

Traffic and Transport Assessment

Proposed Residential Development at Brewery Road, Stillorgan.

August 2019

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1. Introduction

Waterman Moylan Consulting Engineers have been appointed by KW PRS ICAV acting for an on behalf of its sub-fund KW PRS Fund 10 to prepare this Traffic and Transport Assessment (TTA) for a proposed residential Build to Rent (BTR) apartment development at N31 Brewery Road, Stillorgan, Dublin 18. The location of the subject site is shown in the Figure 1 and Figure 2 below.

Figure 1: Site Location (image taken from Google Earth)



Figure 2: Site Location.



1.1 Existing Land Use

The total site area is approximately 1.80 hectares and is currently 50% hardstanding. The Grange Marketing Suite, The Lodge (a 2-storey house), Oaktree Business Centre and the now redundant site set up for the neighbouring development currently occupy the site. There are also a number of well-established trees and foliage on site occupying an area of approximately 257m².

2. Objectives

The Traffic and Transport Assessment (TTA) has been prepared to assess the impact of the proposed development on the surrounding road network.

The TTA will calculate the expected volume of traffic that will be generated by the proposed development and assess the impact that this traffic will have on the operation capacity of junctions in the vicinity. For the purpose of this TTA, the existing junctions that have been analysed are the following:

- Junction 1 - N11 Stillorgan Road/Brewery Road/Farmleigh Ave;
- Junction 2 - N31 Brewery Road/St. Brigid's Church Road;
- Junction 3 - N31 Brewery Road/Site Access.

Figure 3: Location of surveyed junctions.



Furthermore, the TTA will highlight sustainable forms of transportation that are accessible from the subject site to assist with the reduction of traffic impact from the proposed site onto the surrounding highway network.

In preparing this report, Waterman Moylan Consulting Engineers have referred to:

- The Traffic Management Guidelines,
- Guidance on Transport Assessment,
- Design Manual for Urban Roads and Streets,
- Dublin Laoghaire Rathdown Development Plan 2016-2022,
- Project Appraisal Guidelines for National Roads – Unit 5.3 Travel Demand Projections Link-Based Growth Rate; Annual Growth Factors,
- Chartered Institute of Highways and Transportation “Traffic and Transportation Assessment Guidelines”,
- Greater Dublin Area Cycle Network Plan – National Transport Authority (NTA),
- Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for New Apartments – Department of Housing, Planning and Local Government – March 2018, and
- Standard for Cycle Parking and associated Cycling Facilities for New Developments – Dun Laoghaire-Rathdown County Council.

3. Existing Traffic Conditions

3.1 Traffic Survey

In order to quantify the volumes of traffic movements at key points on the road network adjacent to the site, a set of classified turning movement traffic counts were commissioned.

A Manual classified traffic survey was carried out by 'Nationwide Data Collection' on Wednesday 17th October 2018 at 1 No. signalised junctions and 2 No. priority junction during the hours of 07:30 – 09:30 and 16:30 – 18:30. The junctions surveyed were:

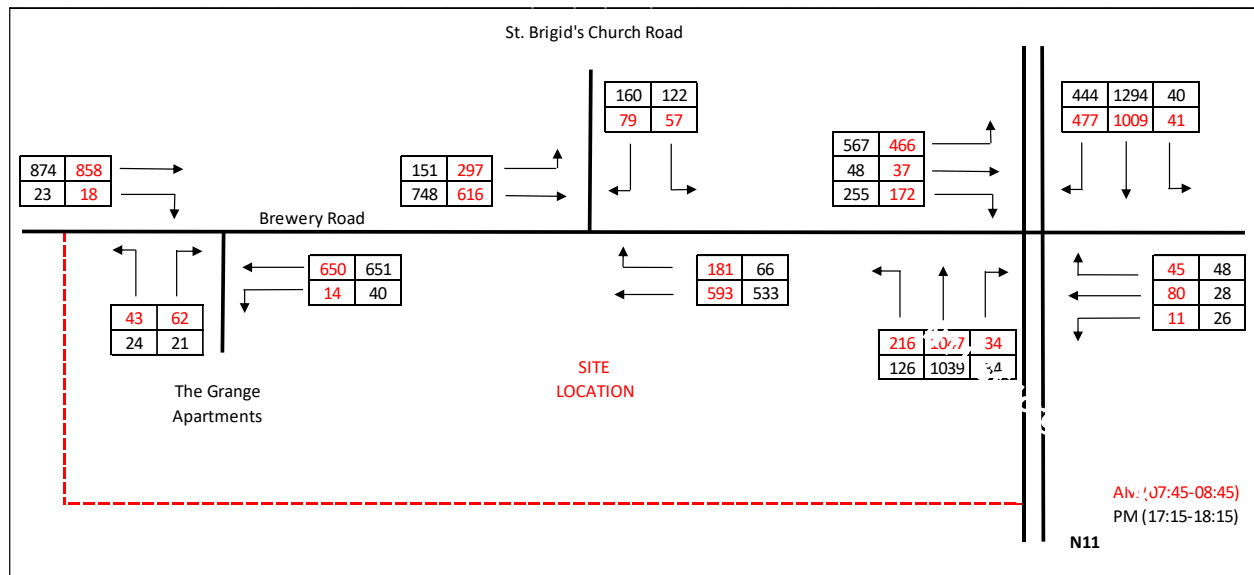
- N11 Stillorgan Road/Brewery Road/Farmleigh Ave,
- N31 Brewery Road/St. Brigid's Church Road, and
- N31 Brewery Road/Site Access.

The surveys were carried out on the dates identified above to ensure that flows were representative of normal term time and hence not affected by school holidays or other public holidays or events. As such they provide a reasonable representation of a neutral month during a period of normal school and employment activity. The surveys are designed to provide representative values encompassing AM and PM periods during normal traffic conditions.

The location of the surveyed junctions is shown in Figure 3 above.

The results of this survey indicated that the peak traffic levels through the junctions occurred between the hours of 07:45 – 08:45 in the morning and 17:15 – 18:15 during the evening. These traffic levels can be seen in Figure 4.

Figure 4: Surveyed Flows (2018)



3.2 Existing Road Network, Pedestrian & Cycle Facilities

The site is located directly adjacent to the junction of N11 Stillorgan Road with N31 Brewery Road.

Stillorgan Road is part of the N11, a national primary road which runs for 80km, connecting Dublin to Wexford. The speed limits along Stillorgan Road in proximity to the site, at the junction with Brewery Road and Farmleigh Avenue, is 60kph. There are cycle lanes along both sides of N11 and controlled pedestrian crossings at southern, western and eastern approaches of the junction. N11 is a dual carriageway with central reservation and bus lanes in both directions.

The **N31 Brewery Road** is a single carriageway road which is subject to a speed limit of 50kmph with cycle lanes and footpaths along both sides and a carriageway width of 9.0m for the majority of its length. Travelling in a south westerly direction from the subject site, approximately 1.1km, the Brewery Road terminates at a 4-arm signal-controlled junction with R113 Burton Hall Road/ Leopardstown Road and N31 Leopardstown Road. The N31 Leopardstown Road to the southwest links to the M50 at Junction 13.

3.3 Proposed Network Improvements

There are no improvements proposed on the local road network. It is however proposed to re-configure the alignment of the existing site access onto Brewery Road as part of the development proposals.

4. Proposed Development

4.1 Site Location

The site is located southwest of the junction of N31 Brewery Road and N11 Stillorgan Road in Stillorgan, Dublin 18, as indicated in Figure 2. The site was the site compound for the construction stage of “The Grange,” an existing residential development to the south of the proposed development. It also includes the marketing suite for “The Grange”.

According to “Map 6” within the Dun Laoghaire-Rathdown County Development Plan 2016-2022, the site is zoned as “Objective A: To protect and-or improve residential amenity”.

The overall area of the subject site is approximately 1.8 hectares and is bounded to the southeast by residential developments, to the northwest by N31 Brewery Road, northeast by N11 Stillorgan Road and to the southwest by Leopardstown Tennis Club.

4.2 Description of the Proposed Development

It is proposed to construct 287 No. residential units with the associated tenant amenities over basement bike and carparking. The proposals also include the construction of a new Crèche to accommodate 23 staff and 115 children on site. The developer will construct all associated infrastructure to service the development including a network of foul water and surface water drains, watermain and a realigned access road and footpaths.

The existing road levels around the site range from 66.01m – 74.00m OD. The ground floor of the proposed building steps across the site to mimic the existing levels on site as much as reasonably practicable. The lowest Ground Floor level is in the basement/ground floor level immediately adjacent to Brewery Road and is at a level of 66.00m OD.

4.3 Site Access

The subject site will be accessed via the existing access road to The Grange off Brewery Road. It is proposed to re-configure the alignment of this access road as part of the development proposals. The site access from Brewery Road is a 50 kmph zone. A 2.4m x 49m sightline, which follows the requirements of the Department of Transport ‘Design Manual for Urban Roads and Streets’ (DMURS) recommendation for a road of design speed of 50 km/h, is currently provided at the access road junction onto Brewery Road. No development works will infringe upon this existing sightline provision as shown on Waterman Moylan Drawing 18-049- P110.

The access will be utilised by all modes of transport travelling to/from the proposed development.

Footpaths will be provided in accordance with Section 4.3.1 of DMURS which suggests that a minimum 1.8m footpath should be provided on all footways. The proposed development has been designed as a DMURS compliant scheme. A separate Statement of Consistency with DMURS is included under a separate cover. Cycle paths have been designed in accordance with the National Cycle Manual.

The design and layout of the proposed development have been prepared to fully comply with the rigorous design standards and specifications applicable to this form of development. The applicant has drawn upon considerable experience in the design and implementation of such proposals.

5. Trip Generation, Distribution and Traffic Growth

5.1 Trip Generation

The traffic generation potential of the proposed development has been estimated using the TRICS software modelling database. Full trip rates, which were sourced from the TRICS Database Version 7.5.4, have been provided in Appendix D. The peak morning hour for the crèche is in fact 09:00-10:00, however TRICS rates for the hour 08:00-09:00 have been used as this is the peak morning hour for the overall development. The peak evening hour is 17:00 – 18:00 for both the Crèche and residential units. These trip rates are summarised in Table 1.

Table 1: Trip Generation – Residential Units and Crèche - AM and PM Peak Hour.

Usage	Time	Units	TRICS Arrival Rate (per unit/pupil)	TRICS Departures Rate (per unit/pupil)	Peak Hour Trips	
					IN	OUT
Residential Development	AM Peak Hour (08:00-09:00)	287	0.048	0.153	14	44
	PM Peak Hour (17:00-18:00)		0.118	0.108	34	31
Crèche	AM Peak Hour (08:00-09:00)	115 children	0.383	0.243	44	28
	PM Peak Hour (17:00-18:00)		0.248	0.311	29	36
TOTAL	AM Peak Hour (08:00-09:00)	287 units + 115 children	-	-	58	72
	PM Peak Hour (17:00-18:00)		-	-	63	67

It can be seen from the above that the total vehicle movements generated by the proposed development fully constructed will be 58 arrivals and 72 departures in the AM peak (two-way total of 130). The total number of vehicle movements in the PM peak hour will be 63 arrivals and 67 departures (two-way total of 130). Although the Crèche has been included in the above figures to provide a robust assessment, it is assumed that all the trips to/from the Crèche will be internalised.

5.2 Trip Distribution

The distribution for the AM and PM peak hour generated traffic, based on the surveyed flows and associated turning movements, is detailed in Figure 5 and the corresponding AM & PM peak hour traffic flows, based on the assumed distribution, are shown in Figure 6.

Figure 5: Distribution of Generated Traffic.

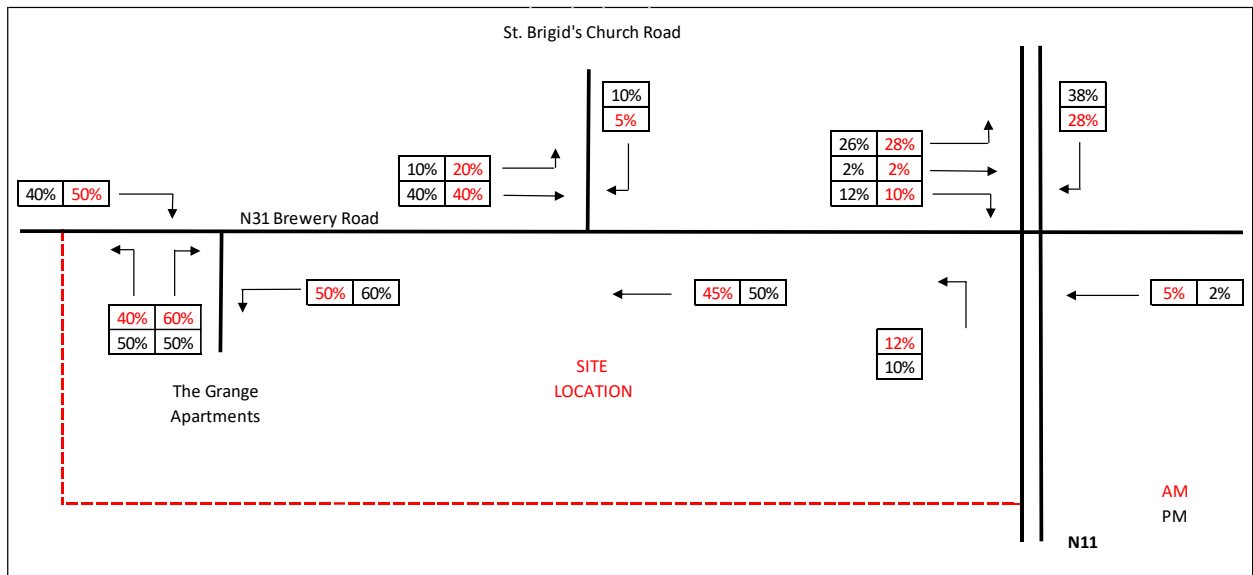
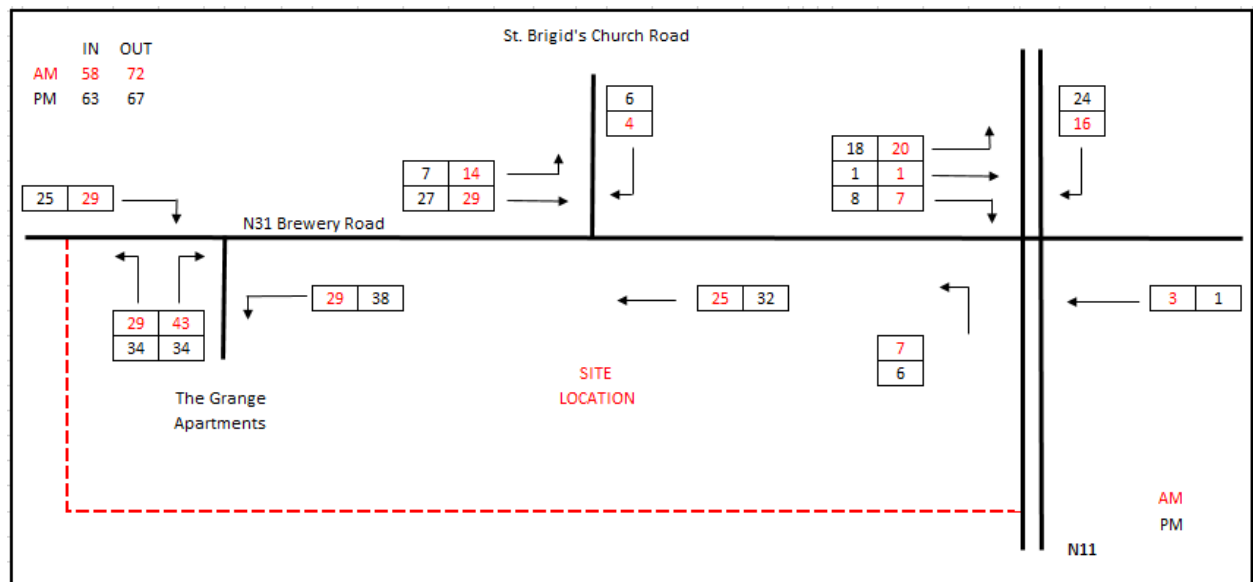


Figure 6: Generated Traffic Flows.

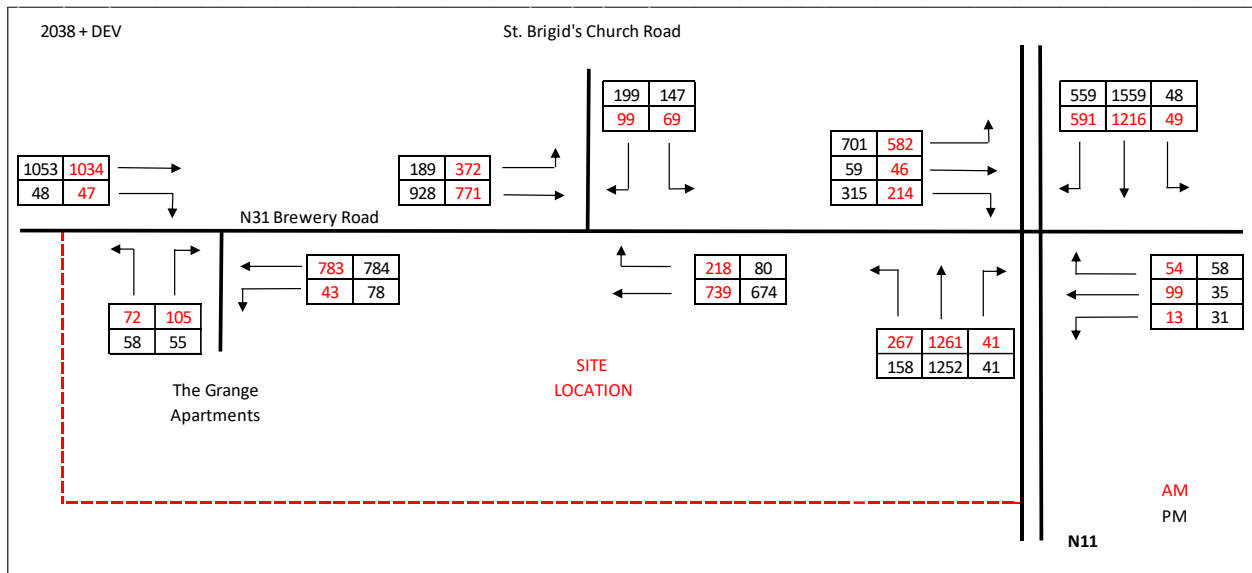


5.3 Traffic Growth

It has been assumed within the Traffic and Transportation Assessment for the subject site that the development will be constructed over a period of approximately 4 years. Therefore, the assumed year of opening is 2023. The junctions were also assessed for the future design years of 2028 and 2038. The background traffic growths used in the analysis are in accordance with the National Traffic Growth Forecasts: Annual Growth Factors within the NRA Project Appraisal Guidelines for National Roads - Unit 5.3 Travel Demand Projections Link-Based Growth Rate; Annual Growth Factors. These are:

- 1.069 (Medium Growth) growth factor from 2018 to 2023
- 1.142 (Medium Growth) growth factor from 2018 to 2028
- 1.205 (Medium Growth) growth factor from 2018 to 2038

Figure 7: 2038 Design Year Traffic Flows.



6. Road Impact

6.1 Junction Analysis

6.1.1 Introduction and Methodology

The extent of traffic impact from the proposed development has been determined by checking where generated traffic would exceed 10% of the traffic flow on the adjoining road or 5% on the road where congestion exists, or the location is sensitive. A summary of the existing two-way traffic and the expected traffic increase at each studied junction is presented below.

Table 2: Existing and expected two-way flows.

	Total Junction Flow - AM Peak Hour	Total Junction Flow - PM Peak Hour	Development Two-way Flow (AM)	Development Two-way Flow (PM)	% Expected Increase (AM)	% Expected Increase (PM)
Junction 1	3,635	3,949	55	59	1.51%	1.49%
Junction 2	1,823	1,780	72	71	3.95%	4.00%
Junction 3	1,645	1,633	130	130	7.90%	7.96%

Where the above junctions do not exceed a 5% increase in traffic no further assessment is warranted. For the junction where the increase is more than 5% it has been analysed using PICADY software.

PICADY is a software for modelling priority junctions. This programme utilises junction's geometry input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the junction.

Typically, a junction is said to be working satisfactorily when the RFC of each link does not exceed 90%. Acceptable RFC values are considered to be in the range of 0.8 to 1.0 with higher values indicating restrained movements.

6.1.2 Assessment Years

The performance of the analysed junctions has been assessed for both the critical AM and PM peak hours (07:45 – 08:45 and 17:15 – 18:15), for year of opening, the 5-year scenario and the 15-year scenario.

6.1.3 Analysis Results

Junction 1 – N11 Stillorgan Road/N31 Brewery Road/Farmleigh Avenue

Junction No. 1 is an existing signal-controlled junction.

The two-way flows presented in Table 2 above, shows a 1.51% increase on the existing 3,635 trips at the AM peak hour and 1.49% increase on the existing 3,949 trips at the PM peak hour on the Junction 1. As the impact is less than 5%, no further assessment of this junction needs to be undertaken.

Junction 2 – N31 Brewery Road/St. Brigid's Church Road

Junction No. 2 is an existing 3-arm priority junction.

The two-way flows presented in Table 2 above, shows a 3.95% increase on the existing 1,823 trips at the AM peak hour and 4.00% increase on the existing 1,780 trips at the PM peak hour on the Junction 2. As the impact is less than 5%, no further assessment of this junction needs to be undertaken.

Junction 3 –N31 Brewery Road/Site Access.

Junction No. 3 is an existing 3-arm priority junction.

The two-way flows presented in Table 2 above, shows a 7.90% increase on the existing 1,645 trips at the AM peak hour and 7.96% increase on the existing 1,633 trips at the PM peak hour on Junction 3. As the impact on this junction is more than 5%, and the location is considered to be sensitive, the junction had to be assessed. Figure 8 below shows the assumed label by PICADY for each arm of the junction.

Figure 8: Junction 3 - N31 Brewery Road/Site Access.



The PICADY analysis results for the N31 Brewery Road/Site Access 3-arm priority junction are presented in Table 3.

Table 3: N31 Brewery Road/Site Access – PICADY Analysis Results.

	AM			PM		
	RFC	Queue (Vehicle)	Delay (s)	RFC	Queue (Vehicle)	Delay (s)
2018						
Stream B-C	0.09	0.1	8.17	0.05	0.1	7.57
Stream B-A	0.22	0.3	16.61	0.08	0.1	14.35
Stream C-AB	0.08	0.1	3.58	0.10	0.2	3.65
2023						
Stream B-C	0.09	0.1	8.39	0.05	0.1	7.74
Stream B-A	0.24	0.3	18.18	0.08	0.1	15.52
Stream C-AB	0.09	0.2	3.49	0.11	0.3	3.56
2023 + DEV						
Stream B-C	0.16	0.2	9.61	0.12	0.1	8.79
Stream B-A	0.42	0.7	25.04	0.23	0.3	19.27
Stream C-AB	0.23	0.9	4.13	0.24	1.0	4.17
2028						
Stream B-C	0.09	0.1	8.65	0.05	0.1	7.94
Stream B-A	0.26	0.3	20.21	0.09	0.1	16.99
Stream C-AB	0.09	0.2	3.40	0.13	0.3	3.48
2028 + DEV						
Stream B-C	0.17	0.2	10.00	0.13	0.1	9.07
Stream B-A	0.46	0.8	29.03	0.25	0.3	21.59
Stream C-AB	0.25	1.1	4.11	0.27	1.2	4.16
2038						
Stream B-C	0.10	0.1	8.88	0.05	0.1	8.12
Stream B-A	0.28	0.4	22.32	0.10	0.1	18.48
Stream C-AB	0.10	0.2	3.33	0.14	0.4	3.43
2038 + DEV						
Stream B-C	0.17	0.2	10.35	0.13	0.1	9.33
Stream B-A	0.50	1.0	33.52	0.27	0.4	24.04
Stream C-AB	0.28	1.3	4.12	0.29	1.4	4.19

The results of PICADY analysis as summarised in Table 3 above, reveal that the junction, without the trips generated by the proposed development, will operate within capacity for the 2038 scenario with the highest Ratio of Flow to Capacity (RFC) at 0.28 and a corresponding queue at 0.4 vehicle during the AM peak period and 0.14 of RFC and a corresponding queue at 0.4 vehicle during the PM.

With the addition of the trips expected to be generated by the proposed development (2038 + DEV), the results indicate that the junction will continue to operate within capacity during both peak periods, with a maximum RFC value of 0.50 and a corresponding queue of 1.0 vehicle recorded for the AM peak and 0.29 RFC and corresponding queue of 1.4 vehicle for the PM peak.

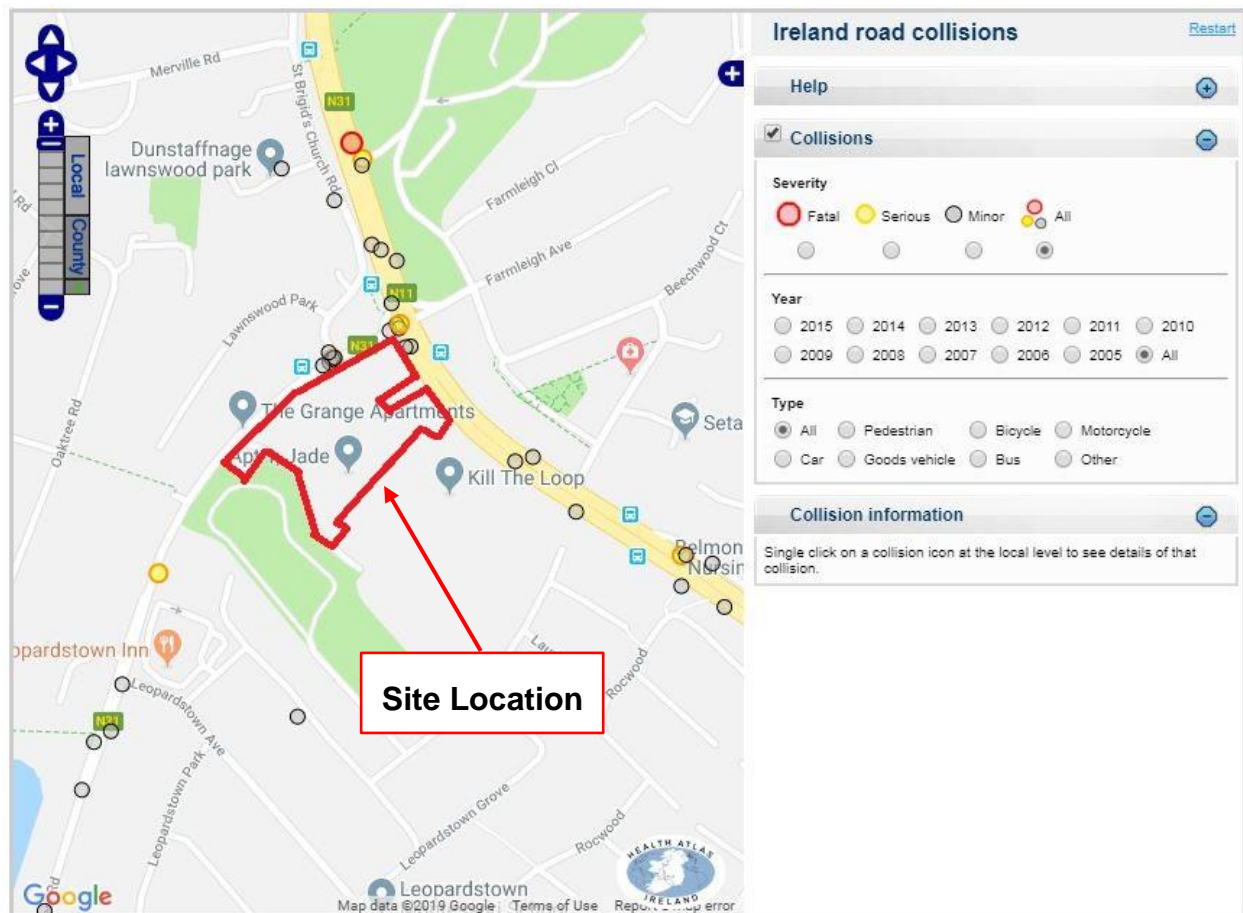
Details of the PICADY analysis are contained in Appendix C.

7. Road Safety, Public Transport, Pedestrian, Cyclists and Parking Provision

7.1 Road Safety

Traffic collision data has been reviewed for the period 2005-2015 from the Road Safety Authority (RSA) traffic collision database. This review will assist to identify any potential safety concerns in relation to the existing road network. These incidents are categorised into class of severity, which includes minor, serious, or fatal collisions. The analysis is shown in Figure 9.

Figure 9: RSA Traffic Collision Data.



From the information obtained from the RSA Traffic Collision Database, there has been one fatal, four serious and several minor collisions that occurred in the vicinity of the proposed site. A summary of the serious and fatal collisions is presented in the Table 4 below.

Table 4: Serious and Fatal Traffic Collision Data.

Severity	Year	Vehicle	Circumstances	Day of Week	Time
Fatal	2005	Undefined	Pedestrian	Thursday	10:00-16:00
Serious	2008	Goods Vehicle	Other	Monday	16:00-19:00
Serious	2009	Car	Single Vehicle Only	Wednesday	23:00-03:00
Serious	2013	Car	Other	Thursday	07:00-10:00
Serious	2014	Car	Pedestrian	Tuesday	10:00-16:00

7.2 Public Transport

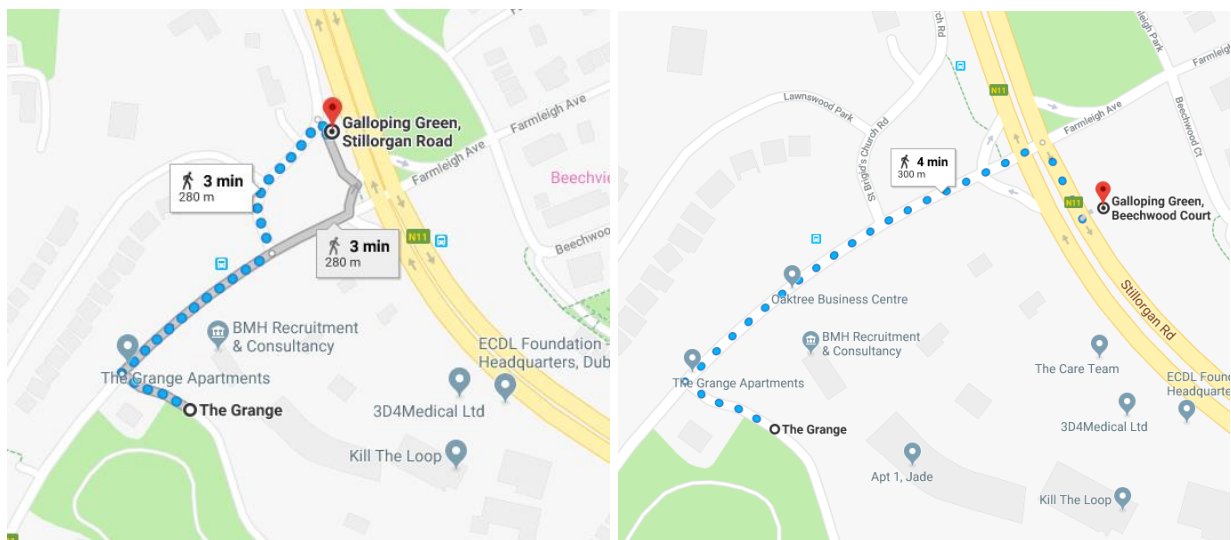
7.2.1 Dublin Bus

Dublin Bus operates several staged services connecting Stillorgan to a number of areas of interest or with access to further public transport such as the LUAS, DART, and Irish Rail. Those areas easily accessible include the City Centre, Blackrock (Irish Rail/ (DART)), Heuston (Irish Rail/ (LUAS)), Dun Laoghaire (Irish Rail/ (DART)) and Bray (Irish Rail/ (DART)).

The site is located directly adjacent to a major public transport corridor being the Stillorgan Quality Bus Corridor (QBC). The Stillorgan QBC has high frequency bus services direct to the City Centre.

Access from the subject site to the primary bus stops on the Stillorgan QBC is via N31 Brewery Road (3 to 4-minute walk). See Figure 10. A network of footpaths is provided on both sides of N31 Brewery Road, and there are dedicated pedestrian crossings facilities at the southern, western, and eastern approaches of N11 Stillorgan Road/N31 Brewery Road signalised junction (Figure 11). These pedestrian crossings include dropped kerbs and tactile paving facilities.

Figure 10: Walking routes from proposed development to Stillorgan QBC bus stops.



A summary of Dublin Bus routes and location of bus stops served by these routes are presented below.

Figure 11: Location of Public Transport Facilities.

Table 5: Bus Stop No. 2014 - Stillorgan Road.



Route No	From	To	Weekday Frequency (Rush hour)
46a	Phoenix Park	Dun Laoghaire	8 minutes
84x	Hawkins St.	Newcastle/Kilcoole	10-20 minutes
145	Heuston Rail Station	Ballywaltrim	10 minutes

Table 6: Bus Stop No. 2064 - Stillorgan Road.

Route No	From	To	Weekday Frequency (Rush hour)
145	Ballywaltrim	Heuston Rail Station	10 minutes
46a	Dun Laoghaire	Phoenix Park	8 minutes
84X	Newcastle/Kilcoole	Hawkins St.	10 minutes
118	Kilternan	Eden Quay	2 per day

Table 7: Bus Stop No. 3320 – Brewery Road.

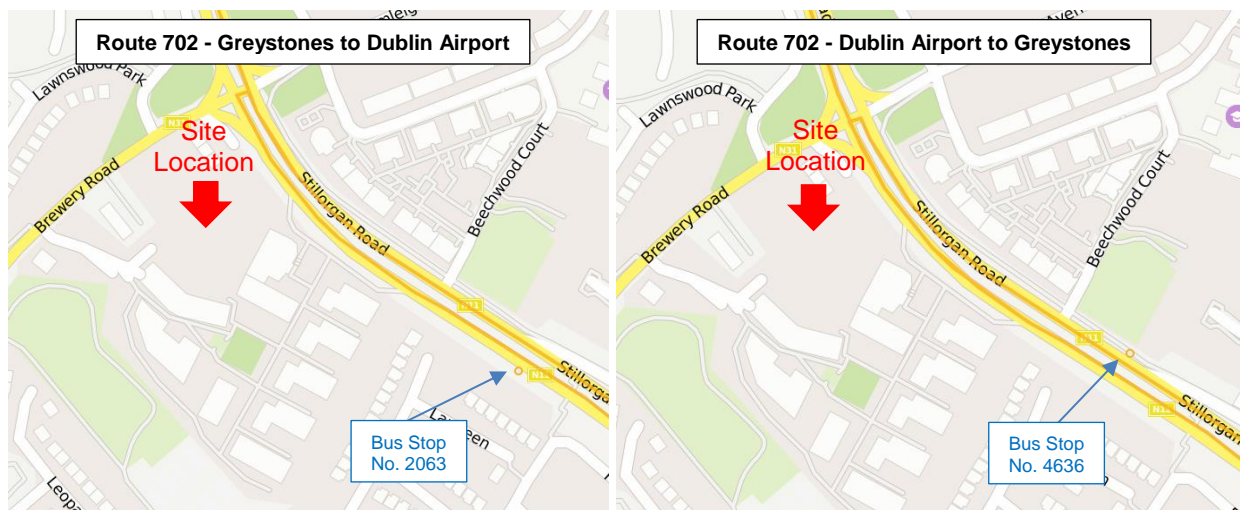
Route No	From	Towards	Weekday Frequency (Rush hour)
118	Kilternan	Eden Quay	2 per day

7.2.2 Aircoach Links (Dublin Airport)

Aircoach operates a 24-hour service, Route 702: Greystones to Dublin Airport, travels through Stillorgan to Dublin Airport. Services on Aircoach Route 702 to and from the terminus in Greystones operate every hour during the day.

Figure 12 below, details the bus route in each direction and the location of the bus stops served by Aircoach Route 702. Both stops are approximately 6 minute walk from the site access on Brewery Road. The advised journey time from Stillorgan to Dublin Airport is 50-55 minutes.

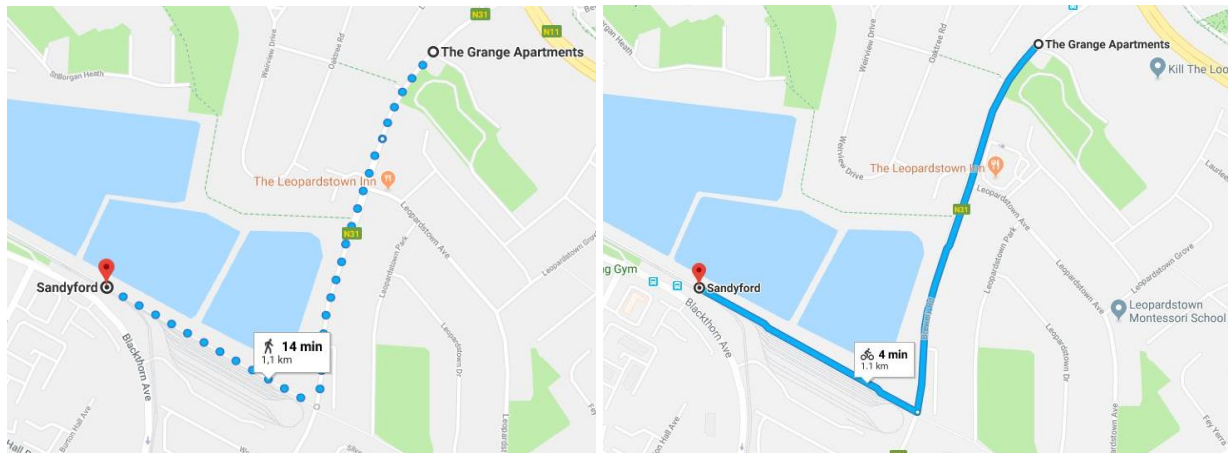
Figure 12: Route 702 - Greystones to Dublin Airport.



7.2.3 LUAS

The site is not directly served by LUAS services, though the closest LUAS station is the Sandyford stop (LUAS Greenline), approximately 1.1km (14-minute walk or 4-minute cycling) southeast of the site access through the N31 Brewery Road. The LUAS Greenline provides a high frequency service to the City Centre. A network of footpaths and cycle paths are provided on both sides of the entirety of N31 Brewery Road.

Figure 13: Walking and cycling times to Sandyford LUAS stop.



7.2.4 Other Services

Go-Ahead Ireland – Go-Ahead Ireland operates a 20-hour service through Stillorgan, linking Dun Laoghaire DART Station with Tallaght Business Area. Routes 75 and 75a run every 30 minutes during the morning and evening peak hours. Journeys numbered 75a are via Sandyford Business Park. Figures 14 and 15 details the routes of these services in the vicinity of the proposed site.

Bus Connects - Bus Connects is a programme of investment in the greater Dublin area bus network which aims to overhaul the current bus system in Dublin through a 10-year programme to deliver a more efficient, reliable and better bus system. The Bray to Dublin City Centre branch of, runs along the N11 Stillorgan Road and as part of the upgrade works along the N11, the Brewery Road junction will be upgraded to improve the cycle paths in this location. It is estimated that the Bus Connects will improve current journey times to the city centre by 40% - 50% and mitigate against any future increase in journey times. The improved journey time to the city centre will encourage a greater modal shift towards the bus and bike.

Figure 14: Route 75 – Dun Laoghaire DART Station to Tallaght (two-ways).



Figure 15: Route 75a – Tallaght to Dun Laoghaire DART Station, through Sandyford Business Park (two-ways).



Rail Services - Stillorgan is not currently served by rail transportation. Dublin Bus Routes 46a and Go-Ahead Route 75 and 75a link Stillorgan with the DART line at Dun Laoghaire DART Station. The DART is a rail service that operates at 15 minutes intervals during the morning and evening peak hours and 30 minutes intervals off peak. It operates routes from/to north as Malahide or Howth and south to Greystones.

7.3 Pedestrians and Cyclists

7.3.1 Pedestrians

N31 Brewery Road is subject to a speed limit of 50kmph with street lighting on both sides of the road. In the vicinity of the subject site, pedestrians can benefit from a good standard of provision of footpaths on both sides of the carriageway. These footpaths are separated from the carriageway by a cycle path and a grass verge for the majority of its length.

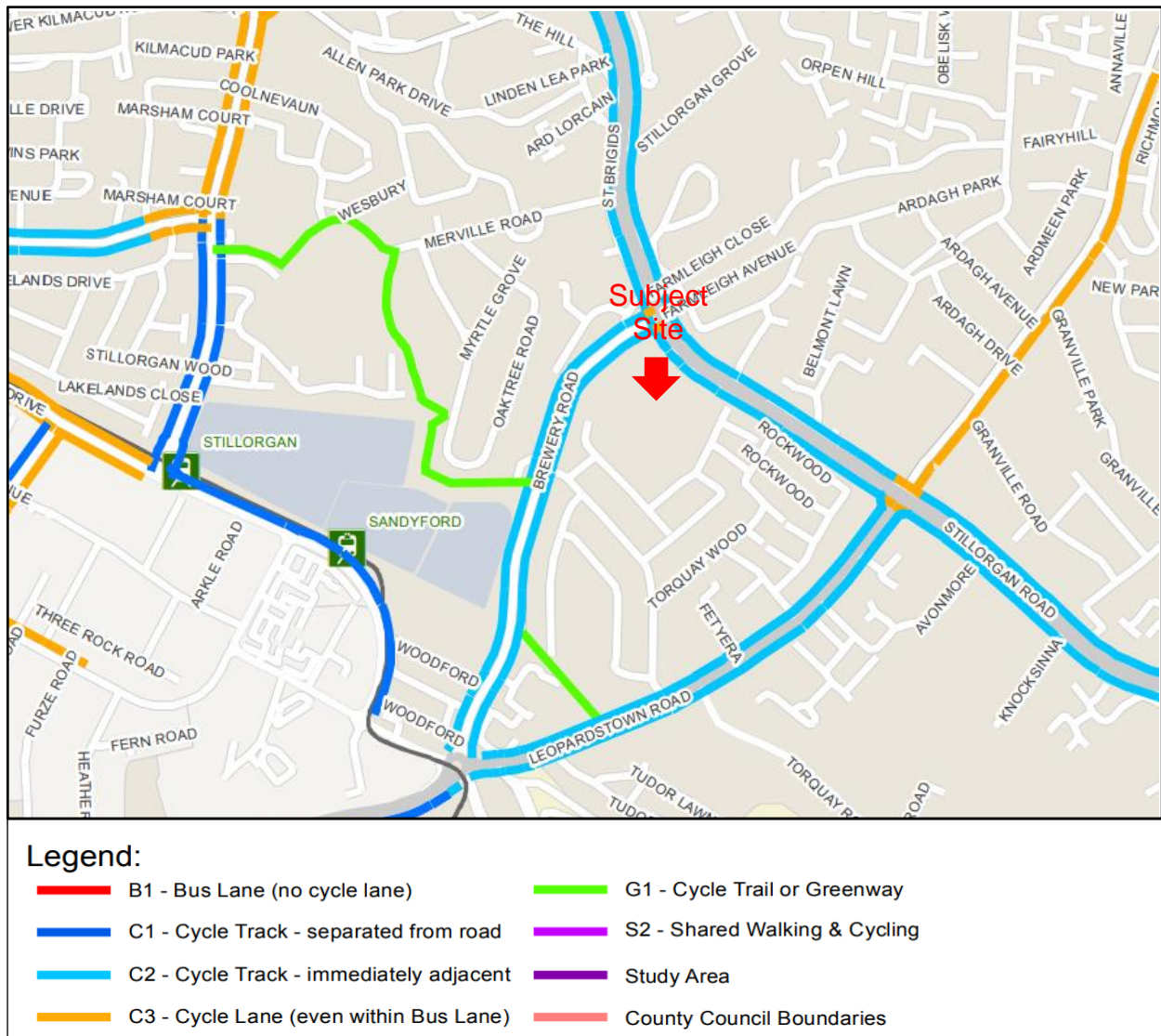
Pedestrians can also benefit from dedicated pedestrian crossings at the southern, western, and eastern approaches of N11 Stillorgan Road/N31 Brewery Road signalised junction. These pedestrian crossings include dropped kerbs and tactile paving facilities.

Access from the subject site to the primary bus stops on the Stillorgan QBC is via N31 Brewery Road as previously presented in Figure16.

7.3.2 Cyclists

With regard to cycle facilities, Figure 18 below shows the local cycle track and lane network as taken from the National Transport Authority's (NTA) Greater Dublin Area Cycle Network Plan.

Figure 16: Local Cycle Infrastructure.



As can be seen above, cyclists can benefit from the provision of cycle tracks immediately adjacent to the bus lanes (south-north bound) on N11 Stillorgán Road. To the west of N11 Stillorgán Road/N31 Brewery Road junction, cycle tracks immediately adjacent to the carriageway are provided along both sides of N31 Brewery Road.

All the existing pedestrian and cycle facilities make the subject site highly accessible by a wide variety of transportation options which will facilitate a modal shift away from private vehicle usage.

7.4 Parking Provision

7.4.1 Car Parking

Section 8.2.4.5 of the Dun Laoghaire Rathdown County Council Development Plan 2016 – 2022 consider the car parking requirements for various types of development. Specifically, Tables 8.2.3 set out the car parking standards for residential developments.

Based on these standards, Table 8 below details the maximum car parking spaces permitted for the proposed development.

Table 8: Car Parking Required and Provided.

Land Use	Units/ Staff Members	DLRCC Car Parking Standards	Maximum Parking Permitted	Parking Provided
Residential/Studio	19	1 space per 1-bed unit	19	
Residential/1 Bed	125	1 space per 1-bed unit	125	92
Residential/2 Bed	143	1.5 space per 2-bed unit	216	
Crèche	23	1 space per 1 staff member	23	8
TOTAL	287 units 23 staff		383	100

As shown in Table 8 above, the development will provide 92 car parking spaces for the proposed 287 apartments. This equates to 0.32 car parking spaces per apartment. In addition, there are 100 vacant spaces available within the adjacent Phase 1 development which are owned and controlled by the applicant which can be made available to serve this development. A detailed justification for the reduced parking provision together with a mobility Management plan/strategy for parking is provided under a separate cover.

7.4.2 Electric Vehicle Charging Points

DLRCC County Development plan require a minimum of 1 Electric Vehicle (EV) charge point per 10 residential. The proposed development provides 28 EV charging points for the residential development, 2 of which will be provided at surface level. 1 additional EV point will be provided at the Creche parking area. The remainder of the spaces will be capable of accommodating EV charge points in the future.

7.4.3 Cycle Parking

Section 4.1 of the 'Standard for Cycle Parking and Associated Cycling Facilities for New Developments – Dun Laoghaire-Rathdown County Council 2018' sets out the cycle parking requirements as follows:

Table 9: Cycle parking standard for proposed development. (DLRCC)

Residential Development Type	Short stay parking space (visitor) (minimum 2)	Long stay parking space (minimum 2)
Apartments, Flats, Sheltered housing	1 per 5 units	1 per unit
Childcare Services	1 per 10 children	1 per 5 staff

In reference to Table 9, the cycle parking spaces required for the proposed development are as presented in Table 10 below.

Table 10: Total cycle parking spaces required (DLRCC)

	Units	Short stay parking required	Long stay parking required	Total parking required
Apartments	287	58	287	345
Crèche	23 staff 115 children	12	5	17
Total		70	292	362

The new national Design Standards for New Apartments, who set out a requirement of 1 long stay space per bedroom and 1 visitor space for every two units, have also been reviewed with regards to cycle parking requirements and are set out in Table 11 below.

Table 11: Total cycle parking spaces required (National Standards)

Land Use	Units		Long stay parking required	Short stay parking required
Residential/Studio	19	1 space per 1-bed unit	19	10
Residential/1 Bed	125	1 space per 1-bed unit	125	63
Residential/2 Bed	143	2 space per 2-bed unit	286	96
TOTAL	287 units		430	169

As the National standards are more onerous than the DLRCC standards for apartments the total number of bike parking spaces provided will be in line with the National Standards. A total of 580 spaces will be provided.

Dun Laoghaire Rathdown County Council (DLRCC) have launched the first county-wide, station-less, bike-sharing scheme in Ireland. The scheme called the Bleeperbike begun a six-month pilot in November 2018 and it is planned to expand the scheme across DLRCC. 39 cycle parking spaces will be provided at ground level to accommodate visitors and those using the Bleeperbike scheme. The cycle parking will be provided as outlined in Table 12 below. All cycle parking on site will be monitored and managed by the management company.

Table 12: Total cycle parking spaces provided.

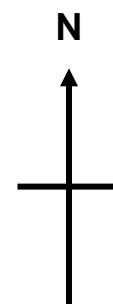
	Level -1	Surface	Total
Apartments	518		518
Crèche		20	20
Surface level visitor spaces		58	58
Total	518	78	596


8. Conclusions

- Waterman Moylan Consulting Engineers have been appointed by KW PRS ICAV acting for an on behalf of its sub-fund KW PRS Fund 10 to prepare a Traffic and Transport Assessment for the proposed residential development at Brewery Road, in Stillorgan, Dublin 18.
- The proposed development will be accessed from an upgrade of the existing access to The Grange off Brewery Road.
- A traffic survey was carried out by 'Nationwide Data Collection' on:
 - Site 01: N11 Stillorgan Road/N31 Brewery Road/Farmleigh Ave (Signalised Junction);
 - Site 02: N31 Brewery Road/St. Brigid's Church Road (3-arm Priority Junction) and
 - Site 03: N31 Brewery Road/Site Access (3-arm Priority Junction).
- The volume of traffic expected to be generated by the proposed development has been derived using the trip rates from TRICS database.
- The vehicular trips generated by the proposed development will be 58 arrivals and 72 departures in the AM Peak, and 63 arrivals and 67 departures for the PM Peak.
- The extent of traffic impact from the proposed residential development has been determined by checking where generated traffic would exceed 10% of traffic flow on the adjoining road or 5% on the adjoining road where congestion exists, or the location is sensitive. Junctions 1 and 2 results indicate that they will not need further assessment.
- Junction 3 has been modelled based on its current configuration of a three-armed priority junction and the results indicate that the junction will operate within capacity during the 2038 plus development scenario with the highest Ratio of Flow to Capacity (RFC) at 0.50 and a corresponding queue of 1.0 vehicle during the AM peak hour and 0.29 of RFC and a corresponding queue of 1.4 vehicle during the PM.

Appendix A

Traffic Counts



	Site / Location: 1 / Stillorgan	Project No: 9318	Diagram No: 9318-01	Drawn By: AC
	Survey Date: Wednesday 17th October 2018	Project Name: STILLORGAN		
	Survey Times: 07:30 to 09:30 and 16:30 to 18:30	Diagram Title: General Location Plan		

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	A to D - N11(N) to Farmleigh Avenue		Veh. Total	A to C - N11(N) to N11(S)		Veh. Total
	LV	HV		LV	HV	
07:30	3	0	3	168	25	193
07:45	9	0	9	186	20	206
08:00	9	1	10	260	17	277
08:15	5	0	5	235	8	243
08:30	17	0	17	273	10	283
08:45	9	0	9	190	9	199
09:00	14	0	14	178	15	193
09:15	3	0	3	161	14	175
Total	69	1	70	1651	118	1769

Peak Hour 07:45 to 08:45

07:45	9	0	9	186	20	206
08:00	9	1	10	260	17	277
08:15	5	0	5	235	8	243
08:30	17	0	17	273	10	283
Total	40	1	41	954	55	1009

Date 17 October 2018

Time	A to D - N11(N) to Farmleigh Avenue		Veh. Total	A to C - N11(N) to N11(S)		Veh. Total
	LV	HV		LV	HV	
16:30	5	0	5	374	13	387
16:45	4	0	4	353	10	363
17:00	10	0	10	269	10	279
17:15	5	0	5	335	17	352
17:30	8	0	8	328	13	341
17:45	16	0	16	292	15	307
18:00	11	0	11	283	11	294
18:15	8	0	8	341	12	353
Total	67	0	67	2575	101	2676

Peak Hour 17:15 to 18:15

17:15	5	0	5	335	17	352
17:30	8	0	8	328	13	341
17:45	16	0	16	292	15	307
18:00	11	0	11	283	11	294
Total	40	0	40	1238	56	1294

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	A to B - N11(N) to N31		Veh. Total	B to A - N31 to N11(N)		Veh. Total
	LV	HV		LV	HV	
07:30	109	7	116	132	5	137
07:45	136	5	141	123	6	129
08:00	119	5	124	107	1	108
08:15	114	2	116	94	7	101
08:30	94	2	96	122	6	128
08:45	99	8	107	89	6	95
09:00	107	3	110	76	5	81
09:15	82	9	91	102	3	105
Total	860	41	901	845	39	884

Peak Hour 07:45 to 08:45

07:45	136	5	141	123	6	129
08:00	119	5	124	107	1	108
08:15	114	2	116	94	7	101
08:30	94	2	96	122	6	128
Total	463	14	477	446	20	466

Date 17 October 2018

Time	A to B - N11(N) to N31		Veh. Total	B to A - N31 to N11(N)		Veh. Total
	LV	HV		LV	HV	
16:30	112	3	115	112	4	116
16:45	113	5	118	123	6	129
17:00	94	3	97	124	2	126
17:15	92	1	93	127	3	130
17:30	117	3	120	118	1	119
17:45	113	2	115	173	2	175
18:00	111	5	116	141	2	143
18:15	114	5	119	121	3	124
Total	866	27	893	1039	23	1062

Peak Hour 17:15 to 18:15

17:15	92	1	93	127	3	130
17:30	117	3	120	118	1	119
17:45	113	2	115	173	2	175
18:00	111	5	116	141	2	143
Total	433	11	444	559	8	567

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	B to D - N31 to Farmleigh Avenue		Veh. Total	B to C - N31 to N11(S)		Veh. Total
	LV	HV		LV	HV	
07:30	9	0	9	16	1	17
07:45	14	0	14	28	1	29
08:00	7	0	7	35	0	35
08:15	7	0	7	61	1	62
08:30	9	0	9	45	1	46
08:45	17	1	18	25	1	26
09:00	10	1	11	23	4	27
09:15	12	1	13	30	2	32
Total	85	3	88	263	11	274

Peak Hour 07:45 to 08:45

07:45	14	0	14	28	1	29
08:00	7	0	7	35	0	35
08:15	7	0	7	61	1	62
08:30	9	0	9	45	1	46
Total	37	0	37	169	3	172

Date 17 October 2018

Time	B to D - N31 to Farmleigh Avenue		Veh. Total	B to C - N31 to N11(S)		Veh. Total
	LV	HV		LV	HV	
16:30	9	0	9	48	0	48
16:45	11	0	11	53	0	53
17:00	6	0	6	47	0	47
17:15	8	0	8	56	2	58
17:30	11	0	11	76	0	76
17:45	14	0	14	55	0	55
18:00	15	0	15	66	0	66
18:15	10	0	10	58	1	59
Total	84	0	84	459	3	462

Peak Hour 17:15 to 18:15

17:15	8	0	8	56	2	58
17:30	11	0	11	76	0	76
17:45	14	0	14	55	0	55
18:00	15	0	15	66	0	66
Total	48	0	48	253	2	255

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	C to B - N11(S) to N31		Veh. Total	C to A - N11(S) to N11(N)		Veh. Total
	LV	HV		LV	HV	
07:30	28	1	29	320	11	331
07:45	54	1	55	264	12	276
08:00	54	0	54	300	18	318
08:15	45	1	46	204	16	220
08:30	59	2	61	213	20	233
08:45	87	2	89	240	13	253
09:00	74	1	75	295	16	311
09:15	56	1	57	322	20	342
Total	457	9	466	2158	126	2284

Peak Hour 07:45 to 08:45

07:45	54	1	55	264	12	276
08:00	54	0	54	300	18	318
08:15	45	1	46	204	16	220
08:30	59	2	61	213	20	233
Total	212	4	216	981	66	1047

Date 17 October 2018

Time	C to B - N11(S) to N31		Veh. Total	C to A - N11(S) to N11(N)		Veh. Total
	LV	HV		LV	HV	
16:30	26	0	26	240	11	251
16:45	23	0	23	241	13	254
17:00	26	1	27	227	14	241
17:15	34	0	34	298	10	308
17:30	34	0	34	209	12	221
17:45	22	0	22	250	8	258
18:00	36	0	36	248	4	252
18:15	18	0	18	256	7	263
Total	219	1	220	1969	79	2048

Peak Hour 17:15 to 18:15

17:15	34	0	34	298	10	308
17:30	34	0	34	209	12	221
17:45	22	0	22	250	8	258
18:00	36	0	36	248	4	252
Total	126	0	126	1005	34	1039

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	C to D - N11(S) to Farmleigh Avenue		Veh. Total	D to C - Farmleigh Avenue to N11(S)		Veh. Total
	LV	HV		LV	HV	
07:30	9	0	9	2	0	2
07:45	10	0	10	3	0	3
08:00	11	0	11	4	0	4
08:15	7	0	7	2	0	2
08:30	6	0	6	2	0	2
08:45	9	0	9	4	0	4
09:00	12	0	12	3	0	3
09:15	12	1	13	2	0	2
Total	76	1	77	22	0	22

Peak Hour 07:45 to 08:45

07:45	10	0	10	3	0	3
08:00	11	0	11	4	0	4
08:15	7	0	7	2	0	2
08:30	6	0	6	2	0	2
Total	34	0	34	11	0	11

Date 17 October 2018

Time	C to D - N11(S) to Farmleigh Avenue		Veh. Total	D to C - Farmleigh Avenue to N11(S)		Veh. Total
	LV	HV		LV	HV	
16:30	6	0	6	9	0	9
16:45	7	0	7	6	0	6
17:00	11	0	11	11	0	11
17:15	9	0	9	5	0	5
17:30	9	0	9	8	0	8
17:45	10	0	10	5	0	5
18:00	6	0	6	8	0	8
18:15	9	0	9	9	0	9
Total	67	0	67	61	0	61

Peak Hour 17:15 to 18:15

17:15	9	0	9	5	0	5
17:30	9	0	9	8	0	8
17:45	10	0	10	5	0	5
18:00	6	0	6	8	0	8
Total	34	0	34	26	0	26

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	D to B - Farmleigh Avenue to N31		Veh. Total	D to A - Farmleigh Avenue to N11(N)		Veh. Total
	LV	HV		LV	HV	
07:30	8	0	8	9	0	9
07:45	24	0	24	10	0	10
08:00	18	0	18	9	0	9
08:15	15	1	16	14	0	14
08:30	22	0	22	12	0	12
08:45	16	0	16	13	0	13
09:00	10	1	11	13	0	13
09:15	9	0	9	7	1	8
Total	122	2	124	87	1	88

Peak Hour 07:45 to 08:45

07:45	24	0	24	10	0	10
08:00	18	0	18	9	0	9
08:15	15	1	16	14	0	14
08:30	22	0	22	12	0	12
Total	79	1	80	45	0	45

Date 17 October 2018

Time	D to B - Farmleigh Avenue to N31		Veh. Total	D to A - Farmleigh Avenue to N11(N)		Veh. Total
	LV	HV		LV	HV	
16:30	9	0	9	12	0	12
16:45	7	0	7	7	0	7
17:00	18	0	18	25	0	25
17:15	9	0	9	9	0	9
17:30	9	0	9	13	0	13
17:45	6	0	6	16	0	16
18:00	4	0	4	10	0	10
18:15	7	0	7	13	0	13
Total	69	0	69	105	0	105

Peak Hour 17:15 to 18:15

17:15	9	0	9	9	0	9
17:30	9	0	9	13	0	13
17:45	6	0	6	16	0	16
18:00	4	0	4	10	0	10
Total	28	0	28	48	0	48

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	To Arm A - N11(N)		Veh. Total	From Arm A - N11(N)		Veh. Total
	LV	HV		LV	HV	
07:30	461	16	477	280	32	312
07:45	397	18	415	331	25	356
08:00	416	19	435	388	23	411
08:15	312	23	335	354	10	364
08:30	347	26	373	384	12	396
08:45	342	19	361	298	17	315
09:00	384	21	405	299	18	317
09:15	431	24	455	246	23	269
Total	3090	166	3256	2580	160	2740

Peak Hour 07:45 to 08:45

07:45	397	18	415	331	25	356
08:00	416	19	435	388	23	411
08:15	312	23	335	354	10	364
08:30	347	26	373	384	12	396
Total	1472	86	1558	1457	70	1527

Date 17 October 2018

Time	To Arm A - N11(N)		Veh. Total	From Arm A - N11(N)		Veh. Total
	LV	HV		LV	HV	
16:30	364	15	379	491	16	507
16:45	371	19	390	470	15	485
17:00	376	16	392	373	13	386
17:15	434	13	447	432	18	450
17:30	340	13	353	453	16	469
17:45	439	10	449	421	17	438
18:00	399	6	405	405	16	421
18:15	390	10	400	463	17	480
Total	3113	102	3215	3508	128	3636

Peak Hour 17:15 to 18:15

17:15	434	13	447	432	18	450
17:30	340	13	353	453	16	469
17:45	439	10	449	421	17	438
18:00	399	6	405	405	16	421
Total	1612	42	1654	1711	67	1778

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	To Arm B - N31		Veh. Total	From Arm B - N31		Veh. Total
	LV	HV		LV	HV	
07:30	145	8	153	157	6	163
07:45	214	6	220	165	7	172
08:00	191	5	196	149	1	150
08:15	174	4	178	162	8	170
08:30	175	4	179	176	7	183
08:45	202	10	212	131	8	139
09:00	191	5	196	109	10	119
09:15	147	10	157	144	6	150
Total	1439	52	1491	1193	53	1246

Peak Hour 07:45 to 08:45

07:45	214	6	220	165	7	172
08:00	191	5	196	149	1	150
08:15	174	4	178	162	8	170
08:30	175	4	179	176	7	183
Total	754	19	773	652	23	675

Date 17 October 2018

Time	To Arm B - N31		Veh. Total	From Arm B - N31		Veh. Total
	LV	HV		LV	HV	
16:30	147	3	150	169	4	173
16:45	143	5	148	187	6	193
17:00	138	4	142	177	2	179
17:15	135	1	136	191	5	196
17:30	160	3	163	205	1	206
17:45	141	2	143	242	2	244
18:00	151	5	156	222	2	224
18:15	139	5	144	189	4	193
Total	1154	28	1182	1582	26	1608

Peak Hour 17:15 to 18:15

17:15	135	1	136	191	5	196
17:30	160	3	163	205	1	206
17:45	141	2	143	242	2	244
18:00	151	5	156	222	2	224
Total	587	11	598	860	10	870

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	To Arm C - N11(S)		Veh. Total	From Arm C - N11(S)		Veh. Total
	LV	HV		LV	HV	
07:30	186	26	212	357	12	369
07:45	217	21	238	328	13	341
08:00	299	17	316	365	18	383
08:15	298	9	307	256	17	273
08:30	320	11	331	278	22	300
08:45	219	10	229	336	15	351
09:00	204	19	223	381	17	398
09:15	193	16	209	390	22	412
Total	1936	129	2065	2691	136	2827

Peak Hour 07:45 to 08:45

07:45	217	21	238	328	13	341
08:00	299	17	316	365	18	383
08:15	298	9	307	256	17	273
08:30	320	11	331	278	22	300
Total	1134	58	1192	1227	70	1297

Date 17 October 2018

Time	To Arm C - N11(S)		Veh. Total	From Arm C - N11(S)		Veh. Total
	LV	HV		LV	HV	
16:30	431	13	444	272	11	283
16:45	412	10	422	271	13	284
17:00	327	10	337	264	15	279
17:15	396	19	415	341	10	351
17:30	412	13	425	252	12	264
17:45	352	15	367	282	8	290
18:00	357	11	368	290	4	294
18:15	408	13	421	283	7	290
Total	3095	104	3199	2255	80	2335

Peak Hour 17:15 to 18:15

17:15	396	19	415	341	10	351
17:30	412	13	425	252	12	264
17:45	352	15	367	282	8	290
18:00	357	11	368	290	4	294
Total	1517	58	1575	1165	34	1199

Site No. 1
 Location N11(N) / N31 / N11(S) / Farmleigh Avenue
 Date 17 October 2018

Time	To Arm D - Farmleigh Avenue		Veh. Total	From Arm D - Farmleigh Avenue		Veh. Total
	LV	HV		LV	HV	
07:30	21	0	21	19	0	19
07:45	33	0	33	37	0	37
08:00	27	1	28	31	0	31
08:15	19	0	19	31	1	32
08:30	32	0	32	36	0	36
08:45	35	1	36	33	0	33
09:00	36	1	37	26	1	27
09:15	27	2	29	18	1	19
Total	230	5	235	231	3	234

Peak Hour 07:45 to 08:45

07:45	33	0	33	37	0	37
08:00	27	1	28	31	0	31
08:15	19	0	19	31	1	32
08:30	32	0	32	36	0	36
Total	111	1	112	135	1	136


Date 17 October 2018

Time	To Arm D - Farmleigh Avenue		Veh. Total	From Arm D - Farmleigh Avenue		Veh. Total
	LV	HV		LV	HV	
16:30	20	0	20	30	0	30
16:45	22	0	22	20	0	20
17:00	27	0	27	54	0	54
17:15	22	0	22	23	0	23
17:30	28	0	28	30	0	30
17:45	40	0	40	27	0	27
18:00	32	0	32	22	0	22
18:15	27	0	27	29	0	29
Total	218	0	218	235	0	235

Peak Hour 17:15 to 18:15

17:15	22	0	22	23	0	23
17:30	28	0	28	30	0	30
17:45	40	0	40	27	0	27
18:00	32	0	32	22	0	22
Total	122	0	122	102	0	102



	Site / Location: 2 / Stillorgan	Project No: 9318	Diagram No: 9318-02	Drawn By: AC
	Survey Date: Wednesday 17th October 2018	Project Name: STILLORGAN		
	Survey Times: 07:30 to 09:30 and 16:30 to 18:30	Diagram Title: General Location Plan		

Site No. 2
 Location St Brigid's Church Road / N31(W) / N31(E)
 Date 17 October 2018

Time	A to C - St Brigid's Church Road to N31(E)		Veh. Total	A to B - St Brigid's Church Road to N31(W)		Veh. Total
	LV	HV		LV	HV	
07:30	10	0	10	16	1	17
07:45	6	1	7	13	0	13
08:00	12	0	12	14	0	14
08:15	16	0	16	25	1	26
08:30	22	0	22	26	0	26
08:45	15	0	15	21	0	21
09:00	16	1	17	37	1	38
09:15	17	0	17	38	0	38
Total	114	2	116	190	3	193

Peak Hour 07:45 to 08:45

07:45	6	1	7	13	0	13
08:00	12	0	12	14	0	14
08:15	16	0	16	25	1	26
08:30	22	0	22	26	0	26
Total	56	1	57	78	1	79

Date 17 October 2018

Time	A to C - St Brigid's Church Road to N31(E)		Veh. Total	A to B - St Brigid's Church Road to N31(W)		Veh. Total
	LV	HV		LV	HV	
16:30	28	1	29	53	0	53
16:45	32	0	32	42	1	43
17:00	28	0	28	36	0	36
17:15	34	0	34	33	1	34
17:30	31	0	31	48	0	48
17:45	21	0	21	37	0	37
18:00	36	0	36	41	0	41
18:15	21	0	21	40	0	40
Total	231	1	232	330	2	332

Peak Hour 17:15 to 18:15

17:15	34	0	34	33	1	34
17:30	31	0	31	48	0	48
17:45	21	0	21	37	0	37
18:00	36	0	36	41	0	41
Total	122	0	122	159	1	160

Site No. 2
 Location St Brigid's Church Road / N31(W) / N31(E)
 Date 17 October 2018

Time	B to A - N31(W) to St Brigid's Church Road		Veh. Total	B to C - N31(W) to N31(E)		Veh. Total
	LV	HV		LV	HV	
07:30	54	1	55	156	6	162
07:45	71	0	71	150	6	156
08:00	81	0	81	141	1	142
08:15	76	1	77	142	9	151
08:30	66	2	68	161	6	167
08:45	64	0	64	110	8	118
09:00	52	0	52	93	9	102
09:15	41	0	41	129	6	135
Total	505	4	509	1082	51	1133

Peak Hour 07:45 to 08:45

07:45	71	0	71	150	6	156
08:00	81	0	81	141	1	142
08:15	76	1	77	142	9	151
08:30	66	2	68	161	6	167
Total	294	3	297	594	22	616

Date 17 October 2018

Time	B to A - N31(W) to St Brigid's Church Road		Veh. Total	B to C - N31(W) to N31(E)		Veh. Total
	LV	HV		LV	HV	
16:30	24	0	24	141	3	144
16:45	33	1	34	155	6	161
17:00	32	0	32	149	2	151
17:15	40	0	40	169	5	174
17:30	48	0	48	162	1	163
17:45	23	0	23	221	3	224
18:00	40	0	40	186	1	187
18:15	39	0	39	170	4	174
Total	279	1	280	1353	25	1378

Peak Hour 17:15 to 18:15

17:15	40	0	40	169	5	174
17:30	48	0	48	162	1	163
17:45	23	0	23	221	3	224
18:00	40	0	40	186	1	187
Total	151	0	151	738	10	748

Site No. 2
 Location St Brigid's Church Road / N31(W) / N31(E)
 Date 17 October 2018

Time	C to B - N31(E) to N31(W)		Veh. Total	C to A - N31(E) to St Brigid's Church Road		Veh. Total
	LV	HV		LV	HV	
07:30	131	7	138	15	1	16
07:45	167	6	173	47	0	47
08:00	141	5	146	41	0	41
08:15	137	4	141	47	0	47
08:30	129	4	133	46	0	46
08:45	147	10	157	55	0	55
09:00	141	5	146	45	0	45
09:15	116	10	126	35	0	35
Total	1109	51	1160	331	1	332

Peak Hour 07:45 to 08:45

07:45	167	6	173	47	0	47
08:00	141	5	146	41	0	41
08:15	137	4	141	47	0	47
08:30	129	4	133	46	0	46
Total	574	19	593	181	0	181

Date 17 October 2018

Time	C to B - N31(E) to N31(W)		Veh. Total	C to A - N31(E) to St Brigid's Church Road		Veh. Total
	LV	HV		LV	HV	
16:30	126	3	129	19	0	19
16:45	132	4	136	12	1	13
17:00	123	4	127	15	0	15
17:15	114	1	115	23	0	23
17:30	142	3	145	16	0	16
17:45	122	2	124	14	0	14
18:00	144	5	149	13	0	13
18:15	119	5	124	18	0	18
Total	1022	27	1049	130	1	131

Peak Hour 17:15 to 18:15

17:15	114	1	115	23	0	23
17:30	142	3	145	16	0	16
17:45	122	2	124	14	0	14
18:00	144	5	149	13	0	13
Total	522	11	533	66	0	66

Site No. 2
 Location St Brigid's Church Road / N31(W) / N31(E)
 Date 17 October 2018

Time	To Arm A - St Brigid's Church Road		Veh. Total	From Arm A - St Brigid's Church Road		Veh. Total
	LV	HV		LV	HV	
07:30	69	2	71	26	1	27
07:45	118	0	118	19	1	20
08:00	122	0	122	26	0	26
08:15	123	1	124	41	1	42
08:30	112	2	114	48	0	48
08:45	119	0	119	36	0	36
09:00	97	0	97	53	2	55
09:15	76	0	76	55	0	55
Total	836	5	841	304	5	309

Peak Hour 07:45 to 08:45

07:45	118	0	118	19	1	20
08:00	122	0	122	26	0	26
08:15	123	1	124	41	1	42
08:30	112	2	114	48	0	48
Total	475	3	478	134	2	136

Date 17 October 2018

Time	To Arm A - St Brigid's Church Road		Veh. Total	From Arm A - St Brigid's Church Road		Veh. Total
	LV	HV		LV	HV	
16:30	43	0	43	81	1	82
16:45	45	2	47	74	1	75
17:00	47	0	47	64	0	64
17:15	63	0	63	67	1	68
17:30	64	0	64	79	0	79
17:45	37	0	37	58	0	58
18:00	53	0	53	77	0	77
18:15	57	0	57	61	0	61
Total	409	2	411	561	3	564

Peak Hour 17:15 to 18:15

17:15	63	0	63	67	1	68
17:30	64	0	64	79	0	79
17:45	37	0	37	58	0	58
18:00	53	0	53	77	0	77
Total	217	0	217	281	1	282

Site No. 2
 Location St Brigid's Church Road / N31(W) / N31(E)
 Date 17 October 2018

Time	To Arm B - N31(W)		Veh. Total	From Arm B - N31(W)		Veh. Total
	LV	HV		LV	HV	
07:30	147	8	155	210	7	217
07:45	180	6	186	221	6	227
08:00	155	5	160	222	1	223
08:15	162	5	167	218	10	228
08:30	155	4	159	227	8	235
08:45	168	10	178	174	8	182
09:00	178	6	184	145	9	154
09:15	154	10	164	170	6	176
Total	1299	54	1353	1587	55	1642

Peak Hour 07:45 to 08:45

07:45	180	6	186	221	6	227
08:00	155	5	160	222	1	223
08:15	162	5	167	218	10	228
08:30	155	4	159	227	8	235
Total	652	20	672	888	25	913

Date 17 October 2018

Time	To Arm B - N31(W)		Veh. Total	From Arm B - N31(W)		Veh. Total
	LV	HV		LV	HV	
16:30	179	3	182	165	3	168
16:45	174	5	179	188	7	195
17:00	159	4	163	181	2	183
17:15	147	2	149	209	5	214
17:30	190	3	193	210	1	211
17:45	159	2	161	244	3	247
18:00	185	5	190	226	1	227
18:15	159	5	164	209	4	213
Total	1352	29	1381	1632	26	1658

Peak Hour 17:15 to 18:15

17:15	147	2	149	209	5	214
17:30	190	3	193	210	1	211
17:45	159	2	161	244	3	247
18:00	185	5	190	226	1	227
Total	681	12	693	889	10	899

Site No. 2
 Location St Brigid's Church Road / N31(W) / N31(E)
 Date 17 October 2018

Time	To Arm C - N31(E)		Veh. Total	From Arm C - N31(E)		Veh. Total
	LV	HV		LV	HV	
07:30	166	6	172	146	8	154
07:45	156	7	163	214	6	220
08:00	153	1	154	182	5	187
08:15	158	9	167	184	4	188
08:30	183	6	189	175	4	179
08:45	125	8	133	202	10	212
09:00	109	10	119	186	5	191
09:15	146	6	152	151	10	161
Total	1196	53	1249	1440	52	1492

Peak Hour 07:45 to 08:45

07:45	156	7	163	214	6	220
08:00	153	1	154	182	5	187
08:15	158	9	167	184	4	188
08:30	183	6	189	175	4	179
Total	650	23	673	755	19	774

Date 17 October 2018

Time	To Arm C - N31(E)		Veh. Total	From Arm C - N31(E)		Veh. Total
	LV	HV		LV	HV	
16:30	169	4	173	145	3	148
16:45	187	6	193	144	5	149
17:00	177	2	179	138	4	142
17:15	203	5	208	137	1	138
17:30	193	1	194	158	3	161
17:45	242	3	245	136	2	138
18:00	222	1	223	157	5	162
18:15	191	4	195	137	5	142
Total	1584	26	1610	1152	28	1180

Peak Hour 17:15 to 18:15

17:15	203	5	208	137	1	138
17:30	193	1	194	158	3	161
17:45	242	3	245	136	2	138
18:00	222	1	223	157	5	162
Total	860	10	870	588	11	599



	Site / Location: 3 / Stillorgan	Project No.: 9318	Diagram No.: 9318-03	Drawn By: AC
	Survey Date: Wednesday 17th October 2018	Project Name: STILLORGAN		
	Survey Times: 07:30 to 09:30 and 16:30 to 18:30	Diagram Title: General Location Plan		

Site No. 3
 Location N31(N) / N31(S) / Unnamed Road
 Date 17 October 2018

Time	A to C - N31(N) to Unnamed Road		Veh. Total	A to B - N31(N) to N31(S)		Veh. Total
	LV	HV		LV	HV	
07:30	2	0	2	152	8	160
07:45	1	0	1	172	6	178
08:00	4	0	4	154	5	159
08:15	4	0	4	155	5	160
08:30	5	0	5	149	4	153
08:45	9	0	9	159	10	169
09:00	10	0	10	169	6	175
09:15	11	0	11	143	10	153
Total	46	0	46	1253	54	1307

Peak Hour 07:45 to 08:45

07:45	1	0	1	172	6	178
08:00	4	0	4	154	5	159
08:15	4	0	4	155	5	160
08:30	5	0	5	149	4	153
Total	14	0	14	630	20	650

Date 17 October 2018

Time	A to C - N31(N) to Unnamed Road		Veh. Total	A to B - N31(N) to N31(S)		Veh. Total
	LV	HV		LV	HV	
16:30	5	0	5	174	3	177
16:45	7	0	7	167	5	172
17:00	5	0	5	154	4	158
17:15	6	0	6	143	2	145
17:30	14	0	14	172	3	175
17:45	12	0	12	146	2	148
18:00	8	0	8	178	5	183
18:15	13	0	13	146	5	151
Total	70	0	70	1280	29	1309

Peak Hour 17:30 to 18:30

17:30	14	0	14	172	3	175
17:45	12	0	12	146	2	148
18:00	8	0	8	178	5	183
18:15	13	0	13	146	5	151
Total	47	0	47	642	15	657

Site No. 3
 Location N31(N) / N31(S) / Unnamed Road
 Date 17 October 2018

Time	B to A - N31(S) to N31(N)		Veh. Total	B to C - N31(S) to Unnamed Road		Veh. Total
	LV	HV		LV	HV	
07:30	198	7	205	3	0	3
07:45	203	6	209	1	0	1
08:00	208	1	209	3	0	3
08:15	206	10	216	7	0	7
08:30	216	8	224	7	0	7
08:45	153	8	161	15	0	15
09:00	137	10	147	3	0	3
09:15	162	5	167	6	0	6
Total	1483	55	1538	45	0	45

Peak Hour 07:45 to 08:45

07:45	203	6	209	1	0	1
08:00	208	1	209	3	0	3
08:15	206	10	216	7	0	7
08:30	216	8	224	7	0	7
Total	833	25	858	18	0	18

Date 17 October 2018

Time	B to A - N31(S) to N31(N)		Veh. Total	B to C - N31(S) to Unnamed Road		Veh. Total
	LV	HV		LV	HV	
16:30	163	3	166	5	0	5
16:45	186	7	193	2	0	2
17:00	174	2	176	4	0	4
17:15	206	5	211	3	0	3
17:30	204	1	205	6	0	6
17:45	236	3	239	4	0	4
18:00	218	1	219	10	0	10
18:15	210	5	215	5	0	5
Total	1597	27	1624	39	0	39

Peak Hour 17:30 to 18:30

17:30	204	1	205	6	0	6
17:45	236	3	239	4	0	4
18:00	218	1	219	10	0	10
18:15	210	5	215	5	0	5
Total	868	10	878	25	0	25

Site No. 3
 Location N31(N) / N31(S) / Unnamed Road
 Date 17 October 2018

Time	C to B - Unnamed Road to N31(S)		Veh. Total	C to A - Unnamed Road to N31(N)		Veh. Total
	LV	HV		LV	HV	
07:30	5	0	5	14	0	14
07:45	10	0	10	16	0	16
08:00	12	0	12	15	0	15
08:15	13	0	13	11	0	11
08:30	8	0	8	20	0	20
08:45	3	0	3	12	0	12
09:00	8	0	8	8	0	8
09:15	5	0	5	8	0	8
Total	64	0	64	104	0	104

Peak Hour 07:45 to 08:45

07:45	10	0	10	16	0	16
08:00	12	0	12	15	0	15
08:15	13	0	13	11	0	11
08:30	8	0	8	20	0	20
Total	43	0	43	62	0	62

Date 17 October 2018

Time	C to B - Unnamed Road to N31(S)		Veh. Total	C to A - Unnamed Road to N31(N)		Veh. Total
	LV	HV		LV	HV	
16:30	3	0	3	2	0	2
16:45	3	0	3	3	0	3
17:00	8	0	8	7	0	7
17:15	9	0	9	4	0	4
17:30	8	0	8	6	0	6
17:45	5	0	5	7	0	7
18:00	2	0	2	4	0	4
18:15	10	0	10	3	0	3
Total	48	0	48	36	0	36

Peak Hour 17:30 to 18:30

17:30	8	0	8	6	0	6
17:45	5	0	5	7	0	7
18:00	2	0	2	4	0	4
18:15	10	0	10	3	0	3
Total	25	0	25	20	0	20

Site No. 3
 Location N31(N) / N31(S) / Unnamed Road
 Date 17 October 2018

Time	To Arm A - N31(N)		Veh. Total	From Arm A - N31(N)		Veh. Total
	LV	HV		LV	HV	
07:30	212	7	219	154	8	162
07:45	219	6	225	173	6	179
08:00	223	1	224	158	5	163
08:15	217	10	227	159	5	164
08:30	236	8	244	154	4	158
08:45	165	8	173	168	10	178
09:00	145	10	155	179	6	185
09:15	170	5	175	154	10	164
Total	1587	55	1642	1299	54	1353

Peak Hour 07:45 to 08:45

07:45	219	6	225	173	6	179
08:00	223	1	224	158	5	163
08:15	217	10	227	159	5	164
08:30	236	8	244	154	4	158
Total	895	25	920	644	20	664

Date 17 October 2018

Time	To Arm A - N31(N)		Veh. Total	From Arm A - N31(N)		Veh. Total
	LV	HV		LV	HV	
16:30	165	3	168	179	3	182
16:45	189	7	196	174	5	179
17:00	181	2	183	159	4	163
17:15	210	5	215	149	2	151
17:30	210	1	211	186	3	189
17:45	243	3	246	158	2	160
18:00	222	1	223	186	5	191
18:15	213	5	218	159	5	164
Total	1633	27	1660	1350	29	1379

Peak Hour 17:30 to 18:30

17:30	210	1	211	186	3	189
17:45	243	3	246	158	2	160
18:00	222	1	223	186	5	191
18:15	213	5	218	159	5	164
Total	888	10	898	689	15	704

Site No. 3
 Location N31(N) / N31(S) / Unnamed Road
 Date 17 October 2018

Time	To Arm B - N31(S)		Veh. Total	From Arm B - N31(S)		Veh. Total
	LV	HV		LV	HV	
07:30	157	8	165	201	7	208
07:45	182	6	188	204	6	210
08:00	166	5	171	211	1	212
08:15	168	5	173	213	10	223
08:30	157	4	161	223	8	231
08:45	162	10	172	168	8	176
09:00	177	6	183	140	10	150
09:15	148	10	158	168	5	173
Total	1317	54	1371	1528	55	1583

Peak Hour 07:45 to 08:45

07:45	182	6	188	204	6	210
08:00	166	5	171	211	1	212
08:15	168	5	173	213	10	223
08:30	157	4	161	223	8	231
Total	673	20	693	851	25	876

Date 17 October 2018

Time	To Arm B - N31(S)		Veh. Total	From Arm B - N31(S)		Veh. Total
	LV	HV		LV	HV	
16:30	177	3	180	168	3	171
16:45	170	5	175	188	7	195
17:00	162	4	166	178	2	180
17:15	152	2	154	209	5	214
17:30	180	3	183	210	1	211
17:45	151	2	153	240	3	243
18:00	180	5	185	228	1	229
18:15	156	5	161	215	5	220
Total	1328	29	1357	1636	27	1663

Peak Hour 17:30 to 18:30

17:30	180	3	183	210	1	211
17:45	151	2	153	240	3	243
18:00	180	5	185	228	1	229
18:15	156	5	161	215	5	220
Total	667	15	682	893	10	903

Site No. 3
 Location N31(N) / N31(S) / Unnamed Road
 Date 17 October 2018

Time	To Arm C - Unnamed Road		Veh. Total	From Arm C - Unnamed Road		Veh. Total
	LV	HV		LV	HV	
07:30	5	0	5	19	0	19
07:45	2	0	2	26	0	26
08:00	7	0	7	27	0	27
08:15	11	0	11	24	0	24
08:30	12	0	12	28	0	28
08:45	24	0	24	15	0	15
09:00	13	0	13	16	0	16
09:15	17	0	17	13	0	13
Total	91	0	91	168	0	168

Peak Hour 07:45 to 08:45

07:45	2	0	2	26	0	26
08:00	7	0	7	27	0	27
08:15	11	0	11	24	0	24
08:30	12	0	12	28	0	28
Total	32	0	32	105	0	105

Date 17 October 2018

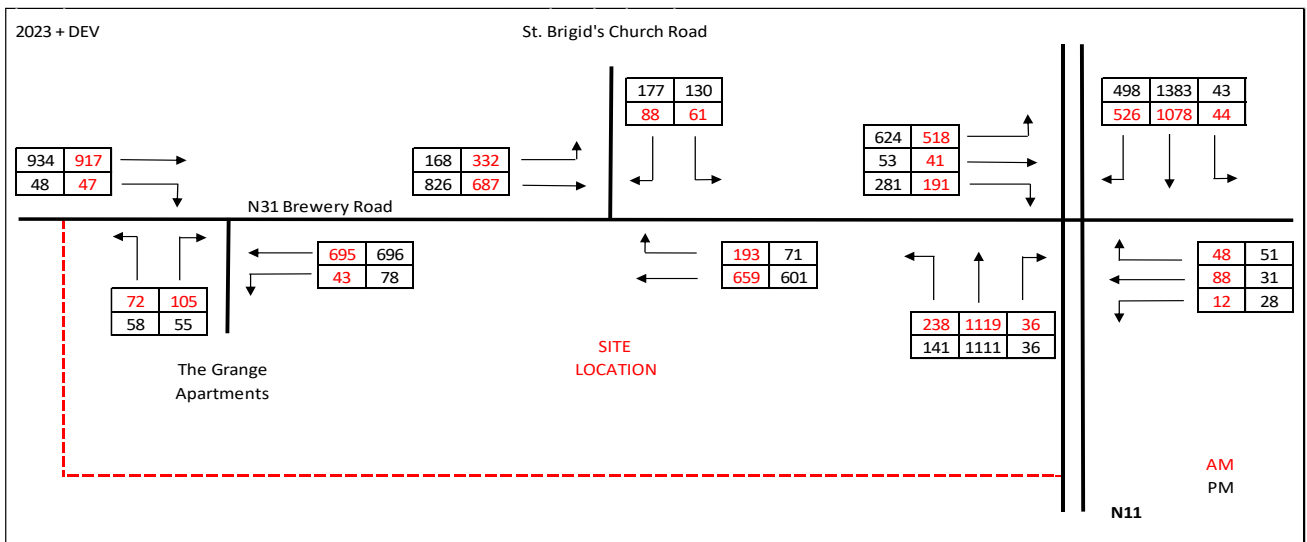
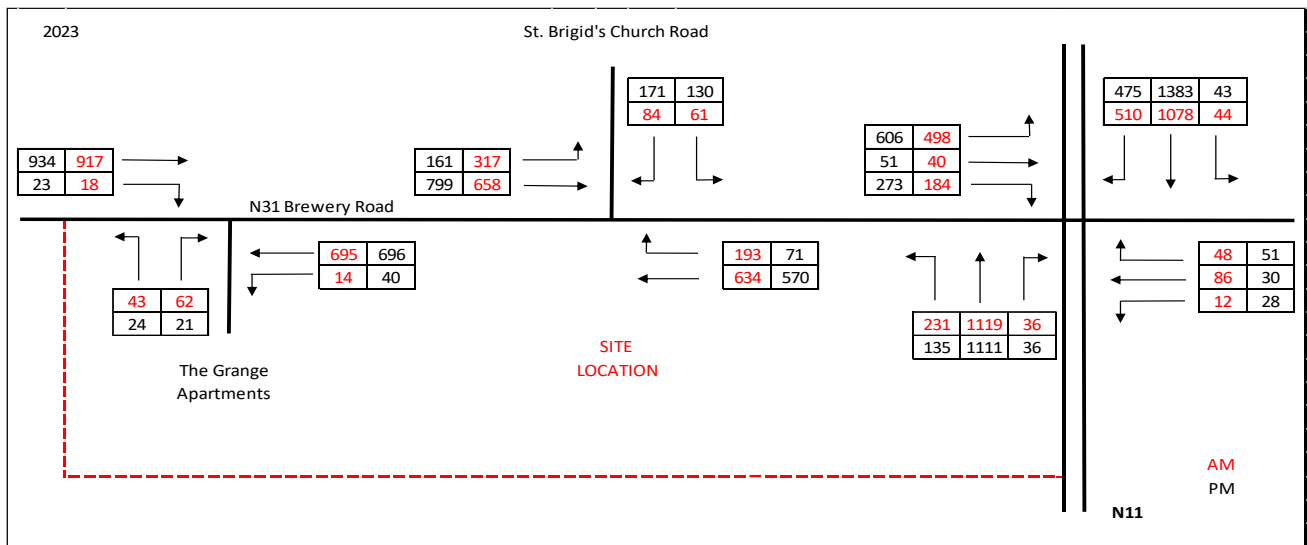
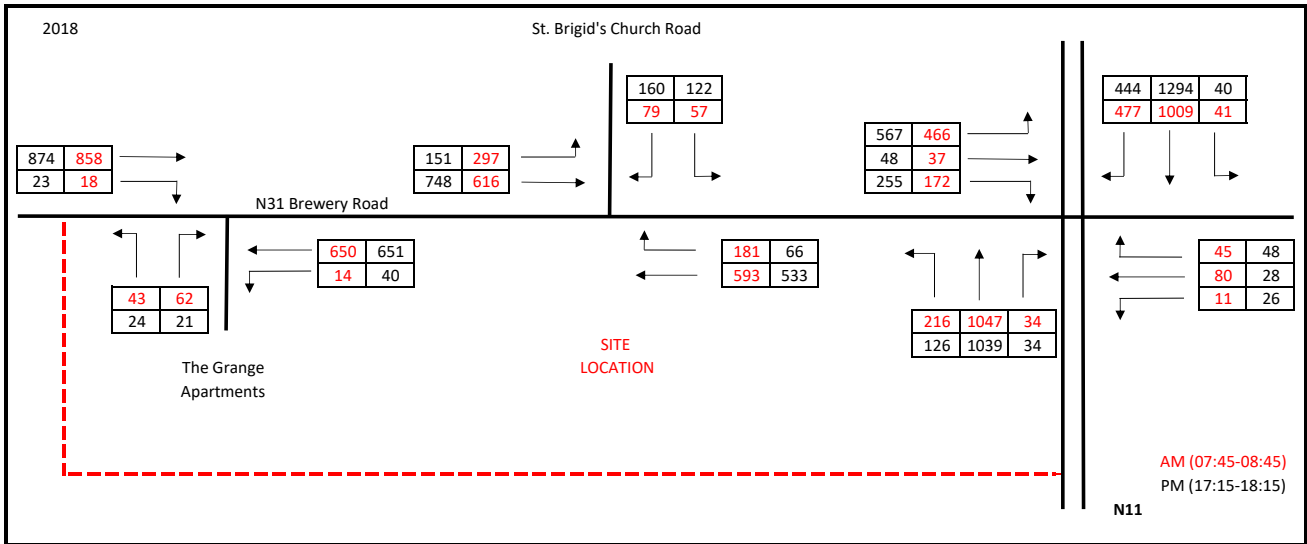
Time	To Arm C - Unnamed Road		Veh. Total	From Arm C - Unnamed Road		Veh. Total
	LV	HV		LV	HV	
16:30	10	0	10	5	0	5
16:45	9	0	9	6	0	6
17:00	9	0	9	15	0	15
17:15	9	0	9	13	0	13
17:30	20	0	20	14	0	14
17:45	16	0	16	12	0	12
18:00	18	0	18	6	0	6
18:15	18	0	18	13	0	13
Total	109	0	109	84	0	84

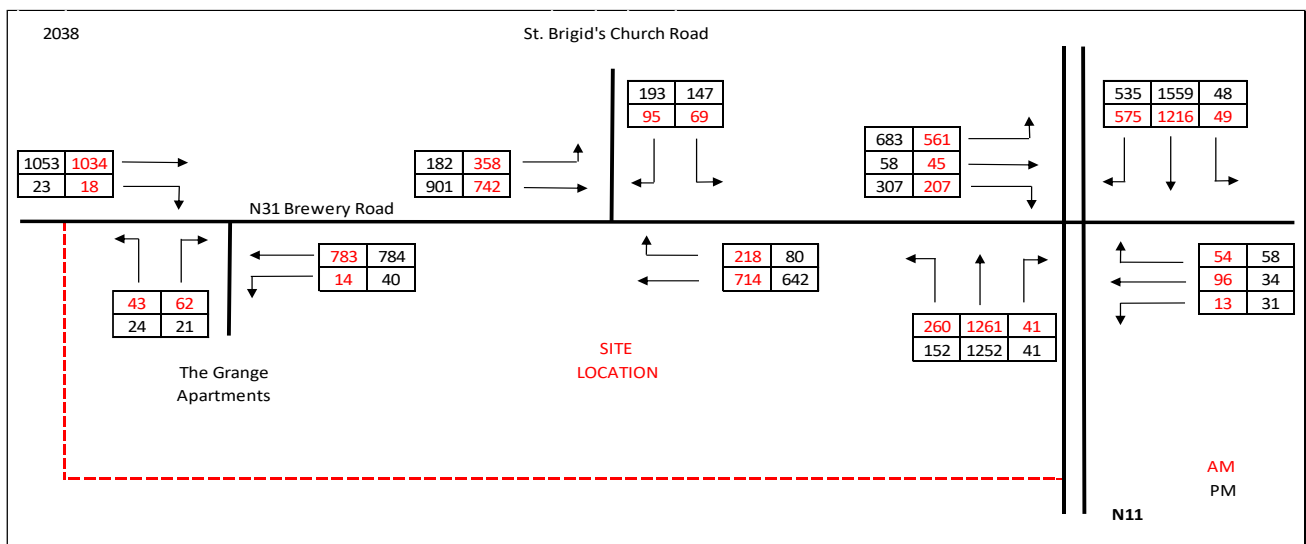
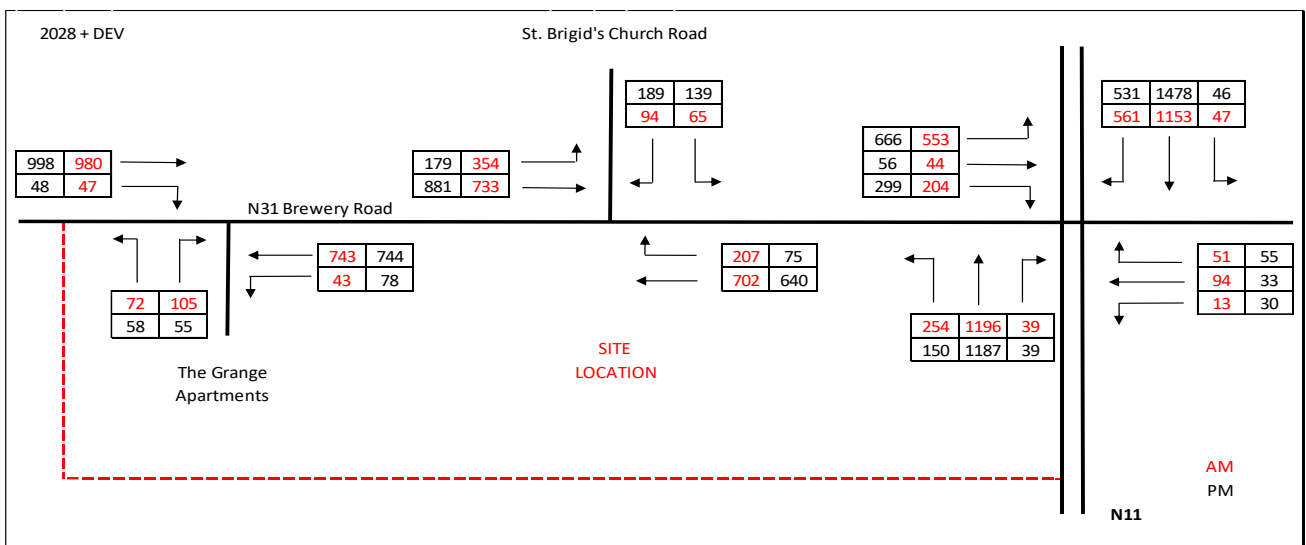
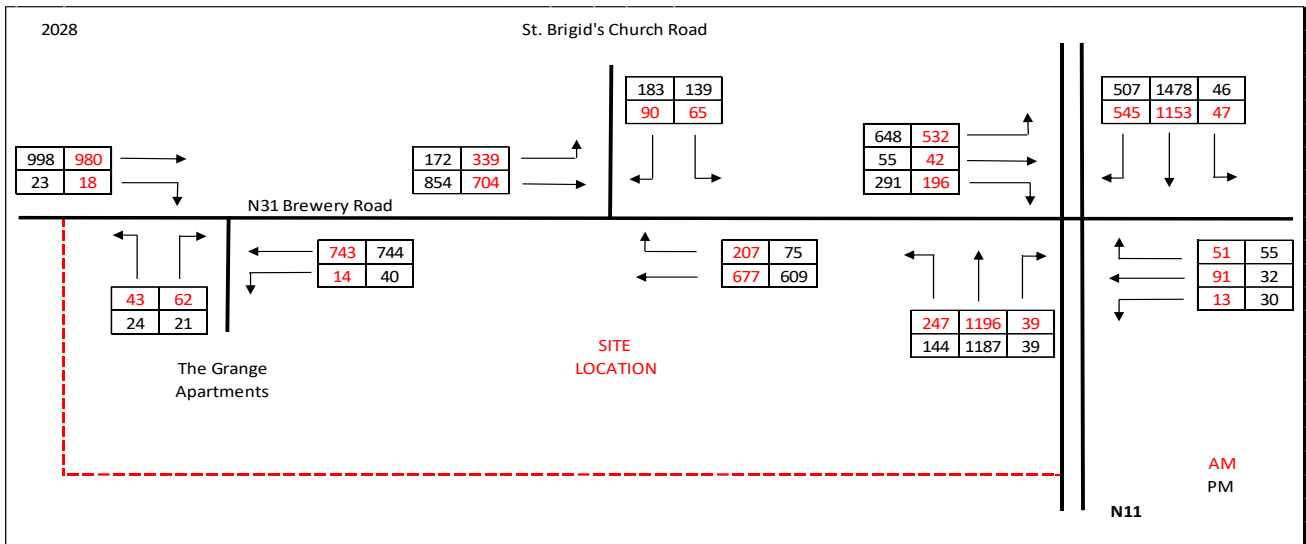
Peak Hour 17:30 to 18:30

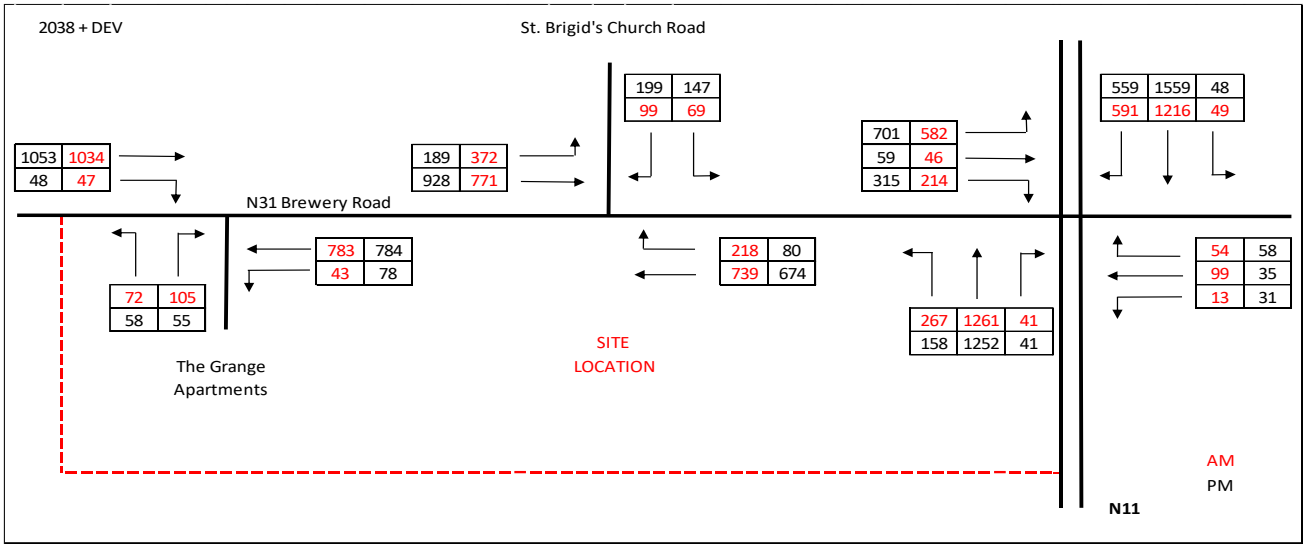
17:30	20	0	20	14	0	14
17:45	16	0	16	12	0	12
18:00	18	0	18	6	0	6
18:15	18	0	18	13	0	13
Total	72	0	72	45	0	45

Appendix B

Traffic Flows







Appendix C

Junction Modelling

<h1>Junctions 9</h1>
<h2>PICADY 9 - Priority Intersection Module</h2>
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
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Filename: JUNCTION 3 - ALL SCENARIOS.j9

Path: M:\Projects\18\18-093 - Brewery Road Apts\Design\Civil\Traffic\Junction 3

Report generation date: 26/08/2019 09:10:14

- »2018, AM
- »2018, PM
- »2023, AM
- »2023, PM
- »2023 + DEV, AM
- »2023 + DEV, PM
- »2028, AM
- »2028, PM
- »2028 + DEV, AM
- »2028 + DEV, PM
- »2038, AM
- »2038, PM
- »2038 + DEV, AM
- »2038 + DEV, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS
2018										
Stream B-C	0.1	8.17	0.09	A	A	0.1	7.57	0.05	A	A
Stream B-A	0.3	16.61	0.22	C		0.1	14.35	0.08	B	
Stream C-AB	0.1	3.58	0.08	A		0.2	3.65	0.10	A	
2023										
Stream B-C	0.1	8.39	0.09	A	A	0.1	7.74	0.05	A	A
Stream B-A	0.3	18.18	0.24	C		0.1	15.52	0.08	C	
Stream C-AB	0.2	3.49	0.09	A		0.3	3.56	0.11	A	
2023 + DEV										
Stream B-C	0.2	9.61	0.16	A	A	0.1	8.79	0.12	A	A
Stream B-A	0.7	25.04	0.42	D		0.3	19.27	0.23	C	
Stream C-AB	0.9	4.13	0.23	A		1.0	4.17	0.24	A	
2028										
Stream B-C	0.1	8.65	0.09	A	A	0.1	7.94	0.05	A	A
Stream B-A	0.3	20.21	0.26	C		0.1	16.99	0.09	C	
Stream C-AB	0.2	3.40	0.09	A		0.3	3.48	0.13	A	
2028 + DEV										
Stream B-C	0.2	10.00	0.17	A	A	0.1	9.07	0.13	A	A
Stream B-A	0.8	29.03	0.46	D		0.3	21.59	0.25	C	
Stream C-AB	1.1	4.11	0.25	A		1.2	4.16	0.27	A	
2038										
Stream B-C	0.1	8.88	0.10	A	A	0.1	8.12	0.05	A	A
Stream B-A	0.4	22.32	0.28	C		0.1	18.48	0.10	C	
Stream C-AB	0.2	3.33	0.10	A		0.4	3.43	0.14	A	
2038 + DEV										
Stream B-C	0.2	10.35	0.17	B	A	0.1	9.33	0.13	A	A
Stream B-A	1.0	33.52	0.50	D		0.4	24.04	0.27	C	
Stream C-AB	1.3	4.12	0.28	A		1.4	4.19	0.29	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	01/02/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAINf.silva
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2018	AM	FLAT	07:45	08:45	60	✓
D2	2018	PM	FLAT	17:15	18:15	60	✓
D3	2023	AM	FLAT	07:45	08:45	60	✓
D4	2023	PM	FLAT	17:15	18:15	60	✓
D5	2023 + DEV	AM	FLAT	07:45	08:45	60	✓
D6	2023 + DEV	PM	FLAT	17:15	18:15	60	✓
D7	2028	AM	FLAT	07:45	08:45	60	✓
D8	2028	PM	FLAT	17:15	18:15	60	✓
D9	2028 + DEV	AM	FLAT	07:45	08:45	60	✓
D10	2028 + DEV	PM	FLAT	17:15	18:15	60	✓
D11	2038	AM	FLAT	07:45	08:45	60	✓
D12	2038	PM	FLAT	17:15	18:15	60	✓
D13	2038 + DEV	AM	FLAT	07:45	08:45	60	✓
D14	2038 + DEV	PM	FLAT	17:15	18:15	60	✓

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	N31 Brewery Road (E)		Major
B	Site Access		Minor
C	N31 Brewery Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.50			100.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	3.30	3.30	150	80

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	585	0.090	0.228	0.144	0.326
1	B-C	695	0.090	0.228	-	-
1	C-B	632	0.208	0.208	-	-

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)	Single time segment only
D1	2018	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	664	100.000
B		✓	105	100.000
C		✓	876	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	14	650
	B	62	0	43
	C	858	18	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.09	8.17	0.1	A
B-A	0.22	16.61	0.3	C
C-AB	0.08	3.58	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	43	483	0.089	43	0.1	8.170	A
B-A	62	278	0.223	62	0.3	16.612	C
C-AB	85	1090	0.078	84	0.1	3.580	A
C-A	791			791			
A-B	14			14			
A-C	650			650			

2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		0.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D2	2018	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	691	100.000
B		✓	45	100.000
C		✓	897	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	40	651
	B	21	0	24
	C	874	23	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.05	7.57	0.1	A
B-A	0.08	14.35	0.1	B
C-AB	0.10	3.65	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	24	500	0.048	24	0.1	7.569	A
B-A	21	272	0.077	21	0.1	14.353	B
C-AB	112	1099	0.102	112	0.2	3.649	A
C-A	785			785			
A-B	40			40			
A-C	651			651			

2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D3	2023	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	709	100.000
B		✓	105	100.000
C		✓	935	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	14	695
	B	62	0	43
	C	917	18	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.09	8.39	0.1	A
B-A	0.24	18.18	0.3	C
C-AB	0.09	3.49	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	43	472	0.091	43	0.1	8.394	A
B-A	62	259	0.239	62	0.3	18.177	C
C-AB	96	1128	0.085	96	0.2	3.486	A
C-A	839			839			
A-B	14			14			
A-C	695			695			

2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		0.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D4	2023	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	736	100.000
B		✓	45	100.000
C		✓	957	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	40	696
	B	21	0	24
	C	934	23	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.05	7.74	0.1	A
B-A	0.08	15.52	0.1	C
C-AB	0.11	3.56	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	24	489	0.049	24	0.1	7.744	A
B-A	21	253	0.083	21	0.1	15.521	C
C-AB	128	1138	0.113	128	0.3	3.562	A
C-A	829			829			
A-B	40			40			
A-C	696			696			

2023 + DEV, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		2.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2023 + DEV	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	738	100.000
B		✓	177	100.000
C		✓	964	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	43	695
	B	105	0	72
	C	917	47	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.16	9.61	0.2	A
B-A	0.42	25.04	0.7	D
C-AB	0.23	4.13	0.9	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	72	446	0.161	72	0.2	9.613	A
B-A	105	247	0.425	104	0.7	25.036	D
C-AB	254	1126	0.225	253	0.9	4.126	A
C-A	710			710			
A-B	43			43			
A-C	695			695			

2023 + DEV, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D6	2023 + DEV	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	774	100.000
B		✓	113	100.000
C		✓	982	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	78	696
	B	55	0	58
	C	934	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.12	8.79	0.1	A
B-A	0.23	19.27	0.3	C
C-AB	0.24	4.17	1.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	58	467	0.124	58	0.1	8.787	A
B-A	55	241	0.228	55	0.3	19.275	C
C-AB	271	1135	0.239	270	1.0	4.167	A
C-A	711			711			
A-B	78			78			
A-C	696			696			

2028, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2028	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	757	100.000
B		✓	105	100.000
C		✓	998	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	14	743
	B	62	0	43
	C	980	18	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.09	8.65	0.1	A
B-A	0.26	20.21	0.3	C
C-AB	0.09	3.40	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	43	459	0.094	43	0.1	8.651	A
B-A	62	239	0.259	62	0.3	20.212	C
C-AB	111	1170	0.095	110	0.2	3.395	A
C-A	887			887			
A-B	14			14			
A-C	743			743			

2028, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		0.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D8	2028	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	784	100.000
B		✓	45	100.000
C		✓	1021	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	40	744
	B	21	0	24
	C	998	23	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.05	7.94	0.1	A
B-A	0.09	16.99	0.1	C
C-AB	0.13	3.48	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	24	477	0.050	24	0.1	7.943	A
B-A	21	233	0.090	21	0.1	16.994	C
C-AB	148	1181	0.125	148	0.3	3.482	A
C-A	873			873			
A-B	40			40			
A-C	744			744			

2028 + DEV, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		2.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D9	2028 + DEV	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	786	100.000
B		✓	177	100.000
C		✓	1027	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	43	743
	B	105	0	72
	C	980	47	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.17	10.00	0.2	A
B-A	0.46	29.03	0.8	D
C-AB	0.25	4.11	1.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	72	432	0.167	72	0.2	9.996	A
B-A	105	227	0.462	104	0.8	29.027	D
C-AB	292	1168	0.250	291	1.1	4.108	A
C-A	735			735			
A-B	43			43			
A-C	743			743			

2028 + DEV, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.52	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D10	2028 + DEV	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	822	100.000
B		✓	113	100.000
C		✓	1046	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	78	744
	B	55	0	58
	C	998	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.13	9.07	0.1	A
B-A	0.25	21.59	0.3	C
C-AB	0.27	4.16	1.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	58	455	0.128	58	0.1	9.072	A
B-A	55	221	0.249	55	0.3	21.593	C
C-AB	314	1178	0.266	313	1.2	4.161	A
C-A	732			732			
A-B	78			78			
A-C	744			744			

2038, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D11	2038	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	797	100.000
B		✓	105	100.000
C		✓	1052	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	14	783
	B	62	0	43
	C	1034	18	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.10	8.88	0.1	A
B-A	0.28	22.32	0.4	C
C-AB	0.10	3.33	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	43	448	0.096	43	0.1	8.883	A
B-A	62	223	0.279	62	0.4	22.316	C
C-AB	125	1207	0.104	125	0.2	3.327	A
C-A	927			927			
A-B	14			14			
A-C	783			783			

2038, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		0.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D12	2038	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	824	100.000
B		✓	45	100.000
C		✓	1076	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	40	784
	B	21	0	24
	C	1053	23	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.05	8.12	0.1	A
B-A	0.10	18.48	0.1	C
C-AB	0.14	3.43	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	24	467	0.051	24	0.1	8.118	A
B-A	21	216	0.097	21	0.1	18.477	C
C-AB	169	1219	0.138	168	0.4	3.426	A
C-A	907			907			
A-B	40			40			
A-C	784			784			

2038 + DEV, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		2.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D13	2038 + DEV	AM	FLAT	07:45	08:45	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	826	100.000
B		✓	177	100.000
C		✓	1081	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	43	783
	B	105	0	72
	C	1034	47	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.17	10.35	0.2	B
B-A	0.50	33.52	1.0	D
C-AB	0.28	4.12	1.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	72	419	0.172	72	0.2	10.354	B
B-A	105	210	0.499	104	1.0	33.518	D
C-AB	332	1205	0.275	330	1.3	4.119	A
C-A	749			749			
A-B	43			43			
A-C	783			783			

2038 + DEV, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	N31 Brewery Road/Site Access	T-Junction	Two-way		1.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D14	2038 + DEV	PM	FLAT	17:15	18:15	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	862	100.000
B		✓	113	100.000
C		✓	1101	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	78	784
	B	55	0	58
	C	1053	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.13	9.33	0.1	A
B-A	0.27	24.04	0.4	C
C-AB	0.29	4.19	1.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:15 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	58	444	0.131	58	0.1	9.331	A
B-A	55	204	0.270	55	0.4	24.037	C
C-AB	358	1216	0.294	356	1.4	4.190	A
C-A	743			743			
A-B	78			78			
A-C	784			784			

Appendix D

Trip Generation – TRICS Database

Calculation Reference: AUDIT-561501-190201-0242

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

15 GREATER DUBLIN
 DL DUBLIN 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: 372 to 372 (units:)
 Range Selected by User: 372 to 372 (units:)

Parking Spaces Range: Selected: 0 to 386 Actual: 0 to 386

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 11/05/10

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 1 days

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

Selected survey types:

Manual count 1 days
 Directional ATC Count 0 days

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

Selected Locations:

Edge of Town 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:

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:

C3 1 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

20,001 to 25,000 1 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*Population within 5 miles:

500,001 or More 1 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*Car ownership within 5 miles:

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:

Yes 1 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 1 days

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

LIST OF SITES relevant to selection parameters

1	DL-03-C-07	BLOCKS OF FLATS	DUBLIN
	SANDYFORD ROAD		
	DUBLIN		
	DUNDRUM		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	372	
	Survey date: TUESDAY	11/05/10	Survey Type: MANUAL

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

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

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	372	0.040	1	372	0.118	1	372	0.158
08:00 - 09:00	1	372	0.048	1	372	0.153	1	372	0.201
09:00 - 10:00	1	372	0.040	1	372	0.070	1	372	0.110
10:00 - 11:00	1	372	0.027	1	372	0.035	1	372	0.062
11:00 - 12:00	1	372	0.038	1	372	0.027	1	372	0.065
12:00 - 13:00	1	372	0.032	1	372	0.035	1	372	0.067
13:00 - 14:00	1	372	0.048	1	372	0.059	1	372	0.107
14:00 - 15:00	1	372	0.038	1	372	0.032	1	372	0.070
15:00 - 16:00	1	372	0.043	1	372	0.054	1	372	0.097
16:00 - 17:00	1	372	0.040	1	372	0.038	1	372	0.078
17:00 - 18:00	1	372	0.102	1	372	0.040	1	372	0.142
18:00 - 19:00	1	372	0.118	1	372	0.108	1	372	0.226
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.614			0.769			1.383

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

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

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION

Category : D - NURSERY

VEHICLESSelected regions and areas:

12 CONNAUGHT		
RO ROSCOMMON		2 days
15 GREATER DUBLIN		
DL DUBLIN		1 days
17 ULSTER (NORTHERN IRELAND)		
DE DERRY		1 days

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

Secondary Filtering selection:

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

Parameter: Number of pupils
 Actual Range: 18 to 106 (units:)
 Range Selected by User: 18 to 106 (units:)

Parking Spaces Range: Selected: 10 to 35 Actual: 10 to 35

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 27/04/18

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

Selected survey days:

Wednesday	1 days
Friday	3 days

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

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	1
Edge of Town	1
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	1
Residential Zone	3

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

Secondary Filtering selection:Use Class:

D1	4 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	1 days
100,001 or More	1 days

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

Population within 5 miles:

5,001 to 25,000	3 days
500,001 or More	1 days

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

Car ownership within 5 miles:

1.1 to 1.5	4 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	4 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	4 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

<p>1 DE-04-D-01 DAY NURSERY COURTAULD WAY NEAR LONDONDERRY EGLINTON Free Standing (PPS6 Out of Town) Industrial Zone Total Number of pupils: 18 <i>Survey date: FRIDAY 22/06/12</i></p>	<p>DERRY</p> <p><i>Survey Type: MANUAL</i></p>
<p>2 DL-04-D-01 NURSERY 78 THE PARK DUBLIN BEAUMONT WOODS Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 30 <i>Survey date: WEDNESDAY 26/09/12</i></p>	<p>DUBLIN</p> <p><i>Survey Type: MANUAL</i></p>
<p>3 RO-04-D-01 NURSERY PARK VIEW ROSCOMMON CRUBY HILL Edge of Town Residential Zone Total Number of pupils: 106 <i>Survey date: FRIDAY 26/09/14</i></p>	<p>ROSCOMMON</p> <p><i>Survey Type: MANUAL</i></p>
<p>4 RO-04-D-02 NURSERY CIRCULAR ROAD ROSCOMMON BALLYPHEASAN Edge of Town Centre Residential Zone Total Number of pupils: 52 <i>Survey date: FRIDAY 27/04/18</i></p>	<p>ROSCOMMON</p> <p><i>Survey Type: MANUAL</i></p>

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

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

VEHICLES

Calculation factor: 1

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	30	0.033	1	30	0.000	1	30	0.033
07:00 - 08:00	4	52	0.073	4	52	0.049	4	52	0.122
08:00 - 09:00	4	52	0.383	4	52	0.243	4	52	0.626
09:00 - 10:00	4	52	0.379	4	52	0.388	4	52	0.767
10:00 - 11:00	4	52	0.039	4	52	0.053	4	52	0.092
11:00 - 12:00	4	52	0.097	4	52	0.029	4	52	0.126
12:00 - 13:00	4	52	0.204	4	52	0.267	4	52	0.471
13:00 - 14:00	4	52	0.126	4	52	0.146	4	52	0.272
14:00 - 15:00	4	52	0.141	4	52	0.097	4	52	0.238
15:00 - 16:00	4	52	0.068	4	52	0.131	4	52	0.199
16:00 - 17:00	4	52	0.136	4	52	0.136	4	52	0.272
17:00 - 18:00	4	52	0.248	4	52	0.311	4	52	0.559
18:00 - 19:00	4	52	0.015	4	52	0.087	4	52	0.102
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.942			1.937			3.879

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.

UK and Ireland Office Locations



