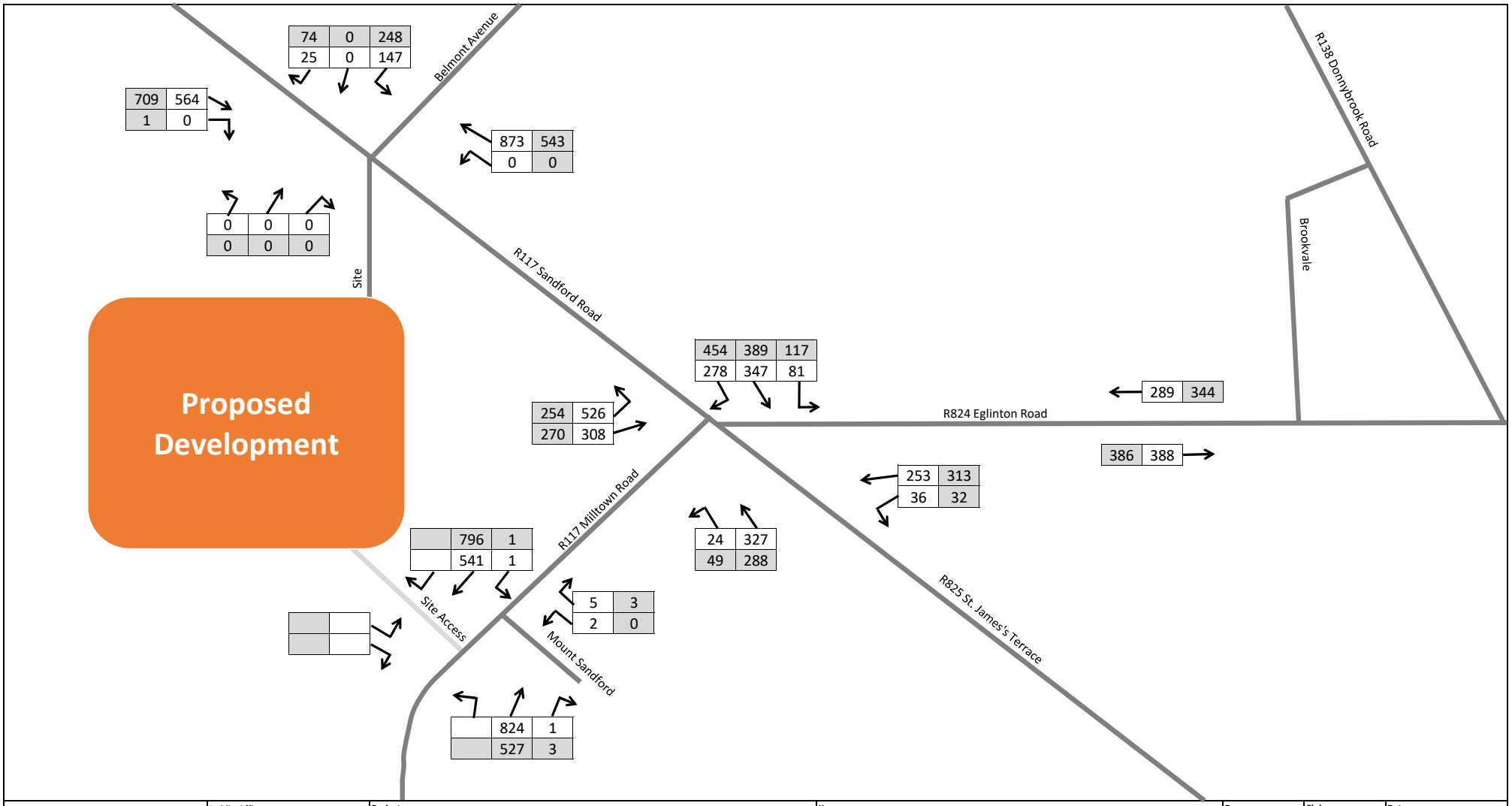
Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 15

Rev: -



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website: www.dbfl.ie

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

DRG. Title :
Network Traffic Flows - Vehicles
2043 Base Flows

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

2040-2050 Medium Growth

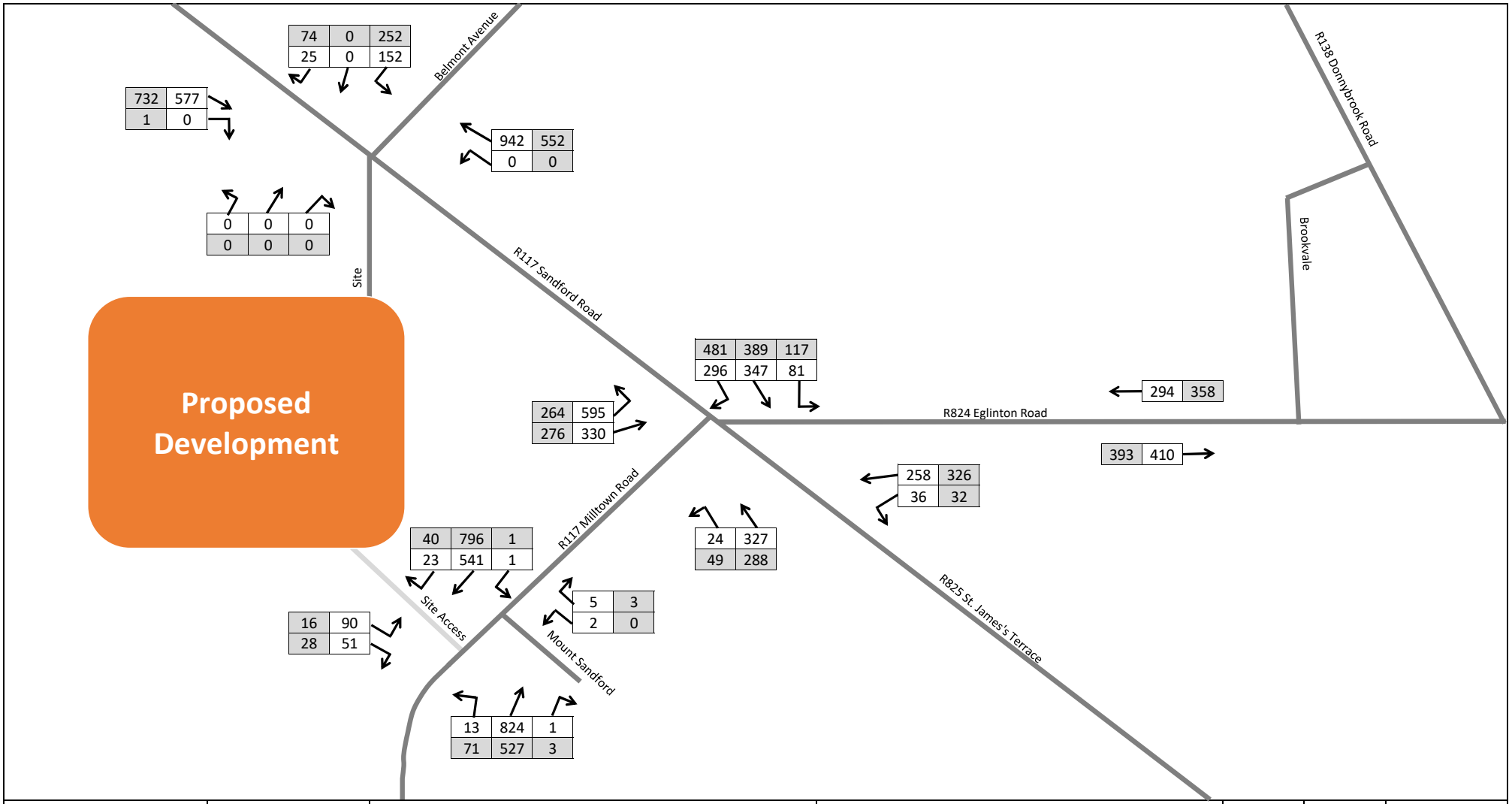
2043	1.0044	**1.1553**

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 16

Rev: -



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

DRG. Title :
Network Traffic Flows - Vehicles
2043 Proposed Development Flows

Key:
AM Peak Hour (0745 to 0845)
PM Peak Hour (1745 to 1845)

Dwn:	Ckd:	Date:
JM	HG	31/10/2025

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

Figure: 17

Rev: -

Network Impact

	Year	AM Peak (07:45-08:45) DN	AM Peak (07:45-08:45) DS	AM Peak (07:45-08:45) % Impact	PM Peak (17:45-18:45) DN	PM Peak (17:45-18:45) DS	PM Peak (17:45-18:45) % Impact
Northern Site Access / R117 Sandford Road / Belmont Avenue	**2028**	1467	1554	5.94%	1434	1471	2.53%
	2033	1535	1623	5.68%	1502	1538	2.41%
	2043	1610	1697	5.42%	1575	1612	2.30%
R117 Sandford Road / R825 St. James's Terrace / R117 Milltown Road / R824 Eglinton Road	**2028**	2000	2113	5.65%	1971	2027	2.82%
	2033	2079	2192	5.43%	2065	2121	2.69%
	2043	2181	2294	5.18%	2167	2222	2.57%
Southern Site Access / R117 Milltown Road / Mount Sandford	**2028**	1248	1424	14.15%	1209	1364	12.79%
	2033	1308	1485	13.49%	1268	1422	12.20%
	2043	1374	1550	12.85%	1331	1486	11.62%

Appendix C : PICADY Output

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.2.1013

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

Filename: R117 Milltown Road - Site Access 2025.j9
Path: G:\2019\p190226\calcs\picady
Report generation date: 01/12/2025 10:05:49

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	Do Nothing - DN 2028									
Stream B-C	A1 D1	0.0	0.00	0.00	A	A1 D2	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
	Do Nothing - DN 2033									
Stream B-C	A1 D5	0.0	0.00	0.00	A	A1 D6	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
	Do Nothing - DN 2043									
Stream B-C	A1 D9	0.0	0.00	0.00	A	A1 D10	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

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	Do Something - DS 2028									
Stream B-C	A2 D3	0.2	7.27	0.15	A	A2 D4	0.0	6.85	0.03	A
Stream B-A		0.2	11.91	0.14	B		0.1	8.99	0.07	A
Stream C-AB		0.1	5.08	0.07	A		0.4	4.52	0.14	A
	Do Something - DS 2033									
Stream B-C	A2 D7	0.2	7.37	0.16	A	A2 D8	0.0	6.89	0.03	A
Stream B-A		0.2	12.20	0.15	B		0.1	9.16	0.07	A
Stream C-AB		0.1	5.02	0.07	A		0.5	4.46	0.15	A
	Do Something - DS 2043									
Stream B-C	A2 D11	0.2	7.47	0.16	A	A2 D12	0.0	6.94	0.03	A
Stream B-A		0.2	12.52	0.15	B		0.1	9.35	0.07	A
Stream C-AB		0.1	4.96	0.07	A		0.5	4.39	0.16	A

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

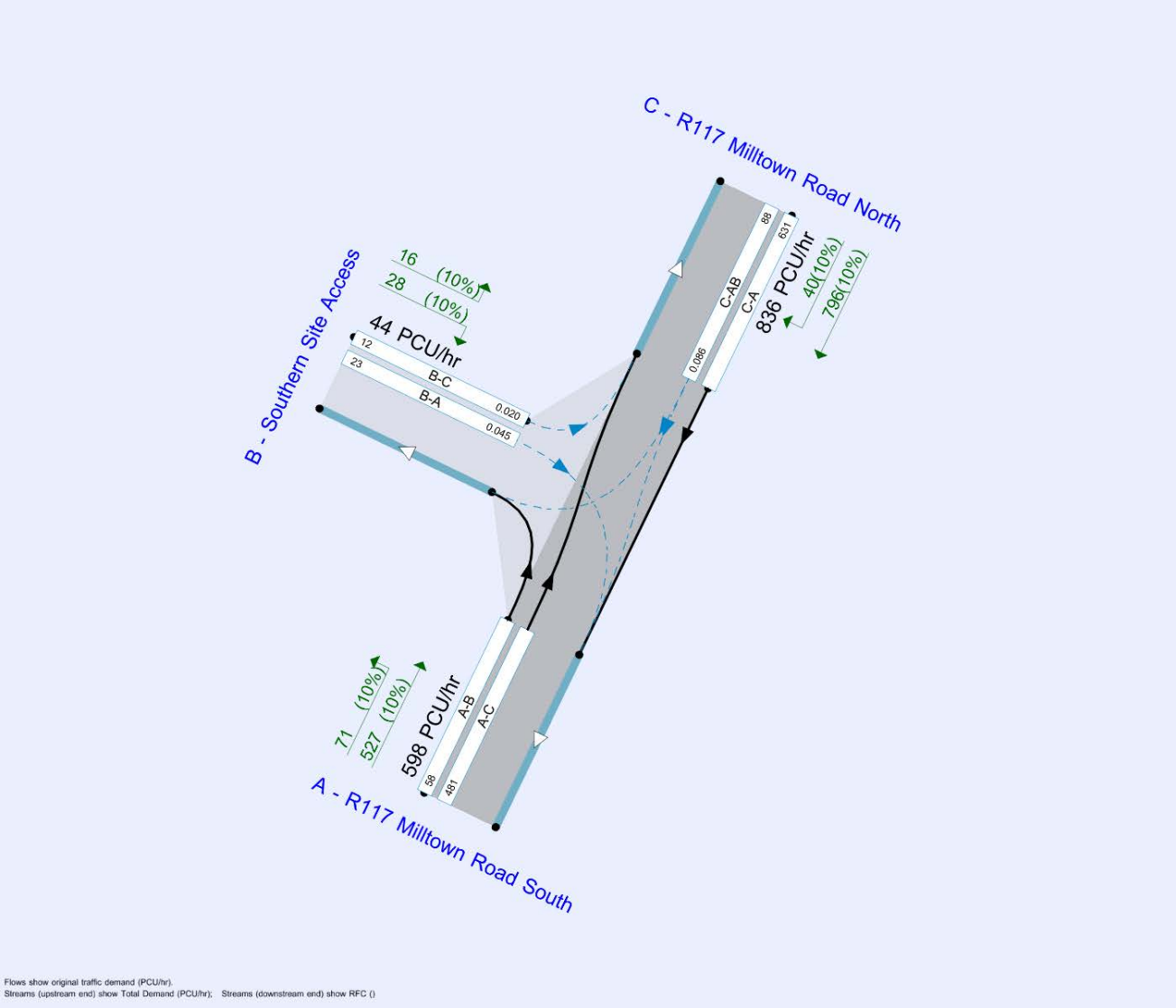
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	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

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	DN 2028	AM	ONE HOUR	07:30	09:00	15	✓
D2	DN 2028	PM	ONE HOUR	17:30	19:00	15	✓
D3	DS 2028	AM	ONE HOUR	07:30	09:00	15	✓
D4	DS 2028	PM	ONE HOUR	17:30	19:00	15	✓
D5	DN 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	DN 2033	PM	ONE HOUR	17:30	19:00	15	✓
D7	DS 2033	AM	ONE HOUR	07:30	09:00	15	✓
D8	DS 2033	PM	ONE HOUR	17:30	19:00	15	✓
D9	DN 2043	AM	ONE HOUR	07:30	09:00	15	✓
D10	DN 2043	PM	ONE HOUR	17:30	19:00	15	✓
D11	DS 2043	AM	ONE HOUR	07:30	09:00	15	✓
D12	DS 2043	PM	ONE HOUR	17:30	19:00	15	✓

Do Nothing - DN 2028, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Do Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	604	0.059	0.150	0.094	0.214
B-C	747	0.062	0.156	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	DN 2028	AM	ONE HOUR	07:30	09:00	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	✓	748	100.000
B - Southern Site Access		ONE HOUR	✓	0	100.000
C - R117 Milltown Road North		ONE HOUR	✓	491	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	0	748
	B - Southern Site Access	0	0	0
	C - R117 Milltown Road North	491	0	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					451	676
A-B					0	0
A-C					686	1030

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	659	0.000	0	0.0	0.0	0.000	A
B-A	0	0	485	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	558	0.000	0	0.0	0.0	0.000	A
C-A	370	92			370				
A-B	0	0			0				
A-C	563	141			563				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	642	0.000	0	0.0	0.0	0.000	A
B-A	0	0	462	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	544	0.000	0	0.0	0.0	0.000	A
C-A	441	110			441				
A-B	0	0			0				
A-C	672	168			672				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	618	0.000	0	0.0	0.0	0.000	A
B-A	0	0	430	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	524	0.000	0	0.0	0.0	0.000	A
C-A	541	135			541				
A-B	0	0			0				
A-C	824	206			824				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	618	0.000	0	0.0	0.0	0.000	A
B-A	0	0	430	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	524	0.000	0	0.0	0.0	0.000	A
C-A	541	135			541				
A-B	0	0			0				
A-C	824	206			824				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	642	0.000	0	0.0	0.0	0.000	A
B-A	0	0	462	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	544	0.000	0	0.0	0.0	0.000	A
C-A	441	110			441				
A-B	0	0			0				
A-C	672	168			672				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	659	0.000	0	0.0	0.0	0.000	A
B-A	0	0	485	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	558	0.000	0	0.0	0.0	0.000	A
C-A	370	92			370				
A-B	0	0			0				
A-C	563	141			563				

Do Nothing - DN 2028, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Do Nothing	✓	✓	D1,D2,D5,D6,D9,D10	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	604	0.059	0.150	0.094	0.214
B-C	747	0.062	0.156	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	DN 2028	PM	ONE HOUR	17:30	19:00	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	✓	479	100.000
B - Southern Site Access		ONE HOUR	✓	0	100.000
C - R117 Milltown Road North		ONE HOUR	✓	723	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	0	479
	B - Southern Site Access	0	0	0
	C - R117 Milltown Road North	723	0	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					663	995
A-B					0	0
A-C					440	659

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	691	0.000	0	0.0	0.0	0.000	A
B-A	0	0	499	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	585	0.000	0	0.0	0.0	0.000	A
C-A	544	136			544				
A-B	0	0			0				
A-C	361	90			361				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	680	0.000	0	0.0	0.0	0.000	A
B-A	0	0	478	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	576	0.000	0	0.0	0.0	0.000	A
C-A	650	162			650				
A-B	0	0			0				
A-C	431	108			431				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	665	0.000	0	0.0	0.0	0.000	A
B-A	0	0	450	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	563	0.000	0	0.0	0.0	0.000	A
C-A	796	199			796				
A-B	0	0			0				
A-C	527	132			527				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	665	0.000	0	0.0	0.0	0.000	A
B-A	0	0	450	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	563	0.000	0	0.0	0.0	0.000	A
C-A	796	199			796				
A-B	0	0			0				
A-C	527	132			527				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	680	0.000	0	0.0	0.0	0.000	A
B-A	0	0	478	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	576	0.000	0	0.0	0.0	0.000	A
C-A	650	162			650				
A-B	0	0			0				
A-C	431	108			431				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	691	0.000	0	0.0	0.0	0.000	A
B-A	0	0	499	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	585	0.000	0	0.0	0.0	0.000	A
C-A	544	136			544				
A-B	0	0			0				
A-C	361	90			361				

Do Nothing - DN 2033, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	604	0.059	0.150	0.094	0.214
B-C	747	0.062	0.156	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	DN 2033	AM	ONE HOUR	07:30	09:00	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	✓	785	100.000
B - Southern Site Access		ONE HOUR	✓	0	100.000
C - R117 Milltown Road North		ONE HOUR	✓	515	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	0	785
	B - Southern Site Access	0	0	0
	C - R117 Milltown Road North	515	0	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					473	709
A-B					0	0
A-C					720	1080

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	655	0.000	0	0.0	0.0	0.000	A
B-A	0	0	479	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	554	0.000	0	0.0	0.0	0.000	A
C-A	388	97			388				
A-B	0	0			0				
A-C	591	148			591				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	637	0.000	0	0.0	0.0	0.000	A
B-A	0	0	455	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	539	0.000	0	0.0	0.0	0.000	A
C-A	463	116			463				
A-B	0	0			0				
A-C	706	176			706				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	612	0.000	0	0.0	0.0	0.000	A
B-A	0	0	421	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	518	0.000	0	0.0	0.0	0.000	A
C-A	567	142			567				
A-B	0	0			0				
A-C	864	216			864				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	612	0.000	0	0.0	0.0	0.000	A
B-A	0	0	421	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	518	0.000	0	0.0	0.0	0.000	A
C-A	567	142			567				
A-B	0	0			0				
A-C	864	216			864				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	637	0.000	0	0.0	0.0	0.000	A
B-A	0	0	455	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	539	0.000	0	0.0	0.0	0.000	A
C-A	463	116			463				
A-B	0	0			0				
A-C	706	176			706				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	655	0.000	0	0.0	0.0	0.000	A
B-A	0	0	479	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	554	0.000	0	0.0	0.0	0.000	A
C-A	388	97			388				
A-B	0	0			0				
A-C	591	148			591				

Do Nothing - DN 2033, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	604	0.059	0.150	0.094	0.214
B-C	747	0.062	0.156	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	DN 2033	PM	ONE HOUR	17:30	19:00	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	✓	502	100.000
B - Southern Site Access		ONE HOUR	✓	0	100.000
C - R117 Milltown Road North		ONE HOUR	✓	758	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	0	502
	B - Southern Site Access	0	0	0
	C - R117 Milltown Road North	758	0	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					696	1043
A-B					0	0
A-C					461	691

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	688	0.000	0	0.0	0.0	0.000	A
B-A	0	0	494	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	582	0.000	0	0.0	0.0	0.000	A
C-A	571	143			571				
A-B	0	0			0				
A-C	378	94			378				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	676	0.000	0	0.0	0.0	0.000	A
B-A	0	0	472	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	573	0.000	0	0.0	0.0	0.000	A
C-A	681	170			681				
A-B	0	0			0				
A-C	451	113			451				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	661	0.000	0	0.0	0.0	0.000	A
B-A	0	0	443	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	559	0.000	0	0.0	0.0	0.000	A
C-A	835	209			835				
A-B	0	0			0				
A-C	553	138			553				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	661	0.000	0	0.0	0.0	0.000	A
B-A	0	0	443	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	559	0.000	0	0.0	0.0	0.000	A
C-A	835	209			835				
A-B	0	0			0				
A-C	553	138			553				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	676	0.000	0	0.0	0.0	0.000	A
B-A	0	0	472	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	573	0.000	0	0.0	0.0	0.000	A
C-A	681	170			681				
A-B	0	0			0				
A-C	451	113			451				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	688	0.000	0	0.0	0.0	0.000	A
B-A	0	0	494	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	582	0.000	0	0.0	0.0	0.000	A
C-A	571	143			571				
A-B	0	0			0				
A-C	378	94			378				

Do Nothing - DN 2043, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	604	0.059	0.150	0.094	0.214
B-C	747	0.062	0.156	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	DN 2043	AM	ONE HOUR	07:30	09:00	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	✓	824	100.000
B - Southern Site Access		ONE HOUR	✓	0	100.000
C - R117 Milltown Road North		ONE HOUR	✓	541	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	0	824
	B - Southern Site Access	0	0	0
	C - R117 Milltown Road North	541	0	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					496	745
A-B					0	0
A-C					756	1134

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	650	0.000	0	0.0	0.0	0.000	A
B-A	0	0	473	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	550	0.000	0	0.0	0.0	0.000	A
C-A	407	102			407				
A-B	0	0			0				
A-C	620	155			620				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	631	0.000	0	0.0	0.0	0.000	A
B-A	0	0	447	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	535	0.000	0	0.0	0.0	0.000	A
C-A	486	122			486				
A-B	0	0			0				
A-C	741	185			741				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	605	0.000	0	0.0	0.0	0.000	A
B-A	0	0	412	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	513	0.000	0	0.0	0.0	0.000	A
C-A	596	149			596				
A-B	0	0			0				
A-C	907	227			907				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	605	0.000	0	0.0	0.0	0.000	A
B-A	0	0	412	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	513	0.000	0	0.0	0.0	0.000	A
C-A	596	149			596				
A-B	0	0			0				
A-C	907	227			907				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	631	0.000	0	0.0	0.0	0.000	A
B-A	0	0	447	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	535	0.000	0	0.0	0.0	0.000	A
C-A	486	122			486				
A-B	0	0			0				
A-C	741	185			741				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	650	0.000	0	0.0	0.0	0.000	A
B-A	0	0	473	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	550	0.000	0	0.0	0.0	0.000	A
C-A	407	102			407				
A-B	0	0			0				
A-C	620	155			620				

Do Nothing - DN 2043, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	604	0.059	0.150	0.094	0.214
B-C	747	0.062	0.156	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	DN 2043	PM	ONE HOUR	17:30	19:00	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	100.000
B - Southern Site Access		ONE HOUR	✓	0	100.000
C - R117 Milltown Road North		ONE HOUR	✓	796	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	0	527
	B - Southern Site Access	0	0	0
	C - R117 Milltown Road North	796	0	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					730	1096
A-B					0	0
A-C					484	725

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	685	0.000	0	0.0	0.0	0.000	A
B-A	0	0	488	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	580	0.000	0	0.0	0.0	0.000	A
C-A	599	150			599				
A-B	0	0			0				
A-C	397	99			397				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	673	0.000	0	0.0	0.0	0.000	A
B-A	0	0	466	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	716	179			716				
A-B	0	0			0				
A-C	474	118			474				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	656	0.000	0	0.0	0.0	0.000	A
B-A	0	0	434	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	556	0.000	0	0.0	0.0	0.000	A
C-A	876	219			876				
A-B	0	0			0				
A-C	580	145			580				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	656	0.000	0	0.0	0.0	0.000	A
B-A	0	0	434	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	556	0.000	0	0.0	0.0	0.000	A
C-A	876	219			876				
A-B	0	0			0				
A-C	580	145			580				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	673	0.000	0	0.0	0.0	0.000	A
B-A	0	0	466	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	716	179			716				
A-B	0	0			0				
A-C	474	118			474				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	0	685	0.000	0	0.0	0.0	0.000	A
B-A	0	0	488	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	580	0.000	0	0.0	0.0	0.000	A
C-A	599	150			599				
A-B	0	0			0				
A-C	397	99			397				

Do Something - DS 2028, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Do Something	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.07	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	554	0.054	0.138	0.087	0.196
B-C	808	0.067	0.169	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	DS 2028	AM	ONE HOUR	07:30	09:00	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	✓	761	100.000
B - Southern Site Access		ONE HOUR	✓	141	100.000
C - R117 Milltown Road North		ONE HOUR	✓	514	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	13	748
	B - Southern Site Access	51	0	90
	C - R117 Milltown Road North	491	23	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0.15	7.27	0.2	A	83	124
B-A	0.14	11.91	0.2	B	47	70
C-AB	0.07	5.08	0.1	A	46	69
C-A					426	638
A-B					12	18
A-C					686	1030

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	68	17	697	0.097	67	0.0	0.1	6.283	A
B-A	38	10	441	0.087	38	0.0	0.1	9.818	A
C-AB	32	8	812	0.039	32	0.0	0.1	5.072	A
C-A	355	89			355				
A-B	10	2			10				
A-C	563	141			563				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	81	20	675	0.120	81	0.1	0.1	6.665	A
B-A	46	11	419	0.109	46	0.1	0.1	10.604	B
C-AB	43	11	851	0.051	43	0.1	0.1	4.905	A
C-A	419	105			419				
A-B	12	3			12				
A-C	672	168			672				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	99	25	644	0.154	99	0.1	0.2	7.266	A
B-A	56	14	389	0.145	56	0.1	0.2	11.898	B
C-AB	63	16	906	0.070	63	0.1	0.1	4.700	A
C-A	503	126			503				
A-B	14	4			14				
A-C	824	206			824				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	99	25	644	0.154	99	0.2	0.2	7.272	A
B-A	56	14	389	0.144	56	0.2	0.2	11.910	B
C-AB	63	16	906	0.070	63	0.1	0.1	4.702	A
C-A	503	126			503				
A-B	14	4			14				
A-C	824	206			824				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	81	20	674	0.120	81	0.2	0.2	6.678	A
B-A	46	11	419	0.109	46	0.2	0.1	10.620	B
C-AB	43	11	851	0.051	43	0.1	0.1	4.908	A
C-A	419	105			419				
A-B	12	3			12				
A-C	672	168			672				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	68	17	697	0.097	68	0.2	0.1	6.299	A
B-A	38	10	441	0.087	39	0.1	0.1	9.838	A
C-AB	32	8	812	0.039	32	0.1	0.1	5.076	A
C-A	355	89			355				
A-B	10	2			10				
A-C	563	141			563				

Do Something - DS 2028, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Do Something	✓	✓	D3,D4,D7,D8,D11,D12	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.67	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	653	0.064	0.162	0.102	0.232
B-C	686	0.057	0.143	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	DS 2028	PM	ONE HOUR	17:30	19:00	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	✓	550	100.000
B - Southern Site Access		ONE HOUR	✓	44	100.000
C - R117 Milltown Road North		ONE HOUR	✓	763	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	71	479
	B - Southern Site Access	28	0	16
	C - R117 Milltown Road North	723	40	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0.03	6.85	0.0	A	15	22
B-A	0.07	8.99	0.1	A	26	39
C-AB	0.14	4.52	0.4	A	110	166
C-A					590	885
A-B					65	98
A-C					440	659

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	625	0.019	12	0.0	0.0	6.459	A
B-A	21	5	529	0.040	21	0.0	0.0	7.792	A
C-AB	71	18	947	0.075	70	0.0	0.1	4.513	A
C-A	504	126			504				
A-B	53	13			53				
A-C	361	90			361				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	613	0.023	14	0.0	0.0	6.616	A
B-A	25	6	505	0.050	25	0.0	0.1	8.255	A
C-AB	101	25	1013	0.100	101	0.1	0.2	4.344	A
C-A	585	146			585				
A-B	64	16			64				
A-C	431	108			431				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	18	4	596	0.030	18	0.0	0.0	6.847	A
B-A	31	8	471	0.065	31	0.1	0.1	8.987	A
C-AB	159	40	1105	0.144	158	0.2	0.4	4.189	A
C-A	681	170			681				
A-B	78	20			78				
A-C	527	132			527				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	18	4	596	0.030	18	0.0	0.0	6.848	A
B-A	31	8	471	0.065	31	0.1	0.1	8.990	A
C-AB	159	40	1105	0.144	159	0.4	0.4	4.194	A
C-A	681	170			681				
A-B	78	20			78				
A-C	527	132			527				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	613	0.023	14	0.0	0.0	6.621	A
B-A	25	6	505	0.050	25	0.1	0.1	8.260	A
C-AB	101	25	1013	0.100	102	0.4	0.2	4.354	A
C-A	585	146			585				
A-B	64	16			64				
A-C	431	108			431				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	625	0.019	12	0.0	0.0	6.462	A
B-A	21	5	529	0.040	21	0.1	0.0	7.799	A
C-AB	71	18	948	0.075	72	0.2	0.2	4.525	A
C-A	503	126			503				
A-B	53	13			53				
A-C	361	90			361				

Do Something - DS 2033, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.05	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	554	0.054	0.138	0.087	0.196
B-C	808	0.067	0.169	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	DS 2033	AM	ONE HOUR	07:30	09:00	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	✓	798	100.000
B - Southern Site Access		ONE HOUR	✓	141	100.000
C - R117 Milltown Road North		ONE HOUR	✓	538	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	13	785
	B - Southern Site Access	51	0	90
	C - R117 Milltown Road North	515	23	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0.16	7.37	0.2	A	83	124
B-A	0.15	12.20	0.2	B	47	70
C-AB	0.07	5.02	0.1	A	48	72
C-A					446	669
A-B					12	18
A-C					720	1080

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	68	17	692	0.098	67	0.0	0.1	6.331	A
B-A	38	10	436	0.088	38	0.0	0.1	9.952	A
C-AB	33	8	822	0.040	33	0.0	0.1	5.017	A
C-A	372	93			372				
A-B	10	2			10				
A-C	591	148			591				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	81	20	669	0.121	81	0.1	0.2	6.730	A
B-A	46	11	413	0.111	46	0.1	0.1	10.791	B
C-AB	45	11	862	0.052	45	0.1	0.1	4.844	A
C-A	439	110			439				
A-B	12	3			12				
A-C	706	176			706				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	99	25	637	0.156	99	0.2	0.2	7.364	A
B-A	56	14	381	0.148	56	0.1	0.2	12.187	B
C-AB	66	17	921	0.072	66	0.1	0.1	4.634	A
C-A	526	132			526				
A-B	14	4			14				
A-C	864	216			864				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	99	25	636	0.156	99	0.2	0.2	7.368	A
B-A	56	14	381	0.147	56	0.2	0.2	12.199	B
C-AB	66	17	921	0.072	66	0.1	0.1	4.636	A
C-A	526	132			526				
A-B	14	4			14				
A-C	864	216			864				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	81	20	669	0.121	81	0.2	0.2	6.742	A
B-A	46	11	413	0.111	46	0.2	0.1	10.807	B
C-AB	45	11	863	0.052	45	0.1	0.1	4.846	A
C-A	439	110			439				
A-B	12	3			12				
A-C	706	176			706				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	68	17	692	0.098	68	0.2	0.1	6.350	A
B-A	38	10	436	0.088	39	0.1	0.1	9.973	A
C-AB	33	8	822	0.040	33	0.1	0.1	5.023	A
C-A	372	93			372				
A-B	10	2			10				
A-C	591	148			591				

Do Something - DS 2033, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.66	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	653	0.064	0.162	0.102	0.232
B-C	686	0.057	0.143	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	DS 2033	PM	ONE HOUR	17:30	19:00	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	✓	573	100.000
B - Southern Site Access		ONE HOUR	✓	44	100.000
C - R117 Milltown Road North		ONE HOUR	✓	798	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	71	502
	B - Southern Site Access	28	0	16
	C - R117 Milltown Road North	758	40	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0.03	6.89	0.0	A	15	22
B-A	0.07	9.16	0.1	A	26	39
C-AB	0.15	4.46	0.5	A	117	175
C-A					615	923
A-B					65	98
A-C					461	691

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	622	0.019	12	0.0	0.0	6.486	A
B-A	21	5	523	0.040	21	0.0	0.0	7.878	A
C-AB	74	18	964	0.077	73	0.0	0.2	4.446	A
C-A	527	132			527				
A-B	53	13			53				
A-C	378	94			378				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	610	0.024	14	0.0	0.0	6.650	A
B-A	25	6	498	0.051	25	0.0	0.1	8.369	A
C-AB	106	27	1032	0.103	106	0.2	0.2	4.278	A
C-A	611	153			611				
A-B	64	16			64				
A-C	451	113			451				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	18	4	592	0.030	18	0.0	0.0	6.891	A
B-A	31	8	463	0.067	31	0.1	0.1	9.154	A
C-AB	170	42	1130	0.150	169	0.2	0.4	4.127	A
C-A	709	177			709				
A-B	78	20			78				
A-C	553	138			553				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	18	4	592	0.030	18	0.0	0.0	6.892	A
B-A	31	8	463	0.067	31	0.1	0.1	9.157	A
C-AB	170	43	1130	0.151	170	0.4	0.5	4.136	A
C-A	708	177			708				
A-B	78	20			78				
A-C	553	138			553				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	610	0.024	14	0.0	0.0	6.655	A
B-A	25	6	498	0.051	25	0.1	0.1	8.376	A
C-AB	107	27	1033	0.103	108	0.5	0.2	4.287	A
C-A	611	153			611				
A-B	64	16			64				
A-C	451	113			451				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	622	0.019	12	0.0	0.0	6.489	A
B-A	21	5	523	0.040	21	0.1	0.0	7.886	A
C-AB	74	19	964	0.077	75	0.2	0.2	4.456	A
C-A	526	132			526				
A-B	53	13			53				
A-C	378	94			378				

Do Something - DS 2043, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.03	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	554	0.054	0.138	0.087	0.196
B-C	808	0.067	0.169	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	DS 2043	AM	ONE HOUR	07:30	09:00	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	✓	837	100.000
B - Southern Site Access		ONE HOUR	✓	141	100.000
C - R117 Milltown Road North		ONE HOUR	✓	564	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	13	824
	B - Southern Site Access	51	0	90
	C - R117 Milltown Road North	541	23	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0.16	7.47	0.2	A	83	124
B-A	0.15	12.52	0.2	B	47	70
C-AB	0.07	4.96	0.1	A	50	75
C-A					467	701
A-B					12	18
A-C					756	1134

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	68	17	687	0.099	67	0.0	0.1	6.383	A
B-A	38	10	430	0.089	38	0.0	0.1	10.097	B
C-AB	34	8	832	0.041	34	0.0	0.1	4.958	A
C-A	391	98			391				
A-B	10	2			10				
A-C	620	155			620				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	81	20	663	0.122	81	0.1	0.2	6.801	A
B-A	46	11	406	0.113	46	0.1	0.1	10.996	B
C-AB	47	12	875	0.053	47	0.1	0.1	4.777	A
C-A	460	115			460				
A-B	12	3			12				
A-C	741	185			741				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	99	25	629	0.158	99	0.2	0.2	7.465	A
B-A	56	14	372	0.151	56	0.1	0.2	12.508	B
C-AB	70	17	937	0.074	70	0.1	0.1	4.563	A
C-A	551	138			551				
A-B	14	4			14				
A-C	907	227			907				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	99	25	629	0.158	99	0.2	0.2	7.473	A
B-A	56	14	372	0.151	56	0.2	0.2	12.523	B
C-AB	70	17	938	0.075	70	0.1	0.1	4.567	A
C-A	551	138			551				
A-B	14	4			14				
A-C	907	227			907				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	81	20	662	0.122	81	0.2	0.2	6.813	A
B-A	46	11	406	0.113	46	0.2	0.1	11.011	B
C-AB	47	12	876	0.053	47	0.1	0.1	4.781	A
C-A	460	115			460				
A-B	12	3			12				
A-C	741	185			741				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	68	17	687	0.099	68	0.2	0.1	6.400	A
B-A	38	10	430	0.089	39	0.1	0.1	10.120	B
C-AB	34	9	832	0.041	34	0.1	0.1	4.962	A
C-A	391	98			391				
A-B	10	2			10				
A-C	620	155			620				

Do Something - DS 2043, 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	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.66	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

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	653	0.064	0.162	0.102	0.232
B-C	686	0.057	0.143	-	-
C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	DS 2043	PM	ONE HOUR	17:30	19:00	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	✓	598	100.000
B - Southern Site Access		ONE HOUR	✓	44	100.000
C - R117 Milltown Road North		ONE HOUR	✓	836	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	71	527
	B - Southern Site Access	28	0	16
	C - R117 Milltown Road North	796	40	0

Vehicle Mix

Heavy Vehicle Percentages

		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

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	0.03	6.94	0.0	A	15	22
B-A	0.07	9.35	0.1	A	26	39
C-AB	0.16	4.39	0.5	A	125	187
C-A					643	964
A-B					65	98
A-C					484	725

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	620	0.019	12	0.0	0.0	6.515	A
B-A	21	5	517	0.041	21	0.0	0.0	7.972	A
C-AB	77	19	981	0.079	77	0.0	0.2	4.376	A
C-A	552	138			552				
A-B	53	13			53				
A-C	397	99			397				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	606	0.024	14	0.0	0.0	6.687	A
B-A	25	6	491	0.051	25	0.0	0.1	8.497	A
C-AB	113	28	1054	0.107	112	0.2	0.3	4.206	A
C-A	639	160			639				
A-B	64	16			64				
A-C	474	118			474				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	18	4	588	0.030	18	0.0	0.0	6.940	A
B-A	31	8	455	0.068	31	0.1	0.1	9.340	A
C-AB	183	46	1157	0.158	182	0.3	0.5	4.068	A
C-A	737	184			737				
A-B	78	20			78				
A-C	580	145			580				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	18	4	588	0.030	18	0.0	0.0	6.942	A
B-A	31	8	455	0.068	31	0.1	0.1	9.346	A
C-AB	184	46	1157	0.159	184	0.5	0.5	4.076	A
C-A	737	184			737				
A-B	78	20			78				
A-C	580	145			580				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	606	0.024	14	0.0	0.0	6.690	A
B-A	25	6	491	0.051	25	0.1	0.1	8.505	A
C-AB	113	28	1055	0.107	114	0.5	0.3	4.219	A
C-A	638	160			638				
A-B	64	16			64				
A-C	474	118			474				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	619	0.019	12	0.0	0.0	6.521	A
B-A	21	5	517	0.041	21	0.1	0.0	7.981	A
C-AB	78	19	982	0.079	78	0.3	0.2	4.386	A
C-A	551	138			551				
A-B	53	13			53				
A-C	397	99			397				

ENVIRONMENT
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