consulting engineers

NRB

Transportation Assessment Report

including....

Preliminary Travel Plan

(Appendix G)

DMURS Statement of Consistency

(Appendix H)

Stage 1 Road Safety/Quality Audit

(Appendix I)

Bus Capacity/Demand Report

(*Appendix J)*

For

Proposed Omni Plaza SHD Development

At

Omni Park Shopping Centre,
Swords Road, Santry, Dublin 9.

on behalf of

Serendale Ltd.

SUBMISSION ISSUE

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EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation impact associated with the construction of a proposed residential development on lands to the north west corner of the Omni Park Shopping Centre and at Santry Hall Industrial Estate, Santry, Dublin 9. The development consists of a total of 457 private residential apartment units, 431m^2 Gross Floor Area (GFA) of retail/commercial space and a Crèche of 226m^2 GFA on the site. The scheme also includes associated residential amenity, community space and infrastructural improvements. We have assessed the impact of the traffic associated with these proposed elements, together with the established traffic and all local committed development traffic (permitted but as yet unbuilt) on the adjacent affected road network for the AM Peak and PM Peak Hours.

A basement car park is proposed for the scheme and is to be accessed internally from within the Omni Park Shopping Centre site, which also incorporates bicycle and waste storage areas. The parking quantum provided is further considered within this Report.

It should be noted that, as a 'brownfield site' with a previous use, the subject lands historically generated traffic volumes associated with the permitted uses. The now proposed uses should be considered in this context, as the permitted uses would have generated traffic volumes in their own right, including more onerous heavy goods vehicle traffic. Given the developments location within and adjacent to Omni Park Shopping Centre, its service offerings and employment opportunities, there is significant scope for linked trips and modal shift away from the private car at this site. In these terms this Transportation Assessment is considered conservative and robust in terms of its approach.

The Transportation Assessment has been prepared in accordance with the TII's Traffic & Transportation Assessment Guidelines and addresses the traffic impact of the proposals. The assessment is based on a new comprehensive Weekday AM & Weekday PM Peak classified interval turning movement surveys of the local roads carried out in 2022 during normal school term following lifting of the Covid 19 Pandemic Measures (Refer to Data as ***Appendix B***).

The Report & analysis includes an assessment of impact of the proposed development traffic during the projected Opening Year 2024 together with an assessment of the Design Year 2039 (15 years following opening). We have also included the traffic generation associated with the significant developments in the local area that have received planning permission but are as-of-yet unbuilt and unoccupied.

With regard to the selected Opening Year of 2024, in the event that the development is completed/occupied at a later date, this will have no implications for the conclusions of the study. The published Greater Dublin Metropolitan Area Annual Traffic Growth Rate (Table

6.1 of PE-PAG-02017 Unit 5.3) is 1.62% Per Annum for light vehicles (cars) during the period 2016 to 2030 (or an annual growth rate of 1.0162, and even less beyond this time period). Therefore, the selection or use of a later Opening Year by 1-5 years, if required for any reason, would have the effect of slightly increasing background traffic levels, thereby actually reducing the net effect of any development traffic, but having no real effect or impact on the conclusions of the Study, based on our experience.

This site is within easy walking distance of current high frequency Dublin Bus Services running along Swords Road via Santry Village, including 24 hour services. The site will also in future benefit from being immediately located on route of the Core Bus Corridor #2 (Swords/City Centre), being a main spine feeder route, thereby ensuring long term multi modal accessibility. This will result in further reduced dependence on the car as a primary mode of travel. Based on published preferred routes, there are no Client owned lands for the subject scheme required for Core Bus Corridor #2 and the proposed scheme does not prejudice the future delivery of Bus Connects here. The impact & demand for bus services is set out in the enclosed Report included as ***Appendix J,*** illustrating a maximum increase in demand of 2.8% to 3.6% where only 40-50% bus occupancy was observed during the survey.

The Transportation Assessment Report confirms that there is a negligible and unnoticeable traffic impact associated with the opening of the proposed subject development, and that it can be accommodated without any adverse traffic impact arising.

The Transportation Assessment confirms that the road network and the established traffic signal controlled vehicular access junction arrangement at Swords Road is more than adequate to accommodate the worst case traffic associated with the entire development being occupied and operational. The assessment also confirms that the construction and full occupation of the scheme will have a negligible and unnoticeable impact upon the operation of the adjacent road network.

The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix G***. We have also prepared a Statement of Consistency with DMURS and confirm that the internal layout is compliant with the requirements, and this is included as ***Appendix H***. An independent Road Safety Audit, together with the Designer Feedback form, has been undertaken and this is included as ***Appendix I***. A Bus Capacity & Demand Study has been prepared and is included as ***Appendix J***.

Based on our studies, we conclude that there are no adverse traffic/transportation capacity or operational issues associated with the construction and occupation of the proposed development that would prevent a positive determination of the planning application by An Bord Pleanála.

1.0 INTRODUCTION

1.1 This Transportation Assessment (TA) has been prepared by NRB Consulting Engineers Ltd and addresses the transportation capacity considerations relating to the proposal to construct a residential development on the site immediately north of and adjacent to Omni Park Shopping Centre, which will be connected to and through the established District Centre.

1.2 The proposed development consists of the construction of 457 no. apartments across 4 no. blocks, ranging in height from 4-12 storeys (over basement). The proposal includes 2 no. retail/café/restaurant units, 1 no. community building, 1 no. childcare facility, 1no. residential amenity space and 5 no. ESB substations. The development also provides for a basement carpark of 213 no. spaces and 7 no. motorcycle spaces with 7 no. creche drop-off parking spaces and 6 no. carshare parking spaces located in newly reconfigured surface carpark. The proposal provides for 768 no. bicycle parking spaces. It includes the provision of a new public open space plaza, with consequential revisions to existing commercial car parking areas, to integrate the proposals with the wider District Centre. The proposal includes the provision of pedestrian and cycle connections and improvements through Omni Park Shopping Centre, including a plaza and cycle/pedestrian link substantially in the form permitted as part of the Omni Living Strategic Housing Development (Ref. ABP-307011-20).

1.3 Access to the proposed 213 no. basement car parking spaces is via the existing Omni Park Shopping Centre. A secondary servicing and emergency access is via the existing service road to the rear of existing retail premises at Omni Park Shopping Centre and accessed from the Swords Road

1.4 In these terms, the development will undoubtedly have significant traffic progression & safety benefits for the area through complimentary residential commercial and employment uses being amalgamated on the same site.

1.5 A site location plan for the development is included below as ***Figure 1.1***.

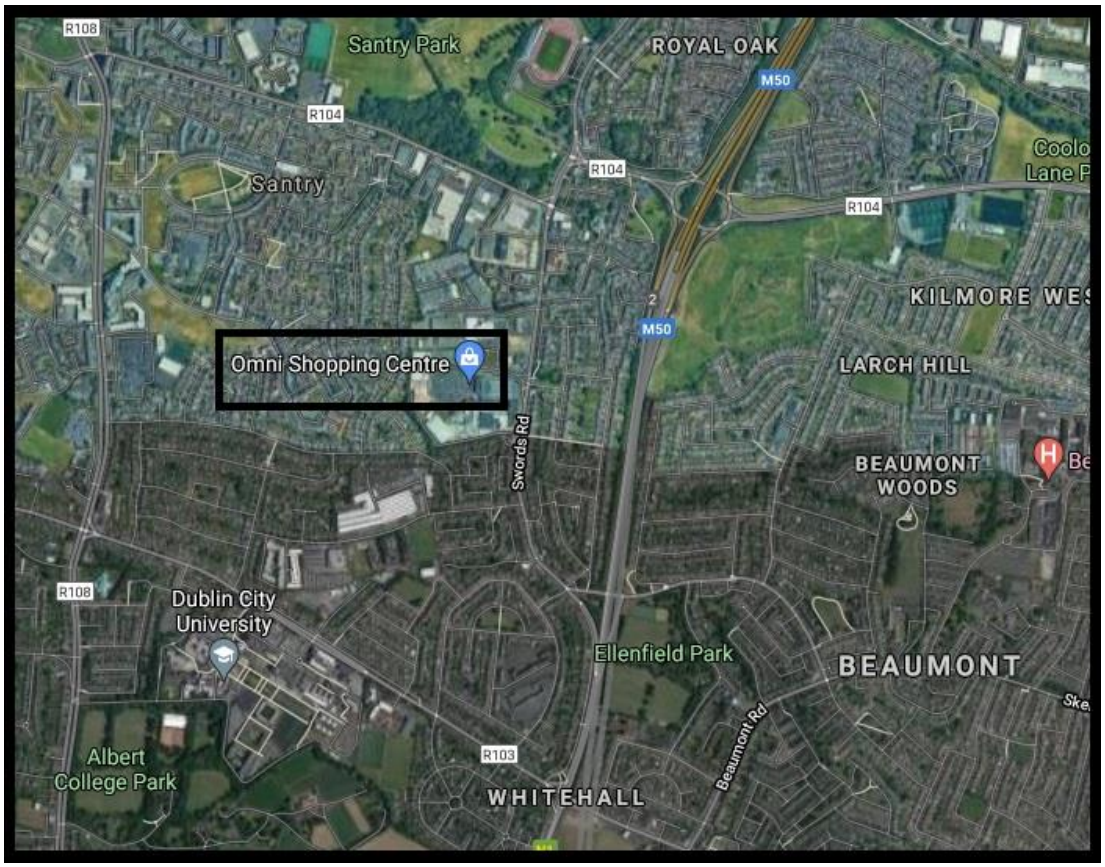


Figure 1.1: Site Location Plan in Context of Dublin

1.6 This Report addresses the impact of the proposed development and the implications for the adjacent road network for the weekday AM and PM Peak Hours, taking account of existing traffic conditions combined with committed development locally.

1.7 The site is considered to represent a highly sustainable location for primarily residential development of the nature proposed, in the context of both the short term and medium term Bus Services available and its location in the centre of an established District Centre. This is clearly supported by the Preliminary Mobility Management Plan included as ***Appendix G***, with the impact upon bus services assessed within the Bus Demand & Capacity Report included as ***Appendix J***.

1.8 The current established traffic signal controlled vehicular access to Omni Shopping Centre from Swords Road will serve as the access to the site, which is a northern extension of the established centre. The established access to the lands via Santry Hall Industrial Estate Road is to be closed to residents and the public, except for emergency access. Drawings showing the access arrangement are included herein within **Appendix A**.

1.9 The layout and design of the scheme will meet the requirements of Dublin City Council and meets the requirements of DMURS in terms of layout & geometric design (Refer to layout plan included herein as ***Appendix A***).

1.10 In describing the Receiving Environment and the Proposed Future Environment, this report addresses the following aspects of the proposed development:

- Appropriate Scale of Development Proposals (conscious that the development constitutes primarily new residential development in a long-established area), with access via the established traffic signal controlled access onto Swords Road,
- Location of the development on a Bus Corridor with high frequency services and the services and facilities available at the nearby Omni Park Shopping Centre,
- Traffic & Transportation impact,
- Capacity of the access Junction to accommodate the worst-case development traffic flows,
- Pedestrian and cyclist permeability and promotion,
- Impact of the development on the free flow and capacity of the adjacent Swords Road and affected junctions, and
- The locational characteristics of the site being in a highly sustainable location in terms of travel characteristics (Refer Preliminary Mobility Management Plan included herein).

1.11 Recommendations contained within this Transportation Assessment are based on the following sources of information and industry-standard practices:

- Transport Infrastructure Ireland (TII) Traffic & Transport Assessment Guidelines,
- TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3,
- Comprehensive traffic turning movement surveys undertaken on the adjacent roads in 2022, during normal school term, following lifting of the Covid 19 Pandemic Emergency Measures,
- Our experience in assessing the impact of Developments of this Nature, and
- Site visits and Observations.

1.12 The Report has been prepared in accordance with the requirements of TII's Traffic & Transport Assessment Guidelines. These are the professional Guidelines used to assess the impact of developments on public roads.

1.13 The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix G***. We have also prepared a Statement of

Consistency with DMURS and confirm that the internal layout is compliant with the requirements, and this is included as ***Appendix H***. An independent Stage 1 Road Safety Audit, together with the Designer Feedback form, has been undertaken and this is included as ***Appendix I***. A Bus Capacity & Demand Study has been prepared and is included as ***Appendix J***.

2.0 RECEIVING ENVIRONMENT/DEVELOPMENT PROPOSALS/PARKING

2.1 The proposed development is primarily residential in nature, with Private Residential Apartments, some small commercial/retail elements and an ancillary crèche element. The scheme also includes associated residential amenity and community space. This is a direct replacement for the former Industrial Buildings/Business uses on the site, which benefited from direct vehicular access onto Santry Hall Industrial Estate Road * onwards onto Swords Road.

2.2 Swords Road serving the site was historically an important arterial route serving the city from the north, prior to completion of the M1 and M50 Motorways, and the Dublin Port Tunnel. Swords Road past the site is an urban Regional Road, the R104. It consists of a single carriageway road, with localised widening on the approach to terminal junctions and also includes a Mon-Sat (0700-1000H and 1200-1900H) southbound Bus/Cycle lane. The road is subject to a 50kph urban speed limit past the site.

2.3 The recent 2022 traffic survey revealed that Swords Road is moderately to heavily trafficked, with a weekday AM Peak Hour Traffic Flow of 1,595 Passenger Car Units (PCUs) and a weekday PM Peak Hour Traffic Flow of 1,483 PCUs. Whilst of course these flows are significant, it is a wide single carriageway with an associated large link capacity in this area with a carrying capacity of 1,000 to 1,200 PCUs per-lane per-hour. In these terms it has a 2-way traffic carrying or 'link capacity' of approximately 2,000-2,400 PCUs. We conclude that the Swords Road is considered moderately trafficked in terms of it's Link Capacity.

2.4 A review of the Road Safety Authority (RSA) online collision database indicates that there is no record of any significant relevant collisions proximate to the site, between 2005-Date inclusive**.** As with all such urban roads of this nature, there have been several minor accidents along this stretch of Swords Rd, however these are not considered to be significant in consideration of the subject development proposals.

2.5 The Accident History from the RSA online database is reproduced in ***Figure 2.1*** below.

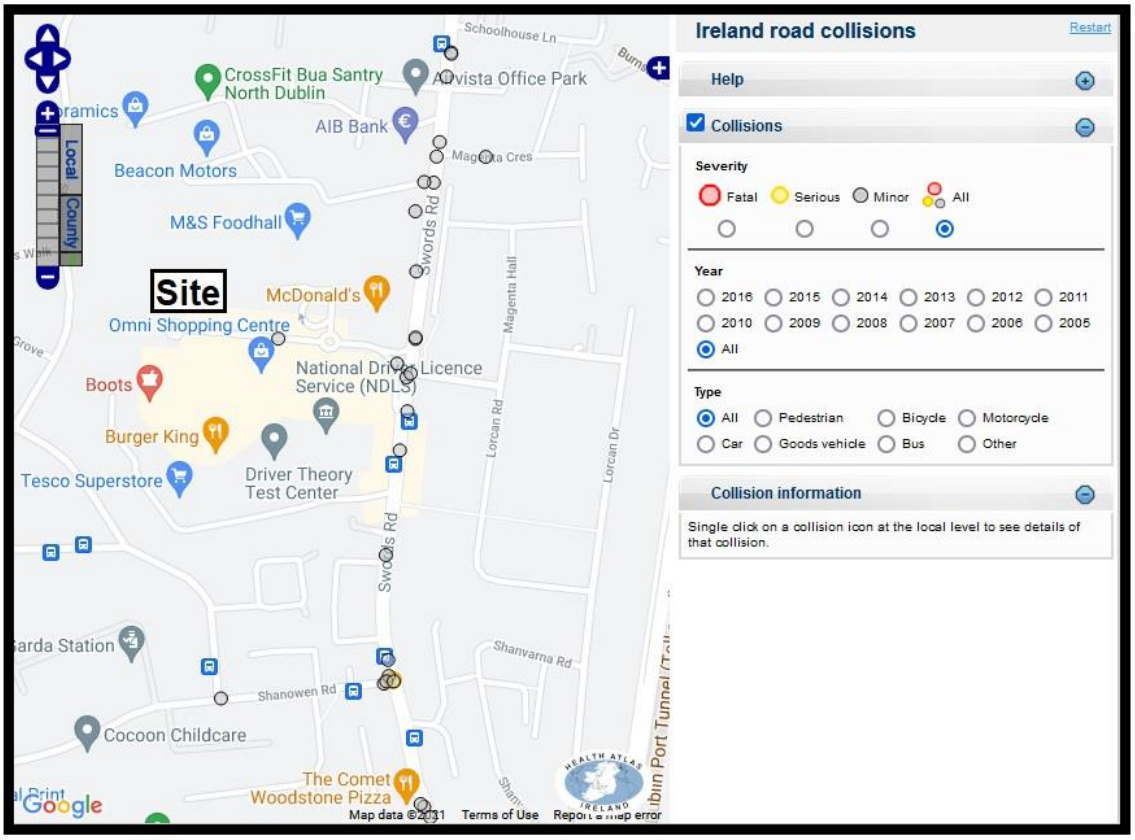


Figure 2.1; - Extract from RSA On Line Database Accidents 2005-Date (All Types)

2.6 Based on the recent traffic survey, the access road leading to Omni Park Shopping Centre is also moderately-heavily trafficked, with a weekday AM peak hour 2-way traffic flow of 764 PCUs and a weekday PM peak hour 2-way flow of 1,200 PCUs.

2.7 In light of the link capacity, the access road is considered moderately-heavily trafficked. It is recognised that the capacity of roads of this nature are ordinarily determined by the capacity of terminal junctions, and in this case therefore the capacity of the Traffic Signals on Swords Road to accommodate traffic is the key issue that is addressed within this report.

2.8 The junction of Omni Park SC Access Road & Swords Rd takes the form of a 4-arm Traffic Signal Controlled Junction. Whilst there are periodic peak time traffic queues at the junction, observation indicated that the traffic signals operate effectively.

2.9 Observation indicated that, like the vast majority of roads in the Greater Dublin Area (GDA), whilst there are some peak commuter period traffic constraints at junctions remote from the site, notwithstanding the moderate volumes of traffic generated during these commuter peak periods, in general the local network operates in an acceptable

manner, without any major issues in terms of road safety. The safety of the local roads is evidenced by the absence of a significant adverse accident history.

2.10 We have nonetheless undertaken detailed modelling and analysis of the established traffic signal controlled junction and the effect of the development otherwise on Swords Road and adjacent junctions on the network surrounding the site. Capacity Modelling using Tii-approved software was undertaken for a selected year of opening 2024 and associated design year 2039 in accordance with industry Guidelines.

2.11 A detailed classified interval turning movement survey was undertaken of the local roads during normal school term in 2022 following the lifting of the Covid 19 Pandemic Emergency Measures. This included a comprehensive classified interval survey for each of the 2 modelled periods. The surveys included observation surveys of buses for the purposes of the Bus Capacity/demand Report. An extract image showing the extent of surveys is included below as ***Figure 2.2***.

Figure 2.2 – Extant of Traffic Surveys

2.12 The Traffic Survey data was used in order to establish current peak hour traffic conditions and to establish the current usage of the roadways. The output from the surveys is included as ***Appendix B***, with the Peak Hour Network flows (expressed as PCUs) identified and extracted for use within Appendix D. This 2022 traffic survey has been used as the basis for the study.

Subject Development Proposals

2.13 Permission for a 7 year duration is sought by Serendale Limited for a Strategic Housing Development which comprises the demolition of the existing industrial / warehouse buildings northwest of Omni Park Shopping Centre, Santry, Dublin 9 and the construction of 457 no. apartments across 4 no. blocks, ranging in height from 4-12 storeys (over basement). The proposal includes 2 no. retail/café/restaurant units, 1 no. community building, 1 no. childcare facility, 1no. residential amenity space and 5 no. ESB substations.

2.14 The development also provides for a basement carpark of 213 no. spaces and 7 no. motorcycle spaces with 7 no. creche drop-off parking spaces and 6 no. carshare parking spaces located in newly reconfigured surface carpark. The proposal provides for 768 no. bicycle parking spaces.

2.15 It includes the provision of a new public open space plaza, with consequential revisions to existing commercial car parking areas, to integrate the proposals with the wider District Centre. The proposal also includes the provision of pedestrian/cycle connections & improvements through Omni Park Shopping Centre, including a plaza and cycle/pedestrian link substantially in the form permitted as part of the Omni Living Strategic Housing Development (Ref. ABP-307011-20). Access to the proposed 213 no. basement car parking spaces is via the existing Omni Park Shopping Centre. A secondary servicing and emergency access is via the existing service road to the rear of existing retail premises at Omni Park Shopping Centre and accessed from the Swords Road.

2.16 The development provides for all associated and ancillary site development, demolition and clearance works, hoarding during construction, revisions to car parking within the Omni Park Shopping Centre, soft and hard landscaping, public realm works, public lighting and signage, ancillary spaces, plant including photovoltaic panels, water infrastructure, utilities and services. The application is accompanied by an Environmental Impact Assessment Report. A full description of the development is contained within the public notices, architectural drawings and accompanying application documents

2.17 Similar to adjacent developments, it is anticipated that the development will be serviced using regular weekly refuse lorries within the site as required, with small transit vans or small-wheelbase trucks for day-to-day servicing of the apartments, which do not have onerous swept-paths and can easily be facilitated on the site. Servicing is possible from the existing surface car park plus the basement has 2.6m high zone at the bottom of the access ramp which can also accommodate deliveries and servicing by vehicles such as transit vans or similar. This will be managed by the Management Company in conjunction with the other users on site.

2.18 The scheme will include a refuse collection point where bins will be brought for collection by the Waste Service Manager on collection day, for the scheduled bin collection time, before being returned to the secure refuse stores. A separate Operational Waste Management Plan will be included with the application to ABP.

2.19 All servicing and access will take place from within Omni Park Shopping Centre. Given the scale of the other uses within the Centre, and the busy nature of the environment in the context of the overall Omni Park, the level of servicing and vehicular movements generated will likely pass unnoticed.

2.20 In traffic terms, whilst there are a significant number of apartments, residential schemes of this nature on the edge of the city centre with good transport links do not generate a significant volume of car movements. In this regard, the small scale of the entire facility is confirmed through the robust assessment of Car Traffic Generated, which is addressed further within Section 3 of this Report.

2.21 The site is also very well located to benefit both from existing Dublin Bus Services (including 24hr services) and from future service proposed as part of the Core Bus Corridor #2 (Swords-City Centre). All of the beneficial public and alternative Transportation Modes are defined in the Preliminary Mobility Management Plan included as ***Appendix G,*** with the impact upon bus services assessed within the Bus Demand/Capacity Report included as ***Appendix J***

Car Parking

2.22 The DCC Development Plan (2022-2028) (DCCDP) sets out the parking requirements for developments, and in this case the location is within Zone 2 of Map J of the DCCDP for parking requirement assessment purposes (Refer Extract included below as ***Figure 2.3***).

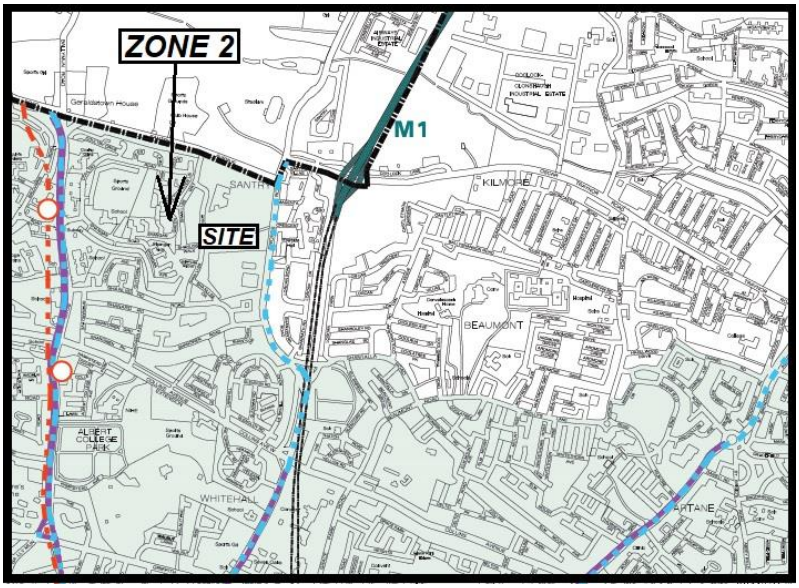


Figure 2.3 - Extract from DCC Map J of Development Plan (2022-2028)

2.23 The car parking standards are set out in Table 2 of the DCCDP Development Management Guidelines and this confirms that the **MAXIMUM** Parking provision for the combination of the proposed uses is as set out in ***Table 2.1*** below; -

Table 2.1 - Assessment of Car Parking in Consideration of DCC Dev Plan (Table 16.1)

Development Element	DCC Dev Plan MAX Std	Requires Spaces (MAX)
457 Residential Apartments	1 Spaces/Dwelling	457
431m^2 Other Retail	1 per 275m^2	1.6
226m^2 Creche	1 per 100m^2	2.3
Total Max Parking Required in Terms of DCC Dev Plan		461

2.24 If the DCC Development Plan parking standards were applied, this suggests the provision of a maximum of 461 parking spaces as being appropriate for the entire of this development. However, in this case we believe any such requirement would be onerous and would represent unsustainable development given the location of the development on a proposed Spine Route/Core Bus Corridor.

2.25 In this case it is proposed that no additional, new, dedicated car parking will be provided to support the new Retail/Commercial and the residential amenity/community space (which is considered ancillary to the apartments).

2.26 It is proposed that the total provision of 213 basement car parking spaces and 7 motorcycle spaces will be provided to support the residential apartments (plus 6 dedicated as 'car-club' spaces at surface level & 7 creche drop-off spces). This translates to an overall car parking ratio of 0.48 for the subject site.

2.27 This provision is fully consistent with the provision at the adjacent ABP-permitted Omni Living SHD scheme (ABP-307011-20) where a total of 324 apartments are permitted with the provision of 148 car parking spaces (plus four number club car spaces), being a parking ratio of 0.46. In these terms this ABP-approved development, which is immediately beside the site, has established a precedent to allow the correct level of parking to be provided.

2.28 This site is clearly well served by public transport and the existing Omni Park Shopping Centre public car park contains ~1400 car parking spaces which are available for use on a short term basis for visitors if required.

2.29 As noted above, there is a slight reduction of ~ 104 car parking spaces at surface level to provide for the new plaza set down for the creche, 6 'car-club' spaces plus landscaping and pedestrian / cyclist linkages. These improved linkages, including 2 no. new high quality shared pedestrian & cyclist route through the Omni Park Shopping Centre & the Omni Living Scheme, are included to integrate the proposed development with the rest of the Omni Park Shopping Centre and link to Swords Road.

2.30 Car parking standards for commercial uses are maximum standards in the Dublin City Development Plan. The Omni Park Shopping Centre has ~1400 spaces. This figure is far in excess of the current maximum standards required for the centre and current elements of the car parking provision are unoccupied on a regular basis. The removal of ~6% of these spaces will have an unnoticeable impact on the existing car parking provision in the overall site and is in line with sustainable transportation objectives to reduce car travel & encourage modal shift.

2.31 A Travel Plan is enclosed with this application as ***Appendix G*** to demonstrate the applicants commitment to encourage modal shift and the use of public transport, cycling and walking.

2.32 The 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities', updates previous Policy and Guidance in the context of greater evidence and knowledge of current and likely future housing demand in Ireland. It takes account of the Housing Agency National Statement on Housing Demand and Supply and projected need for additional housing supply out to 2020, the Government's action programme on housing & homelessness, Rebuilding Ireland and the National Planning Framework – Ireland 2040, published since the 2015 guidelines.

2.33 These new guidelines address car parking and include an objective to 'Remove requirements for car-parking in certain circumstances where there are better mobility solutions and to reduce costs.' Under Car Parking - Section 4.18, the guidelines acknowledge that the quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns which may be suitable for apartment development, broadly based on proximity and accessibility criteria.

2.34 Under Section 4.19 the guidelines note that in larger scale and higher density developments, comprising wholly or predominantly of apartments in more central locations that are well served by public transport, the default policy is for car parking provision to be "**wholly eliminated or substantially reduced"**. This may apply in accessible areas such as in or adjoining city cores or at a confluence of public transport systems.

2.35 Section 4.20 specifically describes these suitable locations. These locations are most likely to be in cities, especially in, or adjacent to (i.e. within 15 minutes walking distance of) city centres or centrally located employment locations. This includes 10 minutes walking distance of DART or Luas stops or within 5 minutes walking distance of high frequency (min 10 minute peak hour frequency) bus services. In this case, the site is in a District Centre and is immediately adjacent current bus services that by far exceed the 10 min peak hour frequency (multiple Dublin Bus Service currently pass the site - ensuring the peak hour frequency is less than 10 minutes). The services include a 24 hr service (#41).

2.36 Dublin City Council ordinarily require a comparison of Census information extracted from the Central Statistics Office (CSO) on-line database. In this regard we have reviewed CSO data drawn from the 2016 census for car ownership rates in the "census Small Area" which is most relevant to this site i.e. a small area with principally apartments. Many of the residential areas around the site are made up of traditional houses which typically have car ownership rates higher than purpose-built apartment developments which are actively managed and promoted as reduced car dependency schemes as is the case here. (Refer to the Extract included below as ***Figure 2.4*** & ***Figure 2.5*** below).

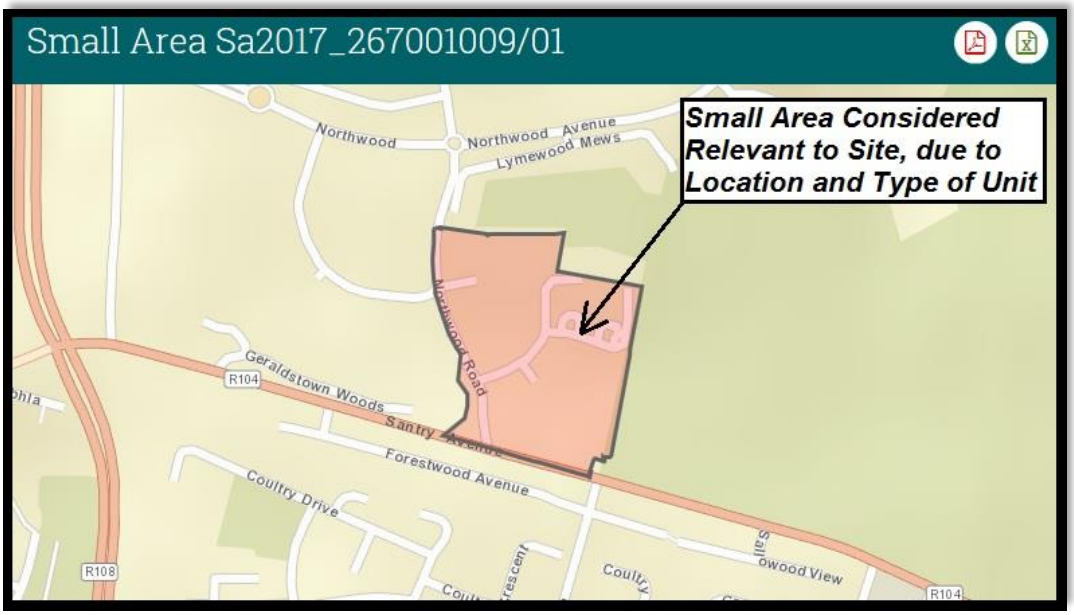


Figure 2.4 - CSO Small Area Map Relevant to Subject Site Location

Theme 15: Motor Car Availability, PC Ownership and Internet Access

PDF Excel Print

Number of households with cars

Motor cars	Households
No motor car	41
One motor car	17
Two motor cars	11
Three motor cars	0
Four or more motor cars	1
Not stated	12
Total	82

Figure 2.5 - CSO Car Ownership for Small Area Map Relevant to Site Location

2.37 As can be seen from the census data above, only 50% of Residences stated that they have cars within the census Small Area selected as relevant to the development site. The 2016 census data also shows that 50% of households within the development site's *Census Small Area* **do not own** a car. Clearly there is a demand for units with no car parking in the locality. And it should be remembered that the subject site will comprise almost entirely of apartments and is located immediately beside, and on, a High Frequency Bus Route.

2.38 Alternative transport is considered in more detail in the enclosed Preliminary MMP as ***Appendix G***. We consider the provision of a net total of 213 residential car parking

spaces (including 6 car share spaces), a ratio of 0.48 per apartment, as adequate & appropriate for the proposed development.

2.39 Given the restricted number of car parking spaces provided within the basement, the scheme will be actively marketed and promoted as a "Reduced-Car-Dependency" scheme and this will be communicated from the outset as part of sales and marketing. The development will also be managed on an on-going basis to ensure that the reduced dependency nature of the development is continually promoted and enhanced.

2.40 The development will be managed and operated by a Management Company. Car parking will not be an automatic entitlement with the apartments but spaces will be available to rent and purchase. Renting/sales of parking will be allocated to residents mainly on a first come first served basis by the Management Company and will be continually managed by the Management.

2.41 Some parking spaces will be reserved for visitors with other car parking spaces allocated for rent/sale to larger units. The allocation of car parking spaces will be reviewed/renewed on an annual/ongoing basis to suit demand.

2.42 This Scheme also includes Car Club Spaces ('Go Cars') to offset the need for residents and guests to have cars and car parking spaces. It is proposed that 6 prominently located parking spaces will be allocated to car club parking spaces (e.g. "Go Car" spaces). These will be located at surface level. Drop off spaces are also allocated at surface level for the creche.

2.43 Whilst there are a total of 22 spaces currently designed as fully EV, all car parking spaces can easily be upgraded to allow conversion for Electric Vehicles. In the case of a residential development of the nature proposed, with specific spaces likely dedicated to specific apartments, it is considered appropriate to facilitate the retro-fitting of spaces, based on demand following occupation, rather than a percentage of spaces being defined as such and provided from the outset. The entire car park of the subject scheme can therefore be ducted to accept future cabling to serve a charging point for every car space as demanded. Within the basement area, conduits can be provided where charging points may be mounted in future.

2.44 In cases where residents request a charging point to be installed, the relevant charging point will be pre-wired back to their home electricity meter in the designated meter

location (or an alternative system to allow individual billing). The socket point will have a lockable cover on it so that only that resident may use the power point. This provision around the entire parking area will allow future charging points to be installed at any of the car parking spaces with minimum works as and when required.

Bicycle Parking

2.45 The DCCDP 2022-2028 sets out cycle parking standards and requirements within Section 3.1 of the Development Management Guidelines, and this requires 1 cycle parking space per bedroom and 1 visitor space per 2 apartments. This is consistent with the requirements of the National Apartment Guidelines.

2.46 The 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities' dated March 2018 also states that 1 bicycle parking space per bedroom plus 1 visitor space per 2 units is a requirement. In this case there are a total of 457 apartments, with a total of 715 bedrooms. This translates to a requirement for 715 residential bicycle parking spaces and 228 visitor bicycle parking spaces, strictly applying the Guidelines.

2.47 The New Apartments Guidelines also states that any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/enlargement, etc.

2.48 This is reflected in the provision of a total of 770 new dedicated cycle parking spaces (504 in the basement and 264 at surface level) which is in line with new national Design Standards for Apartments. 5 Motorcycle spaces are also provided in the basement. The demand for cycle parking will be monitored on site by the Management Company and additional cycle parking provided if required.

2.49 A dedicated cycle lane is provided on the basement ramp to facilitate access to the basket cycle parking.

2.50 This provision is consistent with and higher than the provision at the adjacent ABP-permitted Omni Living SHD scheme (ABP-307011-20) where a total of 324 apartments are permitted with the provision of 380 new dedicated cycle parking spaces (340 in the basement and 40 at surface level). In these terms this ABP-approved development, which is immediately beside the site, has established a precedent to allow an appropriate level of cycle parking to be provided.

2.51 The development includes the dedicated 3m wide combined cycle/pedestrian link to Swords Road, and this is illustrated in the annotated extract from the plans included below as ***Figure 2.6***

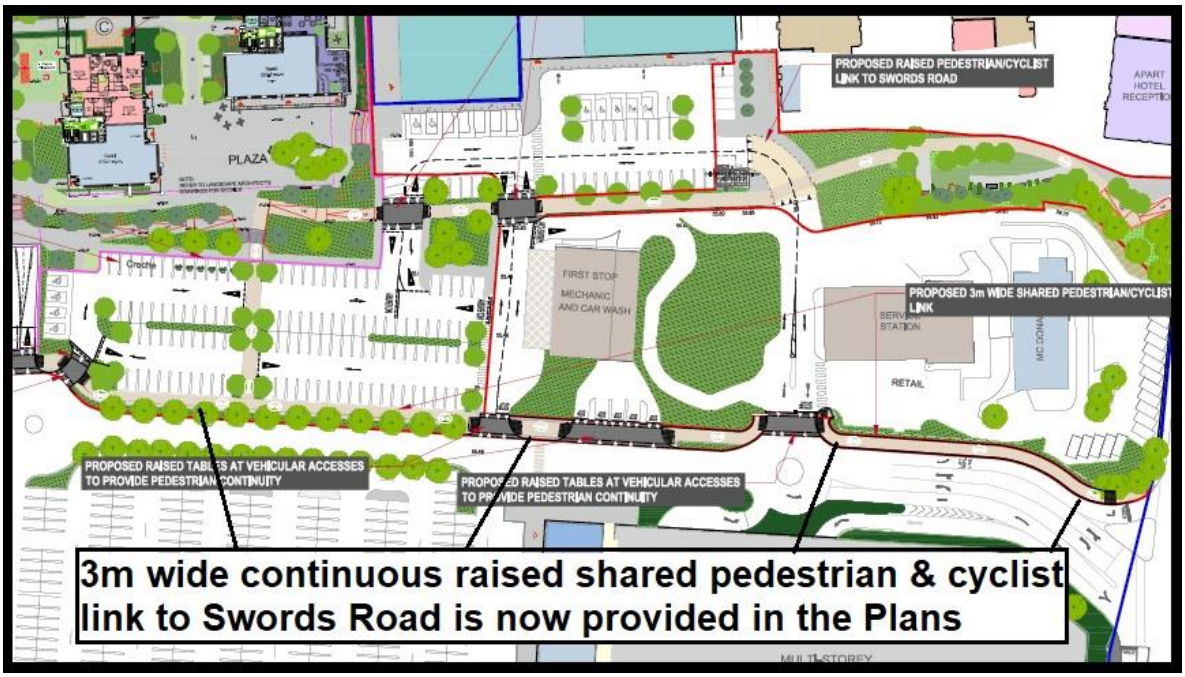


Figure 2.6 – Annotated Extract Showing Pedestrian/Cyclist Link

3.0 TRIP GENERATION, ASSIGNMENT AND DISTRIBUTION

3.1 In terms of assessing Car Traffic and the impact of same on the local road network, the Trip Rate Information Computer System database is ordinarily used to ascertain vehicular trip generation associated with the use of any particular site. This represents industry standard practice for Transportation Assessments in Ireland, and is the recommended method referenced and contained within the TII Guidelines. We have included as ***Appendix C*** the TRICS output for all of the individual elements of the proposed Development, and this provides an accurate estimation of traffic as illustrated in ***Table 3.1*** below.

3.2 The following Tables summarises the Output from the TRICS database which is included herein as ***Appendix C*** for comparison purposes.

Table 3.1: TRICS Data Summary, Total Development - Proposed Scheme

RETAIL ELEMENT - TRICS SUMMARY					
431 m² GFA Retail	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Traffic Generated**
Network Hour	Per 100m²	**Dev**	Per 100m²	**Dev**	
Weekday AM Peak Hr	0.625	3	0.336	1	4
Weekday PM Peak Hr	1.302	6	1.361	6	12
CRÉCHE ELEMENT - TRICS SUMMARY					
226 m² GFA Creche	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Traffic Generated**
Network Hour	Per 100m²	**Dev**	Per 100m²	**Dev**	
Weekday AM Peak Hr	3.649	8	2.955	7	15
Weekday PM Peak Hr	2.538	6	3.169	7	13
RESIDENTIAL APARTMENT ELEMENT - TRICS SUMMARY					
457 No. Apartments	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Traffic Generated**
Network Hour	Per Apt	**Dev**	Per Apt	**Dev**	
Weekday AM Peak Hr	0.062	28	0.203	93	121
Weekday PM Peak Hr	0.178	81	0.088	40	121
ENTIRE DEVELOPMENT COMBINED - TRICS SUMMARY					
Network Hour	**Arrivals (PCUs)**		**Departures (PCUs)**		**2-Way Traffic**
Weekday AM Peak Hr	39		101		140
Weekday PM Peak Hr	93		53		146

3.3 It should be noted that fully operational and fully occupied successful Industrial/Haulage Businesses that formerly operated from the subject site would generate significant traffic volumes in their own right, including heavy goods traffic and significant staff traffic. In these terms, we could make a significant allowance for the extant traffic generation of the permitted uses, and we have not done so in order to provide a robust and onerous assessment of impact to the Local Authority.

3.4 In the case of residential apartments and the other elements of the site, the application of TRICS in this case specifically excludes the effect of shared visits and quantifies the volumes of traffic on an individual basis - in these terms the assessment can be considered further robust. This is particularly relevant in the context of a long established and fully functioning District Centre, which provides for a wide range of retail, leisure, community, medical and administrative uses. The potential for linked journeys and non-vehicular trips is evident in this location (sustainable living). The residential amenity and community space are ancillary to the residential uses and will not generate traffic flows in their own right.

3.5 Therefore, we consider that the use of TRICS in the methodology adopted is robust and onerous and the Trip Rates applied and used provide for a robust reflection of the expected worst case traffic generated by the proposed development. This is particularly the case for the subject site with the high quality public transport available and the limited residential car parking provision which further limits trip generation.

3.6 Notwithstanding, in light of observation of existing capacity conditions, the use of higher Trip Rates, if required, would have no impact upon the conclusions of the study. This is particularly the case given the clear modelled theoretical reserve capacity that exists in the Omni Traffic Signal Controlled access junction.

Committed/Permitted Development

3.7 We have reviewed the significant permitted developments within the road network area of influence, and included the traffic associated with these within the assessment, consistent with the requirements of the TTA Guidelines. The relevant permitted schemes that have been included are DCC Ref 2737/19 (which replaced Ref 2713/17, and which is constructed and open, therefore included within the base background traffic), ABP-303358-19 ('Swiss Cottage Development" which is constructed and open, therefore included within the base background traffic) & ABP-307011-20 (adjacent 'Omni Living' SHD which has permission but is not constructed). We have also included the proposed Santry Avenue SHD Application scheme traffic for completeness (we understand that this was refused planning permission, but has now been relodged as an SHD, Ref ABP-312217-21).

3.8 We extracted traffic data for these permissions from the Transportation Reports by DBFL (published Santry Avenue SHD Application) and NRB Consulting Engineers Ltd (Omni Living), with the relevant data output included herein as ***Appendix C*** and ***Appendix D***.

Assessment Methodology

3.9 We undertook a new 2022 Traffic Survey of the existing road and affected junctions in order to establish background conditions. Details of the surveys are included as ***Appendix B***.

3.10 In Traffic Engineering all vehicles are expressed in terms of "Passenger Car Units" (PCUs), sometimes referred to as "Car Equivalents". This is the methodology that has been employed here, with specific industry standard conversion factors to convert HGVs, Skip Lorries, Cars/Trailers and Bin Lorries to PCUs. The conversion factors used are in accordance with industry-standard recommendations.

3.11 Committed development traffic has been assigned in accordance with the approved TA as submitted with those separate applications. We have assigned the subject development traffic to the road network based on the reasonable and industry standard assumption that the trip patterns will mirror the existing established weekday AM and PM peak hour traffic count data in terms of traffic turning proportions and distribution at junctions and in particular here, they reflect the observed patterns during the commuter peak hours on the local roads. This represents Industry Standard practice.

3.12 The Guidance recommends that we are required to provide a robust and onerous assessment of the likely impact of the proposed development, in order to provide reassurance that the road infrastructure is adequate to accommodate a facility. We have therefore assigned the development traffic to the local roads based on the onerous assumption that ALL of the traffic is new traffic, constituting Primary Trips, with no reduction for shared or multi-purpose trips.

3.13 The resulting traffic flow diagrams for the subject site are included as ***Appendix D*** with the committed and subject development traffic applied.

3.14 With regard to the selected Opening Year of 2024, in the event that the development is completed/occupied at a later date, this will have no implications for the conclusions of the study. The published Greater Dublin Metropolitan Area Annual Traffic Growth Rate (Table 6.1 of PE-PAG-02017 Unit 5.3) is 1.62% Per Annum for light vehicles (cars) during the period 2016 to 2030 (or a growth rate of 1.0162), and even less beyond this time period. Therefore, the selection or use of a later Opening Year by 1-5 years if required for any reason would have the effect of slightly increasing background traffic levels, thereby actually reducing the net effect of any development traffic, but having no

real effect or impact on the conclusions of the Study, based on our experience. We have also undertaken assessment of the Design Year 2039, 15 years following opening.

3.15 Traffic growth factors for future year assessments were calculated from data obtained in the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2021, Table 6.1: Central Growth Rates: Annual Growth Factors Metropolitan Dublin), which provides the recommended method of predicting future year traffic growth on Roads. Calculations of the relevant growth factors are included in ***Table 3.2*** below.

Table 3.2 - Traffic Growth Rates, TII Project Appraisal Guidelines

Year	to Year	Table 6.1:
Survey	2024	1.027
2024	2039	1.135

4.0 TRAFFIC IMPACT - ROAD JUNCTION CAPACITY

4.1 The TII Traffic and Transport Assessment Guidelines sets out a strict mechanism for assessment of developments of this nature and determining whether further assessment is indeed required. These Guidelines require a **Threshold Assessment** of the impact on the local roads to be provided in order to determine whether additional more detailed modelling and assessment of particular critical junctions is necessary.

4.2 We have assessed the impact of the proposed development with a wide area of influence included, similar to the area of influence used for adjacent applications. The professional guidance referenced above sets out specific increases in traffic volume associated with new development, which, when breached, requires further detailed analysis to be undertaken. The recommendation is that, if the expected increase is **5%** for networks that are considered heavily trafficked or congested, then further analysis is warranted. In this case, given the location, for robustness the 5% threshold has been applied.

4.3 In this regard, it is demonstrated herein that the proposed construction and operation of the facility, with relatively low volumes of vehicular traffic added to a busy network, will not result in any significant or noticeable level of new trips on the local roads, with all anticipated traffic increases beyond the Traffic Signal Controlled Swords Road Access junction and the Santry Hall T Junction expected to be **below** the Industry-Standard level of 5% above which further assessment is required.

4.4 Our assessment confirms that the absolute worst case traffic increases on the adjacent road network junctions, for the entire development, undertaken in accordance with Guidelines, is as summarised below as ***Table 4.1***.

Table 4.1; - All of Proposed Development Open & Occupied - Threshold Assessment, Worst-Case Impact - AM & PM Peak Hours 2024 (Including Committed Development)

Assessed Road or Junction	Traffic Increase %		COMMENT
	AM Pk Hr	PM Pk Hr	
Omni Park Traffic Signal Controlled Junction Swords Road	6.5	6.42	>5%; Junction Assessed
Santry Avenue/Swords Rd Junction	3.75	3.14	<5% No Further Assessment Required
Santry Hall Ind Estate/Swords Rd Junction	5.09	4.01	>5%; Junction Assessed
Shannowen Rd/Swords Rd Junction	2.07	3.98	<5% No Further Assessment Required
Swords Road South of Shannowen Rd Impact Upon 2-Way Traffic Flow	2.61	3.68	<5% No Further Assessment Required

4.5 These worst-case traffic increases beyond the established existing traffic signal controlled junction at Omni Park, and beyond Santry Hall/Ind Estate Junction just to the north, are below the Guideline and industry standard level above which further assessment is required in accordance with the Guidelines.

4.6 To set these increased levels of traffic in context, the day-to-day variation in traffic volume (due to day-of-week or weather conditions for example) is accepted as 10%, so, in this context alone, increases of in all cases less than 5% beyond the existing traffic signal controlled junction at Omni Park and Santry Hall will go unnoticed, and this underscores the negligible impact of the proposed development traffic.

4.7 We have undertaken traffic modelling of the Omni Park Junction for weekday AM and PM Periods (2024 Opening Year and 2039 Design Year +15) purely to confirm & demonstrate adequate capacity exists to accommodate the increased traffic associated with the development. We have modelled the capacity of the Santry Hall/Ind Estate/ Swords Rd Junction for completeness as the 5% threshold is just breeched.

Omni Park SC/Swords Rd Junction Capacity Modelling

4.8 We have undertaken detailed comparative modelling of the 4-arm traffic signal controlled Omni Park SC access junction using the TII-approved software, LiNSiG (**Lin**ked **Sig**nal Design), for circumstances with and without the subject development in place. This is approved macrosimulation capacity modelling software that enables the user to determine the capacity queues and delays at junctions controlled by traffic signals such as the subject case. The outputs from the LiNSiG software present Degree of Saturation (DoS) and also Practical Reserve Capacity (PRC) & Queue lengths as indicators of the operational efficiency of the Signals to accommodate the flows. Both are presented in % (percentage) terms. An output DoS approaching 0.90 or 90% would indicate that the junction is approaching capacity, with the upper limit being 100%.

4.9 We have undertaken the detailed assessment of the capacity of the established access onto Swords Rd using LiNSiG With AND Without the entire subject development and the committed developments locally in place and operational, which allows a comparison of results to demonstrate the very small impact of the proposal on network operation. The detailed output of the models is included herein as ***Appendix E***, and is summarised below as ***Table 4.2*** & ***Table 4.3***

Table 4.2: Omni Park SC/Swords Rd Access – Summary LiNSiG Results, Worst Case Weekday AM & PM Commuter Peak Hours - 2024 and 2039 WITOUT Proposed Development

Modelled Scenario	Degree of Sat (%)	PRC (%)
Opening Year 2024 AM Peak Hr	87.2	3.2
Opening Year 2024 PM Peak Hr	64.9	38.7
Design Year 2039 AM Peak Hr	98.0	-8.9
Design Year 2039 PM Peak Hr	72.3	24.4

Table 4.3: Omni Park SC/Swords Rd Access – Summary LiNSiG Results, Worst Case Weekday AM & PM Commuter Peak Hours - 2024 and 2039 WITH Proposed Development

Modelled Scenario	Degree of Sat (%)	PRC (%)
Opening Year 2024 AM Peak Hr	87.5	3.1
Opening Year 2024 PM Peak Hr	65.1	38.3
Design Year 2039 AM Peak Hr	98.3	-9.2
Design Year 2039 PM Peak Hr	73.2	22.3

4.10 The results of the modelling clearly show that the effect of the proposed development on Junction and Network operation is negligible, with tiny alterations in the DoS and PRCs as a result of the additional traffic flow. The established existing junction will have adequate capacity to accommodate the worst case traffic associated with the fully complete and occupied scheme in opening year, conscious of the very small increases in traffic associated with the subject development. Of course, consistent with all traffic signal controlled junctions in the GDA, capacity issues are expected during the later design years of the development. (Note that no account has been made for the effect of linked trips and the new shared surface cycle facilities, which are likely to have a beneficial effect and reduce car dependency for the scheme).

Santry Hall/Ind Estate/Swords Rd Junction Capacity Modelling

4.11 We have used the TII Approved software ***Junction 9*** Package to assess the capacity of the adjacent Priority Controlled Junctions (PiCADY – **P**riority **I**ntersection **C**apacity **a**nd **D**elay). This software enables the user to predict the capacity, queues and delays at a priority controlled junction based on the geometry and design parameters. The outputs from the software present Ratio of Flow to Capacity (RFC) and Queue lengths as indicators of the operational efficiency of the specific junction type. An output-RFC approaching 0.85 would indicate that the junction is approaching capacity and would highlight a potential capacity concern.

4.12 We have undertaken detailed assessment of the capacity of the Priority Controlled Junction to accommodate the existing and projected traffic flows, using PiCADY. The detailed output of the models are included herein as ***Appendix F*** and are summarised below as ***Table 4.4***

Table 4.4: Santry Hall/Ind Estate/Swords Rd T Junction Access – Summary Results, Worst Case Weekday AM & PM Commuter Peak Hours - 2024 and 2039 with Proposed & Committed Development

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak Hr	0.4	0.27
2024 Opening Year PM Peak Hr	0.3	0.24
2039 Design Year AM Peak Hr	0.5	0.33
2039 Design Year PM Peak Hr	0.5	0.36

4.13 Again, given the very low RFCs, significantly less than 0.85, and the lack of any level of queuing, this analysis confirms that there will not be any capacity related issues whatsoever associated with the operation of the established priority junction.

4.14 The above analysis confirms that the construction of the proposed development will have a negligible impact upon the capacity and safety of the road network in the area and can easily be accommodated.

4.15 As discussed above, it is important to note that in the case of residential apartments and the other elements of the site, the application of TRICS in this case specifically excludes the effect of shared visits and quantifies the volumes of traffic on an individual basis. Furthermore, the subject site is adjacent to high quality public transport available with restricted residential car parking provision which further limits trip generation.

4.16 Therefore, we consider that the use of the assessment methodology adopted above is robust and onerous and in reality, much lower trips rated are anticipated here, reducing the assessed impact at the signal junction and on the Swords Road to the north and south.

5.0 RESPONSE TO ABP OPINION & DCC TRANSPORTATION DEPT REPORT

Matters Raised in ABP Opinion

5.1 There are 2 Traffic/Transportation related matters within the ABP Opinion, Item #4 and Item #11, and these are reproduced below for ease of reference followed by the Design Team response to same.

> 4. A Traffic and Transport Assessment including, inter alia, a rationale for the proposed car parking provision should be prepared, to include details of car parking management, car share schemes and a mobility management plan.

Figure 5.1 – Item #4 of ABP Opinion

> 11. A Traffic and Transport Assessment which addresses the concerns of the Transport Section in relation to the car parking management on the site having regard to the ratio proposed and the residential access into the wider Omniplex Park.

Figure 5.2 – Item #11 of ABP Opinion

5.2 This NRB Report addresses the requirement for a Traffic & Transport Assessment. The rationale for the proposed car parking provision is set out under paragraphs 2.22 to 2.44 of this TA Report. Details of proposed car park management are outlined below (Paragraph XX). There are 6 dedicated car share spaces provided. A Mobility Management Plan has been prepared and is included as ***Appendix G***.

Matters Raised in DCC Transportation Planning Division Report (13/01/22)

5.3 We include below the extracts from the 'Recommendations' within the DCC Report for ease of reference followed by the Design Team response to same.

> 1. There are a number of inaccuracies in the Planning Report and Transport Assessment in relation to quantum of car parking provision which should be clarified with any final application.

Figure 5.3 – Item #1, Recommendations Section of DCC Report

5.4 We believe that the inconsistencies across the various reports, drawings and studies have been addressed in the full ABP application.

2. There are serious concerns about the isolated nature of the subject site relative to the availability of adequate pedestrian connectivity to the Swords Road and surrounding network. The proposed changes to the surface level car park to accommodate increased permeability, link to the 'Omni Living' area to the east and therefore is dependent on this development being brought forward. The pedestrian connectivity to the northeast is considered unacceptable as it would result in pedestrian and cyclists travelling through the service yard of the adjoining Lidl/Marks and Spencer's to access onto the internal road connecting to the Swords Road. This is an obvious desire line for pedestrians/cyclists (east-west connection) and while it is noted there are north-south connections through the site, it is considered unacceptable for pedestrians/cyclists to travel through a service yard where large HGV's frequently access. The applicant is requested to address these concerns.

Figure 5.4 – Item #2, Recommendations Section of DCC Report

5.5 The design has been amended in light of these comments, with revised improved routes for pedestrians and cyclists. The proposal now includes the provision of pedestrian/cycle connections & improvements through Omni Park Shopping Centre, including a plaza and cycle/pedestrian link substantially in the form permitted as part of the Omni Living Strategic Housing Development (Ref. ABP-307011-20). The significant improvements in cyclist and pedestrian connectivity to Swords Road is illustrated on the annotated layout plans, and is included above as ***Figures 2.6*** for ease of reference.

3. Car parking for the shopping centre is currently free with no payment/control measures in place. However the rationale for justifying the development of a sustainable community at this location with reduced designated car parking and increased permeability to public transport links is fundamentally undermined by the ability of residents to freely park in the surface car parking area. It is noted that a similar rationale was put forward in the 'Omni Living' development to the east whereby it was stated that overspill car parking could be accommodated at the shopping centre. However given the redevelopment of this entire area for predominately residential development, this division has concerns that this development will realistically become a car based development as there is no disincentive to not have a car. As a large portion of the existing car park has been included within this application, this division considers it a reasonable request for the applicant to consider parking control measures in this area of the overall car park.

Figure 5.5 – Item #3, Recommendations Section of DCC Report

5.6 Omni Park Shopping Centre have on-site management who currently monitor the car park and there is also an Automated Number Plate Recognition (ANPR) system in place which picks up the car number plates as they enter and exit the car park. This allows duration of stay to be closely controlled, ensuring there is no inappropriate or long stay parking occurring. There are no car park barriers in place and it is not a ticketed car park but there is 24 hr security 365 days a year so management monitor occupancy, and resulting clamping of cars occurs. There are also clamping warning signs within the car park.

5.7 A key component in the effective operation of any on-site car parking is an active and enforced parking management strategy. This strategy will continue to be implemented by both the Developer and the Management Company, with the remit of the current management extended to include the subject site. The Management Company will be charged with responsibility for the control of parking & access, including the car share spaces and the creche spaces.

5.8 It is intended that the proposed residential element of the development will be actively marketed as 'Reduced Car Dependency'. Consequently, all marketing material for the apartments will make it clear that they have reduced car parking availability and will also highlight the alternatives available.

5.9 Dedicated Clauses can and will be contained within Sales or Letting Agreements for all Residential Apartments, which specifically address Car Parking. In the event where a parking space is an entitlement as part of a Sale or Letting Agreement, this will be clearly enunciated by way of a dedicated clause, with the specific space or spaces referenced in Agreements, with mapping provided & referenced therein to identify the relevant space.

5.10 Accordingly, unless they are dedicated to individual Residential Apartments, on-site basement parking will otherwise remain in the control of the Management Company. A strict regime will be implemented by the Management Company to control and manage access to the car parking bays, thereby actively managing the availability of on-site car parking.

5.11 All apartment residents will be advised that unless it is otherwise stated in the Lease or Sales Agreement, there will be no car parking available on the site. In the event that a parking space is part of a Legal Agreement, the apartment resident will have a parking permit for the particular dedicated space to display in the vehicle window. The Management Company will have a very limited supply of Visitor Car Parking Permits for the site, spaces that can be allocated for the purposes of 'moving-in' or 'moving-out'. The Management Company will be responsible for the day-to-day management of car parking operations.

5.12 Other than the dedicated spaces for individual apartments, visitors who request a short term permit will be allocated on a 'first-come first-served' basis. It is intended that a charge will be applied to obtain a visitor permit with the objective of covering the associated management costs, discouraging long-term usage of the parking space and encouraging more sustainable modes of travel.

5.13 Access to the parking area will be controlled by fobbed or keypad entry (supported by ANPR technology monitoring access, which only permits registered permitted vehicles to enter). The clamping enforcement regime will also be extended to the subject site to ensure that parking restrictions are adhered to.

> 4. A detailed site layout and drawings should be submitted which clearly identifies the type and number of cycle spaces for both visitors and long term residents provided, ensure ease of accessibility and functionality. It appears from the drawings submitted in the Transport Assessment that a number of the two –tiered bicycle racks that are located adjacent to car parking spaces and not in enclosed stores, may not operate effectively. Furthermore, to ensure use of more active modes, long term residential cycle parking should be provided within an enclosed area and not open in the basement car park. Consideration to the provision of bicycle cages should be explored to increase the sense of security for users. The applicant should also identify areas where a wider range of bicycle types can be accommodated i.e. cargo bikes, electric bicycle charging facilities etc.

Figure 5.6 – Item #4, Recommendations Section of DCC Report

5.14 The bicycle parking provision has been redesigned for the purposes of the full ABP application. This is reflected in the provision of a total of 768 new dedicated cycle parking spaces (504 in the basement and 264 at surface level) which is in line with new national Design Standards for Apartments. Cargo and special/adapted bicycle parking can be accommodate within the surface level areas and within the basement.

> 5. It is not clear whether any of the proposed roads/footpaths are intended to be taken in charge. While it is accepted that the subject site is located within a wider privately operated development and therefore areas for taking in charge is unlikely, in the interests of clarity, the applicant should confirm same if it's the case.

5.15 The development will not be offered for 'taking-in-charge' and will remain fully privately managed and maintained.

6.0 CONCLUSIONS

6.1 This Traffic & Transport Assessment Report assesses the impact of the proposal to construct and occupy a proposed residential development on lands to the north west corner of the Omni Park Shopping Centre and at Santry Hall Industrial Estate. The development consists of a total of 457 private residential apartment units, 431m^2 Gross Floor Area (GFA) of retail/commercial space, residential amenity and community space and a small ancillary Crèche of 226m^2 GFA on the site.

6.2 This Report has been prepared in accordance with TII's Traffic & Transport Assessment Guidelines, and it provides an onerous and robust assessment of the impact of the proposed development on the local roads, in addition to the committed/permitted developments locally.

6.3 The existing site is currently accessed via Santry Hall Industrial Estate Road, which is to be restricted as part of these plans, except for emergency access. The proposed site layout and design is orientated to front into and onto Omni Park SC, with access provided by way of the long established Swords Road Omni Park Traffic Signal controlled junction.

6.4 This report demonstrates that the traffic generated by the proposed development will have an unnoticeable impact upon the established local traffic conditions and can be accommodated on the road network.

6.5 In particular it should be noted that the development is within 15 minutes of the city centre, it is located within a District Centre promoting sustainable living (linked trips and reduced car dependency), and there are significant improved pedestrian and cycle linkages included in the design.

6.6 A new assessment of junction capacity has been undertaken based on recent 2022 traffic data and this confirms that the established Omni Park access on Swords Rd and the affected road links and junctions are adequate to accommodate the worst case traffic associated with the development scheme.

6.7 An assessment of car parking and cycle parking has been undertaken and it is considered more than adequate to cope with the demands of the development.

6.8 The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix G***. We have also prepared a Statement of

Consistency with DMURS and confirm that the internal layout is compliant with the requirements, and this is included as ***Appendix H***.

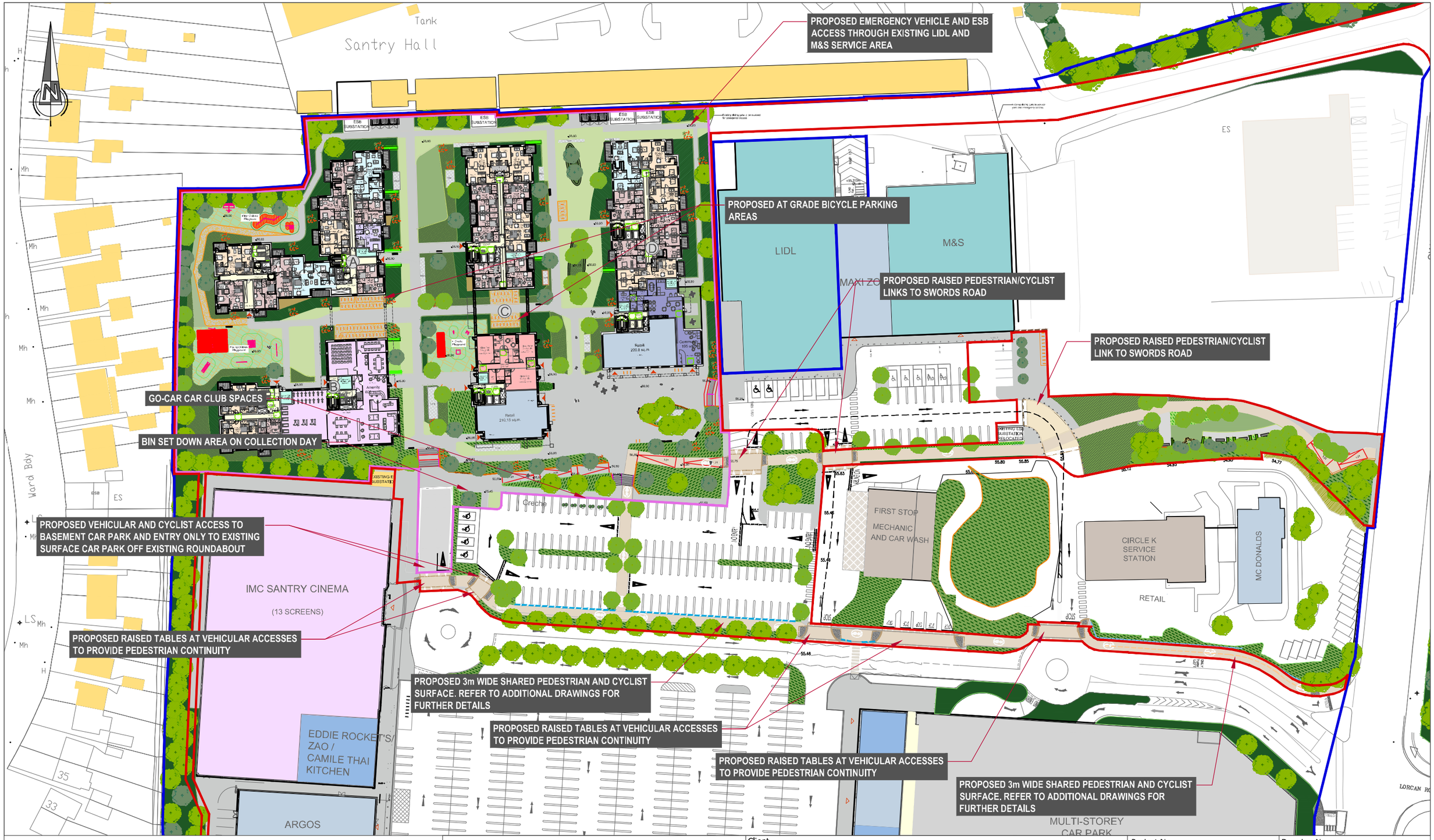
6.9 An independent Stage 1 Road Safety Audit, together with the Designer Feedback form, has been undertaken and this is included as ***Appendix I***. A Bus Capacity & Demand Study has been prepared and is included as ***Appendix J***.

6.10 It is considered that there are no significant Operational Traffic Safety or Road Capacity issues, affecting the established road network, that prevent a positive determination of the application by An Bord Pleanála.

APPENDICES - CONTENT

APPENDIX A

Proposed Development
Site Layout Plans/TRACKs



NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.

This drawing is based upon drawing 1863_PL_P_01_v30 received 18/08/22. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

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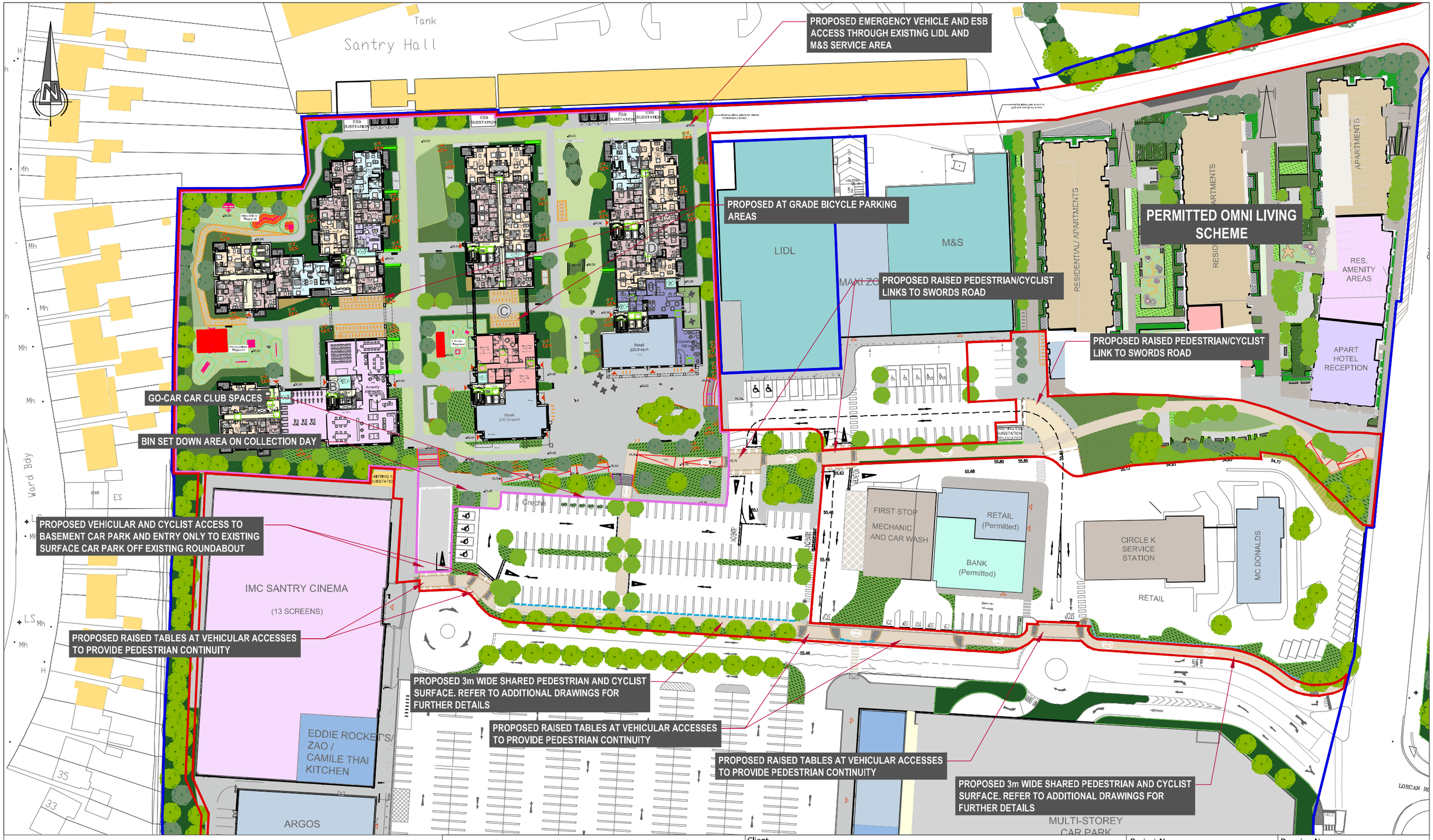
NRB consulting engineers

Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-SHD-000
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Pedestrian/Cyclist Routes and Overall Site Plan (without permitted schemes)		Date: 23-Aug-22	Scale @ A3: 1:1000
			Rev: A

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



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Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-SHD-001
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Pedestrian/Cyclist Routes and Overall Site Plan	Date: 23-Aug-22	Scale @ A3: 1:1000	Rev: A

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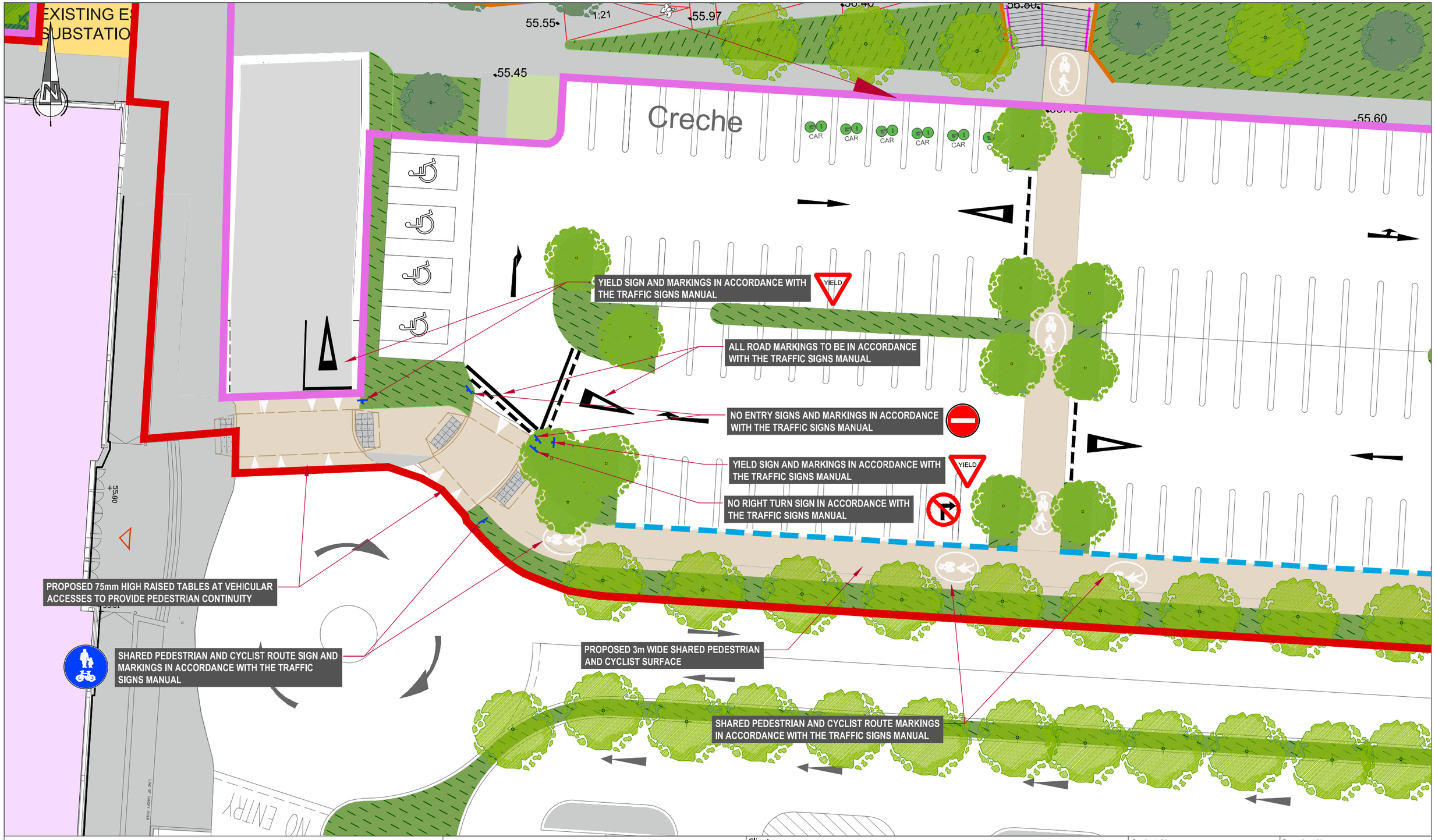

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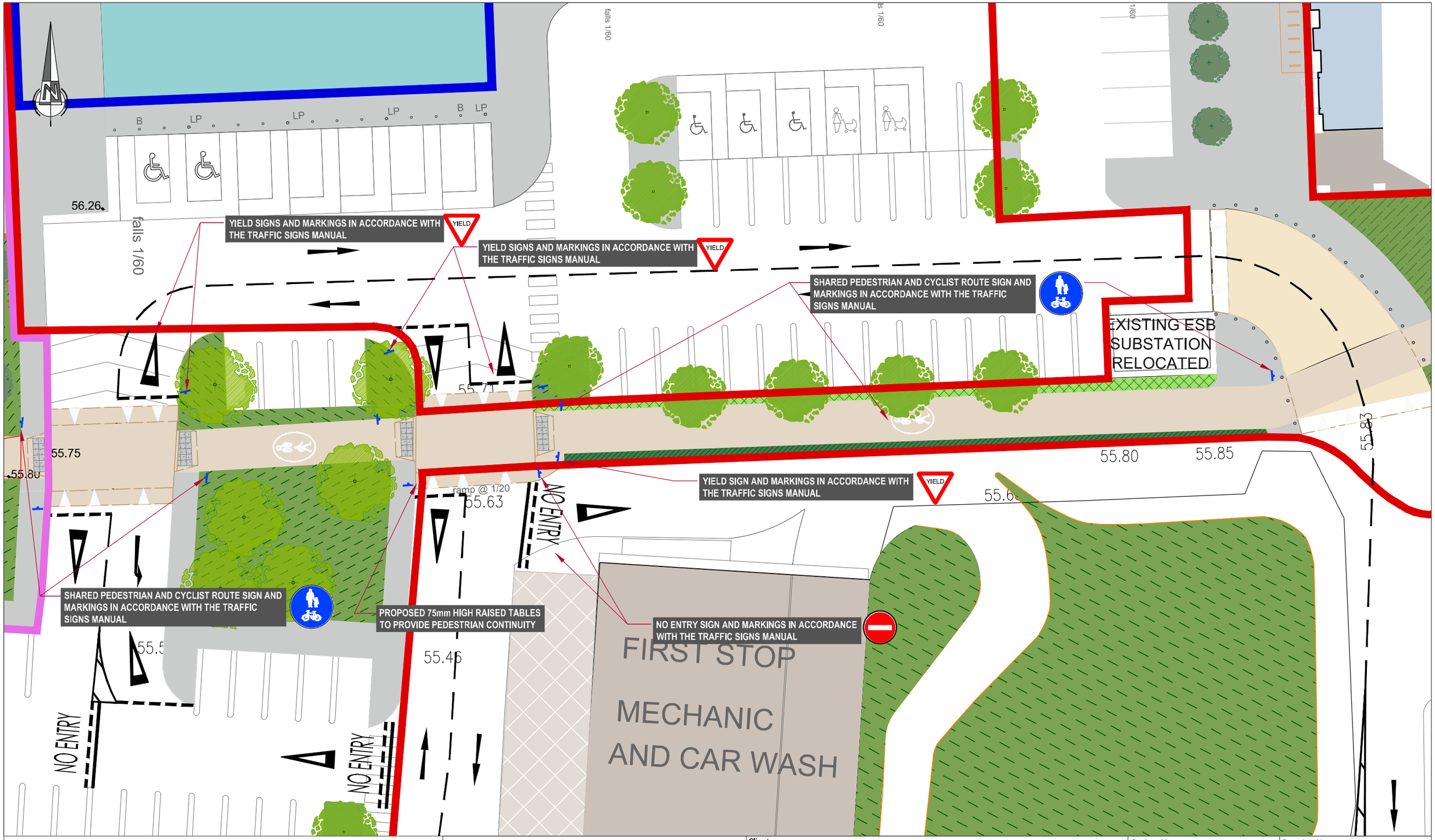
Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-SHD-002
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Access Details Sheet 1 of 4	Date: 23-Aug-22	Scale @ A3: 1:250	Rev: A

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



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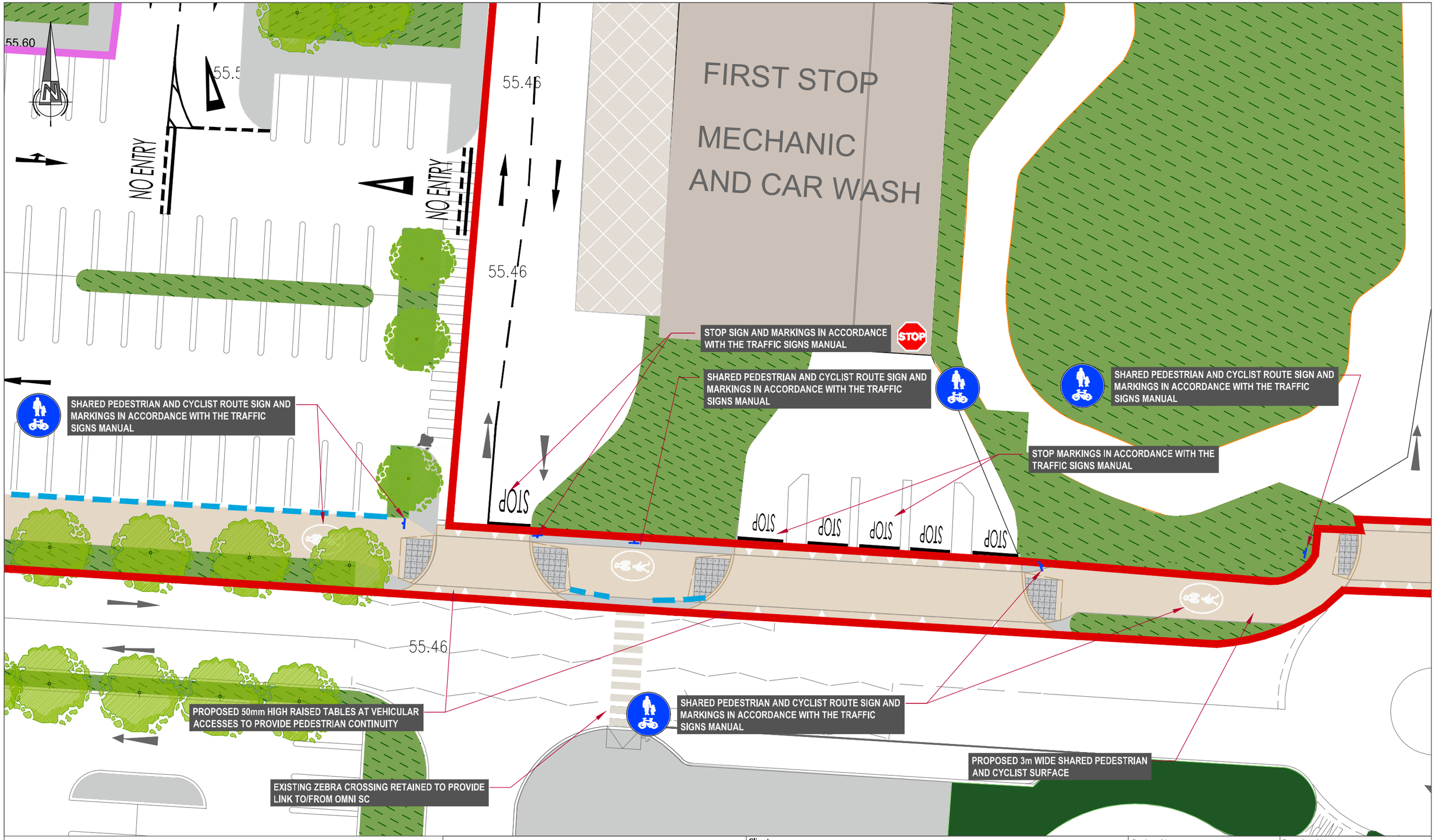
NRB consulting engineers

Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-SHD-003
Project: Omni Plaza Santry		Drawn: PB	Checked: ER 23/08/22
			Approved: ER 23/08/22
Title: Proposed Access Details Sheet 2 of 4		Date: 23-Aug-22	Scale @ A3: 1:250
			Rev: A

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.

This drawing is based upon drawing 1863_PL_P_01_v30 received 18/08/22. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

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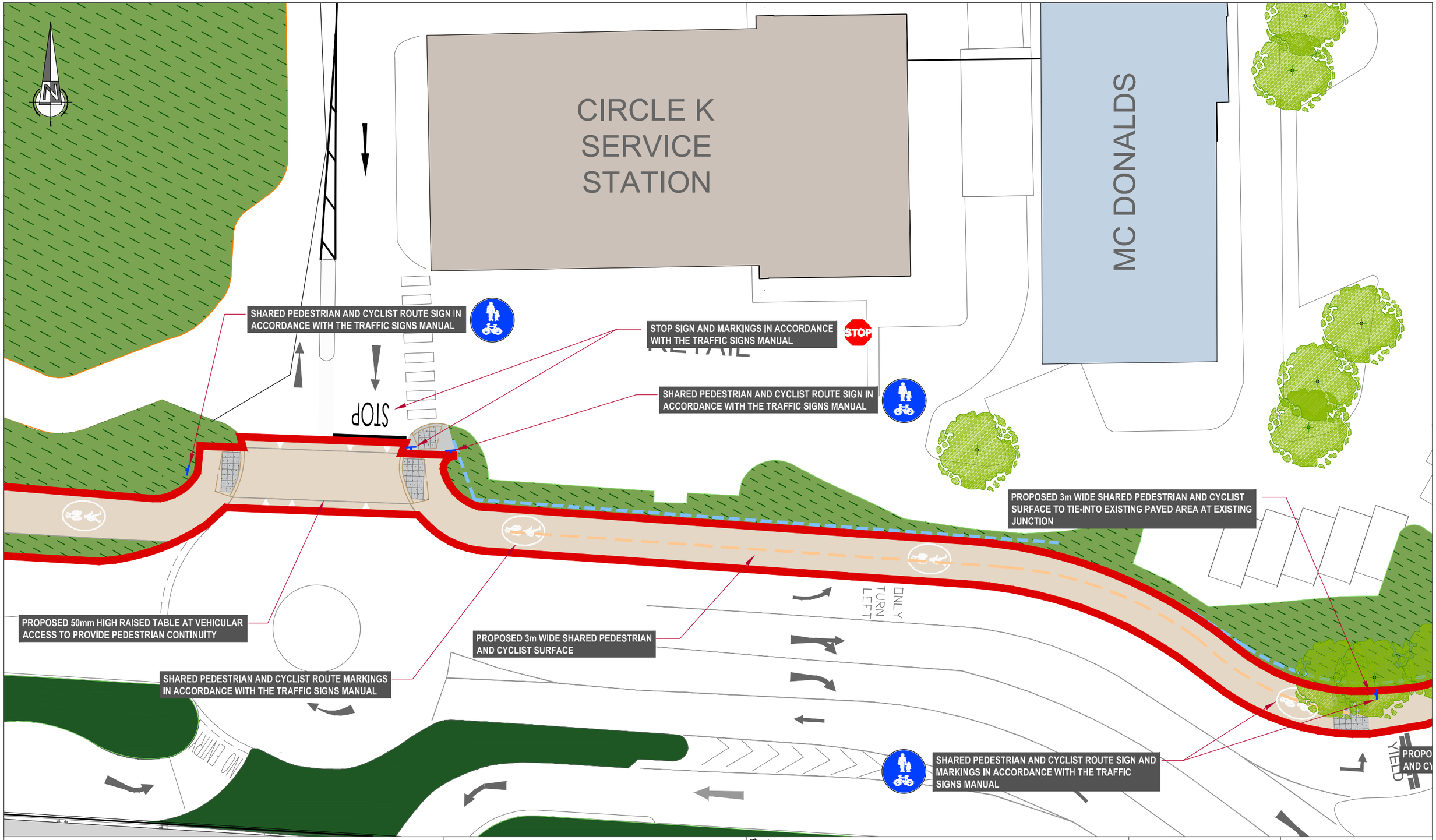
Phone/Fax: +353 1 292 1941
Email: info@nrb.ie
Web: www.nrb.ie
Registered in Ireland No. 491679

NRB consulting engineers

Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-SHD-004
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Access Details Sheet 3 of 4	Date: 23-Aug-22	Scale @ A3: 1:250	Rev: A

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



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Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-SHD-005
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Access Details Sheet 4 of 4	Date: 23-Aug-22	Scale @ A3: 1:250	Rev: A

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Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction

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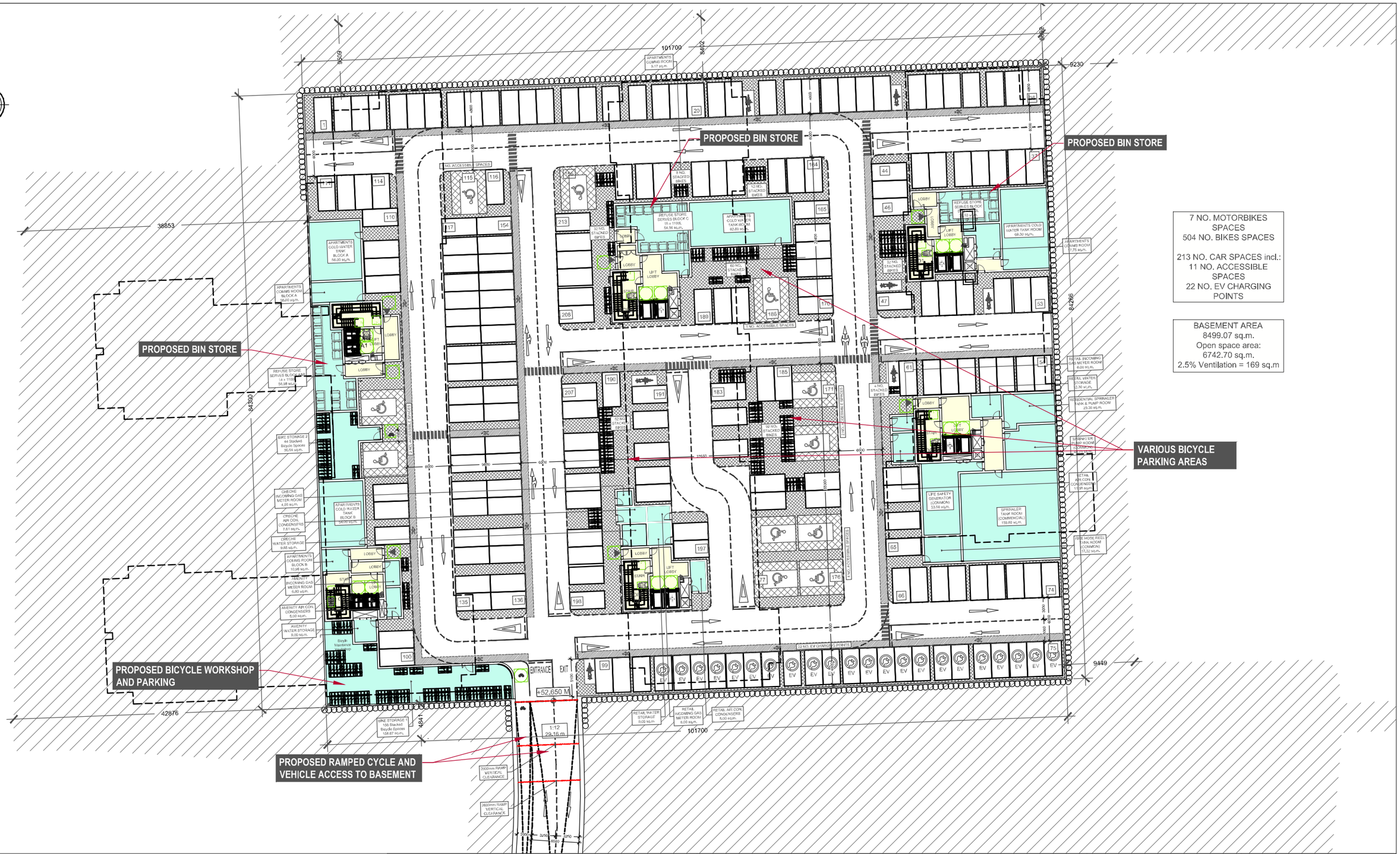
NRB consulting engineers

Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-TA-001
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Site Layout	Date: 23-Aug-22	Scale @ A3: 1:1000	Rev: A

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



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This drawing is based upon architects drawing OMN-JFA-ZZ-B0-DR-A-PB000 270622 received 25/07/22. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

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Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-TA-002
Project: Omni Plaza Santry		Drawn: PB	Checked: ER 23/08/22
			Approved: ER 23/08/22
Title: Proposed Site Basement Layout		Date: 23-Aug-22	Scale @ A3: 1:500
			Rev: A

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Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction

NOTE:
WHILE THE VEHICLES TRACK INTO THE OPPOSING LANE AT THE RADII, THESE MOVEMENTS WILL BE INFREQUENT AND ARE ALLOWABLE UNDER DMURS.

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Client: Serendale Limited			Project No.: 21-018	Drawing No.: NRB-TA-003
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: SN 23/08/22	
Title: Autotracks of a High Reach Fire Tender At the Development	Date: 23-Aug-22	Scale @ A3: 1:500	Rev: A	

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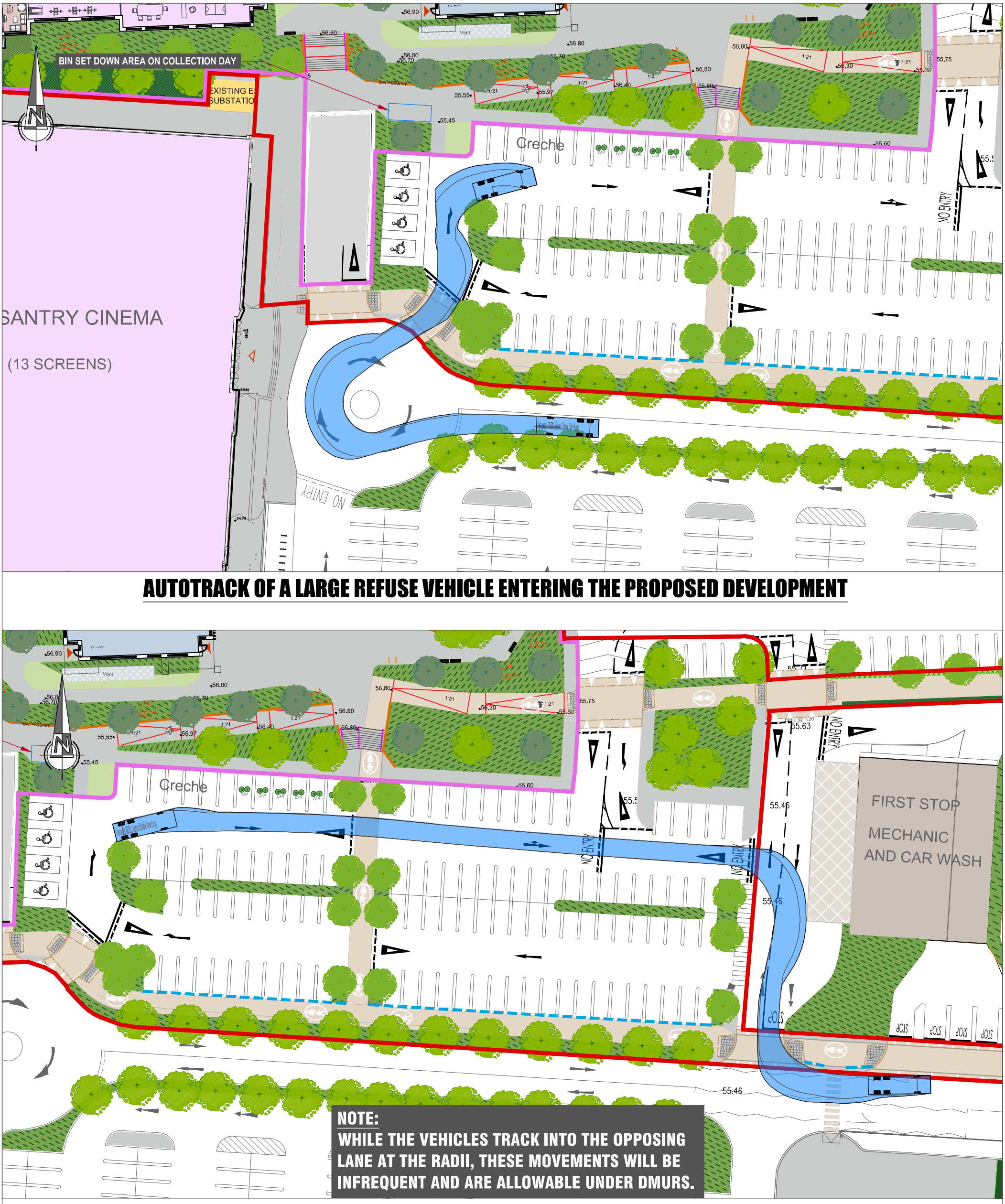
Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction



AUTOTRACK OF A LARGE REFUSE VEHICLE ENTERING THE PROPOSED DEVELOPMENT

AUTOTRACK OF A LARGE REFUSE VEHICLE EXITING THE PROPOSED DEVELOPMENT

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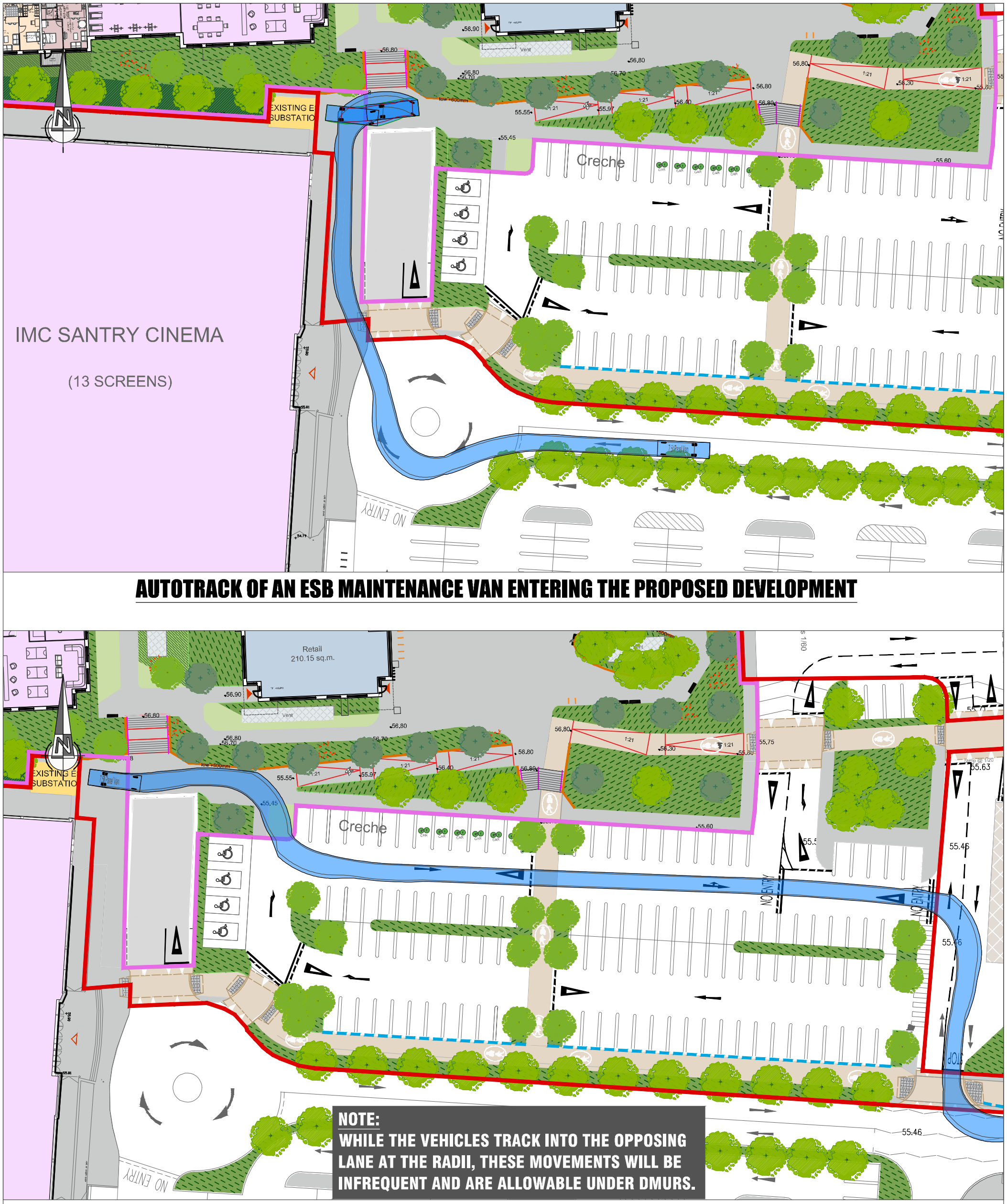
Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-TA-004
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Autotracks of a Large Refuse Vehicle Entering and Exiting on Bin Collection Day	Date: 23-Aug-22	Scale @ A3: 1:500	Rev: A

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction



AUTOTRACK OF AN ESB MAINTENANCE VAN ENTERING THE PROPOSED DEVELOPMENT

AUTOTRACK OF AN ESB MAINTENANCE VAN EXITING THE PROPOSED DEVELOPMENT

NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.

This drawing is based upon drawing 1863_PL_P_01_v30 received 18/08/22. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

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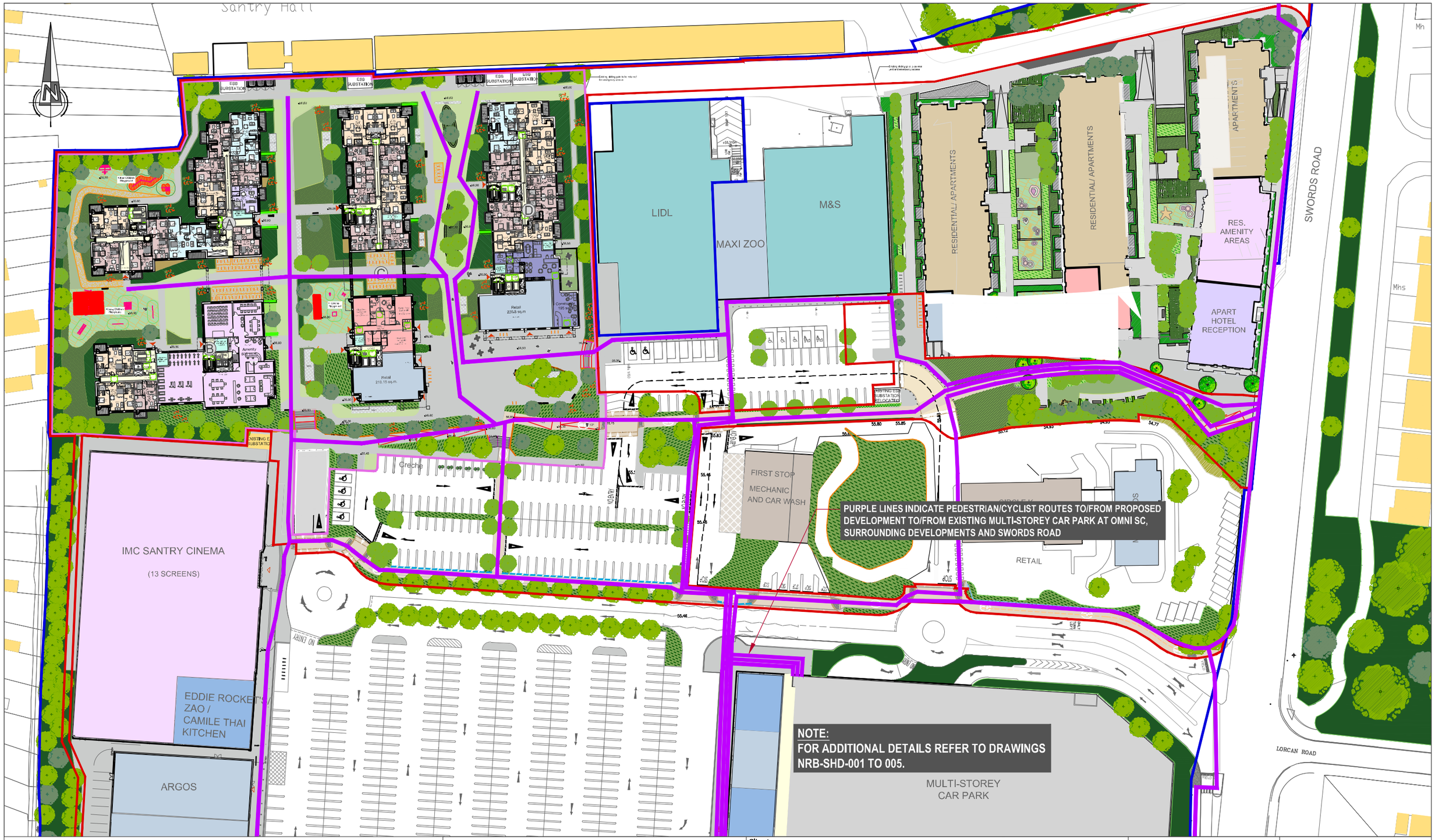
Client: Serendale Limited		Project No.: 21-018		Drawing No.: NRB-TA-005
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22	
Title: Autotracks of an ESB Maintenance Van Entering and Exiting on Bin Collection Day	Date: 23-Aug-22	Scale @ A3: 1:500	Rev: A	

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction



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NRB consulting engineers

Client: Serendale Limited		Project No.: 21-018	Drawing No.: NRB-TA-006
Project: Omni Plaza Santry	Drawn: PB	Checked: ER 23/08/22	Approved: ER 23/08/22
Title: Proposed Site Pedestrian Connectivity	Date: 23-Aug-22	Scale @ A3: 1:1000	Rev: A

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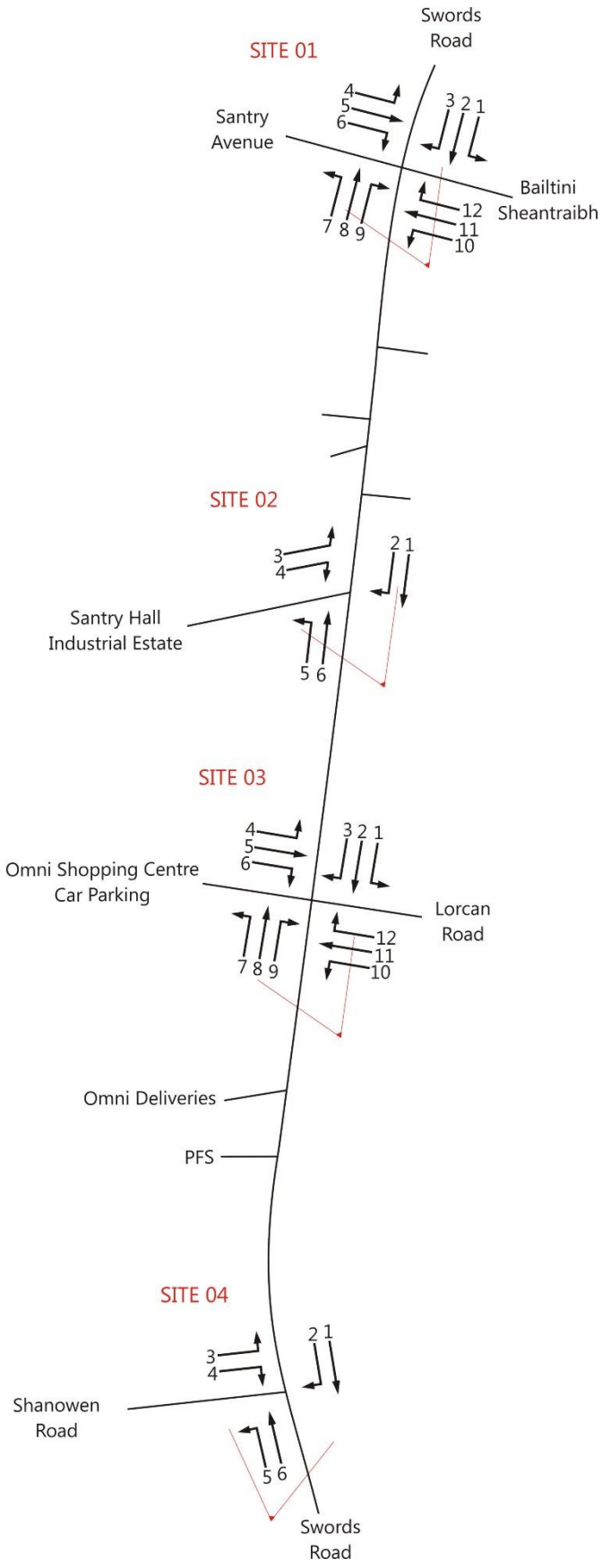
Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction

APPENDIX B

2022 Weekday – Classified Interval
Turning Movement Traffic Survey Output Data

Site Locations/Movement Numbering



	Job number:	Job Date:	Drawing No:	
	TRA/22/158	25th May 2022	TRA/22/158-01	traffinomics.ie
	Client: NRB	Job Day: Wednesday	Survey Details Map/Cover Sheet	

TRAFFINOMICS LIMITED

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 01 DATE: 25th May 2022

LOCATION: R104 Swords Road/Santry Avenue/Bailtini Sheantraibh DAY: Wednesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	7	3	77	16	1	4	108	106	2	0	37	9	1	0	49	48
07:15	0	0	0	0	0	0	0	0	11	0	72	10	2	4	99	96	2	0	32	7	4	1	46	49
07:30	0	0	0	0	0	0	0	0	6	2	100	19	1	8	136	139	4	1	51	7	2	2	67	67
07:45	0	0	0	0	0	0	0	0	10	1	105	13	4	6	139	140	0	0	53	18	3	4	78	85
H/TOT	0	0	0	0	0	0	0	0	34	6	354	58	8	22	482	481	8	1	173	41	10	7	240	250
08:00	0	0	1	2	0	0	3	3	14	1	137	10	3	8	173	172	4	1	69	14	4	3	95	98
08:15	0	0	2	0	0	0	2	2	17	0	137	10	2	5	171	164	2	0	78	8	4	3	95	100
08:30	0	0	0	0	0	0	0	0	17	1	140	17	6	6	187	185	1	1	76	14	5	2	99	105
08:45	0	0	1	0	0	0	1	1	13	0	152	18	2	6	191	189	2	0	66	8	2	3	81	84
H/TOT	0	0	4	2	0	0	6	6	61	2	566	55	13	25	722	710	9	2	289	44	15	11	370	388
09:00	0	0	1	1	0	0	2	2	5	1	125	11	5	11	158	169	0	0	52	13	1	1	67	69
09:15	0	0	1	0	0	0	1	1	4	0	122	15	5	6	152	160	1	0	60	10	2	1	74	76
09:30	0	0	2	0	0	0	2	2	3	1	100	13	6	4	127	134	2	0	39	11	7	3	62	70
09:45	0	0	1	0	0	0	1	1	3	0	103	12	1	7	126	132	0	0	44	10	0	3	57	60
H/TOT	0	0	5	1	0	0	6	6	15	2	450	51	17	28	563	595	3	0	195	44	10	8	260	276
P/TOT	0	0	9	3	0	0	12	12	110	10	1370	164	38	75	1767	1786	20	3	657	129	35	26	870	913

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	3	0	0	0	3	3	2	1	110	14	2	5	134	139	1	0	39	6	2	0	48	49
16:15	0	0	2	0	0	0	2	2	5	0	113	12	2	4	136	138	2	2	45	8	3	1	61	62
16:30	0	0	0	0	0	0	0	0	8	0	114	10	2	6	140	142	3	0	37	12	1	1	54	54
16:45	0	0	3	0	0	0	3	3	5	1	132	7	1	5	151	152	1	1	59	2	1	1	65	66
H/TOT	0	0	8	0	0	0	8	8	20	2	469	43	7	20	561	571	7	3	180	28	7	3	228	231
17:00	0	0	1	0	0	0	1	1	10	1	110	9	2	2	134	129	0	0	47	6	2	0	55	57
17:15	0	0	1	0	0	0	1	1	8	0	115	14	2	5	144	145	2	0	44	6	1	1	54	54
17:30	0	0	1	0	0	0	1	1	3	1	130	10	1	3	148	149	0	2	48	5	0	2	57	58
17:45	0	0	4	0	0	0	4	4	9	1	128	10	0	6	154	152	0	1	46	2	0	2	51	52
H/TOT	0	0	7	0	0	0	7	7	30	3	483	43	5	16	580	575	2	3	185	19	3	5	217	222
18:00	0	0	4	0	0	0	4	4	8	1	99	6	1	3	118	115	4	0	54	3	1	1	63	62
18:15	0	0	2	0	1	0	3	4	3	3	115	10	1	5	137	139	0	0	53	3	0	1	57	58
18:30	0	0	2	0	0	0	2	2	5	0	111	2	0	6	124	126	1	1	56	5	1	2	66	68
18:45	0	0	8	0	0	0	8	8	3	0	99	10	1	2	115	116	1	2	45	5	0	1	54	53
H/TOT	0	0	16	0	1	0	17	18	19	4	424	28	3	16	494	495	6	3	208	16	2	5	240	240
P/TOT	0	0	31	0	1	0	32	33	69	9	1376	114	15	52	1635	1641	15	9	573	63	12	13	685	693

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 01 DATE: 25th May 2022

LOCATION: R104 Swords Road/Santry Avenue/Bailtini Sheantraibh DAY: Wednesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	1	0	27	8	0	0	36	35	0	0	1	0	0	0	1	1	0	0	13	2	0	0	15	15
07:15	2	0	35	7	1	3	48	50	0	0	1	0	0	0	1	1	1	0	17	2	1	0	21	21
07:30	2	0	35	12	3	4	56	61	0	0	0	0	0	0	0	0	0	1	22	7	1	0	31	31
07:45	2	0	46	18	5	1	72	76	0	0	1	0	0	0	1	1	1	0	34	10	3	1	49	52
H/TOT	7	0	143	45	9	8	212	223	0	0	3	0	0	0	3	3	2	1	86	21	5	1	116	120
08:00	0	0	44	4	6	2	56	64	0	0	0	0	0	0	0	0	0	0	27	3	1	0	31	32
08:15	1	0	37	4	1	5	48	53	0	0	1	0	0	0	1	1	2	0	27	8	3	0	40	41
08:30	2	0	42	7	2	0	53	53	0	0	0	0	0	0	0	0	2	0	46	5	0	2	55	55
08:45	0	1	23	6	1	2	33	35	0	0	0	0	0	0	0	0	2	0	41	10	6	1	60	65
H/TOT	3	1	146	21	10	9	190	206	0	0	1	0	0	0	1	1	6	0	141	26	10	3	186	194
09:00	1	1	33	7	1	0	43	43	0	0	1	0	0	0	1	1	0	0	40	14	1	0	55	56
09:15	1	2	28	8	3	2	44	47	0	0	1	0	0	0	1	1	0	0	47	2	1	1	51	53
09:30	1	0	36	7	4	3	51	57	0	0	1	0	0	0	1	1	0	0	31	7	0	1	39	40
09:45	1	1	31	5	1	1	40	41	0	0	1	0	0	0	1	1	3	0	41	11	1	0	56	55
H/TOT	4	4	128	27	9	6	178	187	0	0	4	0	0	0	4	4	3	0	159	34	3	2	201	204
P/TOT	14	5	417	93	28	23	580	617	0	0	8	0	0	0	8	8	11	1	386	81	18	6	503	518

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	2	0	48	7	2	0	59	59	0	0	1	0	0	0	1	1	1	0	35	2	1	0	39	39
16:15	3	0	31	10	3	2	49	52	0	0	0	0	0	0	0	0	0	2	34	5	0	0	41	40
16:30	2	0	42	7	2	0	53	53	0	0	1	0	0	0	1	1	1	2	38	2	1	0	44	43
16:45	1	0	46	3	1	1	52	53	0	0	0	0	0	0	0	0	3	0	43	2	0	0	48	46
H/TOT	8	0	167	27	8	3	213	218	0	0	2	0	0	0	2	2	5	4	150	11	2	0	172	168
17:00	5	0	50	3	1	5	64	66	0	0	2	0	0	0	2	2	1	1	42	2	0	0	46	45
17:15	3	1	25	6	1	0	36	34	0	0	1	0	0	0	1	1	1	0	37	5	0	0	43	42
17:30	2	1	32	5	1	1	42	42	0	0	2	0	0	0	2	2	2	0	32	3	0	0	37	35
17:45	1	0	48	5	0	3	57	59	0	0	2	0	0	0	2	2	0	0	56	1	0	0	57	57
H/TOT	11	2	155	19	3	9	199	201	0	0	7	0	0	0	7	7	4	1	167	11	0	0	183	179
18:00	2	1	38	6	0	1	48	47	0	0	1	0	0	0	1	1	0	0	37	4	0	0	41	41
18:15	0	0	34	8	0	0	42	42	0	0	1	0	0	0	1	1	3	0	35	2	0	1	41	40
18:30	3	1	47	2	1	1	55	54	0	0	2	0	0	0	2	2	2	0	42	0	0	0	44	42
18:45	1	1	44	1	0	1	48	48	0	0	2	0	0	0	2	2	0	0	41	3	0	0	44	44
H/TOT	6	3	163	17	1	3	193	190	0	0	6	0	0	0	6	6	5	0	155	9	0	1	170	167
P/TOT	25	5	485	63	12	15	605	609	0	0	15	0	0	0	15	15	14	5	472	31	2	1	525	514

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 01 DATE: 25th May 2022

LOCATION: R104 Swords Road/Santry Avenue/Bailtini Sheantraibh DAY: Wednesday

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	2	0	26	3	1	0	32	31	5	0	19	9	1	0	34	31	0	0	0	0	0	0	0	0
07:15	1	0	23	7	2	0	33	34	0	2	32	9	1	5	49	54	0	0	0	0	0	0	0	0
07:30	2	0	33	7	2	0	44	44	6	1	69	11	0	3	90	88	0	0	0	0	0	0	0	0
07:45	1	0	36	5	1	0	43	43	6	1	43	11	0	5	66	66	0	0	0	0	0	0	0	0
H/TOT	6	0	118	22	6	0	152	153	17	4	163	40	2	13	239	238	0	0	0	0	0	0	0	0
08:00	1	0	38	8	2	0	49	50	2	1	62	9	3	4	81	86	0	0	1	0	0	0	1	1
08:15	1	0	45	7	2	0	55	56	8	1	49	9	3	5	75	76	0	0	0	0	1	0	1	2
08:30	1	0	54	4	1	1	61	62	5	0	78	4	2	2	91	91	0	0	1	0	0	0	1	1
08:45	1	0	42	9	2	0	54	55	5	0	78	6	5	6	100	107	0	0	0	0	0	0	0	0
H/TOT	4	0	179	28	7	1	219	224	20	2	267	28	13	17	347	360	0	0	2	0	1	0	3	4
09:00	2	2	48	6	3	3	64	67	3	0	78	8	2	7	98	105	0	0	0	0	0	0	0	0
09:15	0	0	41	10	4	0	55	59	1	1	59	15	2	6	84	91	0	0	2	1	0	0	3	3
09:30	1	0	38	1	3	2	45	49	3	1	76	12	2	6	100	105	0	0	0	0	0	0	0	0
09:45	1	0	37	9	4	0	51	54	2	0	62	6	3	1	74	76	0	0	0	0	0	0	0	0
H/TOT	4	2	164	26	14	5	215	230	9	2	275	41	9	20	356	377	0	0	2	1	0	0	3	3
P/TOT	14	2	461	76	27	6	586	607	46	8	705	109	24	50	942	974	0	0	4	1	1	0	6	7

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	66	6	0	0	72	72	6	0	109	13	1	6	135	137	0	0	1	0	0	0	1	1
16:15	2	0	64	9	1	0	76	75	9	0	93	13	2	4	121	120	0	0	1	0	0	0	1	1
16:30	3	1	70	9	2	0	85	84	8	1	94	8	2	3	116	114	0	0	0	0	0	0	0	0
16:45	2	0	58	7	1	1	69	69	6	1	118	6	0	7	138	140	0	0	2	0	0	0	2	2
H/TOT	7	1	258	31	4	1	302	301	29	2	414	40	5	20	510	511	0	0	4	0	0	0	4	4
17:00	4	0	68	5	0	0	77	74	15	0	119	12	0	5	151	144	0	0	0	1	0	0	1	1
17:15	2	1	74	3	0	0	80	78	14	0	101	14	0	5	134	128	0	0	0	0	0	0	0	0
17:30	3	0	65	10	0	0	78	76	12	1	94	15	2	3	127	122	0	0	1	0	0	0	1	1
17:45	1	0	57	3	1	0	62	62	11	1	119	6	2	4	143	140	0	0	1	0	0	0	1	1
H/TOT	10	1	264	21	1	0	297	289	52	2	433	47	4	17	555	533	0	0	2	1	0	0	3	3
18:00	3	0	45	3	0	0	51	49	10	2	98	12	2	7	131	131	0	0	2	0	0	0	2	2
18:15	0	0	71	3	1	0	75	76	11	0	113	10	1	4	139	135	0	0	3	0	0	0	3	3
18:30	0	1	51	2	0	0	54	53	13	2	94	4	2	4	119	113	0	0	2	0	0	0	2	2
18:45	2	0	49	4	0	0	55	53	6	0	91	0	0	4	101	100	0	0	2	0	0	0	2	2
H/TOT	5	1	216	12	1	0	235	231	40	4	396	26	5	19	490	480	0	0	9	0	0	0	9	9
P/TOT	22	3	738	64	6	1	834	822	121	8	1243	113	14	56	1555	1523	0	0	15	1	0	0	16	16

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 01 DATE: 25th May 2022

LOCATION: R104 Swords Road/Santry Avenue/Bailtini Sheantraibh DAY: Wednesday

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	1	0	1	0	0	0	2	1
07:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	1	0	4	0	0	0	5	4
08:00	1	0	1	0	0	0	2	1	1	0	2	0	0	0	3	2	0	0	0	0	0	0	0	0
08:15	1	0	3	0	0	0	4	3	0	0	2	1	0	0	3	3	0	0	1	0	1	0	2	3
08:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	2	0	5	0	0	0	7	5	1	0	5	1	0	0	7	6	0	0	2	0	1	0	3	4
09:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	2	0	0	0	2	2
09:15	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
09:30	0	2	0	0	0	0	2	1	1	0	2	0	0	0	3	2	0	0	2	0	0	0	2	2
09:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	3	0	0	0	0	3	1	1	0	4	1	0	0	6	5	0	0	5	0	0	0	5	5
P/TOT	2	3	6	0	0	0	11	8	2	0	12	2	0	0	16	14	1	0	11	0	1	0	13	13

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4
16:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	1	1	0	0	2	2
H/TOT	0	0	2	1	0	0	3	3	0	0	2	0	0	0	2	2	0	0	6	2	0	0	8	8
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	1	0	0	1	0	0	0	1	1
17:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
17:45	0	0	3	0	0	0	3	3	1	0	1	0	0	0	2	1	0	0	2	0	0	0	2	2
H/TOT	0	0	4	0	0	0	4	4	2	0	3	0	0	0	5	3	0	0	7	0	0	0	7	7
18:00	0	0	6	0	0	0	6	6	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
18:15	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1	0	0	0	2	0	0	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	4	0	1	0	5	6	0	0	1	0	0	0	1	1
18:45	0	0	2	0	0	0	2	2	1	0	0	0	0	0	1	0	0	0	2	0	0	0	2	2
H/TOT	0	0	8	1	0	0	9	9	2	0	5	0	1	0	8	7	0	0	6	0	0	0	6	6
P/TOT	0	0	14	2	0	0	16	16	4	0	10	0	1	0	15	13	0	0	19	2	0	0	21	21

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 02 DATE: 25th May 2022

LOCATION: Swords Road/Santry Hall Industrial Estate DAY: Wednesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:00	6	3	75	14	0	2	100	95	0	0	2	2	0	0	4	4	0	0	2	2	0	0	4	4
07:15	10	1	98	12	2	6	129	128	0	0	12	0	1	0	13	14	0	0	1	1	0	0	2	2
07:30	7	3	114	22	1	9	156	159	0	0	13	3	1	0	17	18	0	0	15	2	0	0	17	17
07:45	11	1	120	19	6	7	164	168	0	0	11	2	1	0	14	15	0	1	10	3	0	0	14	13
H/TOT	34	8	407	67	9	24	549	550	0	0	38	7	3	0	48	51	0	1	28	8	0	0	37	36
08:00	14	1	145	16	2	7	185	182	0	0	15	0	2	0	17	19	0	0	4	1	2	0	7	9
08:15	25	0	154	17	2	6	204	192	0	0	21	1	2	0	24	26	0	0	4	0	0	0	4	4
08:30	20	2	176	20	3	7	228	221	0	0	14	3	2	0	19	21	0	0	8	1	2	1	12	15
08:45	13	1	172	21	6	7	220	222	0	0	17	7	3	0	27	30	0	0	11	1	4	1	17	22
H/TOT	72	4	647	74	13	27	837	817	0	0	67	11	9	0	87	96	0	0	27	3	8	2	40	50
09:00	6	1	152	22	3	12	196	206	0	0	22	4	2	0	28	30	0	0	10	7	4	2	23	29
09:15	5	0	145	16	4	5	175	180	0	0	13	1	2	0	16	18	0	0	5	2	2	0	9	11
09:30	3	1	132	19	4	6	165	172	0	0	9	3	2	0	14	16	0	0	6	2	2	0	10	12
09:45	4	0	121	17	3	6	151	157	0	0	10	4	0	1	15	16	0	0	4	4	3	0	11	14
H/TOT	18	2	550	74	14	29	687	714	0	0	54	12	6	1	73	80	0	0	25	15	11	2	53	66
P/TOT	124	14	1604	215	36	80	2073	2081	0	0	159	30	18	1	208	227	0	1	80	26	19	4	130	152

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	3	1	149	12	2	8	175	182	0	0	6	4	2	0	12	14	0	0	20	3	1	0	24	25
16:15	3	1	132	20	1	3	160	161	0	0	5	1	1	0	7	8	0	0	9	8	1	0	18	19
16:30	12	2	160	13	3	6	196	194	0	0	7	2	0	0	9	9	0	0	13	1	0	0	14	14
16:45	7	1	145	13	0	4	170	168	0	0	8	0	0	0	8	8	0	0	15	0	0	0	15	15
H/TOT	25	5	586	58	6	21	701	705	0	0	26	7	3	0	36	39	0	0	57	12	2	0	71	73
17:00	8	2	145	10	2	2	169	165	0	0	4	1	0	0	5	5	0	0	27	3	0	0	30	30
17:15	13	0	146	18	2	4	183	179	0	0	10	0	0	1	11	12	1	0	17	1	0	0	19	18
17:30	5	1	160	11	1	2	180	178	0	0	6	0	0	0	6	6	0	0	16	3	1	1	21	23
17:45	7	0	152	9	0	6	174	174	1	0	14	0	0	0	15	14	1	0	7	0	2	0	10	11
H/TOT	33	3	603	48	5	14	706	697	1	0	34	1	0	1	37	37	2	0	67	7	3	1	80	82
18:00	8	3	157	6	1	4	179	176	0	0	4	0	0	0	4	4	0	0	10	0	0	0	10	10
18:15	5	2	124	11	1	6	149	151	0	0	4	0	0	0	4	4	0	0	6	0	0	0	6	6
18:30	5	0	145	4	0	6	160	162	0	0	3	0	0	0	3	3	0	0	9	0	0	0	9	9
18:45	6	0	141	6	0	1	154	150	0	0	10	1	1	0	12	13	0	0	5	0	0	0	5	5
H/TOT	24	5	567	27	2	17	642	639	0	0	21	1	1	0	23	24	0	0	30	0	0	0	30	30
P/TOT	82	13	1756	133	13	52	2049	2041	1	0	81	9	4	1	96	100	2	0	154	19	5	1	181	185

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 02 DATE: 25th May 2022

LOCATION: Swords Road/Santry Hall Industrial Estate DAY: Wednesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:00	0	0	6	1	0	0	7	7	0	0	0	0	0	0	0	0	6	0	33	9	1	0	49	45
07:15	0	0	1	0	0	0	1	1	0	0	6	0	0	0	6	6	0	2	57	15	3	5	82	89
07:30	0	0	4	0	0	0	4	4	0	0	2	1	0	0	3	3	7	1	71	14	2	3	98	97
07:45	0	0	6	0	0	0	6	6	0	0	9	0	1	0	10	11	7	0	69	11	1	5	93	93
H/TOT	0	0	17	1	0	0	18	18	0	0	17	1	1	0	19	20	20	3	230	49	7	13	322	324
08:00	0	0	4	0	0	0	4	4	0	0	4	1	0	0	5	5	3	1	105	12	5	4	130	136
08:15	0	0	4	0	0	0	4	4	0	0	5	0	0	1	6	7	7	1	88	18	4	5	123	126
08:30	0	0	5	1	0	0	6	6	0	0	3	4	0	0	7	7	5	0	116	10	1	2	134	133
08:45	0	0	3	2	0	0	5	5	0	0	10	2	1	0	13	14	9	0	116	14	3	4	146	146
H/TOT	0	0	16	3	0	0	19	19	0	0	22	7	1	1	31	33	24	2	425	54	13	15	533	541
09:00	0	0	4	2	1	0	7	8	0	0	9	2	0	1	12	13	4	1	112	11	1	10	139	146
09:15	0	0	5	1	1	0	7	8	0	0	6	0	0	0	6	6	1	2	113	23	5	6	150	159
09:30	0	0	3	0	0	0	3	3	0	0	5	1	0	0	6	6	2	1	101	11	3	6	124	131
09:45	0	0	6	2	0	1	9	10	0	0	4	0	0	2	6	8	7	0	86	13	4	2	112	112
H/TOT	0	0	18	5	2	1	26	29	0	0	24	3	0	3	30	33	14	4	412	58	13	24	525	548
P/TOT	0	0	51	9	2	1	63	66	0	0	63	11	2	4	80	86	58	9	1067	161	33	52	1380	1413

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	6	1	0	0	7	7	0	0	4	1	0	0	5	5	9	0	162	14	1	6	192	192
16:15	0	0	1	0	0	0	1	1	0	0	7	1	0	0	8	8	7	0	150	19	2	3	181	180
16:30	0	0	4	0	0	0	4	4	0	0	9	0	0	0	9	9	10	2	141	14	3	3	173	170
16:45	0	0	6	0	0	0	6	6	0	0	5	0	0	0	5	5	9	1	172	12	2	9	205	208
H/TOT	0	0	17	1	0	0	18	18	0	0	25	2	0	0	27	27	35	3	625	59	8	21	751	750
17:00	0	0	4	0	0	0	4	4	0	0	7	1	1	0	9	10	16	0	166	12	0	2	196	185
17:15	0	0	4	0	0	0	4	4	0	0	12	1	0	0	13	13	15	0	158	20	0	5	198	191
17:30	0	0	5	1	0	0	6	6	0	0	2	0	0	0	2	2	14	2	142	15	1	1	175	165
17:45	0	0	3	2	0	0	5	5	1	0	1	0	0	0	2	1	16	1	167	13	0	8	205	200
H/TOT	0	0	16	3	0	0	19	19	1	0	22	2	1	0	26	26	61	3	633	60	1	16	774	740
18:00	0	0	4	2	1	0	7	8	0	0	2	0	0	0	2	2	15	2	161	13	2	4	197	190
18:15	0	0	5	1	1	0	7	8	1	0	5	0	0	0	6	5	10	0	162	11	1	5	189	187
18:30	0	0	3	0	0	0	3	3	0	0	4	0	0	0	4	4	14	3	141	9	2	5	174	168
18:45	0	0	6	2	0	1	9	10	0	0	11	0	0	0	11	11	7	0	140	3	0	5	155	154
H/TOT	0	0	18	5	2	1	26	29	1	0	22	0	0	0	23	22	46	5	604	36	5	19	715	699
P/TOT	0	0	51	9	2	1	63	66	2	0	69	4	1	0	76	75	142	11	1862	155	14	56	2240	2190

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 03 DATE: 25th May 2022

LOCATION: Swords Road/Omni Shopping Centre/Lorcan Road DAY: Wednesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	0	0	2	1	0	0	3	3	6	3	75	11	0	2	97	92	0	0	4	3	0	0	7	7
07:15	0	0	1	0	0	0	1	1	10	1	89	7	1	5	113	110	0	0	9	5	1	1	16	18
07:30	0	0	3	1	1	0	5	6	7	3	106	20	0	9	145	147	0	0	9	1	0	0	10	10
07:45	1	0	4	1	0	0	6	5	10	1	112	15	5	7	150	153	0	0	10	3	1	0	14	15
H/TOT	1	0	10	3	1	0	15	15	33	8	382	53	6	23	505	503	0	0	32	12	2	1	47	50
08:00	1	0	20	0	0	0	21	20	13	0	114	13	2	7	149	148	0	1	15	3	0	0	19	18
08:15	2	0	27	3	0	0	32	30	22	0	110	14	1	6	153	142	1	0	21	0	1	0	23	23
08:30	0	0	43	0	1	0	44	45	19	2	109	17	2	7	156	149	1	0	29	4	0	0	34	33
08:45	0	0	25	3	0	0	28	28	13	1	102	15	6	7	144	146	0	0	48	5	0	0	53	53
H/TOT	3	0	115	6	1	0	125	124	67	3	435	59	11	27	602	585	2	1	113	12	1	0	129	128
09:00	1	0	9	1	0	0	11	10	5	1	75	19	3	12	115	125	0	0	72	4	1	0	77	78
09:15	0	0	4	2	0	0	6	6	5	0	81	12	4	5	107	112	0	0	65	3	1	0	69	70
09:30	0	0	6	0	0	0	6	6	3	1	73	14	4	6	101	108	0	0	56	5	0	0	61	61
09:45	0	0	6	2	0	0	8	8	4	0	60	11	2	6	83	88	0	0	61	6	1	1	69	71
H/TOT	1	0	25	5	0	0	31	30	17	2	289	56	13	29	406	433	0	0	254	18	3	1	276	280
P/TOT	5	0	150	14	2	0	171	169	117	13	1106	168	30	79	1513	1521	2	1	399	42	6	2	452	458

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	5	1	0	0	6	6	2	1	75	7	1	8	94	101	1	0	75	5	1	0	82	82
16:15	0	0	10	2	0	0	12	12	3	0	61	10	1	3	78	80	0	1	62	8	0	0	71	70
16:30	1	0	7	2	0	0	10	9	11	1	85	6	2	6	111	110	0	1	72	5	1	0	79	79
16:45	0	0	15	0	0	0	15	15	7	1	70	7	0	4	89	87	0	0	66	6	0	0	72	72
H/TOT	1	0	37	5	0	0	43	42	23	3	291	30	4	21	372	377	1	2	275	24	2	0	304	304
17:00	0	0	7	1	0	0	8	8	8	2	71	6	2	2	91	87	0	0	71	3	0	0	74	74
17:15	0	0	8	3	0	0	11	11	12	0	81	10	1	4	108	103	1	0	61	5	1	0	68	68
17:30	0	0	11	1	0	0	12	12	5	1	86	7	0	2	101	98	0	0	68	4	1	0	73	74
17:45	0	0	13	1	0	0	14	14	7	0	72	6	0	6	91	91	0	0	70	4	0	0	74	74
H/TOT	0	0	39	6	0	0	45	45	32	3	310	29	3	14	391	381	1	0	270	16	2	0	289	290
18:00	1	0	13	0	0	0	14	13	7	3	71	5	2	4	92	91	0	0	77	3	0	0	80	80
18:15	0	0	5	0	0	0	5	5	3	1	65	8	2	4	83	86	2	1	59	4	0	2	68	68
18:30	0	0	9	0	0	0	9	9	4	0	73	4	0	6	87	90	1	0	66	0	0	0	67	66
18:45	0	0	10	1	0	0	11	11	6	0	85	5	0	2	98	95	0	0	52	2	0	0	54	54
H/TOT	1	0	37	1	0	0	39	38	20	4	294	22	4	16	360	362	3	1	254	9	0	2	269	268
P/TOT	2	0	113	12	0	0	127	125	75	10	895	81	11	51	1123	1119	5	3	799	49	4	2	862	862

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 03 DATE: 25th May 2022

LOCATION: Swords Road/Omni Shopping Centre/Lorcan Road DAY: Wednesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	0	0	5	2	1	0	8	9	0	0	0	0	0	0	0	0	0	0	4	2	0	0	6	6
07:15	0	0	4	3	0	0	7	7	0	0	0	0	0	0	0	0	0	0	2	2	1	0	5	6
07:30	0	0	7	3	1	0	11	12	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7
07:45	0	0	7	3	0	0	10	10	0	0	0	1	0	0	1	1	0	0	5	2	0	0	7	7
H/TOT	0	0	23	11	2	0	36	38	0	0	0	1	0	0	1	1	0	0	18	6	1	0	25	26
08:00	0	1	8	3	0	0	12	11	0	0	1	0	0	0	1	1	0	0	7	3	1	0	11	12
08:15	0	0	14	4	0	0	18	18	0	0	1	0	0	0	1	1	0	0	7	0	0	0	7	7
08:30	1	0	15	4	0	0	20	19	0	0	0	2	0	0	2	2	1	0	8	1	0	0	10	9
08:45	0	0	17	3	0	0	20	20	0	0	1	1	0	0	2	2	0	0	7	0	1	0	8	9
H/TOT	1	1	54	14	0	0	70	69	0	0	3	3	0	0	6	6	1	0	29	4	2	0	36	37
09:00	0	1	25	2	0	0	28	27	0	0	0	0	0	0	0	0	0	0	17	2	0	0	19	19
09:15	0	0	37	7	1	0	45	46	0	0	1	0	0	0	1	1	0	0	23	5	0	1	29	30
09:30	0	0	49	2	1	0	52	53	0	0	5	1	0	0	6	6	0	1	22	3	0	0	26	25
09:45	1	0	44	4	1	0	50	50	0	0	5	0	0	0	5	5	0	0	20	2	0	0	22	22
H/TOT	1	1	155	15	3	0	175	177	0	0	11	1	0	0	12	12	0	1	82	12	0	1	96	96
P/TOT	2	2	232	40	5	0	281	283	0	0	14	5	0	0	19	19	1	1	129	22	3	1	157	160

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	90	3	0	0	93	93	0	0	7	0	0	0	7	7	0	0	64	2	0	0	66	66
16:15	0	0	71	8	1	0	80	81	0	0	10	0	0	0	10	10	0	1	54	2	0	0	57	56
16:30	2	1	64	8	0	0	75	73	0	0	6	1	0	0	7	7	0	0	62	1	0	0	63	63
16:45	0	0	89	4	1	0	94	95	0	0	4	1	0	0	5	5	2	1	51	2	0	0	56	54
H/TOT	2	1	314	23	2	0	342	342	0	0	27	2	0	0	29	29	2	2	231	7	0	0	242	239
17:00	0	0	92	6	1	0	99	100	0	0	6	0	0	0	6	6	0	0	53	3	0	0	56	56
17:15	0	0	77	4	0	0	81	81	0	0	6	0	0	0	6	6	1	1	74	2	0	0	78	77
17:30	2	0	73	5	1	0	81	80	0	0	4	0	0	0	4	4	2	0	57	0	0	0	59	57
17:45	1	0	89	6	0	0	96	95	0	0	10	0	0	0	10	10	2	0	55	4	0	0	61	59
H/TOT	3	0	331	21	2	0	357	357	0	0	26	0	0	0	26	26	5	1	239	9	0	0	254	249
18:00	0	0	88	6	0	0	94	94	0	1	4	0	0	0	5	4	4	1	60	5	0	0	70	66
18:15	0	0	95	7	0	0	102	102	0	0	8	1	0	0	9	9	0	0	63	0	0	0	63	63
18:30	2	2	77	6	1	0	88	86	0	0	5	0	0	0	5	5	1	1	47	0	0	0	49	48
18:45	1	0	75	0	0	0	76	75	0	0	3	2	0	0	5	5	0	0	54	0	0	0	54	54
H/TOT	3	2	335	19	1	0	360	357	0	1	20	3	0	0	24	23	5	2	224	5	0	0	236	231
P/TOT	8	3	980	63	5	0	1059	1056	0	1	73	5	0	0	79	78	12	5	694	21	0	0	732	719

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 03 DATE: 25th May 2022

LOCATION: Swords Road/Omni Shopping Centre/Lorcan Road DAY: Wednesday

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	0	0	7	2	0	0	9	9	6	0	23	7	0	0	36	31	0	0	0	0	0	0	0	0
07:15	0	0	4	3	1	0	8	9	0	2	53	11	3	5	74	81	0	0	1	0	0	0	1	1
07:30	0	0	12	4	0	0	16	16	7	1	62	10	1	3	84	82	0	0	0	0	0	0	0	0
07:45	0	0	11	3	0	0	14	14	7	0	64	7	2	5	85	86	0	0	0	0	0	0	0	0
H/TOT	0	0	34	12	1	0	47	48	20	3	202	35	6	13	279	280	0	0	1	0	0	0	1	1
08:00	0	0	11	3	0	0	14	14	3	0	93	10	3	4	113	118	0	0	1	0	0	0	1	1
08:15	2	0	13	2	0	0	17	15	7	1	70	12	3	6	99	102	0	0	0	0	0	0	0	0
08:30	1	0	27	3	0	0	31	30	3	0	88	10	1	2	104	105	0	0	3	0	0	0	3	3
08:45	1	0	48	2	0	0	51	50	8	0	90	12	4	4	118	120	1	0	2	0	0	0	3	2
H/TOT	4	0	99	10	0	0	113	110	21	1	341	44	11	16	434	444	1	0	6	0	0	0	7	6
09:00	1	1	55	4	0	0	61	60	4	0	76	8	1	10	99	107	0	0	1	0	0	0	1	1
09:15	0	0	64	3	0	1	68	69	1	2	66	14	2	6	91	97	0	0	1	0	0	0	1	1
09:30	0	0	45	2	1	0	48	49	2	1	55	10	2	6	76	82	0	0	0	0	0	0	0	0
09:45	0	0	50	3	0	0	53	53	6	0	43	7	3	3	62	63	0	0	1	0	0	0	1	1
H/TOT	1	1	214	12	1	1	230	231	13	3	240	39	8	25	328	349	0	0	3	0	0	0	3	3
P/TOT	5	1	347	34	2	1	390	388	54	7	783	118	25	54	1041	1073	1	0	10	0	0	0	11	10

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	1	0	62	8	0	0	71	70	8	0	73	11	1	6	99	100	0	0	1	0	0	0	1	1
16:15	0	0	60	3	0	0	63	63	7	0	73	12	1	3	96	94	1	0	3	1	0	0	5	4
16:30	0	0	64	4	0	0	68	68	8	1	75	5	3	3	95	94	0	0	1	0	0	0	1	1
16:45	1	0	57	2	0	0	60	59	8	1	84	8	1	9	111	114	0	0	2	1	1	0	4	5
H/TOT	2	0	243	17	0	0	262	260	31	2	305	36	6	21	401	402	1	0	7	2	1	0	11	11
17:00	0	0	68	4	0	1	73	74	16	0	71	5	0	2	94	83	0	0	2	0	0	0	2	2
17:15	0	0	53	2	0	0	55	55	15	0	84	13	0	5	117	110	0	0	2	0	0	0	2	2
17:30	1	2	68	4	0	0	75	73	12	2	60	9	0	1	84	74	0	0	0	0	1	0	1	2
17:45	0	1	54	3	0	0	58	57	16	1	73	7	0	8	105	100	0	0	4	0	0	1	5	6
H/TOT	1	3	243	13	0	1	261	259	59	3	288	34	0	16	400	367	0	0	8	0	1	1	10	12
18:00	1	2	67	2	0	0	72	70	15	2	69	6	2	3	97	89	0	0	3	0	0	0	3	3
18:15	1	1	65	0	0	0	67	66	11	0	71	4	1	5	92	89	0	0	0	0	0	0	0	0
18:30	1	0	51	0	0	0	52	51	12	1	61	3	1	5	83	79	0	0	1	0	0	0	1	1
18:45	1	0	51	0	0	0	52	51	6	0	67	3	0	5	81	81	0	0	1	1	0	0	2	2
H/TOT	4	3	234	2	0	0	243	238	44	3	268	16	4	18	353	338	0	0	5	1	0	0	6	6
P/TOT	7	6	720	32	0	1	766	758	134	8	861	86	10	55	1154	1107	1	0	20	3	2	1	27	29

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 03 DATE: 25th May 2022

LOCATION: Swords Road/Omni Shopping Centre/Lorcan Road DAY: Wednesday

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
07:15	1	0	2	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	6	1	0	0	7	7
07:30	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	4	2	0	0	6	6
07:45	0	0	2	1	0	0	3	3	0	0	2	0	0	0	2	2	0	0	7	1	0	0	8	8
H/TOT	1	0	5	2	0	0	8	7	0	0	3	0	0	0	3	3	0	0	22	4	0	0	26	26
08:00	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	8	0	2	0	10	12
08:15	2	0	5	0	0	0	7	5	0	0	1	0	0	0	1	1	0	0	9	2	1	0	12	13
08:30	0	0	2	0	0	0	2	2	0	0	0	1	0	0	1	1	1	0	16	0	0	0	17	16
08:45	0	0	2	0	0	0	2	2	0	0	7	0	0	0	7	7	1	0	19	1	0	0	21	20
H/TOT	2	0	14	0	0	0	16	14	0	0	8	1	0	0	9	9	2	0	52	3	3	0	60	61
09:00	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5	0	0	20	3	0	1	24	25
09:15	0	0	1	0	0	0	1	1	0	0	12	0	0	0	12	12	0	0	16	2	2	0	20	22
09:30	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2
09:45	0	0	0	2	1	0	3	4	0	0	3	1	0	0	4	4	0	0	3	2	0	1	6	7
H/TOT	0	0	2	2	1	0	5	6	0	0	21	2	0	0	23	23	0	0	41	7	2	2	52	56
P/TOT	3	0	21	4	1	0	29	28	0	0	32	3	0	0	35	35	2	0	115	14	5	2	138	143

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7	1	0	3	1	0	0	5	4
16:15	0	0	3	1	0	0	4	4	0	0	2	1	0	0	3	3	0	0	13	0	0	0	13	13
16:30	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	11	1	0	0	12	12
16:45	0	0	1	1	0	0	2	2	0	0	5	0	1	0	6	7	1	0	4	0	0	0	5	4
H/TOT	0	0	4	3	0	0	7	7	0	0	14	1	1	0	16	17	2	0	31	2	0	0	35	33
17:00	0	0	1	0	0	0	1	1	0	0	6	0	0	0	6	6	0	0	10	2	0	0	12	12
17:15	0	0	5	0	0	0	5	5	0	0	4	0	0	0	4	4	0	0	9	4	0	0	13	13
17:30	0	0	0	1	0	0	1	1	0	0	3	0	0	0	3	3	0	0	11	1	0	0	12	12
17:45	0	1	0	0	0	0	1	0	0	0	6	0	0	0	6	6	0	0	6	0	0	0	6	6
H/TOT	0	1	6	1	0	0	8	7	0	0	19	0	0	0	19	19	0	0	36	7	0	0	43	43
18:00	0	0	1	1	0	0	2	2	0	0	4	0	0	0	4	4	0	0	6	1	0	1	8	9
18:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1
18:30	0	0	4	1	0	0	5	5	0	0	3	1	0	0	4	4	0	0	7	0	0	0	7	7
18:45	0	0	2	0	0	0	2	2	0	0	4	0	0	0	4	4	0	0	9	0	0	0	9	9
H/TOT	0	0	7	2	0	0	9	9	0	0	13	1	0	0	14	14	0	0	23	1	0	1	25	26
P/TOT	0	1	17	6	0	0	24	23	0	0	46	2	1	0	49	50	2	0	90	10	0	1	103	102

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 04 DATE: 25th May 2022

LOCATION: Swords Road/Shanowen Road DAY: Wednesday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	4	3	65	8	0	2	82	79	1	1	16	4	0	0	22	21	1	0	5	3	1	0	10	10
07:15	12	1	71	9	1	4	98	93	0	0	18	5	0	1	24	25	0	0	8	4	0	0	12	12
07:30	4	4	83	10	0	7	108	109	0	0	23	6	0	1	30	31	1	0	20	0	0	0	21	20
07:45	11	1	82	14	3	6	117	117	2	0	38	6	1	2	49	50	1	0	30	4	1	0	36	36
H/TOT	31	9	301	41	4	19	405	398	3	1	95	21	1	4	125	127	3	0	63	11	2	0	79	79
08:00	13	0	80	13	1	7	114	112	2	0	38	1	0	0	41	39	0	0	28	3	1	1	33	35
08:15	23	0	78	13	1	6	121	110	0	0	42	4	0	0	46	46	1	0	17	3	1	0	22	22
08:30	20	1	78	14	1	7	121	112	0	1	46	3	1	0	51	51	0	0	39	3	1	0	43	44
08:45	12	1	80	9	4	7	113	114	1	0	31	4	2	0	38	39	2	0	35	2	2	0	41	41
H/TOT	68	2	316	49	7	27	469	447	3	1	157	12	3	0	176	176	3	0	119	11	5	1	139	143
09:00	4	0	65	15	2	10	96	105	1	0	23	7	1	2	34	36	1	0	47	3	0	0	51	50
09:15	3	2	80	16	4	5	110	115	1	1	29	5	1	1	38	39	0	0	33	7	2	2	44	48
09:30	2	0	60	8	2	5	77	82	1	1	34	7	1	0	44	44	0	1	37	2	0	0	40	39
09:45	4	0	48	12	2	6	72	77	1	1	32	2	1	1	38	39	1	0	31	7	1	0	40	40
H/TOT	13	2	253	51	10	26	355	379	4	3	118	21	4	4	154	157	2	1	148	19	3	2	175	178
P/TOT	112	13	870	141	21	72	1229	1225	10	5	370	54	8	8	455	460	8	1	330	41	10	3	393	399

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	2	1	89	6	1	7	106	112	0	0	36	4	0	1	41	42	2	0	38	7	0	1	48	47
16:15	3	1	88	9	1	3	105	106	1	0	52	5	0	0	58	57	2	0	40	7	0	0	49	47
16:30	7	1	99	5	1	5	118	118	0	0	33	2	1	0	36	37	0	0	28	2	1	0	31	32
16:45	11	2	86	7	0	5	111	106	2	0	40	2	0	0	44	42	1	0	39	2	0	0	42	41
H/TOT	23	5	362	27	3	20	440	442	3	0	161	13	1	1	179	179	5	0	145	18	1	1	170	168
17:00	2	1	80	5	2	2	92	94	0	0	45	5	0	0	50	50	1	0	40	2	0	0	43	42
17:15	10	1	102	8	0	4	125	120	2	0	38	3	0	0	43	41	2	0	37	5	0	0	44	42
17:30	3	1	111	5	0	2	122	121	1	0	44	3	0	0	48	47	3	0	35	4	1	0	43	42
17:45	5	2	74	5	0	6	92	93	2	0	46	4	0	0	52	50	3	0	28	2	0	0	33	31
H/TOT	20	5	367	23	2	14	431	428	5	0	173	15	0	0	193	189	9	0	140	13	1	0	163	157
18:00	9	3	86	7	1	4	110	106	0	1	39	4	0	0	44	43	4	0	43	3	0	0	50	47
18:15	7	0	83	10	2	4	106	106	0	1	52	1	0	0	54	53	3	0	36	2	0	0	41	39
18:30	10	1	83	1	1	6	102	100	1	0	43	3	0	0	47	46	1	0	28	0	0	0	29	28
18:45	8	0	82	1	0	2	93	89	0	0	50	1	0	0	51	51	2	0	36	1	0	0	39	37
H/TOT	34	4	334	19	4	16	411	401	1	2	184	9	0	0	196	194	10	0	143	6	0	0	159	151
P/TOT	77	14	1063	69	9	50	1282	1271	9	2	518	37	1	1	568	562	24	0	428	37	2	1	492	476

OMNI SHOPPING CENTRE TRAFFIC COUNTS **MAY 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/158**

SITE: 04 DATE: 25th May 2022

LOCATION: Swords Road/Shanowen Road DAY: Wednesday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:00	0	0	10	4	0	2	16	18	1	0	6	1	0	2	10	11	5	0	25	1	1	0	32	29
07:15	4	0	16	3	0	1	24	22	1	0	14	3	1	2	21	23	1	2	46	13	4	5	71	78
07:30	1	0	16	3	0	1	21	21	1	0	29	2	0	1	33	33	7	1	52	15	0	5	80	79
07:45	1	0	30	2	0	3	36	38	2	0	40	3	0	2	47	47	6	0	51	7	2	4	70	71
H/TOT	6	0	72	12	0	7	97	99	5	0	89	9	1	7	111	115	19	3	174	36	7	14	253	257
08:00	2	3	31	5	0	4	45	46	2	0	46	4	0	2	54	54	4	0	71	10	1	3	89	90
08:15	1	0	33	2	0	2	38	39	1	0	65	3	2	1	72	74	7	0	75	10	0	6	98	98
08:30	7	0	33	2	0	2	44	40	0	0	38	5	0	3	46	49	3	1	84	13	2	3	106	108
08:45	0	0	37	2	1	1	41	43	1	0	35	5	1	2	44	46	9	2	93	12	0	3	119	114
H/TOT	10	3	134	11	1	9	168	168	4	0	184	17	3	8	216	224	23	3	323	45	3	15	412	410
09:00	1	0	22	3	1	4	31	35	3	0	40	4	0	1	48	47	4	2	79	10	0	9	104	109
09:15	0	0	25	1	0	1	27	28	2	0	35	5	0	1	43	42	3	0	92	11	1	5	112	116
09:30	0	0	19	1	0	1	21	22	0	0	18	0	0	2	20	22	1	0	64	10	5	6	86	96
09:45	2	0	19	3	1	1	26	26	0	0	21	2	0	2	25	27	5	0	65	5	1	3	79	79
H/TOT	3	0	85	8	2	7	105	112	5	0	114	11	0	6	136	138	13	2	300	36	7	23	381	399
P/TOT	19	3	291	31	3	23	370	379	14	0	387	37	4	21	463	477	55	8	797	117	17	52	1046	1066

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	2	0	26	5	0	2	35	35	4	0	27	5	0	1	37	35	6	0	94	12	2	5	119	121
16:15	0	0	31	4	0	1	36	37	1	1	38	2	1	1	44	45	7	1	99	13	3	3	126	126
16:30	0	0	21	3	0	1	25	26	1	0	34	7	0	3	45	47	8	0	108	8	2	3	129	128
16:45	0	0	38	0	0	1	39	40	3	2	42	4	1	3	55	55	9	1	89	8	1	9	117	119
H/TOT	2	0	116	12	0	5	135	138	9	3	141	18	2	8	181	182	30	2	390	41	8	20	491	494
17:00	2	1	49	5	0	2	59	59	2	1	56	10	2	1	72	73	17	0	97	8	0	3	125	114
17:15	2	0	39	3	0	2	46	46	1	0	43	7	0	2	53	54	11	1	98	13	0	5	128	124
17:30	1	0	35	1	0	1	38	38	2	0	33	1	1	2	39	40	16	3	90	8	0	3	120	108
17:45	3	1	36	4	1	1	46	45	4	1	24	1	2	2	34	34	12	1	103	7	0	7	130	127
H/TOT	8	2	159	13	1	6	189	188	9	2	156	19	5	7	198	202	56	5	388	36	0	18	503	473
18:00	1	0	20	2	0	2	25	26	2	0	30	5	0	1	38	37	13	4	92	7	2	3	121	113
18:15	1	0	34	1	0	2	38	39	4	0	34	3	1	1	43	42	9	1	101	2	1	5	119	117
18:30	3	0	28	1	0	1	33	32	3	0	27	0	0	3	33	34	12	0	87	4	0	5	108	103
18:45	2	1	27	2	0	1	33	32	2	0	23	3	0	1	29	28	3	0	82	3	0	5	93	96
H/TOT	7	1	109	6	0	6	129	129	11	0	114	11	1	6	143	141	37	5	362	16	3	18	441	429
P/TOT	17	3	384	31	1	17	453	456	29	5	411	48	8	21	522	525	123	12	1140	93	11	56	1435	1396

APPENDIX C

TRICS Output Data
Apartments, Retail & Créche

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	46	65	0.040	46	65	0.146	46	65	0.186
08:00 - 09:00	46	65	0.062	46	65	0.184	46	65	0.246
09:00 - 10:00	46	65	0.078	46	65	0.083	46	65	0.161
10:00 - 11:00	46	65	0.066	46	65	0.083	46	65	0.149
11:00 - 12:00	46	65	0.067	46	65	0.082	46	65	0.149
12:00 - 13:00	46	65	0.088	46	65	0.084	46	65	0.172
13:00 - 14:00	46	65	0.074	46	65	0.087	46	65	0.161
14:00 - 15:00	46	65	0.081	46	65	0.085	46	65	0.166
15:00 - 16:00	46	65	0.103	46	65	0.070	46	65	0.173
16:00 - 17:00	46	65	0.127	46	65	0.080	46	65	0.207
17:00 - 18:00	46	65	0.169	46	65	0.089	46	65	0.258
18:00 - 19:00	46	65	0.147	46	65	0.100	46	65	0.247
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.102			1.173			2.275

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

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

Parameter summary

Trip rate parameter range selected:	9 - 332 (units:)
Survey date date range:	01/01/14 - 15/10/21
Number of weekdays (Monday-Friday):	46
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

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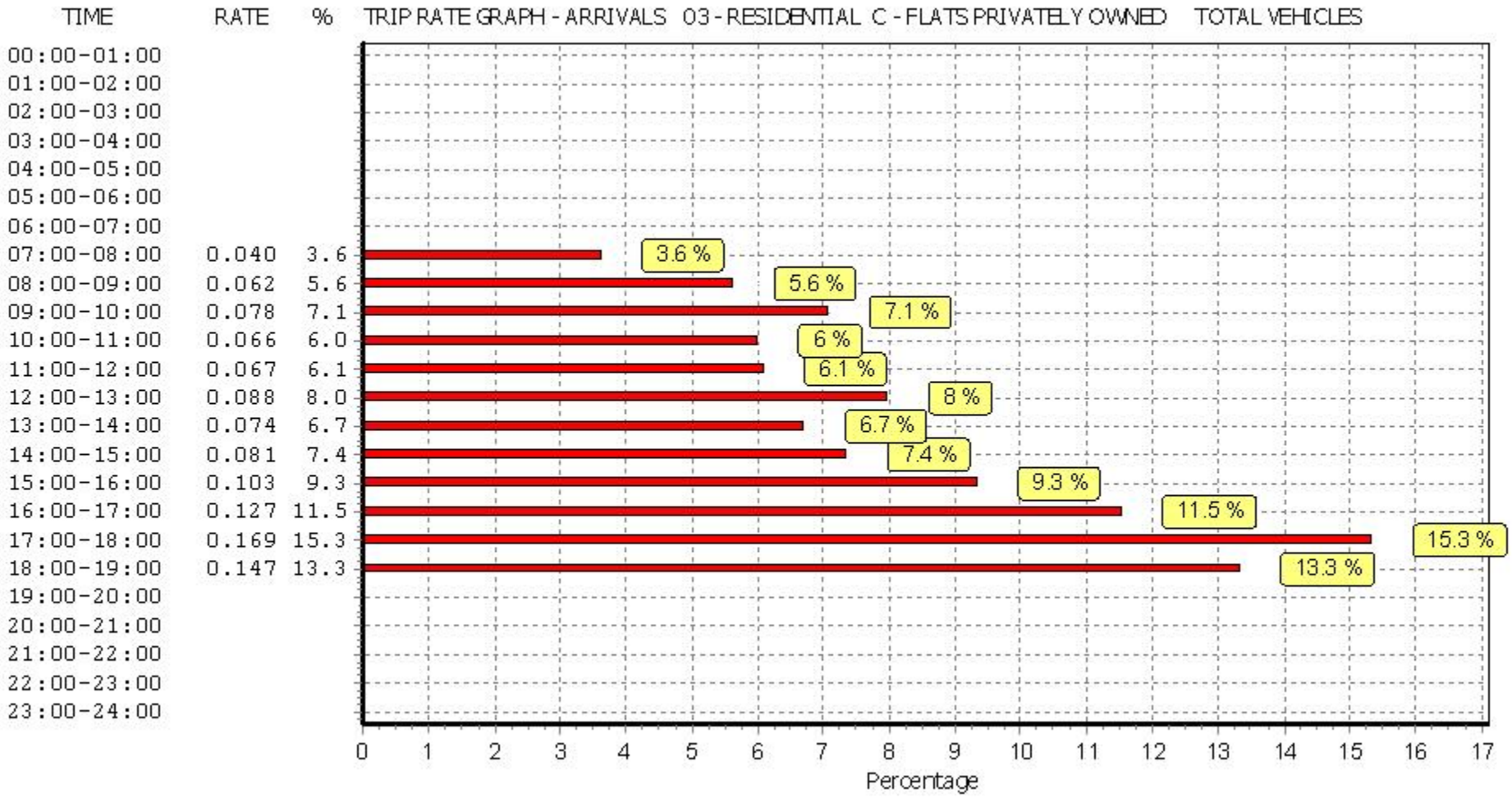

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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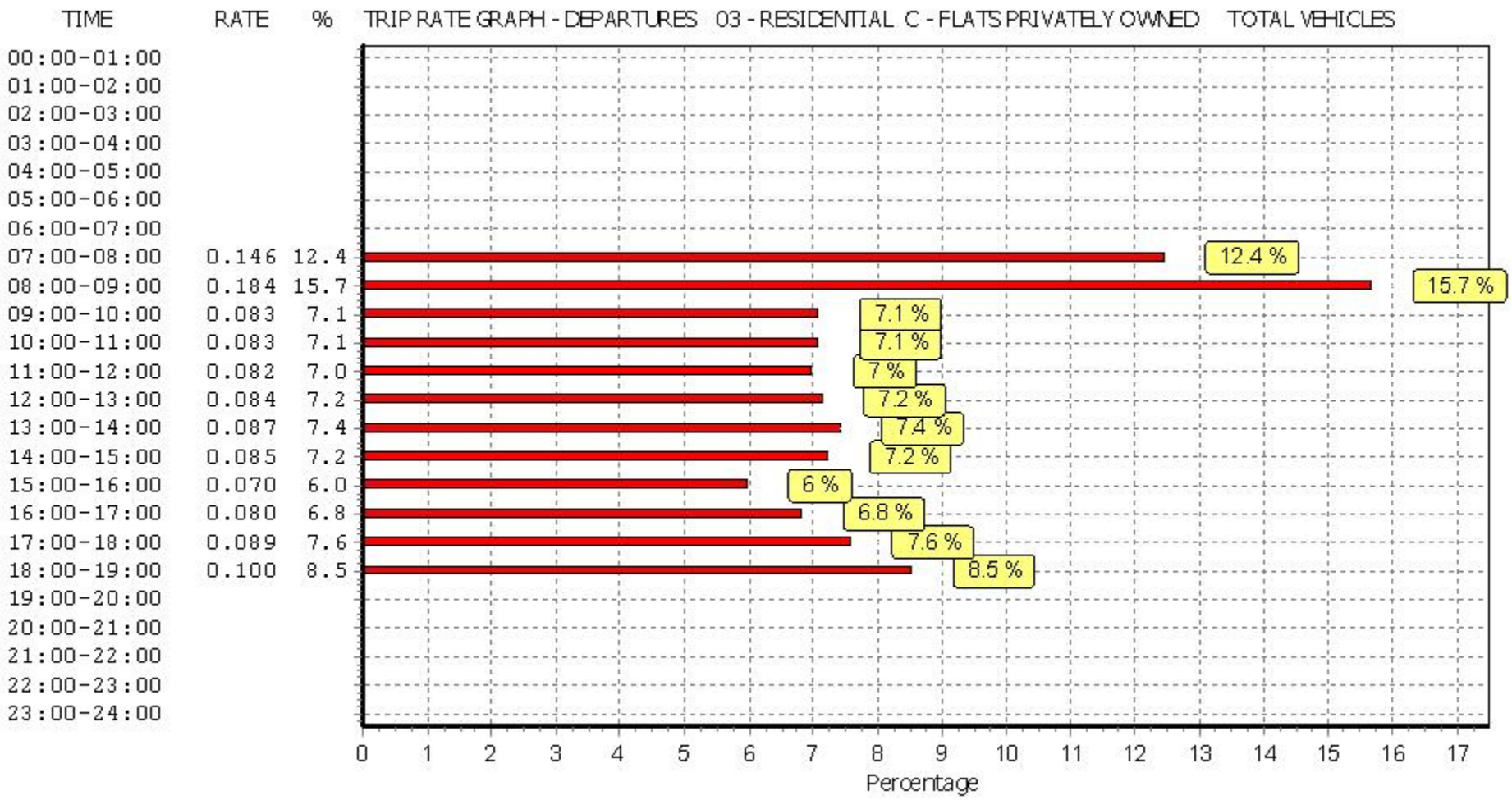

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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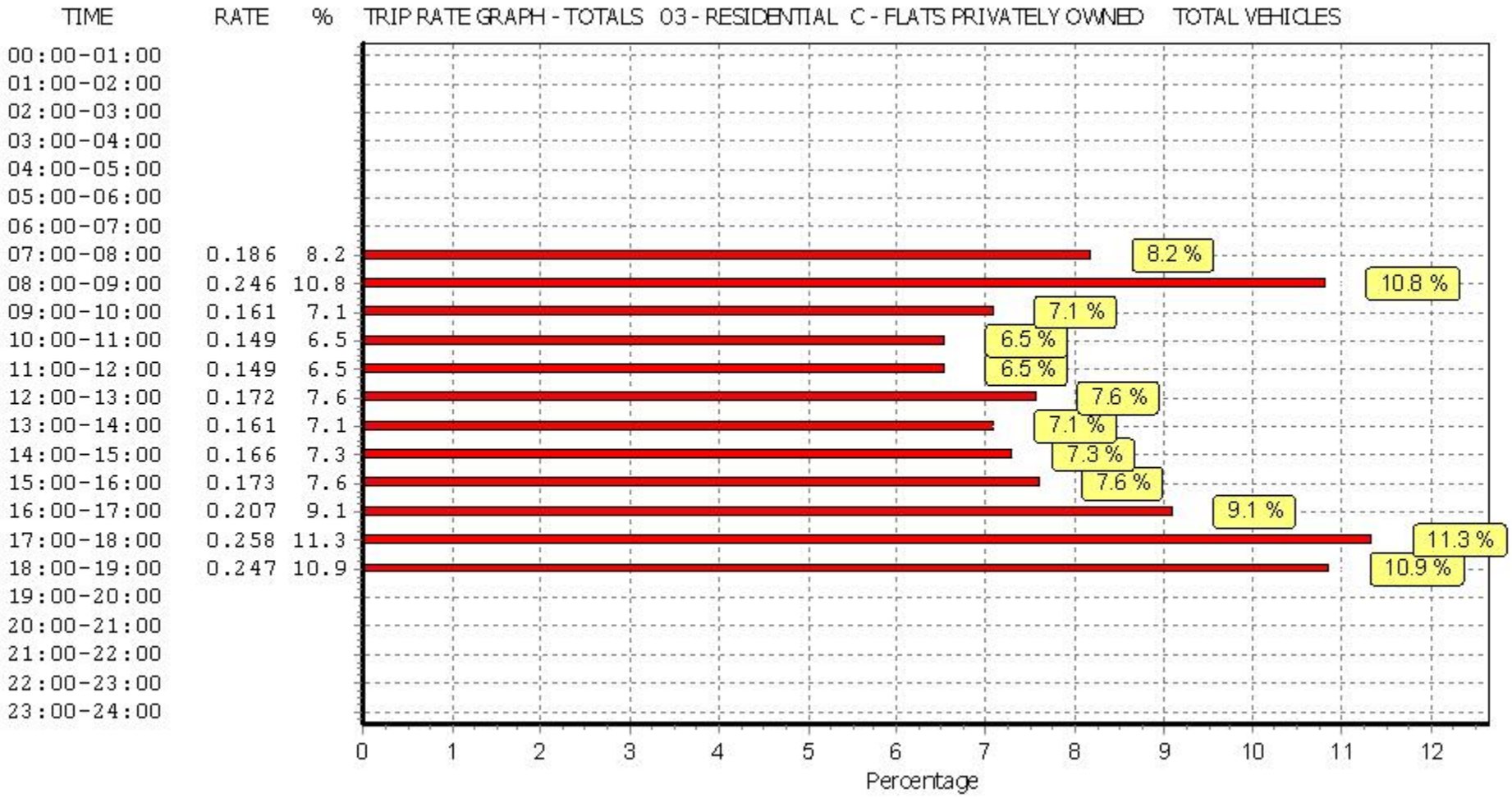

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Calculation Reference: AUDIT-160301-210815-0833

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : J - RETAIL PARK - INCLUDING FOOD
TOTAL VEHICLES

Selected regions and areas:

08	NORTH WEST		
	LC	LANCASHIRE	1 days
09	NORTH		
	TV	TEES VALLEY	1 days
17	ULSTER (NORTHERN IRELAND)		
	AN	ANTRIM	1 days

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

TRIP RATE for Land Use 01 - RETAIL/J - RETAIL PARK - INCLUDING FOOD
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	27800	0.061	1	27800	0.011	1	27800	0.072
07:00 - 08:00	3	24786	0.281	3	24786	0.147	3	24786	0.428
08:00 - 09:00	3	24786	0.625	3	24786	0.336	3	24786	0.961
09:00 - 10:00	3	24786	1.267	3	24786	0.831	3	24786	2.098
10:00 - 11:00	3	24786	1.586	3	24786	1.167	3	24786	2.753
11:00 - 12:00	3	24786	1.746	3	24786	1.579	3	24786	3.325
12:00 - 13:00	3	24786	1.873	3	24786	1.810	3	24786	3.683
13:00 - 14:00	3	24786	1.822	3	24786	1.860	3	24786	3.682
14:00 - 15:00	3	24786	1.517	3	24786	1.837	3	24786	3.354
15:00 - 16:00	3	24786	1.446	3	24786	1.537	3	24786	2.983
16:00 - 17:00	3	24786	1.288	3	24786	1.489	3	24786	2.777
17:00 - 18:00	3	24786	1.302	3	24786	1.361	3	24786	2.663
18:00 - 19:00	3	24786	1.213	3	24786	1.309	3	24786	2.522
19:00 - 20:00	3	24786	0.795	3	24786	1.116	3	24786	1.911
20:00 - 21:00	3	24786	0.371	3	24786	0.686	3	24786	1.057
21:00 - 22:00	2	23280	0.241	2	23280	0.419	2	23280	0.660
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			17.434			17.495			34.929

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

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

Parameter summary

Trip rate parameter range selected:	1930 - 44629 (units: sqm)
Survey date date range:	01/01/13 - 03/10/20
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

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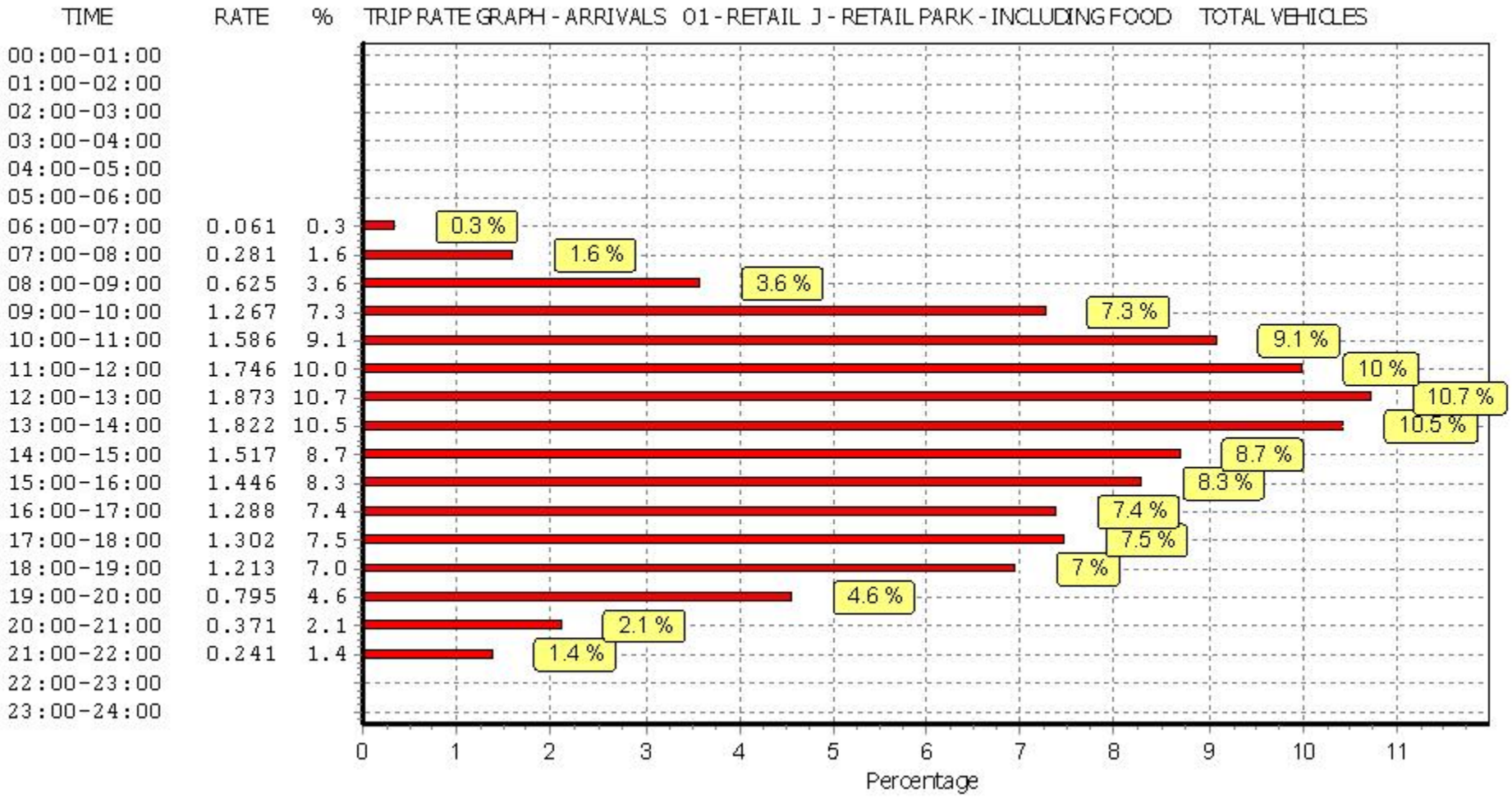

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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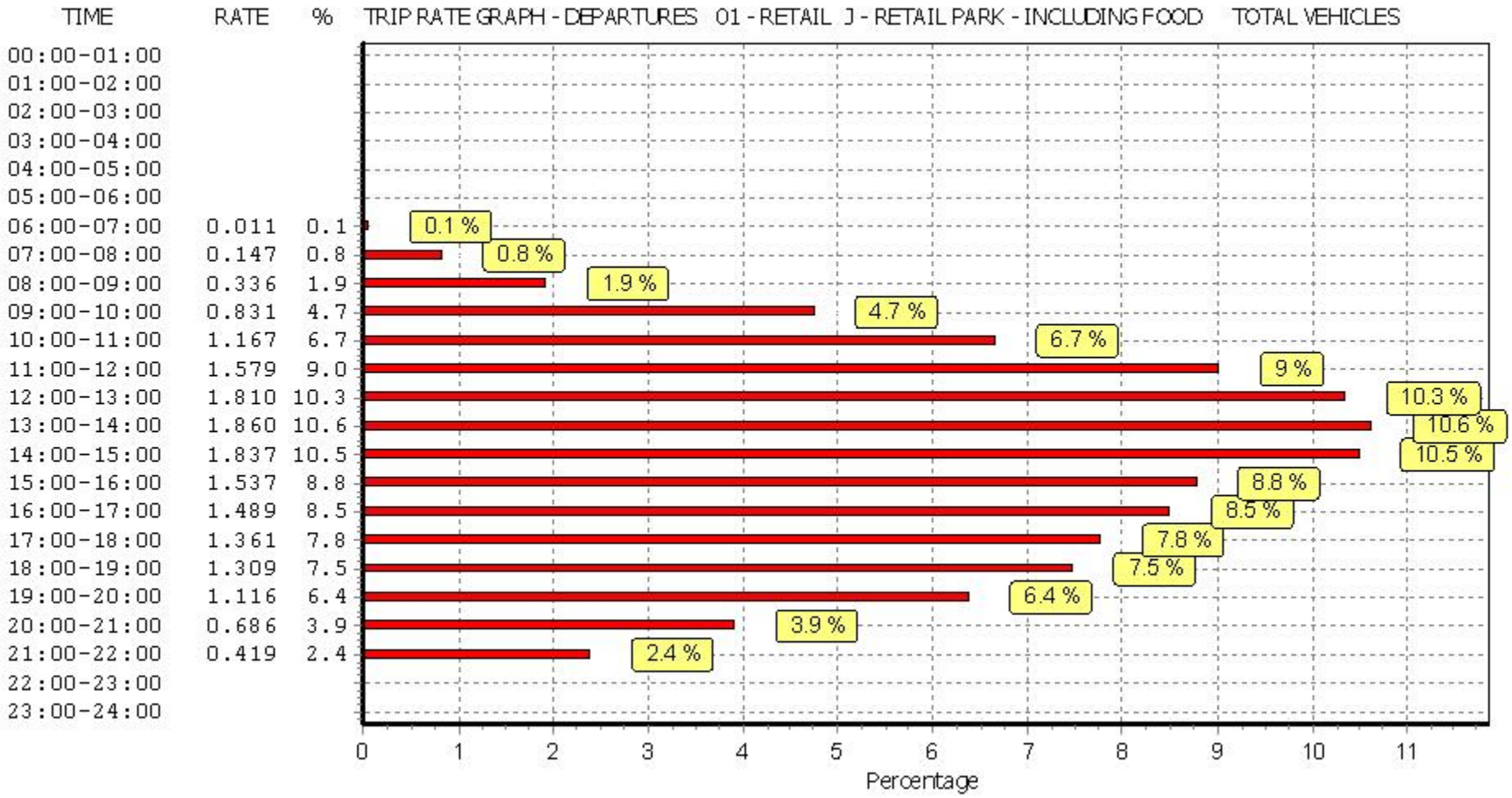

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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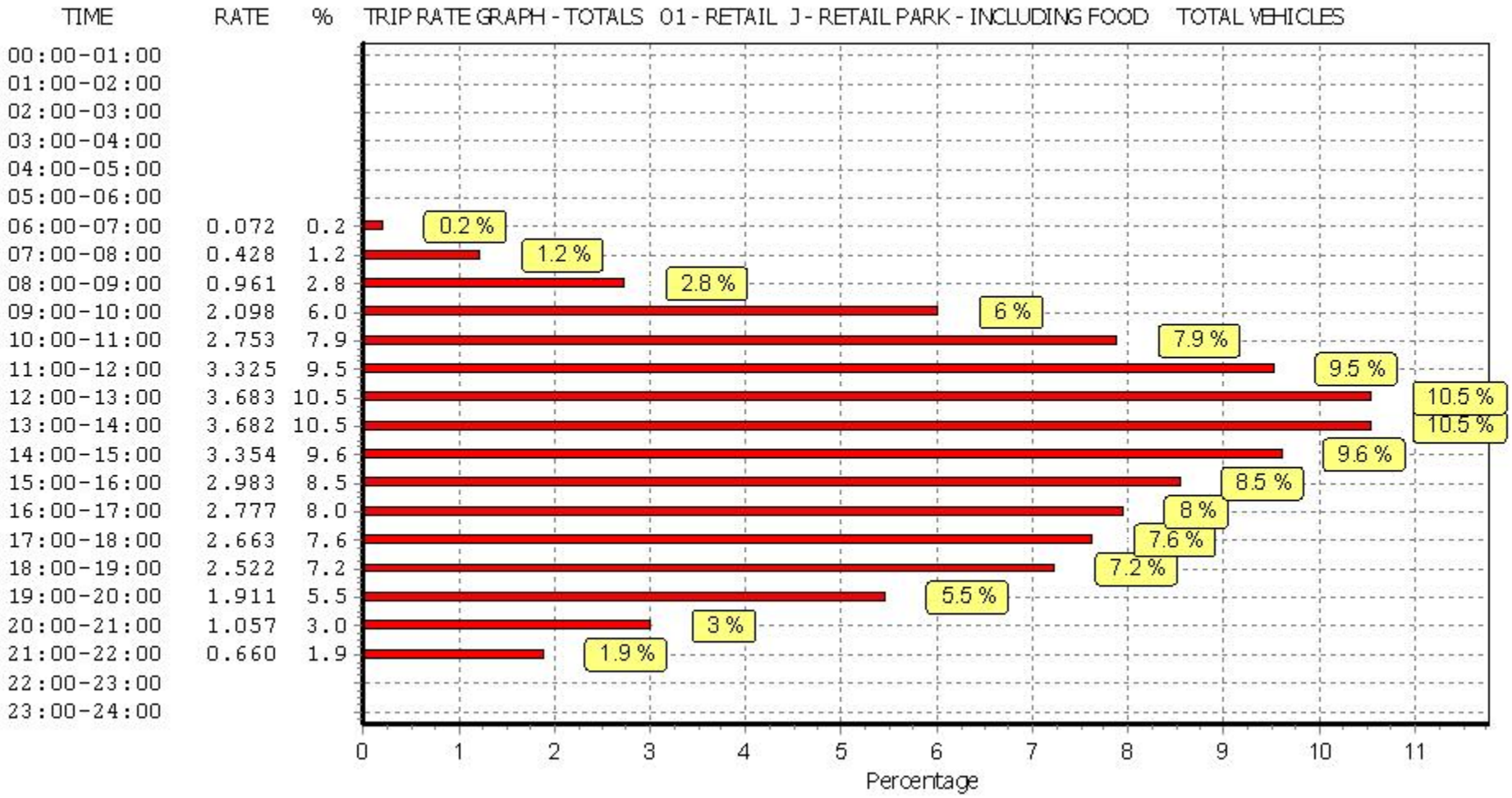


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	2	455	0.000	2	455	0.000	2	455	0.000
07:00 - 08:00	21	489	1.888	21	489	0.934	21	489	2.822
08:00 - 09:00	21	489	3.455	21	489	2.813	21	489	6.268
09:00 - 10:00	21	489	1.557	21	489	1.528	21	489	3.085
10:00 - 11:00	21	489	0.457	21	489	0.341	21	489	0.798
11:00 - 12:00	21	489	0.652	21	489	0.438	21	489	1.090
12:00 - 13:00	21	489	1.285	21	489	1.421	21	489	2.706
13:00 - 14:00	21	489	0.895	21	489	1.285	21	489	2.180
14:00 - 15:00	21	489	0.701	21	489	0.623	21	489	1.324
15:00 - 16:00	21	489	0.749	21	489	0.827	21	489	1.576
16:00 - 17:00	21	489	1.499	21	489	1.664	21	489	3.163
17:00 - 18:00	21	489	2.540	21	489	3.183	21	489	5.723
18:00 - 19:00	20	506	0.138	20	506	0.691	20	506	0.829
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			15.816			15.748			31.564

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

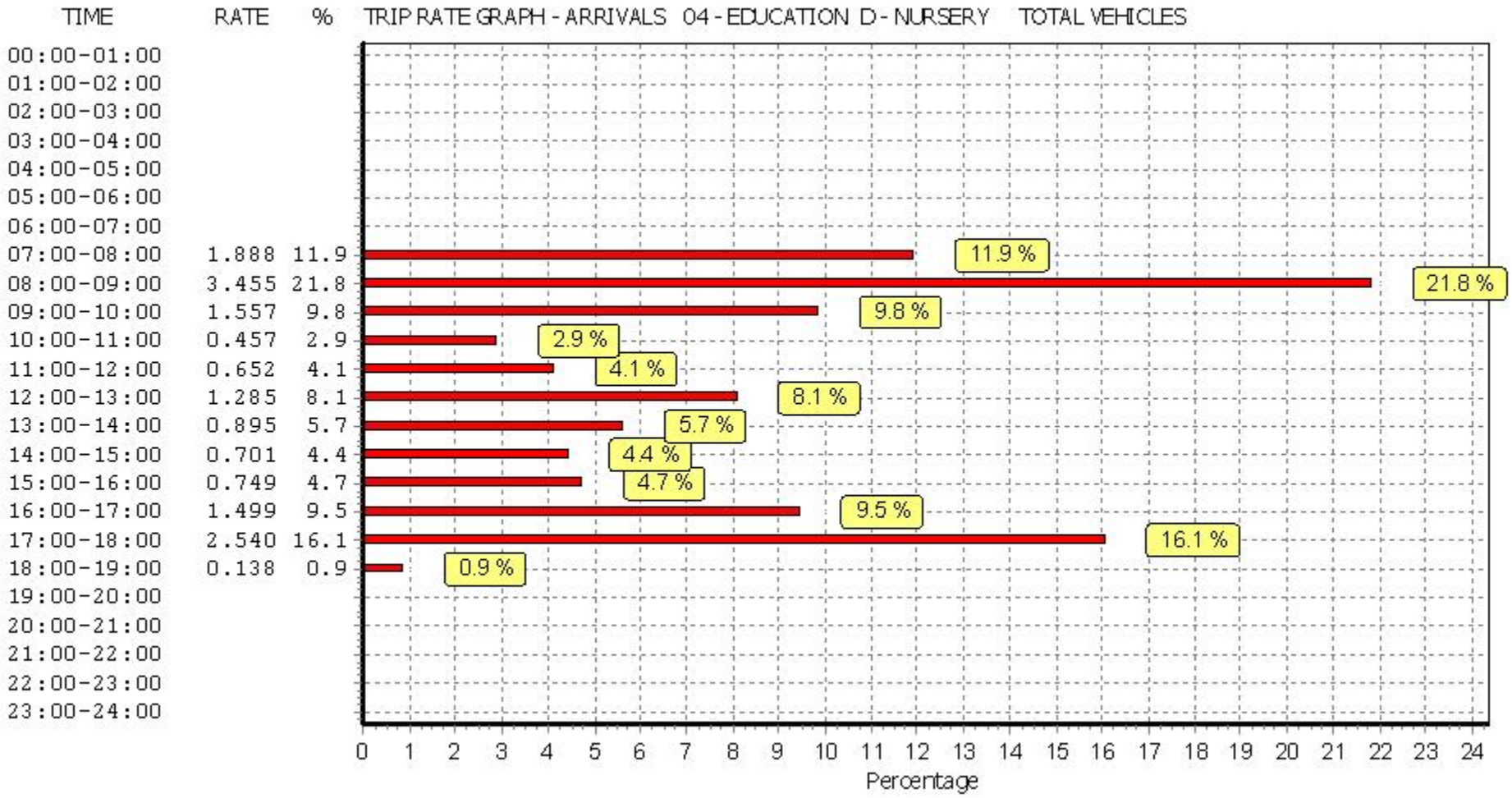
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

Parameter summary

Trip rate parameter range selected:	150 - 880 (units: sqm)
Survey date date range:	01/01/14 - 19/11/21
Number of weekdays (Monday-Friday):	21
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

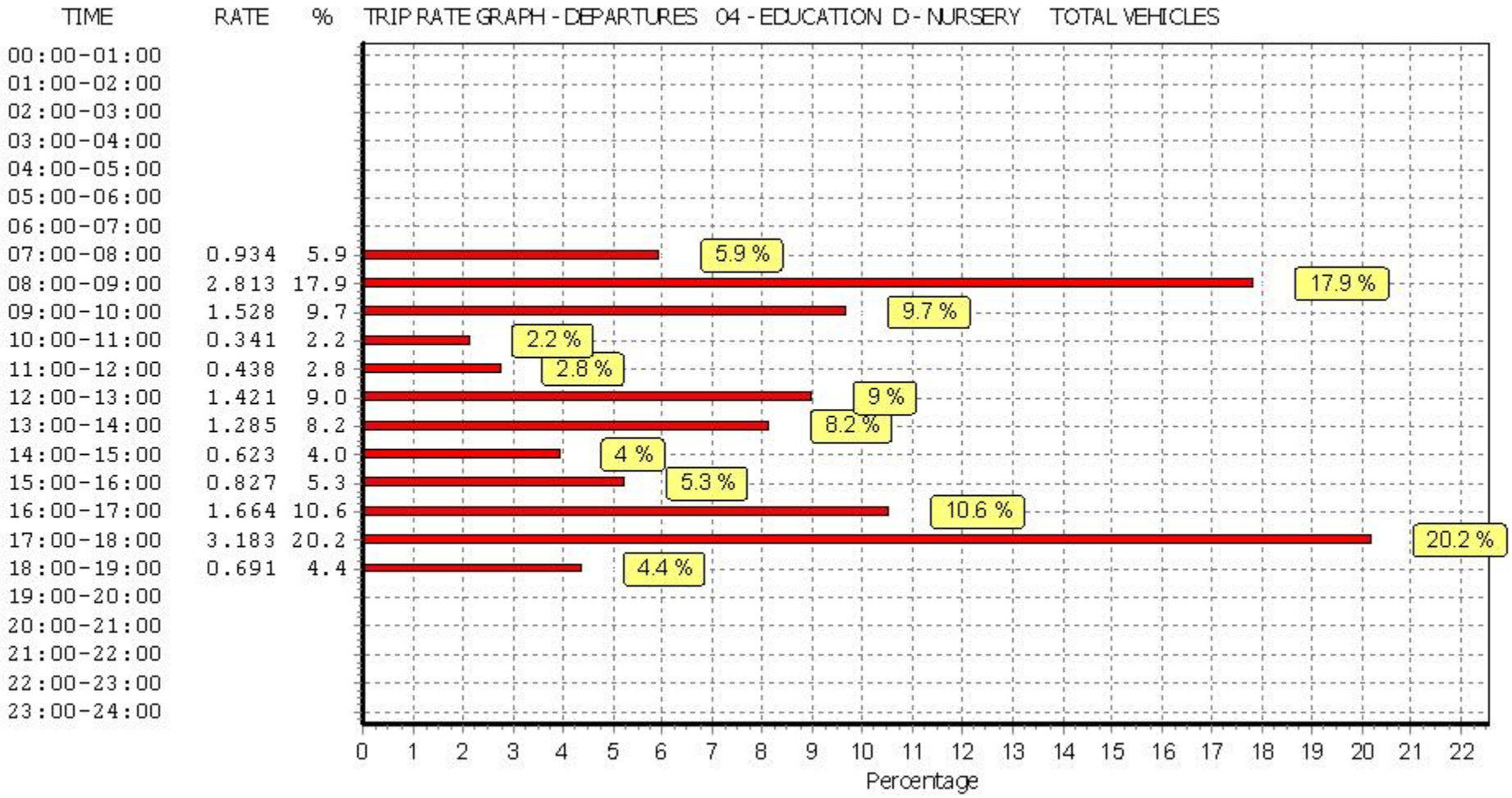
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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

NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



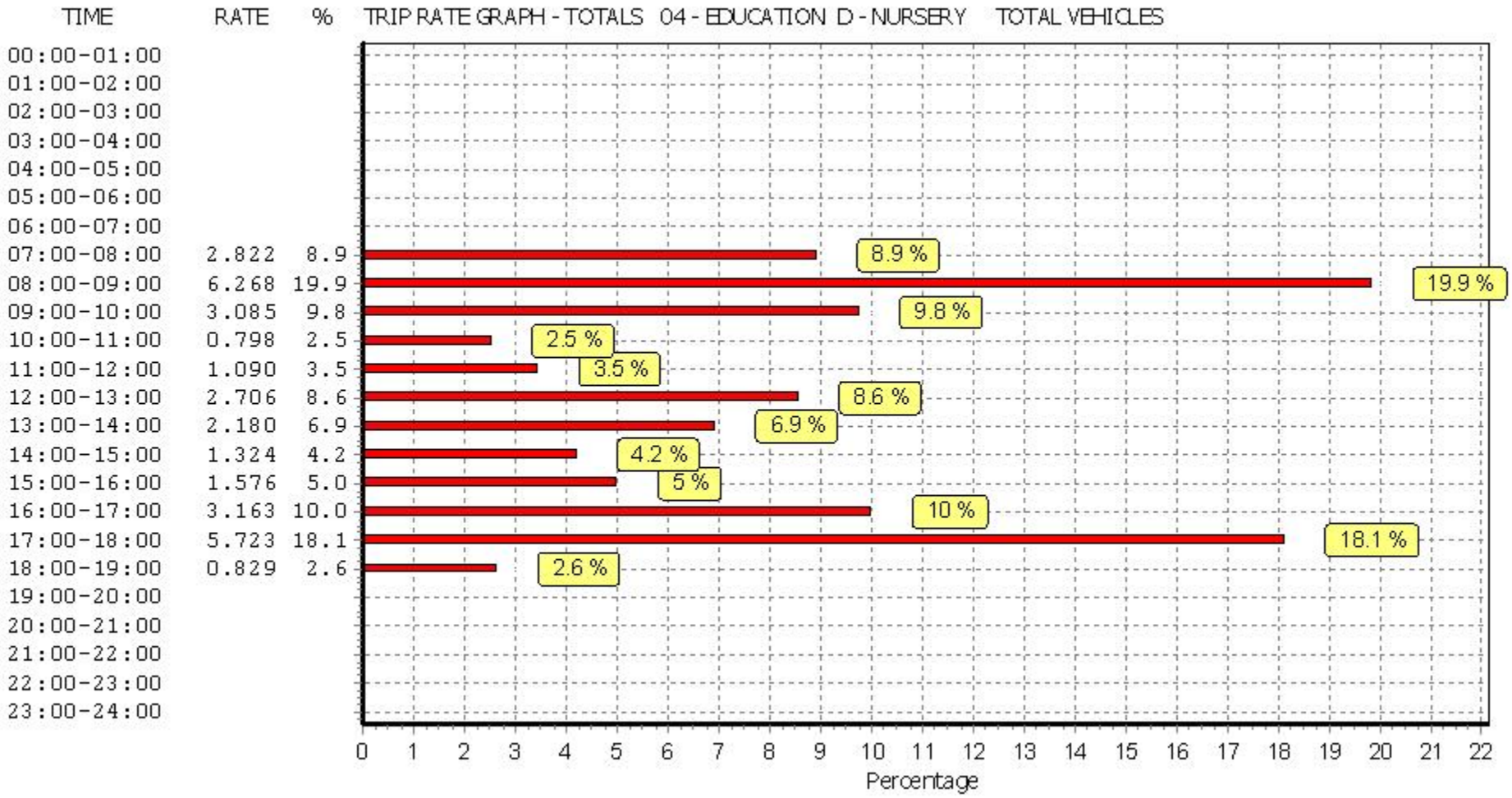
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

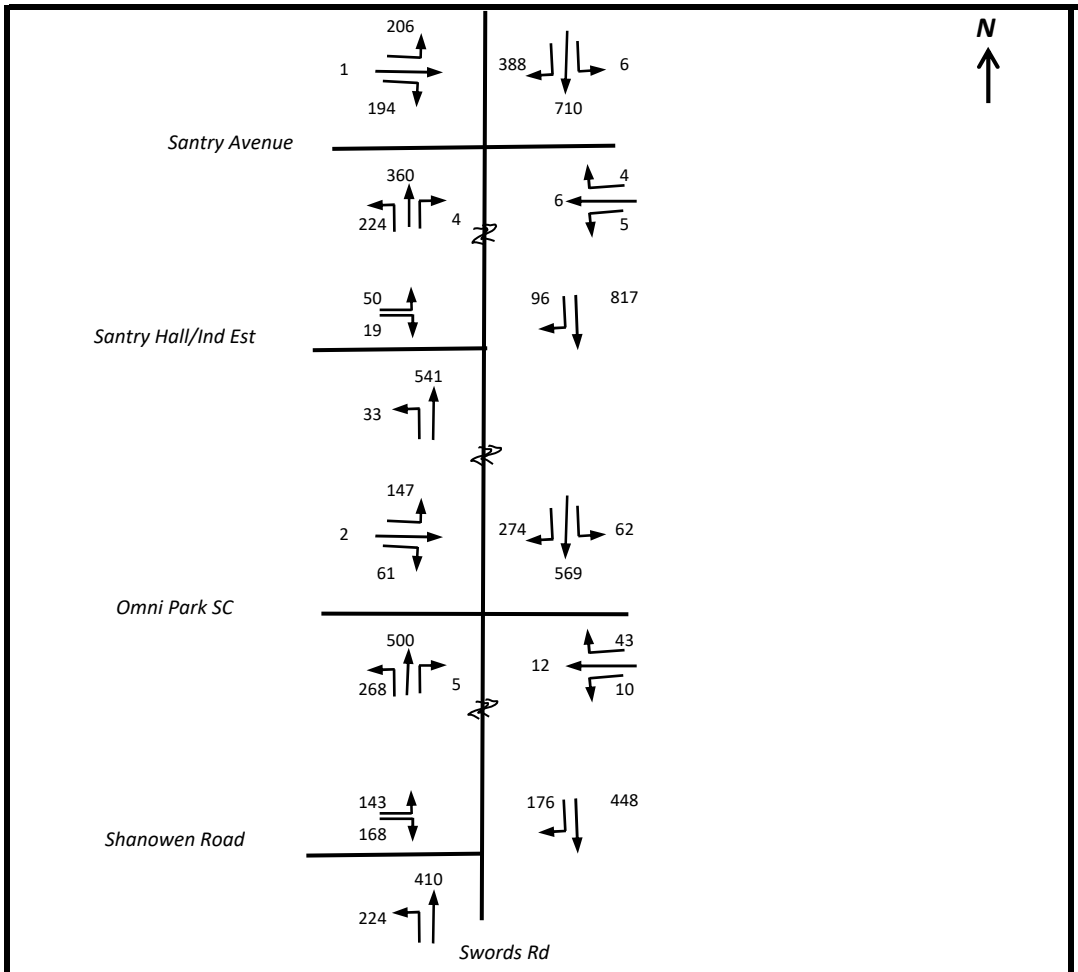
NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



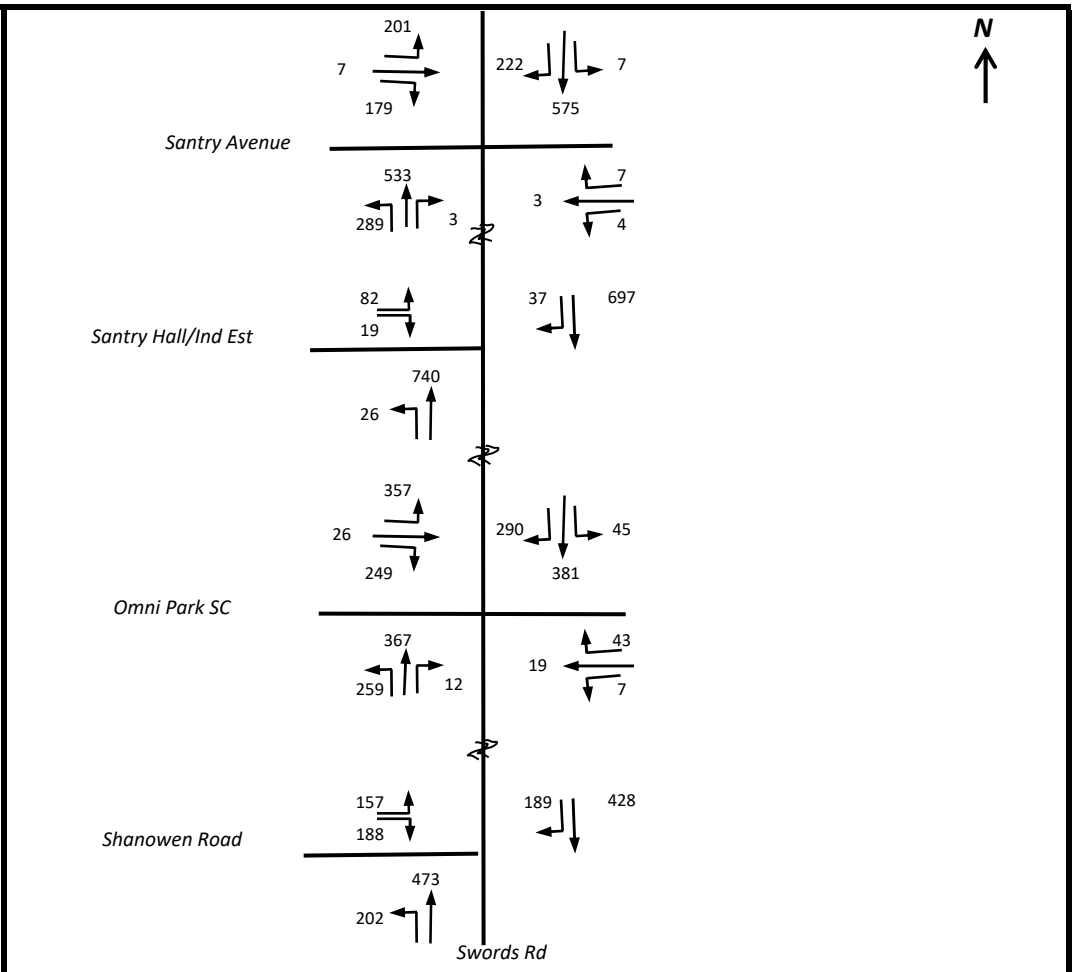
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

APPENDIX D

Traffic Calculations, Trip Distribution, Network Traffic Flow Diagrams & Projections Based on 2022 Traffic Surveys/TRICS



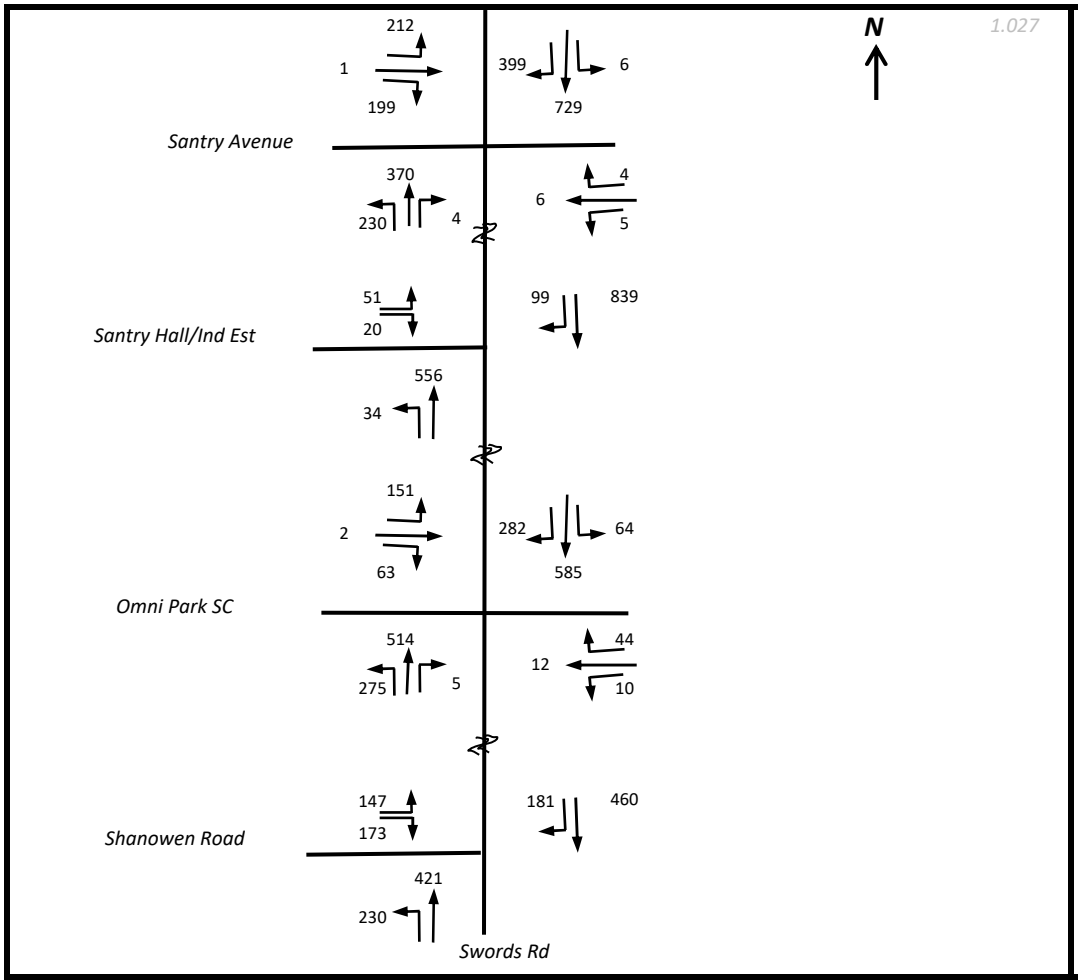
AM PEAK HR 8-9am



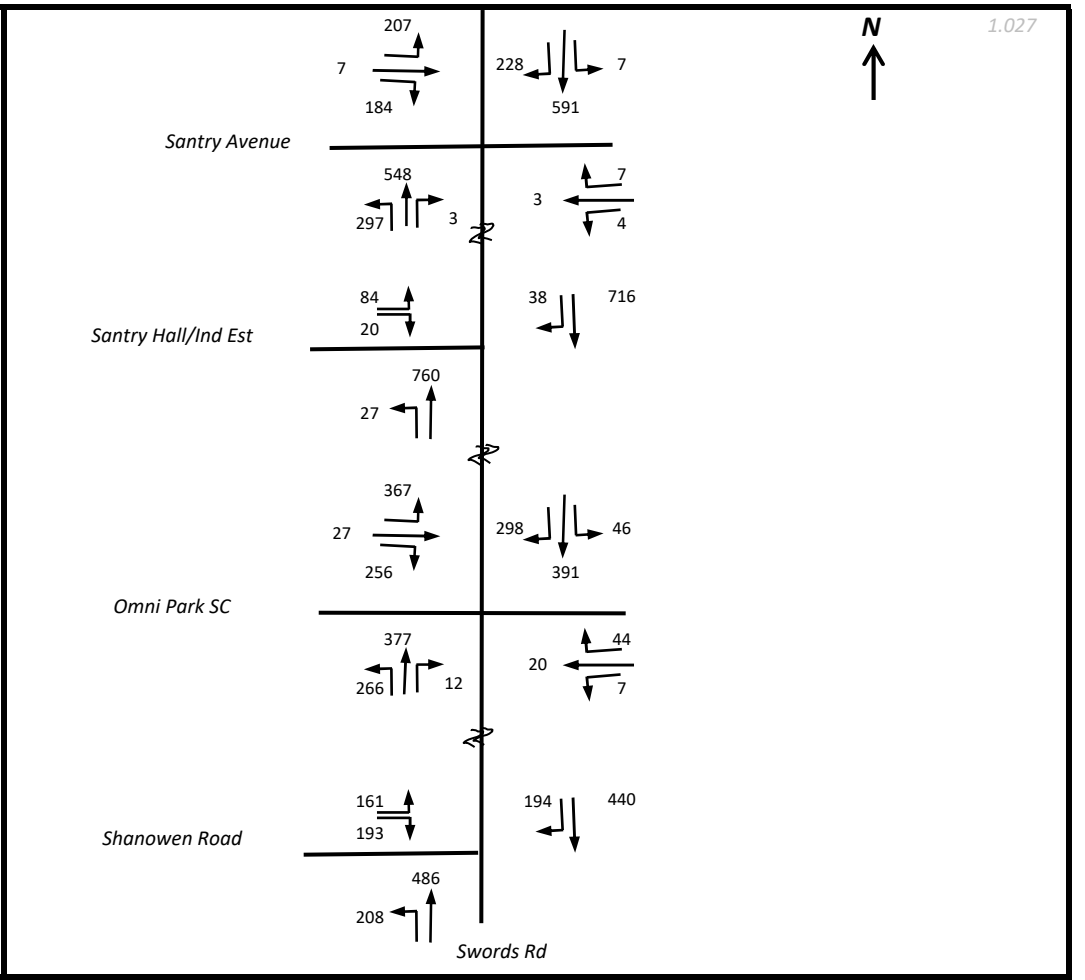
PM PEAK HR 5-6pm

Existing As Surveyed 2022 Traffic (PCUs) - WITHOUT ANY DEVELOPMENT (Refer Appendix B).

CALCULATING TII ANNUAL GROWTH FACTORS TO APPLY…….	
TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2021, Table 6.1: Central Growth Rates: Annual Growth Factors Metropolitan Dublin)	2022 - 2024 = 1.027 2024 to 2039 = 1.135

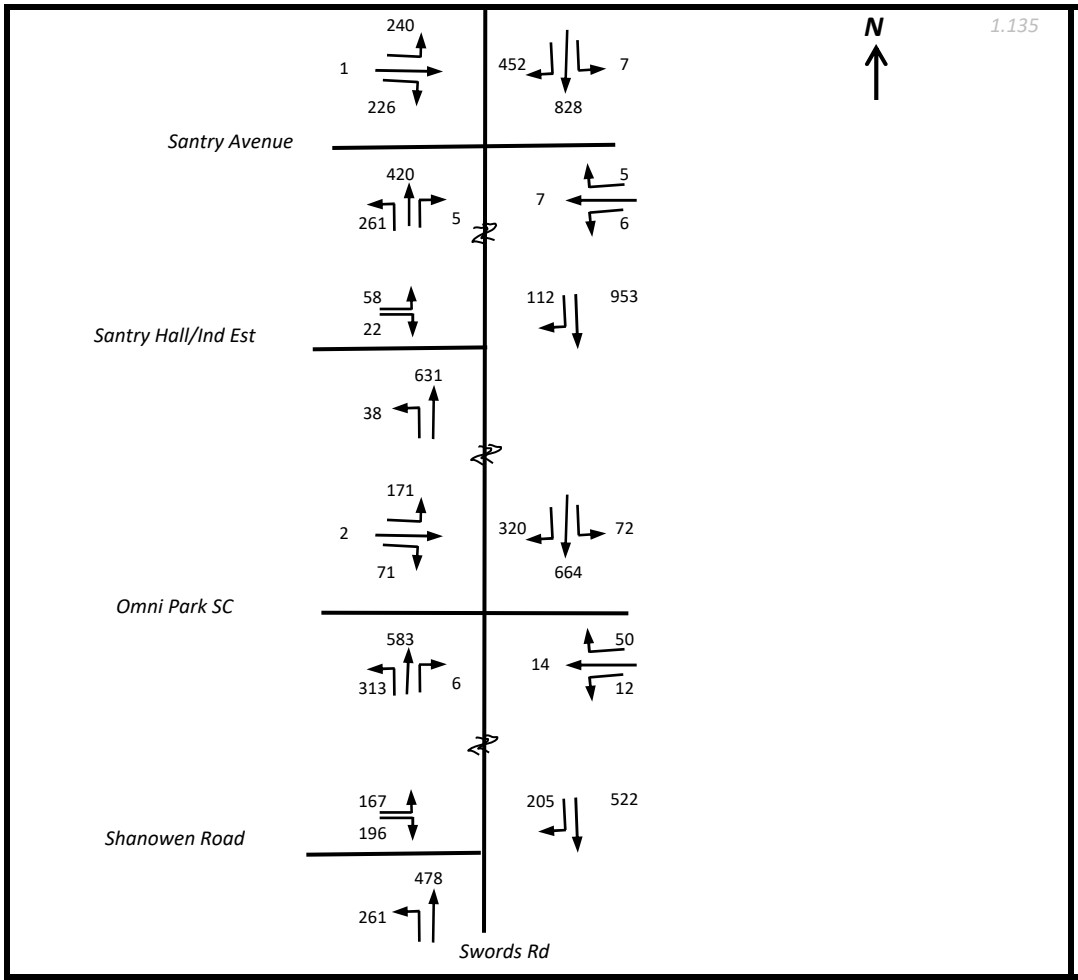


AM PEAK HR 8-9am

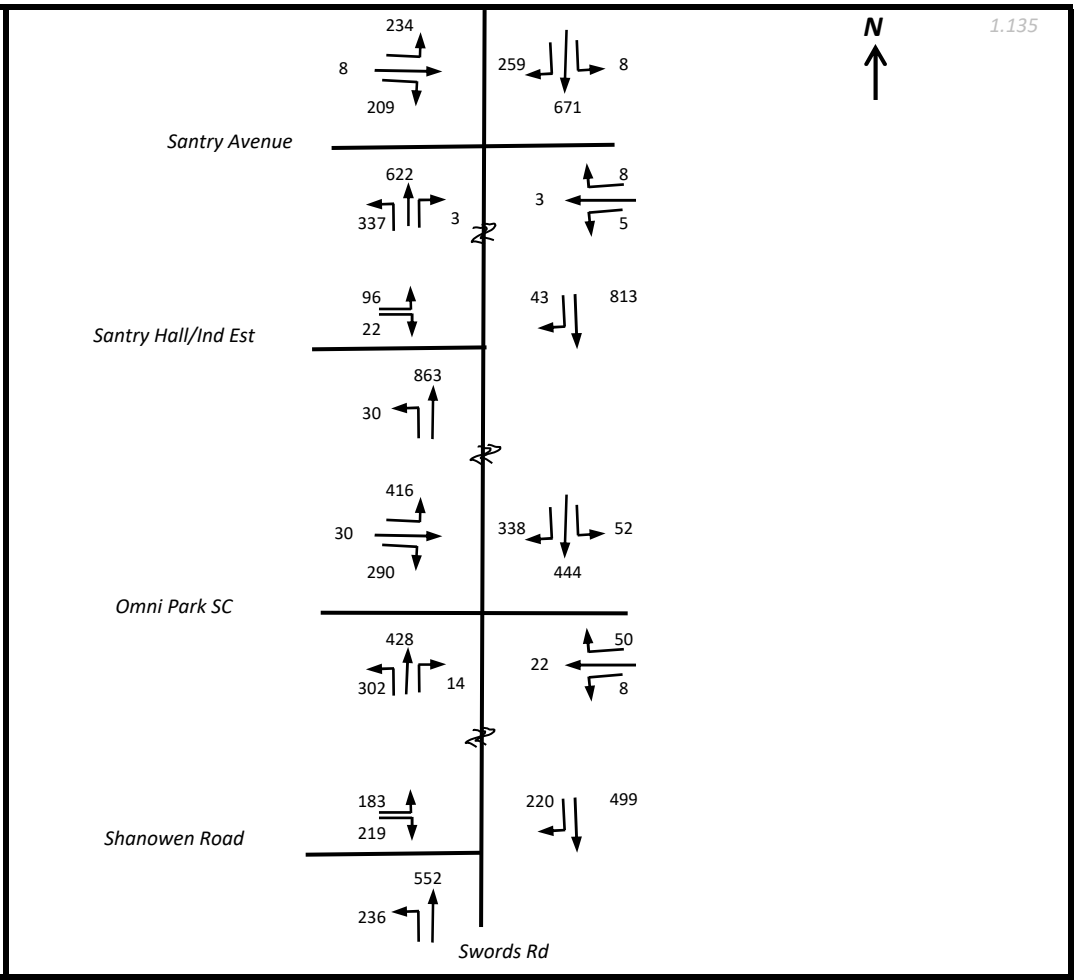


PM PEAK HR 5-6pm

Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes - TII Annual Growth Factors Applied (PCUs) - WITHOUT ANY DEVELOPMENT

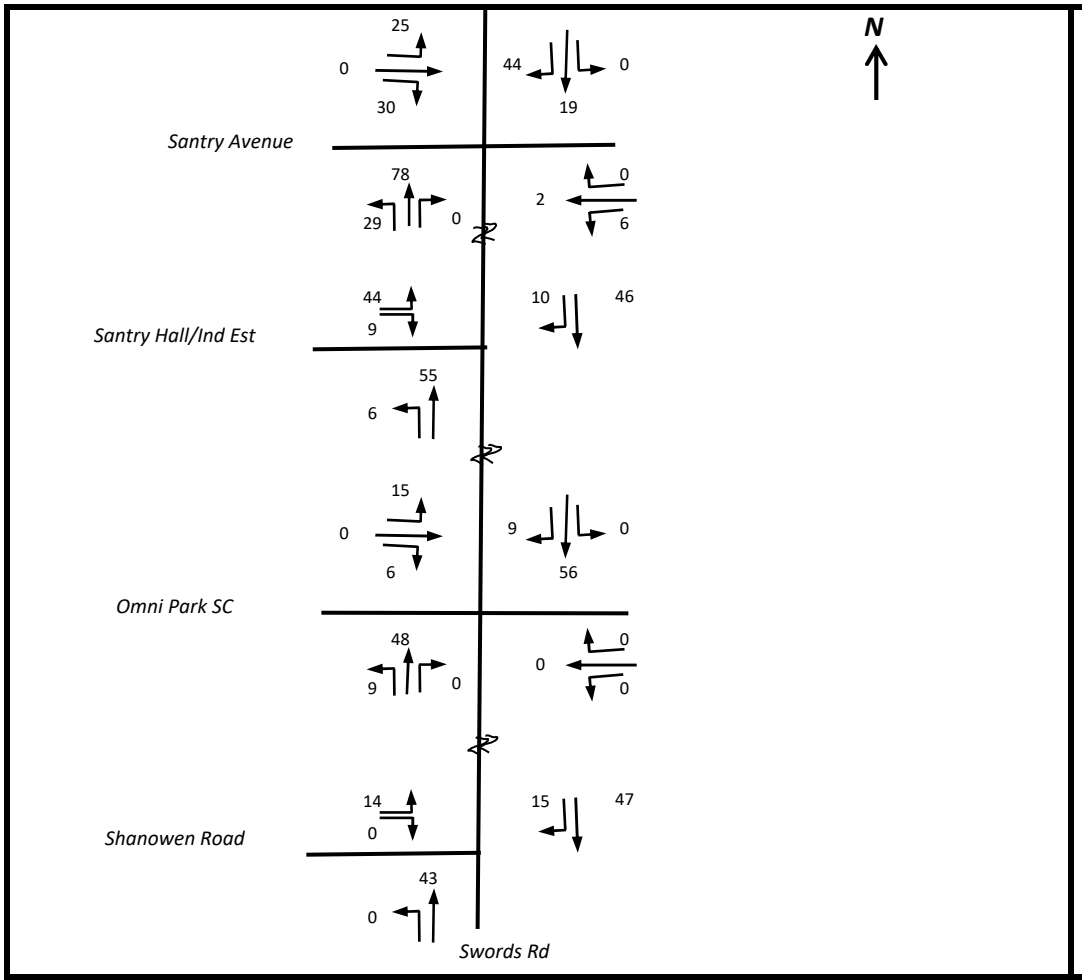


AM PEAK HR 8-9am

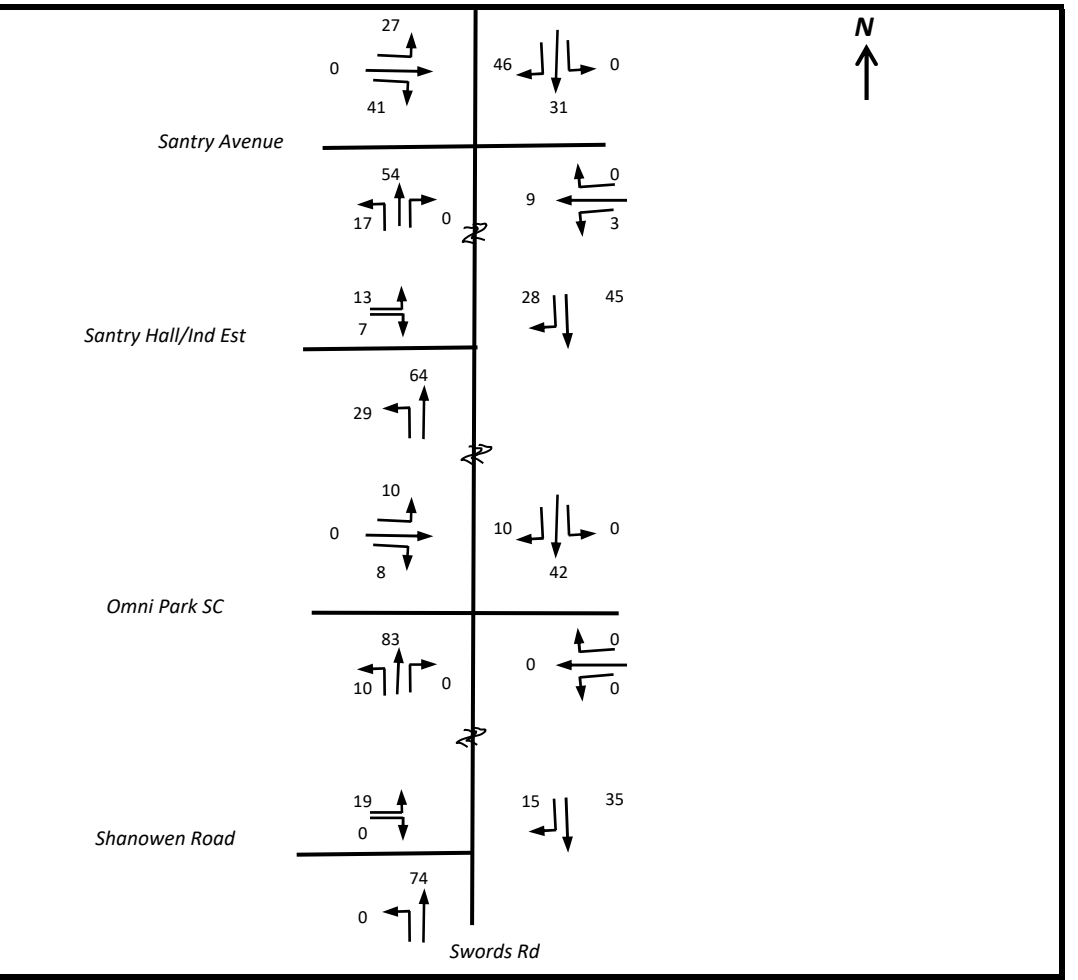


PM PEAK HR 5-6pm

Associated Design Year 2039 Weekday Peak Hour Traffic Volumes - TII Annual Growth Factors Applied (PCUs) - WITHOUT ANY DEVELOPMENT

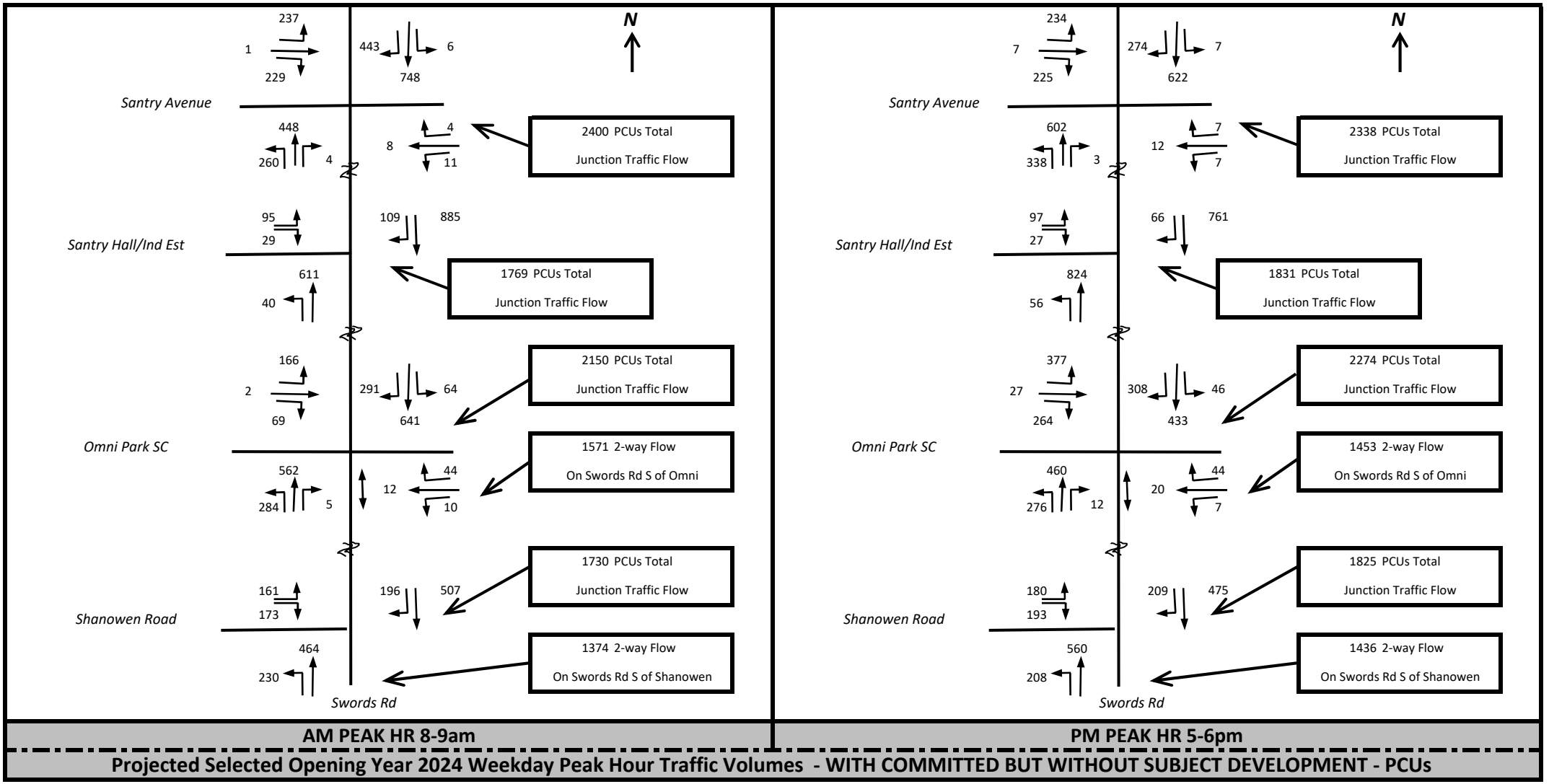


AM PEAK HR 8-9am

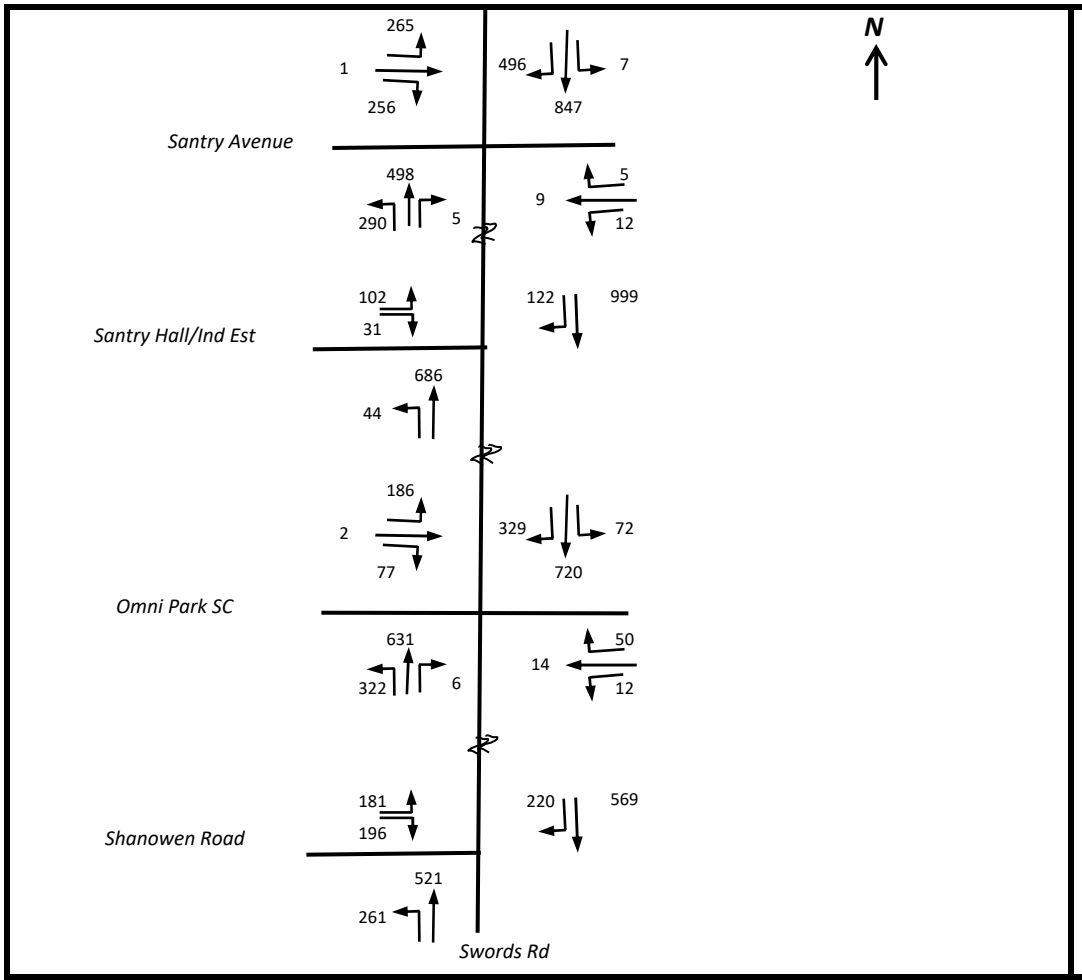


PM PEAK HR 5-6pm

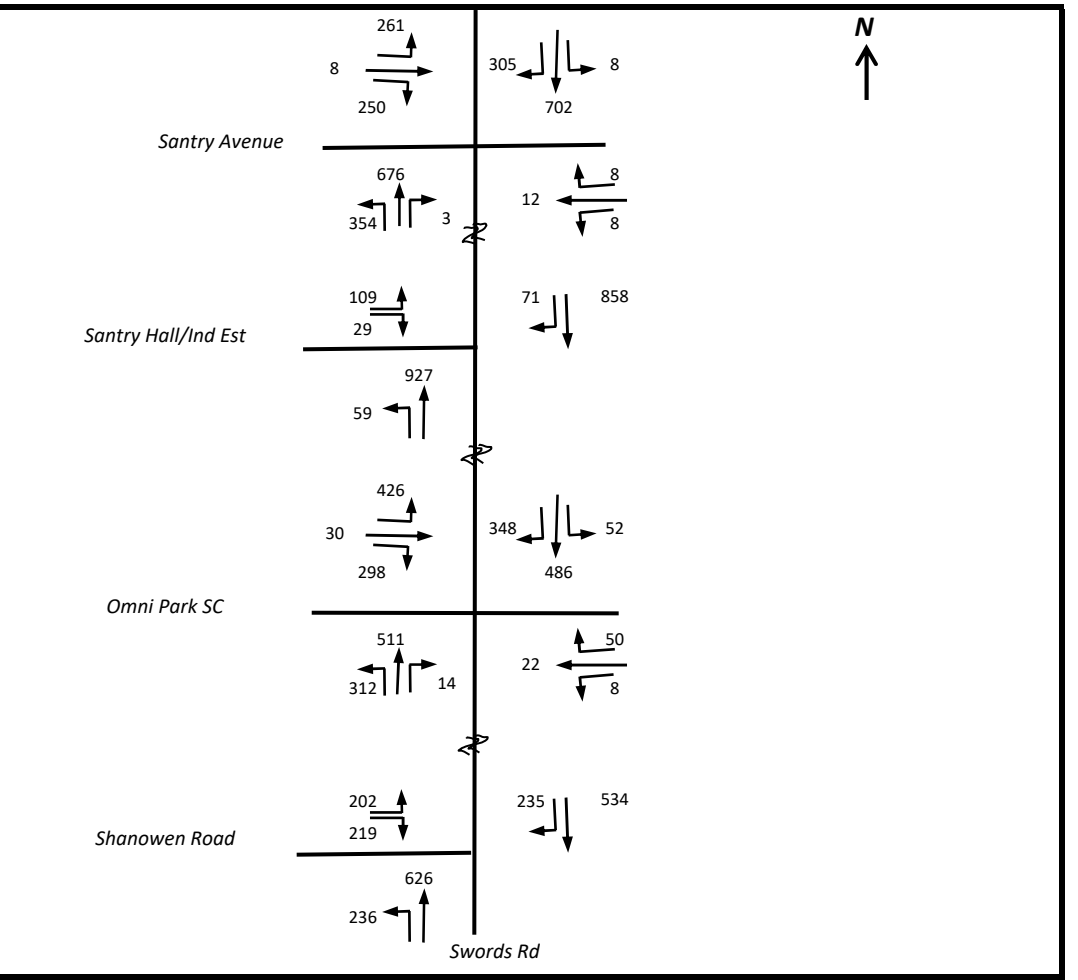
ASSIGNMENT OF COMMITTED DEVELOPMENT TRAFFIC (Ref 2737/19, Ref 2713/17, ABP-303358-19 & ABP-307011-20 PLUS Santry Ave SHD) ***Extracted from DBFL & NRB TA Reports***



Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes - WITH COMMITTED BUT WITHOUT SUBJECT DEVELOPMENT - PCUs



AM PEAK HR 8-9am



PM PEAK HR 5-6pm

Associated Design Year 2039 Weekday Peak Hour Traffic Volumes - WITH COMMITTED BUT WITHOUT SUBJECT DEVELOPMENT - PCUs

TRICS ASSESSMENT OF WORST-CASE TRAFFIC GENERATED BY PROPOSED DEVELOPMENT (Subject Site Only)

REFER TO TRICS OUTPUT WITHIN APPENDIX C

431 m2 GFA Retail	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Traffic Generated
Network Hour	Per 100m2	Dev	Per 100m2	Dev	
Weekday AM Peak Hr	0.625	3	0.336	1	4
Weekday PM Peak Hr	1.302	6	1.361	6	12

A

226 m2 GFA Creche	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Traffic Generated
Network Hour	Per 100m2	Dev	Per 100m2	Dev	
Weekday AM Peak Hr	3.649	8	2.955	7	15
Weekday PM Peak Hr	2.538	6	3.169	7	13

B

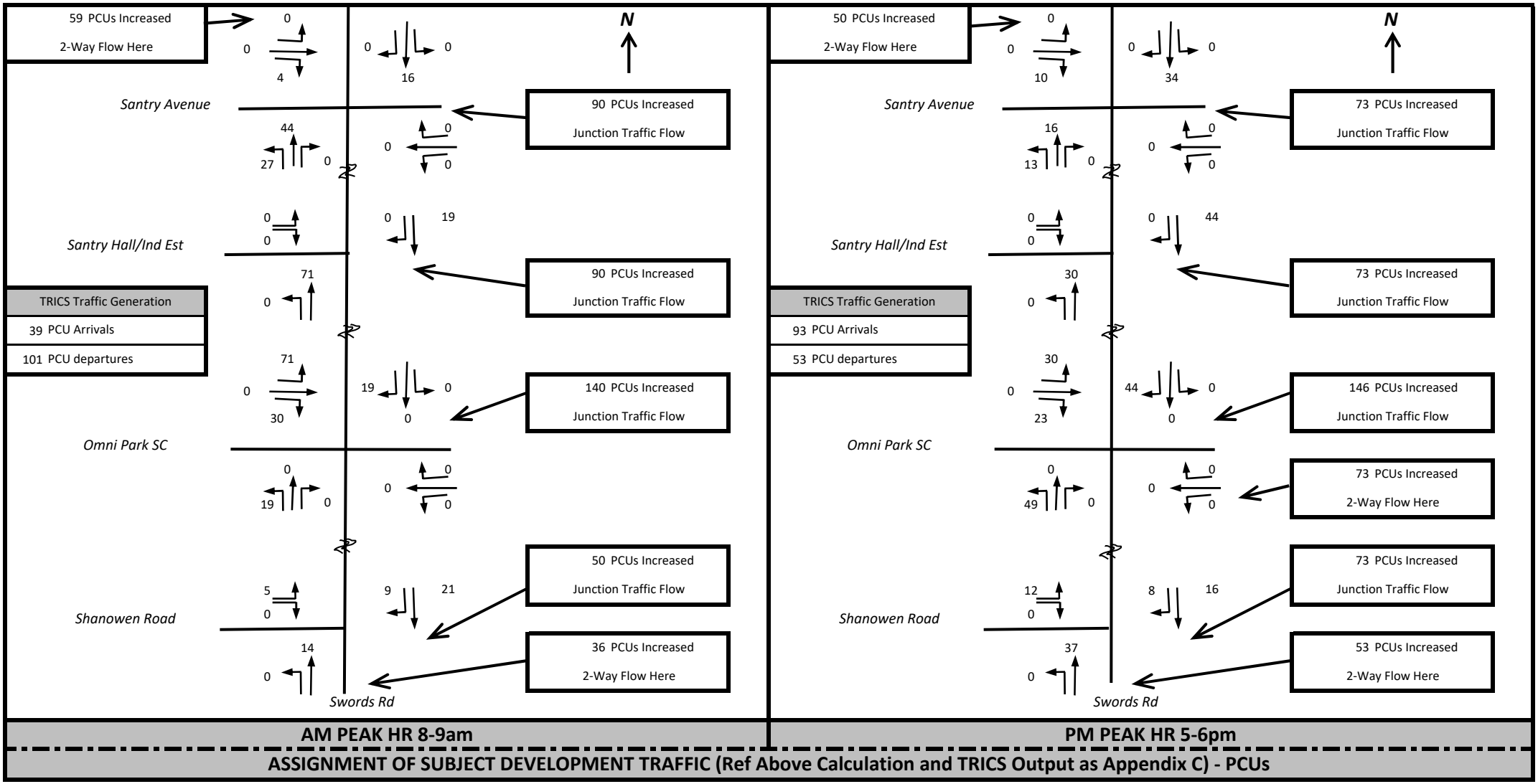
457 No. Aparts	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Traffic Generated
Network Hour	Per Apt	Dev	Per Apt	Dev	
Weekday AM Peak Hr	0.062	28	0.203	93	121
Weekday PM Peak Hr	0.178	81	0.088	40	121

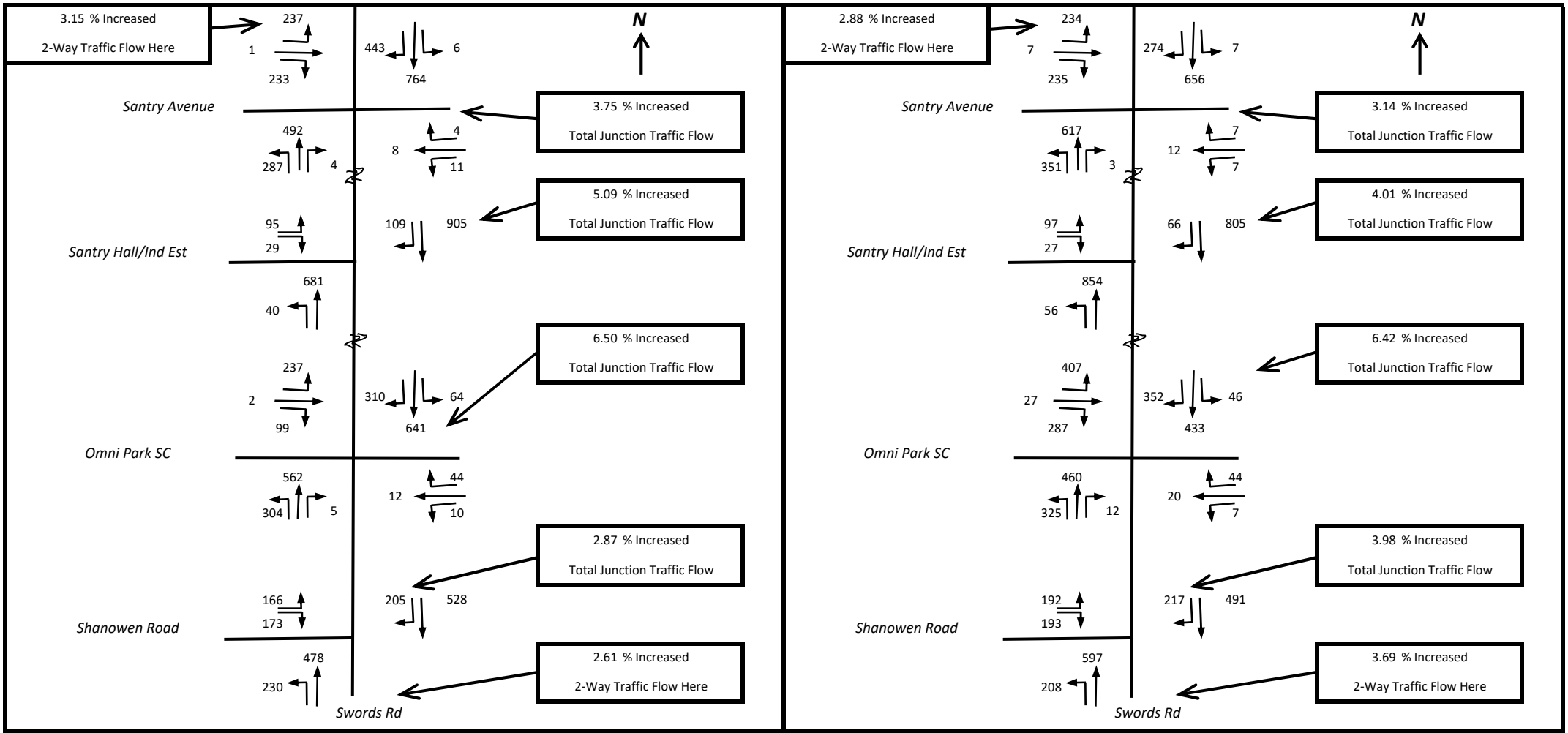
C

Total Worst Case Traffic Generated

Network Hour	Arrivals (PCUs)	Departures (PCUs)	2-Way Traffic
Weekday AM Peak Hr	39	101	140
Weekday PM Peak Hr	93	53	146

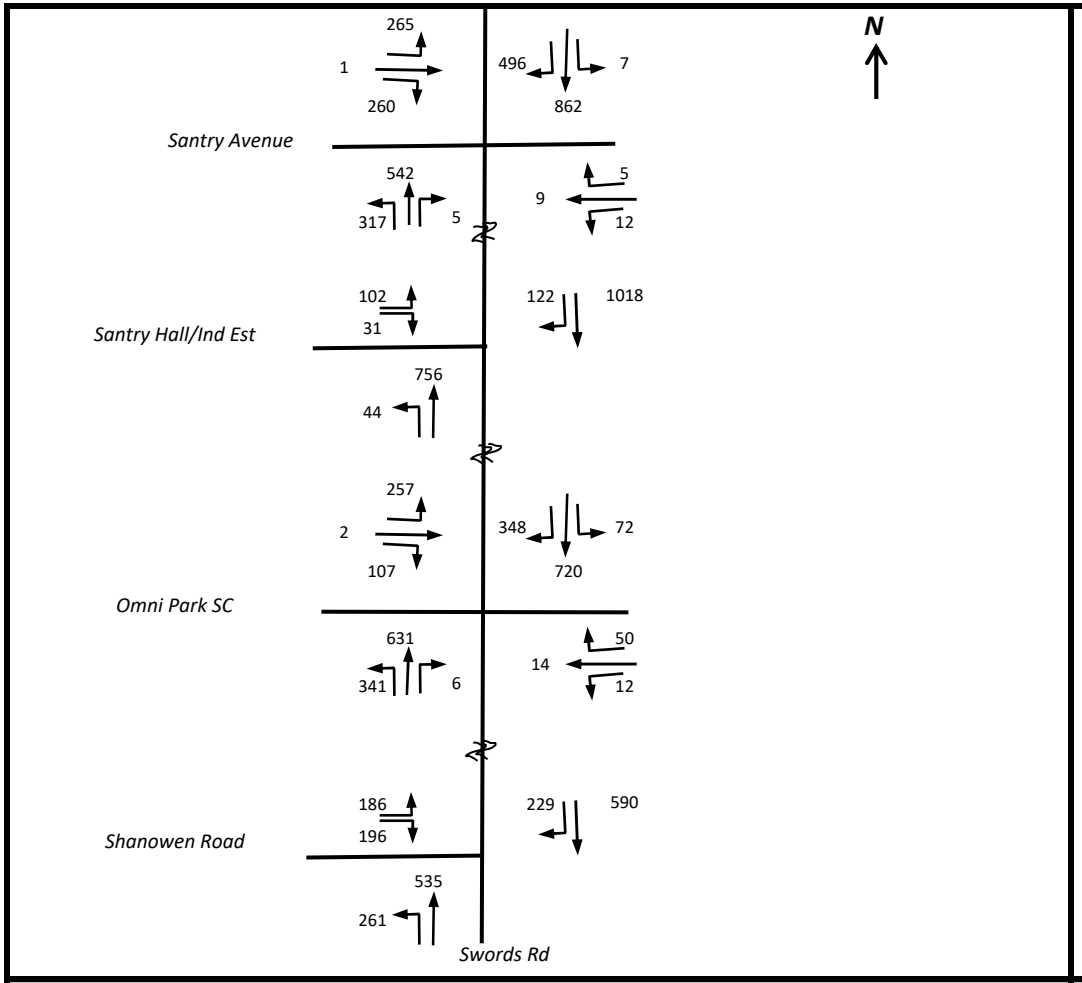
A + B + C


59 PCUs Increased
2-Way Flow Here
90 PCUs Increased
Junction Traffic Flow
90 PCUs Increased
Junction Traffic Flow
140 PCUs Increased
Junction Traffic Flow
50 PCUs Increased
Junction Traffic Flow
36 PCUs Increased
2-Way Flow Here
Santry Avenue
Santry Hall/Ind Est
Omni Park SC
Shanowen Road
Swords Rd
N
TRICS Traffic Generation
39 PCU Arrivals
101 PCU departures
50 PCUs Increased
2-Way Flow Here
73 PCUs Increased
Junction Traffic Flow
73 PCUs Increased
Junction Traffic Flow
146 PCUs Increased
Junction Traffic Flow
73 PCUs Increased
2-Way Flow Here
73 PCUs Increased
Junction Traffic Flow
53 PCUs Increased
2-Way Flow Here
Santry Avenue
Santry Hall/Ind Est
Omni Park SC
Shanowen Road
Swords Rd
N
TRICS Traffic Generation
93 PCU Arrivals
53 PCU departures
AM PEAK HR 8-9am
PM PEAK HR 5-6pm
ASSIGNMENT OF SUBJECT DEVELOPMENT TRAFFIC (Ref Above Calculation and TRICS Output as Appendix C) - PCUs

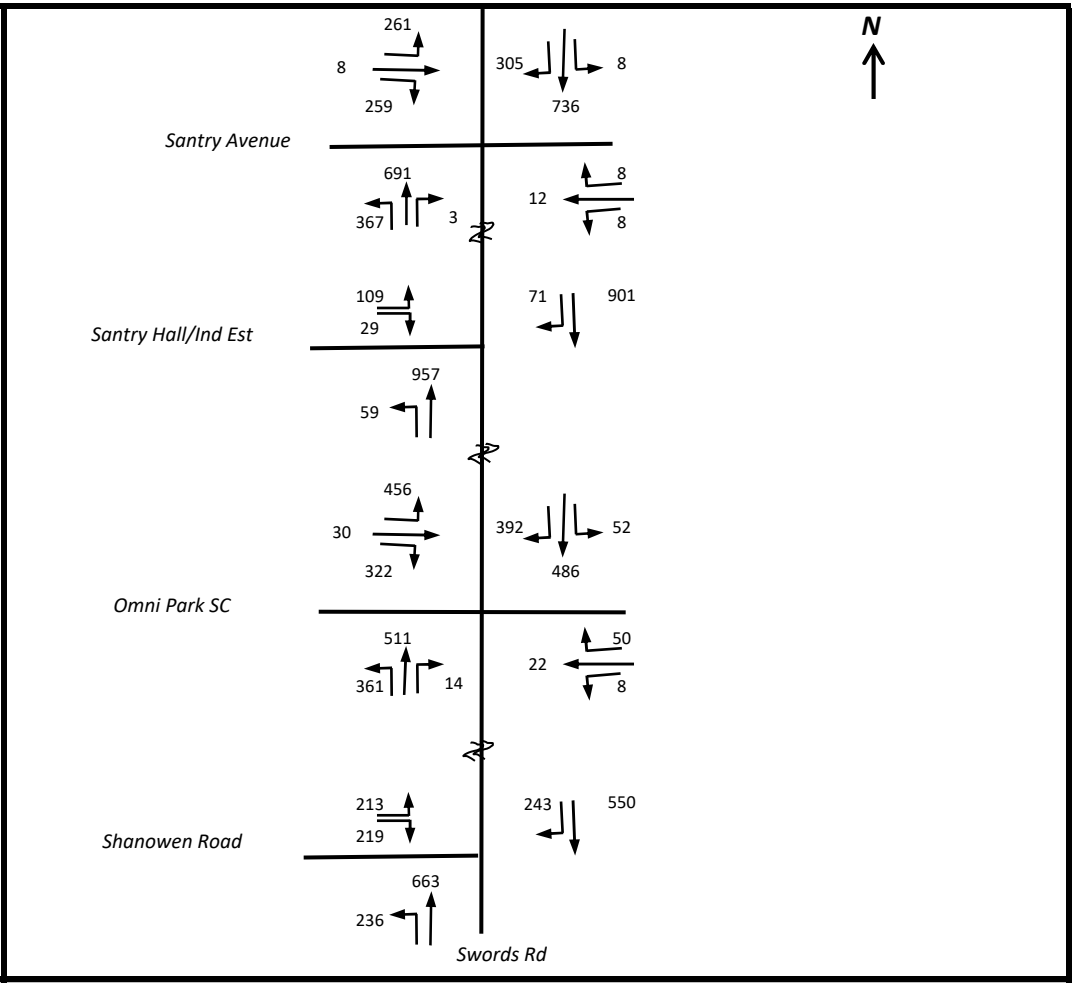


AM PEAK HR 8-9am | **PM PEAK HR 5-6pm**

Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes - WITH COMMITTED AND WITH SUBJECT DEVELOPMENT - PCUs



AM PEAK HR 8-9am



PM PEAK HR 5-6pm

Projected Associated Design Year 2039 Weekday Peak Hour Traffic Volumes - WITH COMMITTED AND WITH SUBJECT DEVELOPMENT - PCUs

APPENDIX E

LiNSiG Model Output
(Existing Omni Park SC/Swords Rd Junction)

Comparative Capacity Assessment With Subject and Committed Development - Established Existing Swords Road/Omni SC Access Junction

Table 1 - Capacity Assessment Summary WITHOUT Proposed Development Traffic

Modelled Scenario	Total Degree of Sat (%)	PRC (%)
Opening Year 2024 AM Peak Hr	87.2	3.2
Opening Year 2024 PM Peak Hr	64.9	38.7
Design Year 2039 AM Peak Hr	98.0	-8.9
Design Year 2039 PM Peak Hr	72.3	24.4

Table 2 - Capacity Assessment Summary WITH Proposed Development Traffic

Modelled Scenario	Total Degree of Sat (%)	PRC (%)
Opening Year 2024 AM Peak Hr	87.5	3.1
Opening Year 2024 PM Peak Hr	65.1	38.3
Design Year 2039 AM Peak Hr	98.3	-9.2
Design Year 2039 PM Peak Hr	73.2	22.3

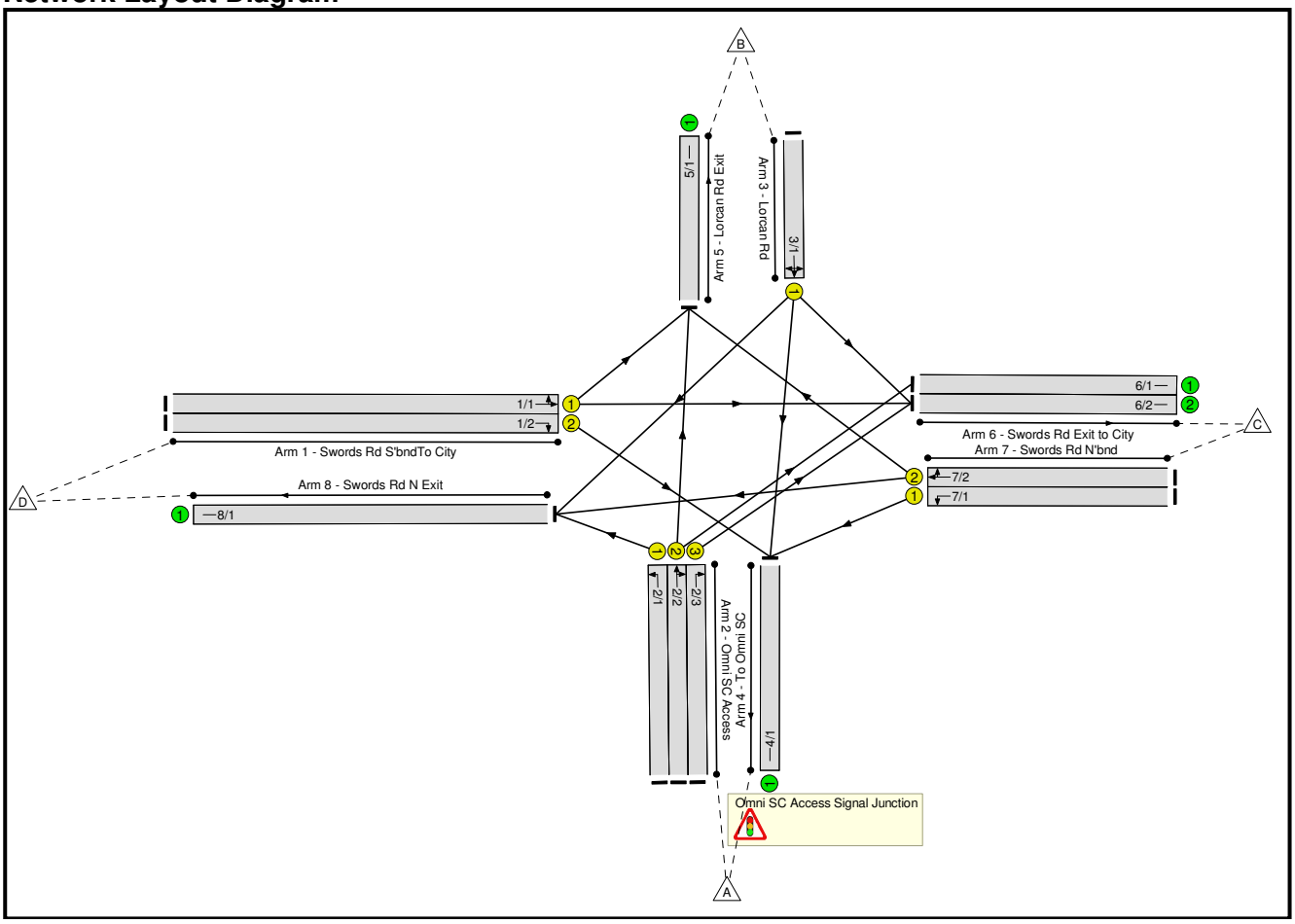
The Above Comparative LiNSiG Analysis of the Junction WITH AND WITHOUT the Subject Development Traffic Clearly Demonstrates the Negligible Impact of the Proposed Development – with No Significant Alteration in the Results of the Comparative Modelling of the Junction.

Full Input Data And Results; Omni Apartments SHD (Committed Development ONLY)

User and Project Details

Project:	**JN 21-018**
Title:	**Omni Apartments SHD**
Location:	21018/Calcs
File name:	All Scenarios Without Report.lsg3x
Author:	Eoin Reynolds
Company:	NRB Consulting Engineers Ltd.,
Address:	Apollo Buildings, Dundrum Road, Dublin 14.
Notes:	

Network Layout Diagram



Full Input Data And Results

Network Results; 2024 AM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.2%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.2%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	49	-	705	1940	808	87.2%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	49	-	291	2065	860	33.8%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	40	-	166	1940	663	25.0%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	40	-	29	1940	663	4.4%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	40	-	42	2080	711	5.9%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	40	-	66	1800	615	10.7%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	587	1800	1800	32.6%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	71	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	27	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	693	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	40	-	284	1940	663	42.8%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	40	-	567	1940	663	85.5%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	772	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**18.7**	**7.2**	**0.0**	**25.9**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**18.7**	**7.2**	**0.0**	**25.9**	-	-	-	-
1/1	705	705	-	-	-	6.3	3.2	-	9.5	48.5	21.3	3.2	24.6
1/2	291	291	-	-	-	1.9	0.3	-	2.2	26.9	6.5	0.3	6.8
2/1	166	166	-	-	-	1.3	0.2	-	1.5	32.1	4.0	0.2	4.1
2/2	29	29	-	-	-	0.2	0.0	-	0.2	29.3	0.6	0.0	0.7
2/3	42	42	-	-	-	0.3	0.0	-	0.3	29.3	0.9	0.0	1.0
3/1	66	66	-	-	-	0.5	0.1	-	0.6	30.3	1.5	0.1	1.6
4/1	587	587	-	-	-	0.0	0.2	-	0.3	1.5	3.6	0.2	3.9
5/1	71	71	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	27	27	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	693	693	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	284	284	-	-	-	2.4	0.4	-	2.8	35.2	7.3	0.4	7.6
7/2	567	567	-	-	-	5.8	2.8	-	8.6	54.5	17.5	2.8	20.3
8/1	772	772	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1		PRC for Signalled Lanes (%):	3.2	Total Delay for Signalled Lanes (pcuHr):	
25.64	Cycle Time (s):	120			
		PRC Over All Lanes (%):	3.2	Total Delay Over All Lanes(pcuHr):	
		25.89			

Full Input Data And Results

Network Results; 2024 PM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**64.9%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**64.9%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	45	-	479	1940	744	64.4%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	45	-	308	2065	792	38.9%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	44	-	377	1940	727	51.8%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	44	-	134	1940	727	18.4%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	44	-	157	2080	780	20.1%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	44	-	71	1800	675	10.5%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	604	1800	1800	33.6%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	107	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	597	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	44	-	276	1940	727	37.9%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	44	-	472	1940	727	64.9%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	881	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**18.1**	**3.5**	**0.0**	**21.6**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**18.1**	**3.5**	**0.0**	**21.6**	-	-	-	-
1/1	479	479	-	-	-	4.0	0.9	-	4.9	37.1	13.0	0.9	13.9
1/2	308	308	-	-	-	2.3	0.3	-	2.6	30.5	7.4	0.3	7.7
2/1	377	377	-	-	-	3.0	0.5	-	3.6	34.2	9.7	0.5	10.3
2/2	134	134	-	-	-	0.9	0.1	-	1.1	28.2	3.0	0.1	3.1
2/3	157	157	-	-	-	1.1	0.1	-	1.2	28.2	3.5	0.1	3.7
3/1	71	71	-	-	-	0.5	0.1	-	0.5	27.4	1.5	0.1	1.6
4/1	604	604	-	-	-	0.0	0.3	-	0.3	1.6	4.6	0.3	4.8
5/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	107	107	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	597	597	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	276	276	-	-	-	2.1	0.3	-	2.4	31.3	6.7	0.3	7.0
7/2	472	472	-	-	-	4.1	0.9	-	5.0	38.0	13.0	0.9	13.9
8/1	881	881	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1		PRC for Signalled Lanes (%):	38.7	Total Delay for Signalled Lanes (pcuHr):	
21.33	Cycle Time (s):	120			
		PRC Over All Lanes (%):	38.7	Total Delay Over All Lanes(pcuHr):	
		21.59			

Full Input Data And Results

Network Results; 2039 AM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.0%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.0%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	49	-	792	1940	808	98.0%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	49	-	329	2065	860	38.2%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	40	-	186	1940	663	28.1%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	40	-	32	1940	663	4.8%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	40	-	47	2080	711	6.6%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	40	-	76	1800	615	12.4%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	665	1800	1800	36.9%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	80	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	30	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	779	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	40	-	322	1940	663	48.6%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	40	-	637	1940	663	96.1%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	867	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**22.1**	**19.7**	**0.0**	**41.8**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**22.1**	**19.7**	**0.0**	**41.8**	-	-	-	-
1/1	792	792	-	-	-	7.6	10.6	-	18.2	82.5	26.0	10.6	36.5
1/2	329	329	-	-	-	2.2	0.3	-	2.5	27.7	7.6	0.3	7.9
2/1	186	186	-	-	-	1.5	0.2	-	1.7	32.5	4.5	0.2	4.7
2/2	32	32	-	-	-	0.2	0.0	-	0.3	29.3	0.7	0.0	0.7
2/3	47	47	-	-	-	0.3	0.0	-	0.4	29.3	1.0	0.0	1.1
3/1	76	76	-	-	-	0.6	0.1	-	0.6	30.5	1.7	0.1	1.8
4/1	665	665	-	-	-	0.0	0.3	-	0.3	1.7	5.1	0.3	5.4
5/1	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	30	30	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	779	779	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	322	322	-	-	-	2.8	0.5	-	3.3	36.5	8.4	0.5	8.9
7/2	637	637	-	-	-	6.9	7.7	-	14.6	82.3	20.7	7.7	28.4
8/1	867	867	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

	C1	PRC for Signalled Lanes (%):	-8.9	Total Delay for Signalled Lanes (pcuHr):	
41.49	Cycle Time (s):	120			
		PRC Over All Lanes (%):	-8.9	Total Delay Over All Lanes(pcuHr):	
		41.80			

Full Input Data And Results

Network Results; 2039 PM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.3%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.3%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	45	-	538	1940	744	72.3%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	45	-	348	2065	792	44.0%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	44	-	426	1940	727	58.6%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	44	-	153	1940	727	21.0%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	44	-	175	2080	780	22.4%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	44	-	80	1800	675	11.9%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	682	1800	1800	37.9%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	123	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	669	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	44	-	312	1940	727	42.9%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	44	-	525	1940	727	72.2%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	987	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**20.9**	**4.7**	**0.0**	**25.6**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**20.9**	**4.7**	**0.0**	**25.6**	-	-	-	-
1/1	538	538	-	-	-	4.7	1.3	-	6.0	40.2	15.2	1.3	16.5
1/2	348	348	-	-	-	2.7	0.4	-	3.0	31.5	8.5	0.4	8.9
2/1	426	426	-	-	-	3.6	0.7	-	4.3	36.0	11.4	0.7	12.1
2/2	153	153	-	-	-	1.1	0.1	-	1.2	28.6	3.4	0.1	3.6
2/3	175	175	-	-	-	1.2	0.1	-	1.4	28.6	3.9	0.1	4.1
3/1	80	80	-	-	-	0.5	0.1	-	0.6	27.6	1.7	0.1	1.8
4/1	682	682	-	-	-	0.0	0.3	-	0.3	1.8	6.0	0.3	6.3
5/1	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	123	123	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	312	312	-	-	-	2.4	0.4	-	2.8	32.3	7.7	0.4	8.1
7/2	525	525	-	-	-	4.7	1.3	-	6.0	40.9	14.9	1.3	16.2
8/1	987	987	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1
25.29 Cycle Time (s):

PRC for Signalled Lanes (%): 24.4
120
PRC Over All Lanes (%): 24.4
25.62

Total Delay for Signalled Lanes (pcuHr):

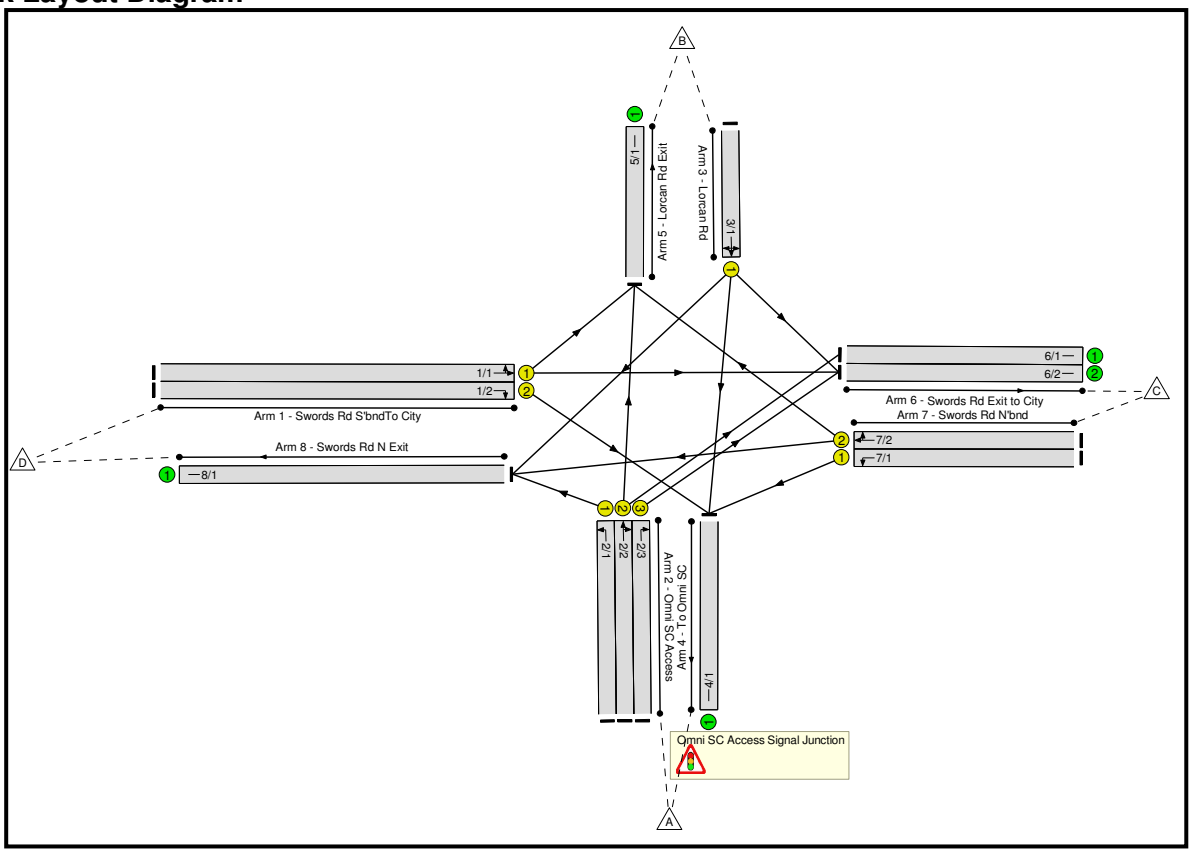
Total Delay Over All Lanes(pcuHr):

Full Input Data And Results; Omni Apartments SHD (Committed & Subject Developments)

User and Project Details

Project:	**JN 21-018**
Title:	**Omni Apartments SHD**
Location:	21018/Calcs
File name:	All Scenarios With Report.lsg3x
Author:	Eoin Reynolds
Company:	NRB Consulting Engineers Ltd.,
Address:	Apollo Buildings, Dundrum Road, Dublin 14.
Notes:	

Network Layout Diagram



Full Input Data And Results

Network Results; 2024 AM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.5%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.5%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	49	-	705	1940	808	87.5%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	49	-	310	2065	860	36.0%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	40	-	237	1940	663	35.8%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	40	-	43	1940	663	6.5%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	40	-	58	2080	711	8.2%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	40	-	66	1800	615	10.7%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	626	1800	1800	34.8%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	71	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	41	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	709	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	40	-	304	1940	663	45.9%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	40	-	567	1940	663	85.5%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	843	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**20.0**	**7.4**	**0.0**	**27.3**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**20.0**	**7.4**	**0.0**	**27.3**	-	-	-	-
1/1	705	705	-	-	-	6.3	3.2	-	9.5	48.5	21.3	3.2	24.6
1/2	310	310	-	-	-	2.1	0.3	-	2.4	27.3	7.1	0.3	7.3
2/1	237	237	-	-	-	2.0	0.3	-	2.2	33.8	5.9	0.3	6.1
2/2	43	43	-	-	-	0.3	0.0	-	0.4	29.5	1.0	0.0	1.0
2/3	58	58	-	-	-	0.4	0.0	-	0.5	29.5	1.3	0.0	1.3
3/1	66	66	-	-	-	0.5	0.1	-	0.6	30.3	1.5	0.1	1.6
4/1	626	626	-	-	-	0.0	0.3	-	0.3	1.6	4.6	0.3	4.8
5/1	71	71	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	41	41	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	709	709	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	304	304	-	-	-	2.6	0.4	-	3.0	35.8	7.9	0.4	8.3
7/2	567	567	-	-	-	5.8	2.8	-	8.6	54.5	17.5	2.8	20.3
8/1	843	843	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

	C1	PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	
	27.06 Cycle Time (s):	120			
		PRC Over All Lanes (%):	3.1	Total Delay Over All Lanes(pcuHr):	
		27.35			

Full Input Data And Results

Network Results; 2024 PM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**65.1%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**65.1%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	45	-	479	1940	744	64.4%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	45	-	352	2065	792	44.5%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	44	-	407	1940	727	55.9%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	44	-	146	1940	727	20.1%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	44	-	168	2080	780	21.5%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	44	-	71	1800	675	10.5%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	697	1800	1800	38.7%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	119	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	608	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	44	-	325	1940	727	44.7%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	44	-	472	1940	727	65.1%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	911	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**19.4**	**3.9**	**0.0**	**23.3**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**19.4**	**3.9**	**0.0**	**23.3**	-	-	-	-
1/1	479	479	-	-	-	4.0	0.9	-	4.9	37.1	13.0	0.9	13.9
1/2	352	352	-	-	-	2.7	0.4	-	3.1	31.6	8.7	0.4	9.1
2/1	407	407	-	-	-	3.4	0.6	-	4.0	35.3	10.6	0.6	11.3
2/2	146	146	-	-	-	1.0	0.1	-	1.2	28.4	3.3	0.1	3.4
2/3	168	168	-	-	-	1.2	0.1	-	1.3	28.4	3.8	0.1	3.9
3/1	71	71	-	-	-	0.5	0.1	-	0.5	27.4	1.5	0.1	1.6
4/1	697	697	-	-	-	0.0	0.3	-	0.3	1.8	6.1	0.3	6.4
5/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	119	119	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	608	608	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	325	325	-	-	-	2.5	0.4	-	2.9	32.6	8.1	0.4	8.5
7/2	472	472	-	-	-	4.1	0.9	-	5.0	38.0	13.0	0.9	13.9
8/1	911	911	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1
22.95 Cycle Time (s):

PRC for Signalled Lanes (%): 38.3
120
PRC Over All Lanes (%): 38.3
23.30

Total Delay for Signalled Lanes (pcuHr):

Total Delay Over All Lanes(pcuHr):

Full Input Data And Results

Network Results; 2039 AM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.3%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.3%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	49	-	792	1940	808	98.3%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	49	-	348	2065	860	40.4%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	40	-	257	1940	663	38.8%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	40	-	48	1940	663	7.2%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	40	-	61	2080	711	8.6%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	40	-	76	1800	615	12.4%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	703	1800	1800	39.1%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	80	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	46	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	793	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	40	-	341	1940	663	51.4%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	40	-	637	1940	663	96.1%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	938	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**23.4**	**19.9**	**0.0**	**43.3**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**23.4**	**19.9**	**0.0**	**43.3**	-	-	-	-
1/1	792	792	-	-	-	7.6	10.6	-	18.2	82.5	26.0	10.6	36.5
1/2	348	348	-	-	-	2.4	0.3	-	2.7	28.1	8.1	0.3	8.5
2/1	257	257	-	-	-	2.1	0.3	-	2.5	34.4	6.5	0.3	6.8
2/2	48	48	-	-	-	0.4	0.0	-	0.4	29.6	1.1	0.0	1.1
2/3	61	61	-	-	-	0.5	0.0	-	0.5	29.6	1.4	0.0	1.4
3/1	76	76	-	-	-	0.6	0.1	-	0.6	30.5	1.7	0.1	1.8
4/1	703	703	-	-	-	0.0	0.3	-	0.3	1.8	6.0	0.3	6.4
5/1	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	46	46	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	793	793	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	341	341	-	-	-	3.0	0.5	-	3.5	37.1	9.0	0.5	9.5
7/2	637	637	-	-	-	6.9	7.7	-	14.6	82.3	20.7	7.7	28.4
8/1	938	938	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1
42.95 Cycle Time (s):

PRC for Signalled Lanes (%): -9.2
120
PRC Over All Lanes (%): -9.2
43.30

Total Delay for Signalled Lanes (pcuHr):

Total Delay Over All Lanes(pcuHr):

Full Input Data And Results

Network Results; 2039 PM Peak

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**73.2%**
Omni SC Access Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**73.2%**
1/1	Swords Rd S'bndTo City Left Ahead	U	N/A	N/A	C		1	45	-	538	1940	744	73.2%
1/2	Swords Rd S'bndTo City Right	U	N/A	N/A	C		1	45	-	392	2065	792	49.5%
2/1	Omni SC Access Left	U	N/A	N/A	A		1	44	-	456	1940	727	62.7%
2/2	Omni SC Access Ahead Right	U	N/A	N/A	A		1	44	-	164	1940	727	22.5%
2/3	Omni SC Access Right	U	N/A	N/A	A		1	44	-	188	2080	780	24.1%
3/1	Lorcan Rd Ahead Left Right	U	N/A	N/A	B		1	44	-	80	1800	675	11.9%
4/1	To Omni SC	U	N/A	N/A	-		-	-	-	775	1800	1800	43.1%
5/1	Lorcan Rd Exit	U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%
6/1	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	134	Inf	Inf	0.0%
6/2	Swords Rd Exit to City	U	N/A	N/A	-		-	-	-	682	Inf	Inf	0.0%
7/1	Swords Rd N'bnd Left	U	N/A	N/A	B		1	44	-	361	1940	727	49.6%
7/2	Swords Rd N'bnd Right Ahead	U	N/A	N/A	B		1	44	-	525	1940	727	72.2%
8/1	Swords Rd N Exit	U	N/A	N/A	-		-	-	-	1017	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**22.4**	**5.1**	**0.0**	**27.5**	-	-	-	-
Omni SC Access Signal Junction	-	-	**0**	**0**	**0**	**22.4**	**5.1**	**0.0**	**27.5**	-	-	-	-
1/1	538	538	-	-	-	4.7	1.3	-	6.0	40.2	15.2	1.3	16.5
1/2	392	392	-	-	-	3.1	0.5	-	3.6	32.7	9.9	0.5	10.4
2/1	456	456	-	-	-	3.9	0.8	-	4.7	37.2	12.4	0.8	13.2
2/2	164	164	-	-	-	1.2	0.1	-	1.3	28.8	3.7	0.1	3.8
2/3	188	188	-	-	-	1.3	0.2	-	1.5	28.8	4.3	0.2	4.4
3/1	80	80	-	-	-	0.5	0.1	-	0.6	27.6	1.7	0.1	1.8
4/1	775	775	-	-	-	0.1	0.4	-	0.4	2.0	7.5	0.4	7.9
5/1	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	134	134	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	682	682	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	361	361	-	-	-	2.9	0.5	-	3.4	33.7	9.2	0.5	9.7
7/2	525	525	-	-	-	4.7	1.3	-	6.0	40.9	14.9	1.3	16.2
8/1	1017	1017	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1
27.06 Cycle Time (s):

PRC for Signalled Lanes (%): 22.3
120
PRC Over All Lanes (%): 22.3
27.49

Total Delay for Signalled Lanes (pcuHr):

Total Delay Over All Lanes(pcuHr):

APPENDIX F

PiCADY Model Output
(Santry Hall/Swords Rd Junction)

Capacity Assessment With Subject Development Open and Occupied
Existing Priority Controlled T-Junction

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak Hr	0.4	0.27
2024 Opening Year PM Peak Hr	0.3	0.24
2039 Design Year AM Peak Hr	0.5	0.33
2039 Design Year PM Peak Hr	0.5	0.36

All Results Above are WAY below the recommended RFC of 0.85 (85% Capacity) and therefore no problems whatsoever are anticipated at the Junction in terms of Capacity or excessive vehicle Queues

NB - Any Small Changes to Selected Opening Year 2024 or Design Year 2039, or indeed significantly higher traffic volumes experienced, as clearly deductable from the positive results presented, will clearly have no significant implications in terms of the conclusions of the Study. The Excess Capacity in the Junction is clearly evident from the RFCs, whilst the junction will also benefit from the Gaps in traffic flow due to 'platooning effects' of adjacent traffic signals.

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: 2024AMPM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2021\21-018 Molloy & Sherry SHD\Calculations\Picadys Santry Hall Access
Report generation date: 18/07/2022 12:58:32

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2024							
Stream B-C	0.3	9.56	0.21	A	0.3	11.04	0.24	B
Stream B-A	0.3	34.02	0.23	D	0.3	37.89	0.24	E
Stream C-B	0.4	11.41	0.27	B	0.2	11.44	0.18	B

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	03/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D1	2024	AM	ONE HOUR	07:45	09:15	15
D2	2024	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Santry Hall Ind Estate T Junc	T-Junction	Two-way	1.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Swords Rd S		Major
B	Santry Hall Ind Est Access		Minor
C	Swords Rd N		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	7.00			90.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	5.00	5.00	5.00	3.50	3.50	✓	2.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	451	0.079	0.199	0.125	0.284
1	B-C	728	0.107	0.270	-	-
1	C-B	626	0.232	0.232	-	-

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)
D1	2024	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	721	100.000
B		✓	124	100.000
C		✓	1014	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	40	681
	B	29	0	95
	C	905	109	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-C	0.21	9.56	0.3	A
B-A	0.23	34.02	0.3	D
C-A				
C-B	0.27	11.41	0.4	B
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	72	573	0.125	71	0.1	7.305	A
B-A	22	238	0.092	21	0.1	16.897	C
C-A	681			681			
C-B	82	500	0.164	81	0.2	8.750	A
A-B	30			30			
A-C	513			513			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	85	540	0.158	85	0.2	8.071	A
B-A	26	197	0.132	26	0.2	21.432	C
C-A	814			814			
C-B	98	476	0.206	98	0.3	9.708	A
A-B	36			36			
A-C	612			612			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	105	489	0.214	104	0.3	9.525	A
B-A	32	140	0.229	31	0.3	33.728	D
C-A	996			996			
C-B	120	442	0.272	120	0.4	11.376	B
A-B	44			44			
A-C	750			750			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	105	488	0.214	105	0.3	9.564	A
B-A	32	140	0.228	32	0.3	34.017	D
C-A	996			996			
C-B	120	442	0.272	120	0.4	11.407	B
A-B	44			44			
A-C	750			750			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	85	539	0.159	86	0.2	8.112	A
B-A	26	197	0.132	27	0.2	21.581	C
C-A	814			814			
C-B	98	476	0.206	98	0.3	9.745	A
A-B	36			36			
A-C	612			612			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	72	572	0.125	72	0.1	7.341	A
B-A	22	239	0.092	22	0.1	16.981	C
C-A	681			681			
C-B	82	500	0.164	82	0.2	8.795	A
A-B	30			30			
A-C	513			513			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Santry Hall Ind Estate T Junc	T-Junction	Two-way	1.50	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)
D2	2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	910	100.000
B		✓	124	100.000
C		✓	871	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	854
	B	27	0	97
	C	805	66	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-C	0.24	11.04	0.3	B
B-A	0.24	37.89	0.3	E
C-A				
C-B	0.18	11.44	0.2	B
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	73	540	0.135	72	0.2	7.838	A
B-A	20	228	0.089	20	0.1	17.630	C
C-A	606			606			
C-B	50	467	0.106	49	0.1	8.777	A
A-B	42			42			
A-C	643			643			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	87	500	0.174	87	0.2	8.878	A
B-A	24	185	0.131	24	0.1	22.735	C
C-A	724			724			
C-B	59	436	0.136	59	0.2	9.733	A
A-B	50			50			
A-C	768			768			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	107	440	0.243	106	0.3	10.979	B
B-A	30	126	0.235	29	0.3	37.530	E
C-A	886			886			
C-B	73	394	0.185	72	0.2	11.422	B
A-B	62			62			
A-C	940			940			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	107	439	0.243	107	0.3	11.037	B
B-A	30	127	0.235	30	0.3	37.892	E
C-A	886			886			
C-B	73	394	0.185	73	0.2	11.440	B
A-B	62			62			
A-C	940			940			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	87	499	0.175	88	0.2	8.930	A
B-A	24	186	0.131	25	0.2	22.905	C
C-A	724			724			
C-B	59	436	0.136	60	0.2	9.755	A
A-B	50			50			
A-C	768			768			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	73	539	0.135	73	0.2	7.880	A
B-A	20	228	0.089	21	0.1	17.711	C
C-A	606			606			
C-B	50	467	0.106	50	0.1	8.802	A
A-B	42			42			
A-C	643			643			

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: 2039AMPM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2021\21-018 Molloy & Sherry SHD\Calculations\Picadys Santry Hall Access
Report generation date: 18/07/2022 13:01:31

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2039							
Stream B-C	0.3	10.89	0.25	B	0.4	13.56	0.31	B
Stream B-A	0.5	52.97	0.33	F	0.5	64.40	0.36	F
Stream C-B	0.5	12.77	0.32	B	0.3	12.73	0.21	B

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	03/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D1	2039	AM	ONE HOUR	07:45	09:15	15
D2	2039	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Santry Hall Ind Estate T Junc	T-Junction	Two-way	2.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Swords Rd S		Major
B	Santry Hall Ind Est Access		Minor
C	Swords Rd N		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	7.00			90.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	5.00	5.00	5.00	3.50	3.50	✓	2.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	451	0.079	0.198	0.125	0.284
1	B-C	728	0.107	0.270	-	-
1	C-B	626	0.232	0.232	-	-

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)
D1	2039	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	800	100.000
B		✓	133	100.000
C		✓	1140	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	44	756
	B	31	0	102
	C	1018	122	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-C	0.25	10.89	0.3	B
B-A	0.33	52.97	0.5	F
C-A				
C-B	0.32	12.77	0.5	B
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	77	555	0.138	76	0.2	7.651	A
B-A	23	213	0.109	23	0.1	19.225	C
C-A	766			766			
C-B	92	486	0.189	91	0.2	9.272	A
A-B	33			33			
A-C	569			569			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	92	517	0.177	91	0.2	8.622	A
B-A	28	167	0.167	28	0.2	26.248	D
C-A	915			915			
C-B	110	459	0.239	109	0.3	10.486	B
A-B	40			40			
A-C	680			680			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112	452	0.249	112	0.3	10.789	B
B-A	34	103	0.331	33	0.5	51.672	F
C-A	1121			1121			
C-B	134	422	0.319	134	0.5	12.725	B
A-B	48			48			
A-C	832			832			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112	449	0.250	112	0.3	10.895	B
B-A	34	103	0.331	34	0.5	52.969	F
C-A	1121			1121			
C-B	134	422	0.319	134	0.5	12.773	B
A-B	48			48			
A-C	832			832			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	92	515	0.178	92	0.2	8.697	A
B-A	28	168	0.166	29	0.2	26.668	D
C-A	915			915			
C-B	110	459	0.239	110	0.3	10.540	B
A-B	40			40			
A-C	680			680			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	77	554	0.139	77	0.2	7.697	A
B-A	23	214	0.109	24	0.1	19.369	C
C-A	766			766			
C-B	92	486	0.189	92	0.2	9.323	A
A-B	33			33			
A-C	569			569			

2039, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Santry Hall Ind Estate T Junc	T-Junction	Two-way	2.00	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)
D2	2039	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	1016	100.000
B		✓	138	100.000
C		✓	972	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	59	957
	B	29	0	109
	C	901	71	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-C	0.31	13.56	0.4	B
B-A	0.36	64.40	0.5	F
C-A				
C-B	0.21	12.73	0.3	B
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	82	518	0.158	81	0.2	8.394	A
B-A	22	201	0.108	21	0.1	20.339	C
C-A	678			678			
C-B	53	449	0.119	53	0.1	9.269	A
A-B	44			44			
A-C	720			720			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	98	472	0.208	98	0.3	9.808	A
B-A	26	154	0.169	26	0.2	28.521	D
C-A	810			810			
C-B	64	414	0.154	64	0.2	10.470	B
A-B	53			53			
A-C	860			860			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	120	394	0.305	119	0.4	13.354	B
B-A	32	88	0.361	31	0.5	62.261	F
C-A	992			992			
C-B	78	367	0.213	78	0.3	12.703	B
A-B	65			65			
A-C	1054			1054			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	120	391	0.307	120	0.4	13.559	B
B-A	32	89	0.360	32	0.5	64.402	F
C-A	992			992			
C-B	78	367	0.213	78	0.3	12.733	B
A-B	65			65			
A-C	1054			1054			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	98	469	0.209	99	0.3	9.928	A
B-A	26	155	0.168	27	0.2	29.084	D
C-A	810			810			
C-B	64	414	0.154	64	0.2	10.503	B
A-B	53			53			
A-C	860			860			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	82	517	0.159	82	0.2	8.458	A
B-A	22	202	0.108	22	0.1	20.490	C
C-A	678			678			
C-B	53	449	0.119	54	0.1	9.301	A
A-B	44			44			
A-C	720			720			

APPENDIX G

Preliminary Planning Stage
Mobility Management Plan/Travel Plan

consulting engineers

NRB

Preliminary
Travel Plan
(Mobility Management Plan)
Appendix G

For

Proposed Omni Plaza SHD

At

Omni Park SC,
Swords Road, Santry,
Dublin D9.

on behalf of
Serendale Ltd.

SUBMISSION ISSUE

1st Floor, Apollo Buildings, Dundrum Road, Dundrum, Dublin 14.
Tel: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

Contents

1.0 INTRODUCTION

1.1 NRB Consulting Engineers have been commissioned to prepare a Preliminary Travel Plan in support of an application for the redevelopment of the subject site with a proposed mixed-use development to be accommodated within the confines of Omni Park Shopping Centre. The report has been prepared in order to explain the applicant's commitment to the promotion of more sustainable and cost effective travel habits among the end occupiers/residents of the scheme. ***It should be recognised that a Travel Plan/Mobility Management Plan prepared at planning application stage, when the development is un-built and unoccupied, can only highlight the current and proposed Alternative Transport initiatives in place at the site, and set out the applicant's commitment to the promotion of sustainable transport measures***.

What is a Travel Plan?

1.2 Originally and elsewhere called Mobility Management Plans (MMPs), they originated in the United States and the Netherlands in the late 1980s. In the US, employers over a certain size (generally over 100 employees) were required to implement 'Trip Reduction Plans' in order to reduce single-occupancy car commuting trips, and to increase car occupancy.

1.3 A MMP or Travel Plan (TP) consists of a package of measures put in place by an organisation to encourage and support more sustainable travel patterns among staff and other visitors. Such a plan usually concentrates on staff commuting patterns. In essence, a TP is useful not only to reduce the attractiveness of private car use, but also for the ability to promote and support the use of more sustainable transport modes such as walking, cycling, shared transport and mass transit such as buses and trains.

Aims and Objectives of this Travel Plan

1.4 The package generally includes measures to promote and improve the attractiveness of using public transport, cycling, walking, car sharing, flexible working or a combination of these as alternatives to single-occupancy car journeys to work. A TP can consider all travel associated with the residential or work site, including business travel, fleet management, customer access and deliveries. It should be considered as a dynamic process where a package of measures and campaigns are identified, piloted and monitored on an on-going basis. This TP supports the reduced provision of car parking and higher cycle parking space numbers at the subject development.

1.5 The changes which are being sought as part of any plan may be as simple as car sharing one-day per week, or walking on Wednesdays, or taking the bus on days which do not conflict with other commitments, leisure or work activities.

1.6 It is envisaged that once in place, the Travel Plan will enable the following benefits to be realised for the Development:

- Little to no car parking demand and reduced congestion on the local road network due to lower demand for private transport and/or more efficient use of private motor vehicles,
- Improved safety for cyclists and pedestrians,
- Direct financial savings for those taking part in the developed initiatives, through higher than average vehicle occupancy rates,
- A reduction in car parking and car set-down demand, resulting in improved operational efficiency and safety for all,
- Improved social networking between all those participating in the shared initiatives,
- Improved environmental consideration and performance,
- Improved public image for the development, which sets an example to the broader community and may lead to residents making better travel decisions in the future,
- Improved health and well-being for those using active non-car transport modes,
- Regular liaison with the Local Authority and public transport providers to maintain, improve, and support transportation services to and from the site,
- Improved attractiveness of the development to prospective residents,
- Optimal levels of safety for all residents, staff and visitors.

Methodology

1.7 As part of this Travel Plan, reference has been made to the following documents:

- Your Step By Step Guide To Travel Plans (NTA 2012);
- Achieving Effective Workplace Travel Plans (NTA 2011);
- Traffic and Transport Assessment Guidelines (TII);
- Traffic Management Guidelines (DoELG, 2003);
- Mobility Management Plans – DTO Advice Note (DTO, 2002);
- The Route to Sustainable Commuting (DTO 2001);
- Smarter Travel: A Sustainable Transport Future (DOT)

1.8 Consultation with key stakeholders is an essential part of any Travel plan. As discussed below, as part of the operational phase of this development, a Travel Plan Coordinator Role will be appointed from within the Management Company. Following on, once occupied end occupiers/residents will be asked to complete detailed questionnaires on essential data in relation to their existing travel patterns. This information will be used to inform the ongoing implementation, monitoring and review of the plan for this development.

1.9 This information has been used herein as the basis for the assessment, conclusions and recommendations.

2.0 ACCESS TO THE SITE - BY MODE

2.1 The development consists of a total of 457 private residential apartment units, some small commercial/retail units and a small ancillary Crèche, community space and residential amenity. The site is within close proximity to high quality alternative modes of transport, with secure off street parking areas for bicycles and a limited number of private cars proposed along with bins storage, electrical room, plant enclosures and all associated site works.

2.2 For what is primarily a Residential Development, it is essential for successful Travel Planning to concentrate on journeys associated with work and school commuting patterns. These are the groups which can most practically be encouraged to use modes of transport other than the car. It should be noted that, being located on a busy District Centre, apartments on site contributes to sustainable living, with employment opportunities, retail and leisure all located within proximity. The measures and initiatives below are relevant and will apply to all elements of the proposed scheme.

Cycling and Walking Facilities

2.3 At present, pedestrian/cycle traffic at/to the existing site is served by an extensive City Wide network of footpaths and some cycle lanes/facilities. On Swords Road there is a 24hr southbound timed bus lane which facilitates cyclists in a shared arrangement. Future Medium-Term Plans for the Swords Road include widening and improvements to facilitate Core Bus Corridor #2 which will further provide improved facilities at the site. Extracts from The National Transport Authority Core Bus Corridor #2 Swords/City Centre Map at the site is included as ***Figure 2.1***.

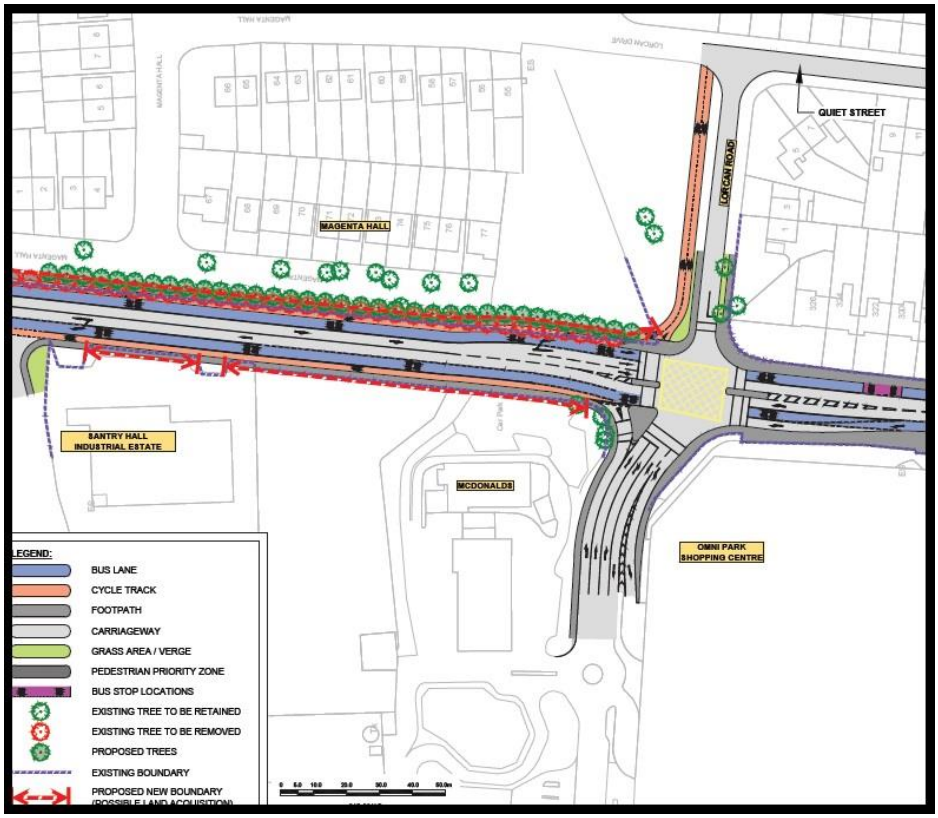


Figure 2.1 – Extract Core Bus Corridor #2 Swords/City Centre

2.4 The proposed development includes significantly enhanced internal pedestrian & cyclists linkage to Swords Road, and this is included below as ***Figure 2.2*** with an annotated extract from the plans for ease of reference.

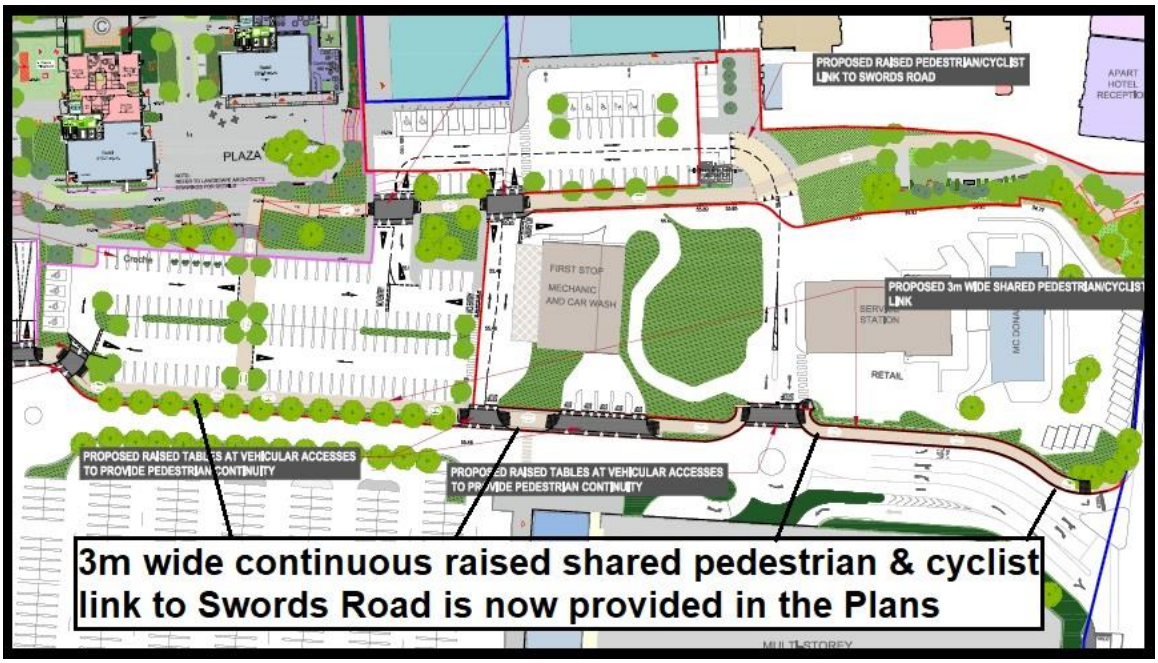


Figure 2.2 – Annotated Extract Showing Pedestrian/Cyclist Linkage

2.5 The key to cycle accessibility is convenient safe links, with secure and carefully sited cycle parking. Cycling is ideal for shorter journeys. The Dublin City Development Plan (2022-2028) (DCDP) sets out the car parking and cycle parking requirements for developments, based on their location and the accessibility to public transport. A review of ***Map J*** of the Plan confirms that, given the high accessibility to public transport, the subject is located within Zone 2 for assessment purposes. This is addressed in more detail within ***Section 2.0*** of the ***TA Report***.

2.6 For journeys greater than 8km, it is recognised that a modal shift to cycling could be achievable for some, but not all, and options such as public transport and car sharing should be considered. Journeys up to 8km could be undertaken by bicycle and journeys up to 3-4km could be undertaken by walking or cycling.

2.7 To illustrate the extent of the GDA accessible by both Bicycle (8km – out and back) and on foot (2km) we have included below 'Iso-Distance Mapping' for a 2km and 4km Radius from the site. These illustrate the extent of the employment, retail and schools within sustainable travel distance of the site.

Figure 2.3 – 4Km Radius Iso-Distance of the Subject Site (Cycle)

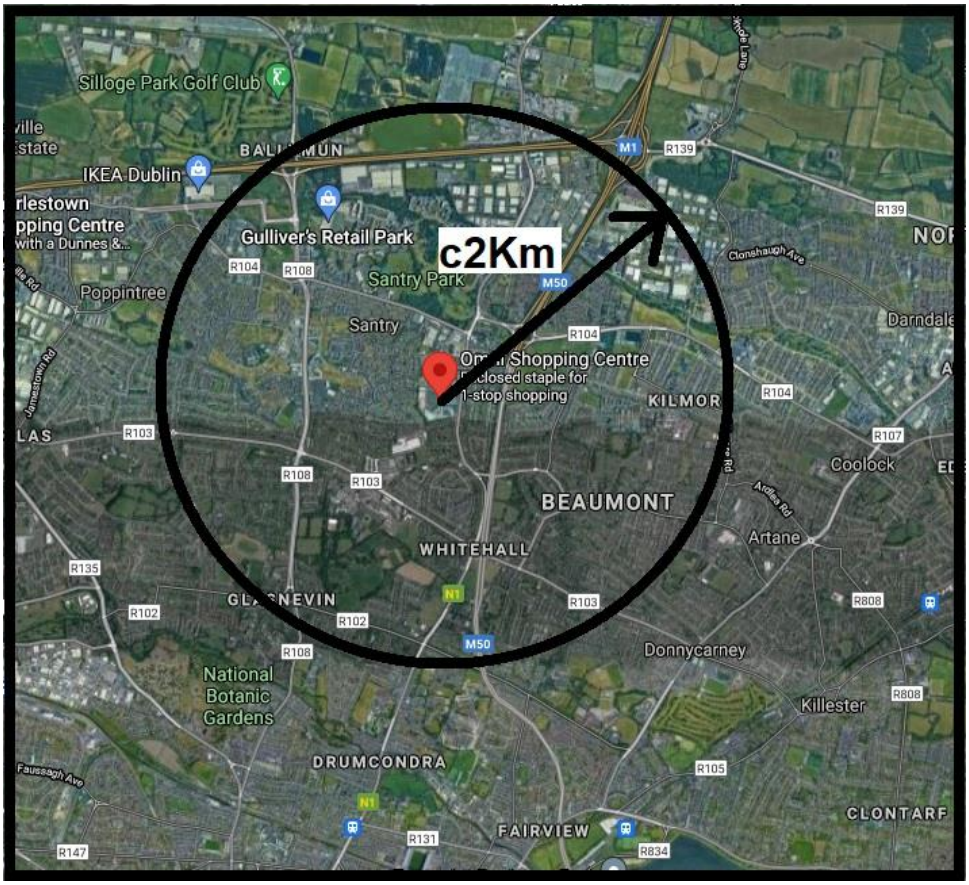


Figure 2.4 – 2Km Radius Iso-Distance of the Subject Site (Walk)

2.8 Bicycle sharing facilities are becoming ever more popular with the Dublin Bikes and Bleeperbike initiatives spreading ever further throughout the City and into Suburbs. These facilities offer a bicycle sharing alternative mode of transport, and are easily accessible from the site.

Cycle Parking

2.9 It is anticipated that a significant number of residents can be encouraged to cycle to work and school etc. with the safe links and secure parking which are in place (and that is reflected in the provision of a total of **768** dedicated cycle parking spaces. This number is considered appropriate in terms of published policy documents.

2.10 It is acknowledged that cyclists need to be confident that their cycles will not be tampered with. This development includes **504** secure enclosed accessible cycle parking spaces at basement level, accessed by way of a dedicated cyclist ramp, in an area which is beneficially subject to passive surveillance and will also be monitored by CCTV. There are 264 additional cyclist spaces at surface level.

2.11 The DCC Development Plan vision is to cultivate a cycling culture, through the implementation of appropriate infrastructure and promotional measures, which positively encourages all members of the community to cycle at all life stages and abilities as a mode of sustainable transport that delivers environmental, health and economic benefits to both the individual and the community.

BUS ACCESSIBILITY

2.12 The development is well placed to take advantage of the existing and future Dublin Bus and other services, with existing stops in close proximity to the site. The location and proximity to the established bus stops and services (NB accurate at the time of writing) are illustrated on ***Figure 2.5*** below.

Figure 2.5 – Bus Stops near the Site

2.13 All of the Dublin Bus routes passing the development are operated using new low-floor wheelchair accessible city buses. Details of route, timetables and fares are provided on www.dublinbus.ie and on the Transport for Ireland National Journey Planner App.

2.14 The site is clearly very accessible to the existing Bus Stops on Swords Road which is served by very frequent Bus Services. These provide a maximum frequency of 3-4 minutes to and from the city during peak commuter periods, with easy bus accessibility to/from Dublin Airport. The Number 41 is a 24hr service.

2.15 In terms of Future Planned Services, the NTA have recently published details of the overall bus network for the GDA, the 'New Dublin Area Network' - showing Spine Routes, Feeder and Orbital Routes. An extract from the NTA Plans showing the site location is included below as ***Figure 2.6***

2.16 This future network shows that the site's accessibility to bus services will be further enhanced.

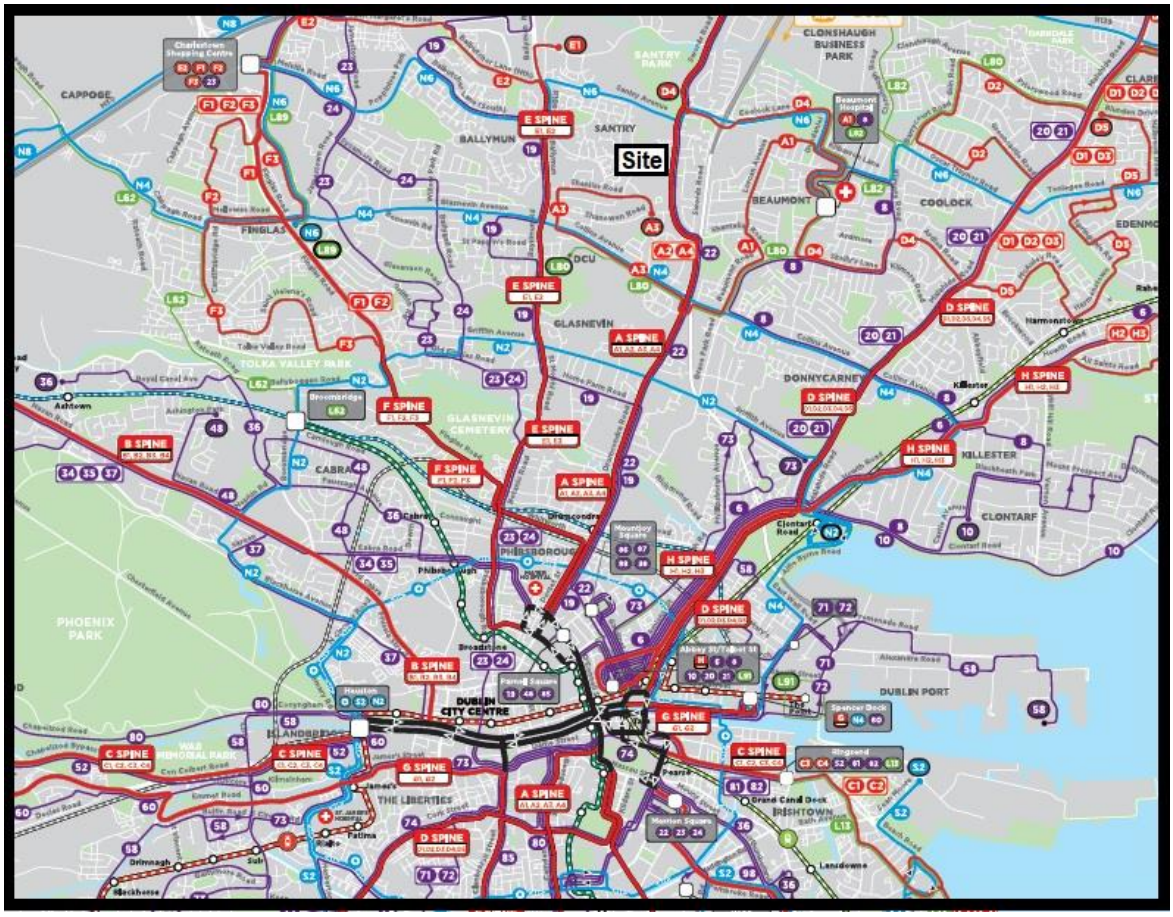


Figure 2.6 – NTA GDA New Dublin Area Network - Bus Services Plan

MAINLINE BUS AND RAIL

2.17 Of course, with the high frequency existing and proposed bus services to the city and airport, the site is therefore also within easy reach of the mainline Nationwide Train Services - trains via Connolly & Heuston Stations and Buses via Busarus and the Airport Terminus.

2.18 With ease of accessibility by Bus and Rail, and in particular with the high frequency existing bus services on Swords Rd, it is therefore considered that the proposed development is very highly sustainable in terms of public transport accessibility. The proximity of the development to existing public transport services means that end occupiers/residents will have viable alternatives to the private car for accessing the site and will not be reliant whatsoever upon the car as a primary mode of travel.

TAXI ACCESSIBILITY

2.19 In terms of taxis, modern communication devices (e.g. 'Freenow' and 'Lynk') now allow taxis to be ordered on a demand-basis, without any requirement for formal taxi ranks or dedicated taxi holding areas. In this case there is a rank adjacent at Omni park Shopping Centre.

FUTURE ACCESSIBILITY - CORE BUS CORRIDOR

2.20 The NTA have advanced and well publicised plans for the creation of Core Bus Corridor #2 Swords/City Centre and it is proposed that this will pass the Omni SC site. This is illustrated in the extract from the Corridor Brochure included above at ***Figure 2.1***

2.21 It is proposed that the Swords Road will be widened adjacent the Omni Park SC site frontage to provide the cross section with high quality service and facilities as depicted in ***Figure 2.7*** below; -

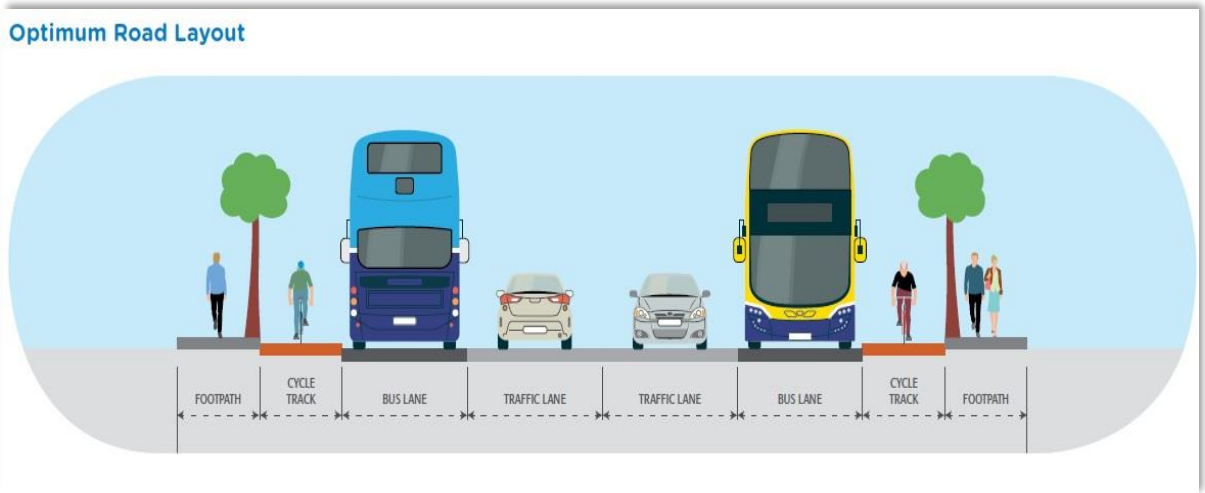


Figure 2.7 - Typical Swords Road Cross Section adjacent Site

FUTURE ACCESSIBILITY - METROLINK

2.22 Plans are well advanced for the Metrolink Service that will link Dublin City with the Airport and Swords. There are currently plans for Stations at Ballymun and Northwood. Both are within easy accessibility to the subject development site as illustrated below as ***Figure 2.8***

Figure 2.8 - Site Location and Metrolink Plans

WALKING

2.23 The site is within Omni Park Shopping Centre, a District Shopping Centre which will of course serve end occupiers/residents of the development obviating the need to travel for shopping/services and some leisure elements.

2.24 Of course, being within close proximity to the District Centre, several business & industrial estates, and Dublin Airport, this means that a very significant number of Employment Destinations and Offices are within an easy and acceptable walk-commute of the site.

2.25 The site is also within the heart of Santry Community and is within the catchment for local Primary and Secondary Schools.

2.26 In these terms we believe that walking will represent the most popular mode of home-work-home and home-school-home travel for residents of the Apartment elements of the development.

Car Parking

2.27 A reduced number of 213 Car Parking spaces are provided in the basement, which is an effective demand management measure in itself. Details of the justification of the parking provision are set

out in the main body of the Transportation Assessment Report Section 2.0. However, it is clear that the lower provision of car parking will act as a demand management measure, ensuring that the development is occupied in the most sustainable manner being reliant on non-car modes of travel.

2.28 It is proposed that 6 parking spaces will be allocated to car club parking spaces (e.g. Go Car spaces). These will be located at surface level for ease of use for end occupiers/residents.

Residents Communication

2.29 Prior to moving in, the Management Company will issue welcome packs to all residents. These packs include details of the development and how it is run, advice on moving in, public transport information, useful local information, the restricted availability of on-site parking and can require confirmation of a time-slot to move in. The preparation of this information ensures residents are familiar with the operation of the development before moving in.

2.30 In terms of the number of transport alternatives easily available to Residents, it is considered that the proposed development is very highly sustainable in terms of public and alternative transport accessibility. The proximity of the development to existing public transport services means that all residents will have viable alternatives to the private car for accessing the site and will not be reliant upon the car as a primary mode of travel.

2.31 Direct and high quality pedestrian linkages are provided between the site and the existing pedestrian facilities on the surrounding road network. The entrances to the site will be well lit, so that people can feel secure in using the facilities, and can also be monitored by CCTV.

2.32 Public transport maps and timetables can be provided in prominent locations on site and the information will be kept up to date by the appointed Travel Plan Coordinator, a role for the Management Company.

2.33 Working Residents are generally now offered the opportunity to purchase public transport commuter tickets under the current ‘Employer Pass’ and ‘TaxSaver’ programmes, by individual Employers. Under these schemes the employer applies to Iarnród Éireann / Bus Éireann for tax free public transport tickets for their employees as an incentive for them to use public transport to travel to work.

2.34 With this in mind, the main focus of this Preliminary Travel Plan will be to promote and support the use of alternative modes to the private car.

3.0 COLLECTION OF BASELINE INFORMATION

Possible Travel Pattern Questionnaires

3.1 Once occupied, and when the Travel Plan Coordinator is appointed, the occupiers of the proposed development will be encouraged to regularly monitor the Travel Plan initiatives in order to maximise on their success.

3.2 Shortly after occupation of the new development, a detailed travel-questionnaire will be compiled and distributed to Residents, Guests and Employees for completion. The aim of the travel questionnaire will be to establish travel patterns between work and home and school among other travel demands. The information gathered from this survey will be used to inform the further development of the Travel Plan.

3.3 The Baseline Survey information will also allow the Travel Plan Coordinator for the development to set realistic modal-split targets for the development.

3.4 It is anticipated that, given the location and good transport links at this development, combined with the reduced level of available car parking on site, there will be a high percentage of use via public and alternative transport.

3.5 The Travel Plan will need to maintain this positive modal split and improve it, where possible. It is informative to note that the "Smarter Travel: A Sustainable Transport Future" (DOT) Objective for 2020 is to achieve a reduced work related commuting by car modal share of 65% to 45%.

4.0 THE TRAVEL PLAN

4.1 The successful implementation of the Travel Plan will ensure that, in-so-far-as-possible, the impacts of this traffic are reduced and minimised where practical, while providing a number of environmental and economic advantages detailed below.

4.2 The following sub-sections detail the available initiatives which will serve to better manage travel demand, and therefore the traffic impact of work-related journeys, focused on the movement of end occupiers/residents during peak times.

Walking

Walking - Key Information	
Approx Zone of Influence	3.5km
Percentage of end occupiers/residents in area of influence	TBC in each survey when occupied
Percentage of end occupiers/residents interested in Walking	TBC in each survey when occupied

Table 4.1 – Key Information: Walking

4.3 There are many local, global, and personal benefits to walking to work, a few of which are listed following:

- **W** - Wake Up! - Studies have shown that people who walk to work are more awake and find it easier to concentrate.
- **A** - Always one step ahead - Walking makes people more aware of road safety issues and helps them develop stronger personal safety skills.
- **L** - Less congestion - If you leave the car at home and walk, there are fewer cars on the road which makes it safer for those who walk and cycle.
- **K** - Kinder to the environment - By leaving the car at home you are reducing the amount of CO 2 produced and helping to reduce the effects of climate change and air pollution.
- **I** - Interpersonal skills - Walking to work or school can be a great way to meet other walkers, share the experience, and develop personal skills.
- **N** - New adventures - Walking to work or school is a great way to learn about your local environment and community. It's also a fun way to learn about the weather, landscape, and local ecosystems.
- **G** - Get fit and stay active - Walking to and from work or school helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.

4.4 Most adults will consider walking a maximum of 3.5 km (Approx 30/40 minutes) to work. End occupiers/residents working within a 3.5 km radius of the site will be encouraged to walk to work as often as their schedule permits. Similarly school trips can be encouraged on foot.

4.5 The following initiatives and incentives can be used to encourage walking to work or school:

- Take part in a 'Pedometer Challenge' which is organised through the Irish Heart Foundation or Smarter Travel Workplaces;
- Organise special events such as a 'Walk to work/school on Wednesdays' where participants are rewarded for their participation;
- Keep umbrellas in public areas on a deposit system for use when raining;
- Display Smarter Travel Workplaces Accessibility Walking maps on notice boards areas so Residents can plan journeys;
- Organise lunch time or afternoon walks as part of a health and well-being programme;
- Highlight the direct savings gained due to reduced use of private vehicles.

Cycling

Cycling – Key Information	
Approx. zone of influence	10km
Percentage of end occupiers/residents in area of influence	TBC in each survey when occupied
Percentage of end occupiers/residents interested in cycling	TBC in each survey when occupied

Table 4.2 : Key Information - Cycling

4.6 Research suggests that cycling is a viable mode of transport for people who live up to 10 km from work or school.

4.7 Cycling is a great way to travel. It helps foster independence, raises awareness of road safety, and helps the environment.

4.8 Some positive aspects of cycling to work or school are listed following:

- **C** - Cycling is fun! - Cycling is a great form of transport but it's also a great recreational activity. Cycling is a skill that stays with you for life and it's a fantastic way to explore your local community.
- **Y** - You save time & money - cycling to work reduces the need to travel by car thus reducing fuel costs and freeing up road space for more cyclists;
- **C** - Confidence building - travelling to work as an independent cyclist can give people increased confidence proving beneficial in all aspects of life;

- **L** - Less congestion - If you leave the car at home and cycle to work there are fewer cars on the road which makes it safer for those who cycle and walk to work or school;
- **I** - Interpersonal skills - Cycling to work or to school can be a great way to meet other cyclists and share the experience;
- **N** - New adventures - Cycling to work or school is a great way to learn about your local environment and community. It helps people to understand where they live and how their actions affect their local environment;
- **G** - Get fit and stay active - cycling to and from work or school helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.

4.9 The provision of enhanced and attractive cycle parking facilities at the site will clearly play a critical role in promoting journeys by bicycle.

4.10 The following initiatives and incentives can be used to encourage cycling to work and school:

- New cycle parking installed within the development, secure and well lit;
  Publicise cycle parking availability by way of signage and on notice boards;
- Display maps on notice boards areas so people can plan journeys;
- The development can provide free cycle accessories (panniers, lights, visi-vests, helmets) in periodic draws for cyclists,
- The Travel Plan Coordinator can organise cycle training sessions on site on the rules of the road and the specific risks associated with the locality;
- The Travel Plan Coordinator can invite bike suppliers on site for a 'Green Day' or 'Green Week' so that people can try bikes before buying;
- The Travel Plan Coordinator can set up a Bicycle User Group (BUG) to promote cycling;
- The Travel Plan Coordinator can highlight the direct savings gained due to reduced use of private vehicles;
- The Travel Plan Coordinator can encourage residents to take part in National Bike Week, see www.bikeweek.ie.

Public Transport

Public Transport – Key Information	
Approx. zone of influence	All Residents
Percentage of end occupiers/residents in area of influence	100%
Percentage of end occupiers/residents using Public Transport	TBC in each survey when occupied

Table 4.3: Key Information: Public Transport

4.11 There are many benefits to taking public transport, some of which include:

- Personal Opportunities – Public transportation provides personal mobility and freedom;
- Saving fuel – Every full standard bus can take more than 50 cars off the road, resulting in fuel savings from reduced congestion;
- Reducing congestion – The more people who travel to work or to school on public transport, especially during peak periods, the less people travelling by private car;
- Saving money – Taking public transport to and from work or school is a lot cheaper than travelling by car and saves the cost of buying, maintaining and running a vehicle;
- Reducing fuel consumption – A full standard bus uses significantly less fuel per passenger than the average car;
- Reducing carbon footprint – Public transport is at least twice as energy efficient as private cars. Buses produce less than half the CO2 emissions per passenger kilometre compared to cars and a full bus produces 377 times less carbon monoxide than a full car;
- Get fit and stay active - Walking to and from work or school to public transport helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.
- Less stress – Using public transport can be less stressful than driving yourself, allowing you to relax, read, or listen to music.

4.12 The following initiatives and incentives can be used to encourage people to take public transport:

- Publicise Employee Tax Saver Commuter tickets, which offer savings to employers in PSRI per ticket sold and significant savings to employees in marginal tax rate and levies on the price of their ticket;
- Encourage public transport use for travel by promoting smart cards, advertising the availability of these tickets to end occupiers/residents;
- Publicise the availability of Real Time Information. Real Time Information shows when your bus is due to arrive at your bus stop so you can plan your journey more accurately;

- Provide maps of local bus routes and the nearest bus stops and the length of time it takes to walk to them;
- Contact local providers about issues such as location of existing and new bus stops, timing of routes, or where you have market information about a potential new route.

Go-Car/Car Sharing

Car Sharing – Key Information	
Approx. zone of influence	All Residents
Percentage of end occupiers/residents in area of influence	100%
Percentage of end occupiers/residents using Car Sharing	TBC in each survey when occupied

Table 4.4: Key Information - Go-Car/Car Sharing

4.13 Every day thousands of commuters drive to work or to school on the same routes to the same destinations, at the same time as their colleagues. By car sharing just once a week, a commuter's fuel costs can be reduced by 20%, and in a similar fashion, the demand for work place parking can be reduced by 20%. If every single-occupancy driver carried another driver, there would be 50% less cars on the road at peak times.

4.14 Although use of the car to get to work or to school is essential for some people, car sharing schemes such as GoCar (which are active in Dublin) have the potential to deliver a significant reduction in private vehicle trips by promoting higher than average occupancy rates for each vehicle.

4.15 Car sharing often happens informally, however some participants often prefer a formal scheme such as a GoCar facility which will normally generate a higher take-up for car sharing, and more efficiency in terms of increased occupancy rates.

4.16 Encouraging more end occupiers/residents to share car journeys to work rather than driving alone as well as encouraging more to set up and take part in car sharing/pooling would prove a very effective means of reducing daily car trips to and from the site.

4.17 The following initiatives and incentives can be used to encourage car sharing:

- Highlight to drivers that they do not have to share with a person that doesn't suit them – allow choice based on gender, route, smoking or non-smoking;
- Clarify the financial implications of the scheme – those accepting a lift could contribute towards fuel costs.
- Use existing online databases for car sharing. For example, the development could set up its own private car sharing site using www.carsharing.ie.

Action Plan Summary Table

4.18 The Summary Action Plan is described in the Table below. Modal Split Targets will be determined following on from the first survey shortly after full occupation, typically within the first six months. This will be part of the role of the Travel Plan Coordinator. This will show existing travel patterns with realistic targets set to improve the modal split of end occupiers/residents.

	Initiative	Impact on Delivery	Difficulty Delivering	Current Modal Split	Target MS
Residents Initiatives	Walking	Medium	Low	TBC	TBC
	Cycling	Medium	Medium	TBC	TBC
	Public Transport	High	Low	TBC	TBC
	Other	Medium	Medium	TBC	TBC
	Car - Sharing	Medium	Medium	TBC	TBC
	Cars - 1 Passenger Only	High - Negative	High	TBC	TBC
Promoting the TP	Marketing the Plan	High	Low	Driven By TP Coordinator	
	Measuring Success	High	Medium	Annual Surveys	

Action Plan Summary Table

5.0 IMPLEMENTING THE PLAN

Background

5.1 Setting realistic targets and a sustained approach to the promotion of the Travel Plan is important if the measures are to be successful. The objectives and benefits of the Plan will be made clear and broadcast during the full lifecycle of the Plan.

5.2 The implementation of a successful Travel plan will require the upfront investment of resources. As well as reviewing objectives and initiatives regularly, it is equally important to measure results. This provides an indication of any Plan's success, and ensures that the targets remain realistic.

The Travel Plan Coordinator

5.3 The key objective of this Travel Plan is to ensure that the traffic impacts and car usage associated with the operation of Redevelopment are minimised. Achieving this objective will result in a wide array of benefits for the development and its stakeholders.

5.4 To ensure the plan is effective it is essential for a Travel Plan Coordinator to be appointed for the Development upon occupation.

5.5 It is envisaged that the Coordinator will work closely with residents to enthusiastically promote and market the Travel Plan. As Residents will be the focus of the plan; their involvement must be sought from the outset.

5.6 To support the Travel Plan Coordinator's efforts, the Management Company must ensure that they have sufficient time to carry out their duties. In addition, it is essential that the powers of decision making are bestowed upon him/her, along with a suitable budget and programme for implementation.

Promoting the Travel Plan

5.7 Active promotion and marketing is needed if the Travel Plan is to have a positive impact on stakeholder travel patterns to and from the site.

5.8 All marketing initiatives should be focused on areas where there is willingness to change. Such information has been extracted from the questionnaires and has been described in Section 3 of this Plan.

- **Identify the Aim** – e.g. to reduce low occupancy car commuting, school, and business travel & to promote active travel, public transport & alternatives to travelling by car.

- **Brand the Plan** – as part of communicating the Travel Plan, visually brand all work relating to it with a consistent look, slogan, identity or logo.

- **Identify the Target Audience** – 'segment the audience' (e.g. shift workers, school travel, sedentary workers, people travelling long/ short distances, mode used, members of a walking club or green team) so you can target the message and events towards these different groups.

5.9 As part of the marketing process, the Travel Plan coordinator can personalise a plan for the Development, drawing attention to the benefits of participation and support for its implementation.

5.10 The Coordinator can identify communication tools and networks used by the different audiences in the development, and use these to communicate about travel.

5.11 Promotional material regardless of its quality is only as good as its distribution network; material incentives assist greatly in introducing people to alternative modes of commuting.

5.12 The plan should be about promoting equity among modes and offering choice and accessibility.

5.13 The Coordinator can promote positive messages associated with a plan, for example, reduced tax/PRSI payments, getting fit and active, reducing congestion, reducing CO2 emissions and so on, and encourage people to start small – changing one day per week for example, to explore their options.

5.14 Marketing drives which feature individual Residents who have reduced their car use can carry a strong message. This will serve to raise not only the profile of the Plan, but also send a clear message in relation to the Residents and Employees commitment to the Plan.

6.0 CONCLUSIONS

6.1 The development forming the subject of this application accords with the principles of sustainable development, being located within an established District Centre with clear and easy access to alternative modes of travel. With reduced levels of private car parking provided (with a parking ratio of 0.48 per unit) and very high quality cycle provision, this also acts as a demand management measure, promoting alternatives to the private car. In addition, 6 No dedicated car share spaces are included. The Management Company, once the development is occupied, will utilise pragmatic measures that encourage safe and viable alternatives to the private car for accessing the development.

6.2 Good Travel Planning is not a one-off event, it is instead an on-going iterative process requiring continued effort. This Preliminary report assists these efforts by forming an outline framework and providing guidance for its success. Monitoring and reviewing the initiatives set out within the plan will form a far greater part of the Final Travel Plan itself.

6.3 The key to the Plans success will be the appointment of a ***Travel Plan Coordinator*** for the development, once occupied. They will be vested with total responsibility for implementing the plan. They should be granted the authority and time to execute the Plan, and be provided with sufficient resources to realise the Plans success.

6.4 As Residents are the focus of the plan; their involvement should be sought from the outset following occupation. To this end, the Plan Coordinator should be assisted and supported by the Management Company and Residents. This will serve to spread the work load, and also give the Residents a valuable input into the operation of the Plan.

6.5 Successful Travel Plans require marketing **and** regular review. The measures set out in the Action Plan Summary Table (Chapter 4) should form the basis of a sound, realistic Plan and should be clearly set out and be fully transparent to all users.

6.6 Residents, Guests and Employees also have an essential responsibility in terms of co-operating with, and taking an active part in the plan. They are, after all, the plan's primary focus.

6.7 It is recommended that the Final Travel Plan be set in motion, sensibly at full occupation. The plan should evolve and develop with the development, taking into account changing residents, staff and visitors and their travel preferences and needs.

6.8 Annual reviews of the Plan should include a full stakeholder survey, providing valuable information for target setting and marketing target groups. It is emphasised that failing to meet initial targets should not be seen as failure, as the preliminary 12 to 18 months of the plan should be viewed as a calibration exercise for target setting.

APPENDIX H

DMURS Statement of Consistency

consulting engineers

NRB

DMURS Design Statement
Technical Note
(Appendix H)

For

Proposed Omni Plaza SHD

At

Omni Park SC,
Swords Road, Santry,
Dublin D9.

on behalf of

Serendale Ltd.

SUBMISSION ISSUE

1st Floor, Apollo Buildings, Dundrum Road, Dundrum, Dublin 14.
Tel: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

1.0 INTRODUCTION

1.1 It is NRB's opinion that the proposed residential development is consistent with both the principles and guidance outlined within the *Design Manual for Urban Roads and Streets* (DMURS). The scheme proposals are the outcome of an integrated design approach. This approach seeks to implement a sustainable community connected by well-designed links, layout and accesses - which combined deliver attractive, convenient and safe access in addition to promoting modal shift and viable alternatives to car based journeys.

1.2 The following section discusses design features which are incorporated within the proposed mixed use residential scheme with the objective of delivering a design that is consistent with the principles of DMURS.

2.0 DESIGN ATTRIBUTES

2.1 The proposed layout strategy seeks to maximise connectivity between key local destinations through the provision of a high level of **permeability and legibility** for all journeys, particularly for sustainable forms of travel (cycling and walking). The proposed residential scheme delivers greater mode & route choices along direct, attractive and safe linkages to local amenities and schools/service destinations.

2.2 High Quality Connections between the proposed development and the local roads and public transport services are provided. The internal road layout itself has been designed to deliver a hierarchy which provides safe access within / across the proposed new residential community, linking the site and community with the established and proposed local network.

2.3 Dedicated routes are provided for pedestrians and for cyclists to access Swords Road. As part of the development the movement function is designed to respect the different levels of motorised traffic whilst optimising access to/from alternative transport and catering for higher number of pedestrians & cyclists. In parallel the adopted design philosophy has sought to consider the context / place status of the scheme in terms of level of connectivity provided, quality of the proposed design, level of pedestrian / cyclists activity and vulnerable users requirements whilst identifying appropriate 'transition' solutions particularly at street junctions.

2.4 The layout of the proposed development seeks to maximise permeability and enhances legibility, and the design of appropriately sized blocks actively contributes to a highly permeable and accessible community for both pedestrians and cyclists.

2.5 The proposed layout seeks to successfully create an appropriate balance between the functional requirements of different network users whilst enhancing the 'sense of place'. Design attributes of the proposed layout which contribute to achieving this ***DMURS objective*** include:

a) The main vehicular access to the development is separate from the pedestrian and cyclist accesses to the development and does not impinge on the open space.

b) The proposed scheme includes the closure of established accesses onto Santry Hall Industrial Estate Rd, except for emergency access, which in itself has beneficial effects. The plan then offers a well-connected, sustainable and improved but permeable network through connectivity to and through Omni Park Shopping Centre.

c) These improved linkages, including via a new high quality shared pedestrian and cyclist route through the Omni Living Scheme, are included to integrate the proposed development with the rest of the Omni Park Shopping Centre and link to Swords Road.

d) The proposed design deliberately seeks to specify minimal signage and line markings along the internal layout, with such treatments used sensitively throughout and predominately at key nodes and ‘transition’ areas.

e) Footpaths no less than 1.8m (generally 2.0m or wider) will be provided throughout the scheme with connections and tie-ins to existing external pedestrian networks.

f) Appropriate clear unobstructed visibility splays, as per DMURS requirements, are provided at the site access junctions to the external road network.

g) Well designed and frequent pedestrian crossing facilities will be provided along key travel desire lines throughout the scheme in addition to those located at street nodes. All courtesy crossings will be provided with dropped kerbs and /or raised tables thereby allowing pedestrians to informally assert a degree of priority. The separation of vehicular access to the development from the pedestrian accesses to the development and the open space aid in this aspect of the layout.

h) At the more heavily trafficked Swords Road serving the site, formal signalised controlled crossings are currently provided for the benefit of both pedestrians and cyclists. These connect with the pedestrian, cyclists and bus stop facilities running along the boundary of the Swords Road.

i) All informal pedestrian crossing facilities will be at least 2.0m wide, whilst all controlled pedestrian crossings will be a minimum of 2.4m wide. A shared surface for pedestrians and cyclists, of minimum width of 3m, is provided to connect the subject site to Swords Road significantly enhancing connectivity. This is illustrated in the extract included below as ***Figure 2.1***

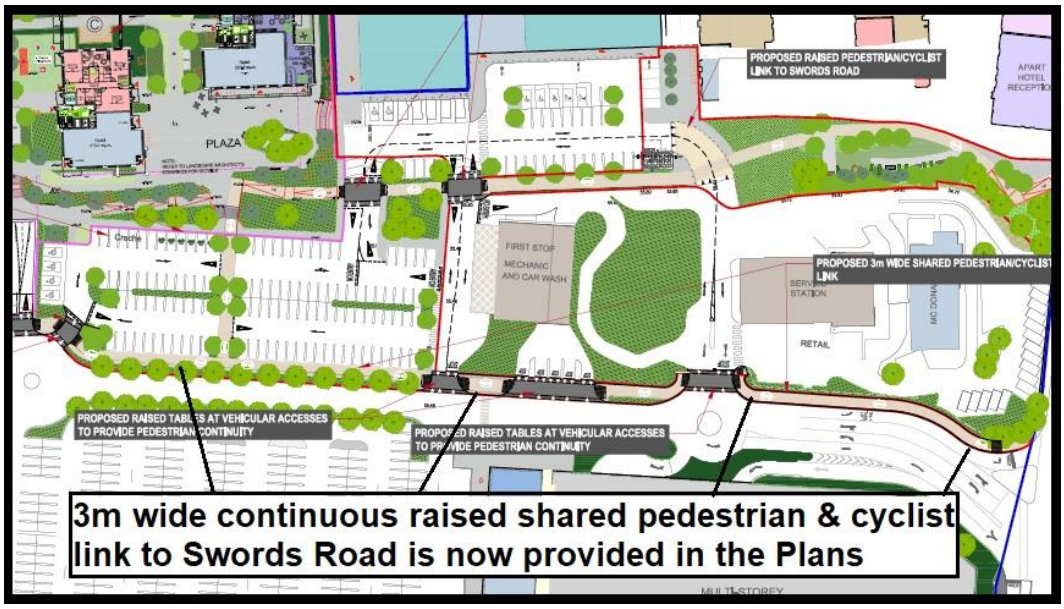


Figure 2.1 – Annotated Extract Showing Pedestrian/Cyclist Link

j) With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii will be 6m where swept path analysis permits and will be of further reduced radii where feasible in line with DMURS guidance.

k) Internally within the development, where carriageway kerbs are required, heights will be typically 60mm in accordance with the objectives of DMURS.

l) Much of the Swords Road includes cycle lanes which will provide access to the development. Within the development, as required cyclists will share the carriageway with other street users as per the NCM guidance for such situations and best practice, with an additional new high quality shared pedestrian and cyclist route provided through the Omni Living Scheme to the proposed new plaza and cycle parking.

m) Any required street signage and road markings will be in accordance with the Department of Transport Traffic Signs Manual, and the location and form will be agreed in advance with Dublin City Council.

APPENDIX I

Stage 1 Independent Road Safety/Quality Audit
(& Designer Feedback Form)

Title: **Stage 1 ROAD SAFETY AUDIT**

For;

Omni Plaza SHD, Omni Park, Swords Road, Santry, Dublin 9.

Client: **NRB Consulting Engineers**

Date: **July 2022**

Report reference: **1570R01**

VERSION: **FINAL (29-7-2022)**

Prepared By:

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CONTENTS SHEET

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1.0 Introduction

This report was prepared in response to a request from Mr. Eoin Reynolds, NRB Consulting Engineers, for a Stage 1 Road Safety Audit of the proposed vehicular, pedestrian and cyclists infrastructure proposed as part of the Strategic Housing Development at Onmi Park, Swords Road, Santry, Dublin 9.

The Road Safety Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

TII Auditor Approval no. NB 168446

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval no. OO1291756

The Road Safety Audit involved the examination of drawings and other material provided by NRB and a site visit by the Audit Team on the 26th of July 2022.

The weather at the time of the site visit was dry and the road surface was also dry.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

The information supplied to the Audit Team is listed in **Appendix A.**

The feedback form is contained in **Appendix B.**

A plan drawing showing the problem locations is contained in **Appendix C**.

2.0 Background

It is proposed to construct a strategic housing development in the north western area of the OMNI Shopping centre complex in Santry.

There will be underground parking which will be accessed off the existing roundabout at the cinema. A segregated ramp for cyclists will be provided to the basement.

There will be two shared pedestrian cycle links to the Swords Road. The existing car parking layout in car park no. 3 will be altered to accommodate the development. This will include having entry only to the car park from the roundabout at the cinema. Other car parking areas will have new road markings signage and priority to accommodate the new facilities for pedestrians and cyclists.

It is proposed to have emergency vehicle and ESB access through the existing Lidl and M&S service area at the northern boundary of the site.

The northern most proposed cycle and pedestrian link to Swords Road will interact with the proposed Santry Living Scheme which is permitted and for which the same Audit Team carried out the road safety audit at planning stage.

The site location is shown below.

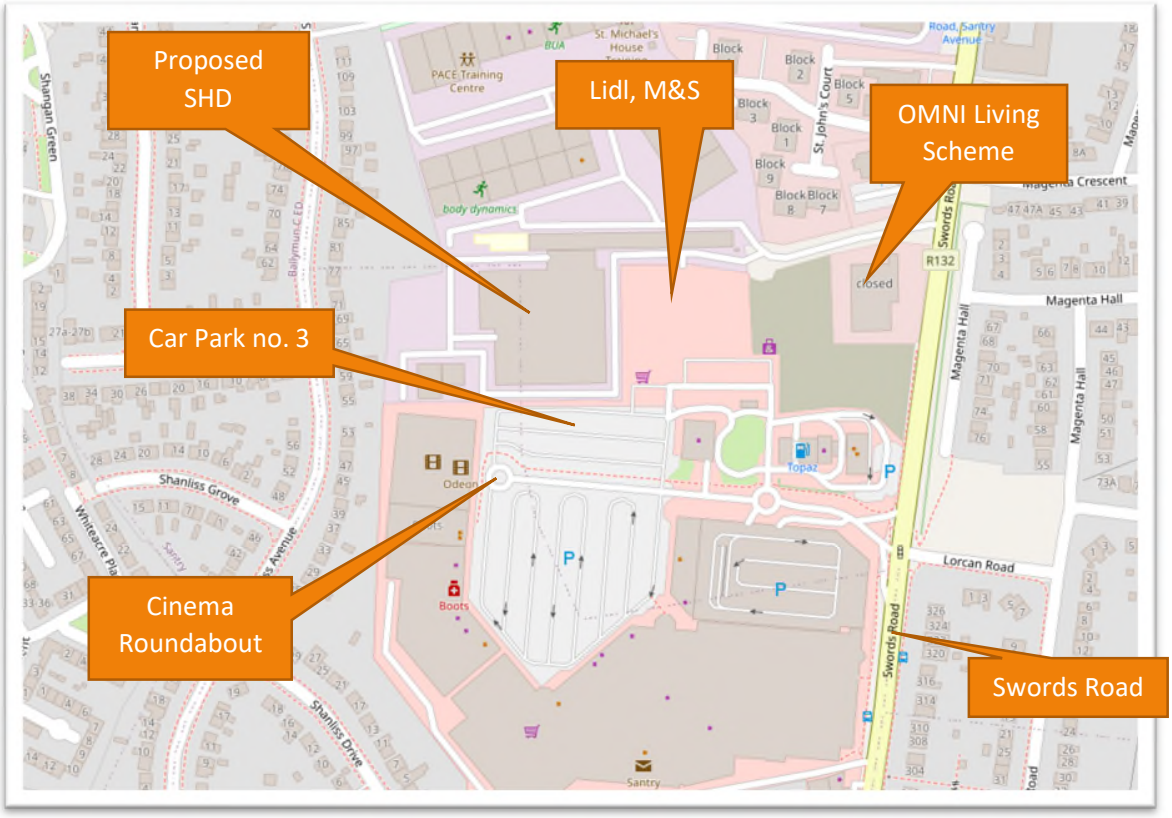


Image courtesy of openstreetmap.org

3.0 Items Raised in This Stage 1 Road Safety Audit.

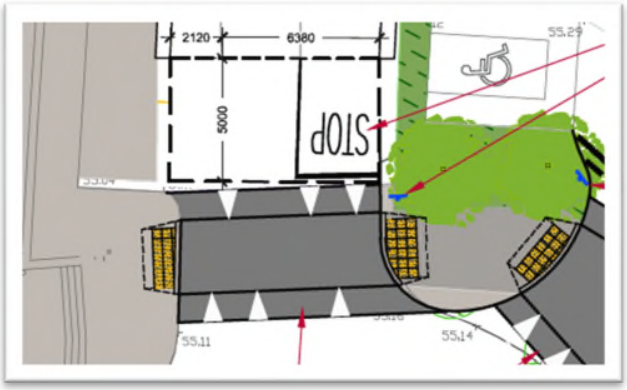
3.1. Problem

LOCATION

Drawing NRB-SHD-002

PROBLEM

There is a proposed stop control at the exit from the basement. This may be confusing for drivers as there is a mini roundabout ahead and they might assume priority after stopping and not give way to traffic approaching from the right resulting in side-impact collisions.



RECOMMENDATION

It is recommended that a Yield control be provided at the roundabout.

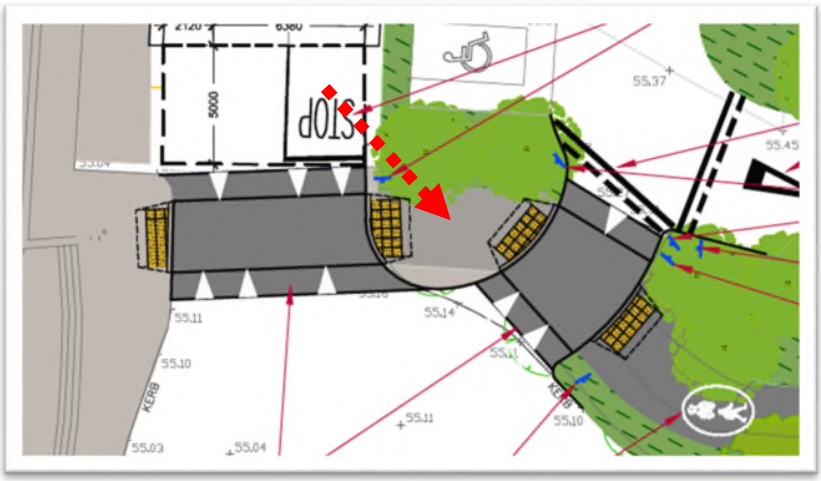
3.2 Problem

LOCATION

Drawing NRB-SHD-002

PROBLEM

There is a risk that the proposed landscaping could block a drivers's visibility to crossing pedestrians and cyclists at Car park no.3. This could lead to collisions with those road users.



RECOMMENDATION

It is recommended that suitable low level vegetation be provided only or be removed altogether.

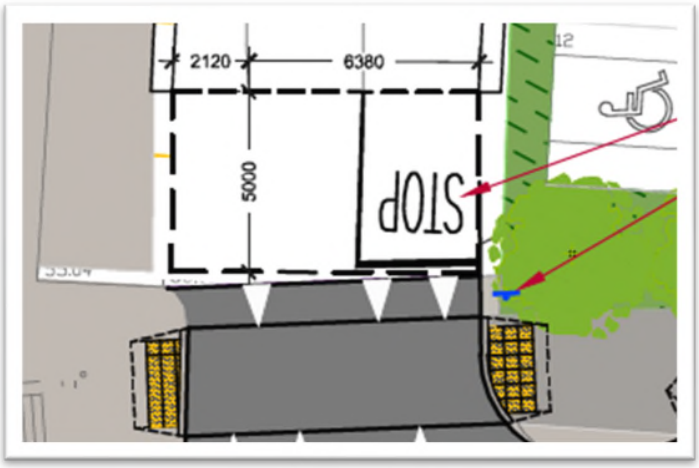
3.3 Problem

LOCATION

Drawing NRB-SHD-002

PROBLEM

It is unclear what gradient is proposed at the dwell area at the exit from the basement. If it is too steep this could lead to loss of traction and sudden movements either forward or backwards leading to collisions with pedestrians and cyclists or material damage with following vehicles.



RECOMMENDATION

Ensure a suitable dwell area gradient is provided.

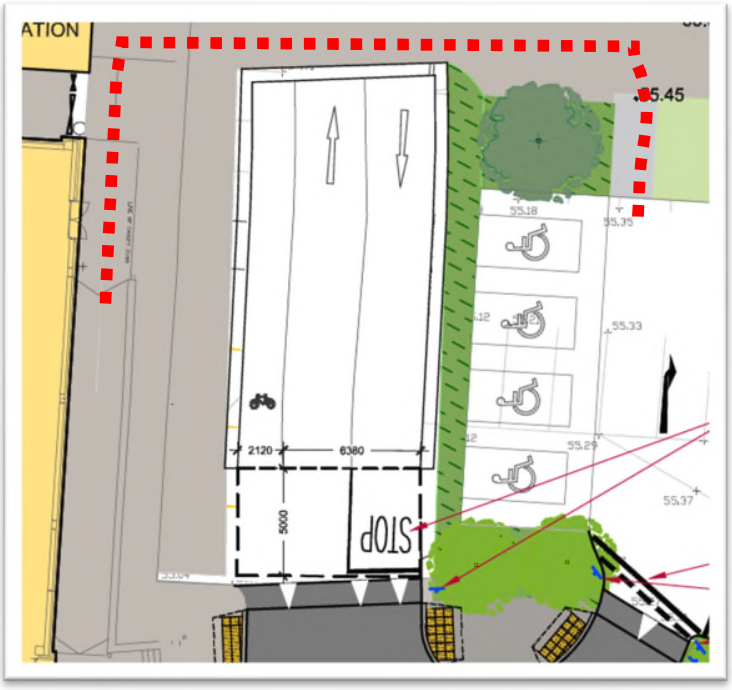
3.4 Problem

LOCATION

Drawing NRB-SHD-002

PROBLEM

It is unclear if there will be a direct access route to the ramp to the cinema main entrance door from the relocated disabled parking bays to the rear of the basement ramp. Without a direct route the mobility impaired would have longer journeys to travel which may lead to discomfort.



RECOMMENDATION

Ensure a suitable route without high kerbs or excessive gradients is provided.

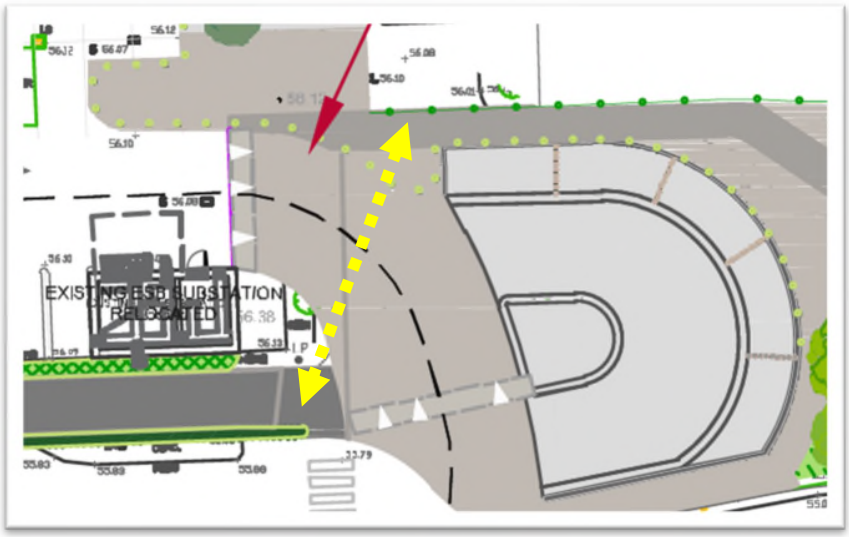
3.5 Problem

LOCATION

Drawing NRB-SHD-001

PROBLEM

There is a discontinuity in the proposed pedestrian /cycle facilities at the OMNI Living interface. This could lead to pedestrians and cyclists travelling diagonally across the carriageway at the severe bend leading to collisions.



RECOMMENDATION

It is recommended that a continuous facility be provided.

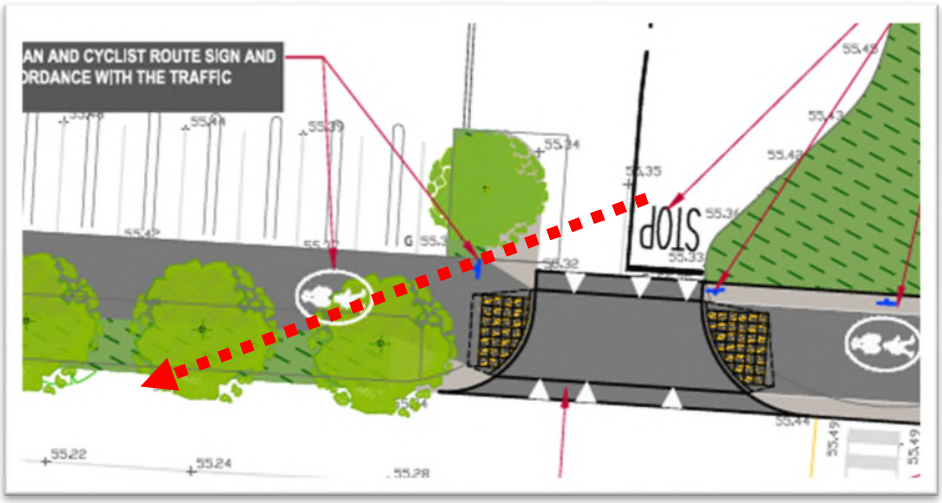
3.6 Problem

LOCATION

Drawing NRB-SHD-004

PROBLEM

Drivers may not have sufficient visibility to the right as they exit car park no. 3 onto the main access road due to the set-back stop line behind the proposed shared use facility. This may lead drivers to creep forward and block the pedestrian /cycle facility. This could lead to collisions with those road users.



RECOMMENDATION

It is recommended that suitable visibility be provided.

3.7 Problem

LOCATION

Drawing NRB-SHD-001

PROBLEM

It is unclear if a pedestrian and cyclist crossing is to be provided at the Swords Road signalised junction and splitter island to the proposed shared use facility. Without an area to access the proposed facility for cyclists and pedestrians they may opt not to use the new facility and remain on the carriageway where they would be at greater risk of being struck by passing vehicles.

RECOMMENDATION

It is recommended that a crossing facility be provided for pedestrians and cyclists.

4.0 Observations

4.1 Observation

It is assumed that road drainage will be provided at the upstream base of all raised areas to avoid surface water ponding.

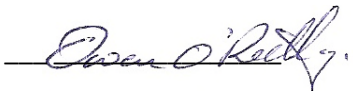
5.0 Audit Statement

We certify that we have examined the information provided and the site. The examination has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton **Signed:** 

(Audit Team Leader) **Dated:** ___29/7/2022_____

Owen O'Reilly **Signed:** 

(Audit Team Member) **Dated:** ____29/7/2022_____

Appendix A

List of Material Supplied for this Road Safety Audit;

Drawing NRB-SHD-001

Drawing NRB-SHD-002

Drawing NRB-SHD-003

Drawing NRB-SHD-004

Drawing NRB-SHD-005

Drawing NRB-TA-001

Drawing NRB-TA-002

Drawing NRB-TA-003

Drawing NRB-TA-004

Drawing NRB-TA-005

Drawing NRB-TA-006

Appendix B

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: SHD, Santry
Stage: 1 Road Safety Audit
Date Audit (Site Visit) Completed: 26-7-2022

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Y	Y – Stop changed to Yield as recommended.		
3.2	Y	Y – all vegetation to be low planting as recommended.		
3.3	Y	Y – dwell area is c.2% (1:50) gradient to facilitate waiting vehicle.		
3.4	Y	Y – dropped kerbs are provided along red dashed route (i.e., shortest route to the ramp which avoids interaction with other vehicles at basement and car park accesses)		
3.5	Y	Y – route across plaza area has been amended to provide direct/continuous VRU access.		
3.6	Y	Y – sight lines for appropriate speed is provided with only a single long stem tree encroaching within the splay in line with DMURS.		
3.7	Y	Y – toucan crossing to potentially be provided subject to planning and agreement with DCC.		

Observations:

4.1 Gullies will be provided at detailed design stage upstream of all raised tables as necessary.

Signed…… **Date**: 28/07/2022
Design Team Leader

Signed…… **Date**……29-7-2022……
Audit Team Leader

Signed. **Date**…28-7-2022……
Employer/Developer

Appendix C

Problem Location Plan.


Santry Hall
PROPOSED EMERGENCY VEHICLE AND ESB ACCESS THROUGH EXISTING LIDL AND M&S SERVICE AREA
PROPOSED AT GRADE BICYCLE PARKING AREAS
PROPOSED RAISED PEDESTRIAN/CYCLIST LINKS TO SWORDS ROAD
PROPOSED RAISED PEDESTRIAN/CYCLIST LINK TO SWORDS ROAD
OMNI LIVING (Permitted)
PLAZA
CAR PARK 3
PROPOSED VEHICULAR AND CYCLIST ACCESS TO BASEMENT CAR PARK AND ENTRY ONLY TO EXISTING SURFACE CAR PARK OFF EXISTING ROUNDABOUT
PROPOSED 3m WIDE SHARED PEDESTRIAN/CYCLIST LINK
PROPOSED RAISED TABLES AT VEHICULAR ACCESSES TO PROVIDE PEDESTRIAN CONTINUITY
PROPOSED RAISED TABLES AT VEHICULAR ACCESSES TO PROVIDE PEDESTRIAN CONTINUITY
PROPOSED RAISED TABLES AT VEHICULAR ACCESSES TO PROVIDE PEDESTRIAN CONTINUITY
3.1
3.2
3.3
3.4
3.5
3.6
3.7
Problem 3.3

APPENDIX J

Bus Capacity/Demand Study Report

consulting engineers

NRB

Bus Services

&

Capacity Assessment Report

(Appendix J)

For

Proposed Omni Plaza SHD

At

Omni Park Shopping Centre,
Swords Road, Santry, Dublin 9.

on behalf of

Serendale Ltd.

SUBMISSION ISSUE

1st Floor, Apollo Building, Dundrum Road, Dundrum, Dublin 14
Tel: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

Contents

Appendices.....

1.0 INTRODUCTION

1.1 NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation issues associated with a planning application for a proposed residential development on lands to the north west corner of the Omni Park Shopping Centre and at Santry Hall Industrial Estate. The development consists of a total of 457 private residential apartment units, 431m^2 Gross Floor Area (GFA) of retail/commercial space and a small ancillary Crèche of 226m^2 GFA on the site.

1.2 The proposed development is predominantly located within the confines of Omni Shopping Centre, being a significant local retail, leisure & employment destination, and also within close proximity to Santry Village. It is also with an easy cycling distance of Dublin Airport (with between 15,000 and 20,000 Employees). The site is within an approximate 15-18min cycle time of Dublin Airport and surrounding employers. As such the proposed development will represent a sustainable living opportunity for employees. However, this report has been prepared as if the Bus Demand created is additional new demand for local Bus Services based on the established trip patterns within Santry and it ignores the proximity to local employment areas.

1.3 The NRB commission includes this assessment of current & future Bus Capacity, a 'Bus Services & Capacity Assessment Report'. The Assessment also considers the combined effect of the adjacent permitted "Omni Living Scheme" (ABP-307011-20) being fully completed and occupied.

1.4 Whilst this Report contains an assessment of Bus Capacity, it should be remembered that Bus Operators are commercial in nature, running their businesses based on demand rather than medium to longer term future demand. If there is an increased demand for services with full or overcapacity services, Operators then generally react to improve facilities, if it makes commercial sense to do so. More customers means more revenue generated. As evidence we would highlight the extract from the NTA GDA Bus Connects document included within this report (Figure 2.3 Page 6), which states; "… *subject to adjustment in line with future passenger numbers*".

1.5 Notwithstanding the above, the purpose of this Study is to review the potential impact of the development and the adjacent committed development upon the existing and future bus services in the vicinity of the site.

1.6 The analysis of the existing and future bus services is based on an assessment methodology which includes trip generation assessment, modal split assumptions, and

assignment/distribution. These assumptions have been based on real data extracted from the Central Statistics Office (CSO) 2016 Small Area Map Data for the local settlement area, available through the online mapping tool. This data was used to quantify the anticipated demand for Buses as a result of the proposed development locally based on adjacent CSO Statistical Data.

1.7 The first step undertaken therefore was to review the current and future planned bus services. (While the requirement under the Building Height Guidelines is to show that the site is currently well served by existing public transport, we have also considered the future planned bus services as part of Bus Connects).

1.8 The bus stops within an easy walking distance of the subject site were identified, with the current bus services, bus service frequency and capacity studied and assessed.

1.9 In terms of future services*, Bus Connects* is expected to be implemented within a relatively short timeframe. This initiative will eventually reconfigure the bus services for the Greater Dublin Area completely. This Study therefore considers primarily the existing bus network and existing capacity.

1.10 The Study focuses on the peak commuter periods, and in particular the busiest weekday AM commuter peak demand for buses – this represents the period of highest demand on the network consistent with the TII Traffic & Transport Assessment Guidelines (May 2014). The methodology assumes that the demand for bus trips will be assigned to the nearest available bus stops.

2.0 BUS STOP LOCATIONS & BUS SERVICES (CURRENT & FUTURE)

CURRENT BUS SERVICES

2.1 For commuting, a walk distance to/ from Bus Stops of up to 1km is generally considered to be acceptable. For the purposes of this assessment, given that the site is very well served by buses we have considered the bus services in the immediate vicinity of the site only, being the one on the R132 Swords Rd immediately beside the site and on Shanowen Road nearby.

2.2 The site is very well served by Bus Services, and this is illustrated below as ***Figure 2.1*** which illustrates the existing bus services within an easy walking distance of the site. The illustration provides details of all of the bus services at the adjacent nearest stops (correct at time of writing).

Figure 2.1 – Existing Bus Stops Adjacent the Site

2.3 All of the bus services referenced within this report are within a circa 200-250m walk distance of the subject site. In terms of the Existing Bus Service Provision and Service Frequency, the Timetables for each existing Service are included herein as ***Appendix A***.

2.4 These bus service details have been collated and are summarised below as ***Table 2.1,*** extracting information relating to the busy 7-9am weekday AM Commuter Period.

2.5 The bus service summary demonstrates that the site is clearly accessible to a significant and high capacity existing bus provision, with a capacity of c.5,460 bus seats during the 7-9am commuter peak period, all within an easy walk-distance of the site. And of course, the majority of these bus services provide for connectivity to Public Transport Hubs and Interchanges (Rail, Intercity Bus Services, LUAS etc) located within the City Core, and many to the National Bus Interchange a short distance away at Dublin Airport.

Table 2.1: Buses within Easy Walk Distance (as per Figure 2.1)

Service #	Route	Operator	No. Buses 7-9am (Mon - Fri)	Total Person Capacity * (7-9am)	Thru City Core (Y/N)
1	Santry - Shaw St - Return	Dublin Bus	11	1001	Y
16/16d	Dublin Airport - Ballinteer - Return	Dublin Bus	12	1092	Y
33/33e	Lwr Abbey St - Balbriggan - Return	Dublin Bus	4	364	Y
41	Lwr Abbey St - Swords Mnr - Return	Dublin Bus	7	637	Y
41b	Lwr Abbey St - Rowelstown - Return	Dublin Bus	1	91	Y
41c	Lwr Abbey St - Swords - Return	Dublin Bus	7	637	Y
41d	Lwr Abbey St - Swords Bus Pk - Return	Dublin Bus	1	91	Y
101	Dublin - Drogheda - Dublin	Bus Eireann	5	455	Y
104	Clontarf - DCU - Return	Go Ahead Ire	10	910	N
220t	DCU - Ladyswell Rd - Return	Go Ahead Ire	2	182	N
Total (7-9am) All Routes			**60**	**5460**	
Total (7-9am) Routes Via City Centre			**48**	**4368**	

**On the Industry-standard assumption of 91 seats per standard DD Bus*

2.6 Dublin Bus website and Mobile Phone Apps now provide a service that allows customers access up to date real information for Bus Arrivals and Departures on a stop-by-stop basis. This information on Bus Arrivals and Departures allows customers to plan their arrivals and departures and associated walk times accurately, facilitating journey planning.

2.7 Almost all of Dublin Bus & Go-Ahead Bus Services consist of fleets of high quality comfortable 'Double Decker' Buses, being accessible buses with 'low-floor' technology incorporated into their design.

2.8 Transport for Ireland also provides an interactive online tool that enables the user to plan journeys, with real time information on Bus & Rail services on a nationwide basis.

2.9 This Report addresses the increased capacity bus demand created by the Residential elements of the development based on current local catchment Modal Split and Existing Bus Service provisions.

2.10 We have also set out below details of the proposed bus service improvements locally, as part of *Bus Connects*, but even without these future improvements the site is well served by public transport with high capacity frequent services and with good links to other modes of transport.

FUTURE BUS SERVICES

2.11 In terms of **Future Planned Services**, the NTA have recently published details of the overall bus network for the GDA, the 'New Dublin Area Network' - showing Spine Routes, Feeder and Orbital Routes. An extract from the NTA Plans showing the site location is included below as ***Figure 2.2***.

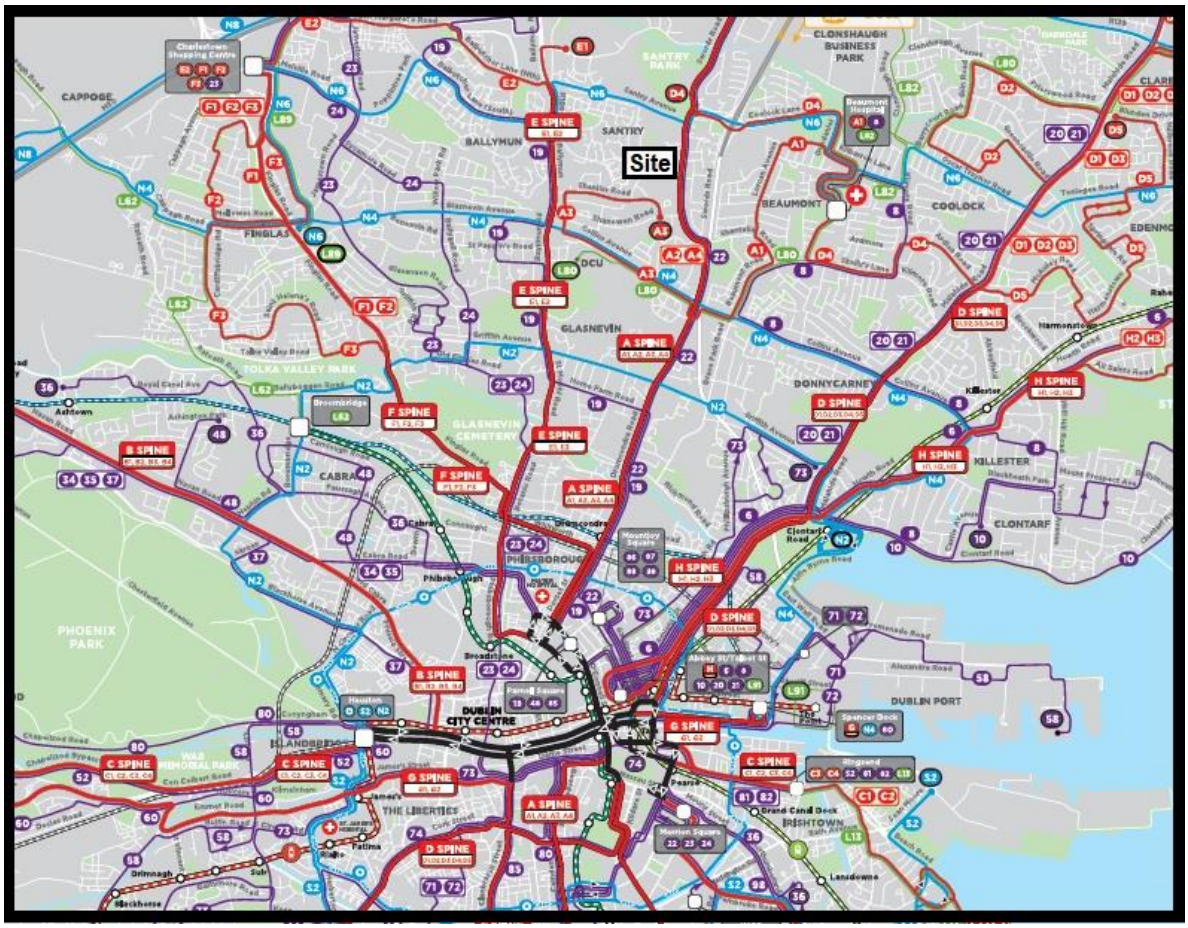


Figure 2.2 – Extract Current NTA Network Plans & Site

2.12 This future network shows that the site's accessibility to bus services will be further enhanced, with a high frequency and permeable service to be provided. The site is located directly on the main Spine Routes A2 & A4 (Red Colour in Figure 2.2 above) which is to run along the R132 Swords Road. The planned frequency of service for the A Spine is a bus every 12 minutes. An extract from the NTA Bus Spine Frequency Tables is included below as ***Figure 2.3 ("The number in each box is the expected time in minutes between buses")***.

New Dublin Area Bus Network / Network Implementation

Spine frequency tables

The number in each box is the expected time in minutes between buses. It is subject to adjustment in line with future passenger numbers.

Spines & Branches		Weekday																	
Route no.	To and From	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
A-SPINE	Swords Rd - City Centre - Terenure	8	4	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	8
A1	Beaumont - City Centre - Knocklyon	30	15	12	12	12	12	12	12	12	12	12	12	12	12	15	15	15	15	30
A2	Airport - City Centre - Ballinteer - Dundrum	30	15	12	12	12	12	12	12	12	12	12	12	12	12	15	15	15	15	30
A3	DCU - City Centre - Tallaght	30	15	12	12	12	12	12	12	12	12	12	12	12	12	15	15	15	15	30
A4	Swords - City Centre - Dundrum	30	15	12	12	12	12	12	12	12	12	12	12	12	12	15	15	15	15	30
B-SPINE	Blanchardstown SC - City Centre - UCD	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	8
B1	Ongar - City Centre - UCD	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30
B2	Ongar North - Clonsilla - City Centre - UCD	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30
B3	Tyrrelstown - City Centre - Dún Laoghaire	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30
B4	Blanchardstown SC - City Centre - Sallynoggin	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30
C-SPINE	Lucan - City Centre - Ringsend	15	8	4	5	8	8	8	8	8	8	5	4	5	8	8	8	8	8	15
C1	Adamstown - City Centre - Sandymount	60	30	8	8	30	30	30	30	30	30	8	8	8	30	30	30	30	30	60
C2	Adamstown - City Centre - Sandymount	60	30	8	15	30	30	30	30	30	30	15	8	15	30	30	30	30	30	60
C3	Maynooth - City Centre - Ringsend	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60
C4	Celbridge - City Centre - Ringsend	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60

Figure 2.3 – Extract NTA Core Bus Network GDA, Spine Route Frequency

2.13 There are other feeder and local services nearby, but with the Spine Routes passing the site, these feeder and local routes will likely be of lesser importance or as frequently used by residents. The site is therefore also ideally placed in terms of future high frequency bus availability, based on the NTAs published Plans.

FUTURE METROLINK

2.14 ***Figure 2.4*** below shows the route alignment for the proposed Metrolink, located to the west of the site running along Ballymun Road. It is expected to provide significant benefits to the site in terms of a realistic alternative mode of travel, but is simply included herein for reference.

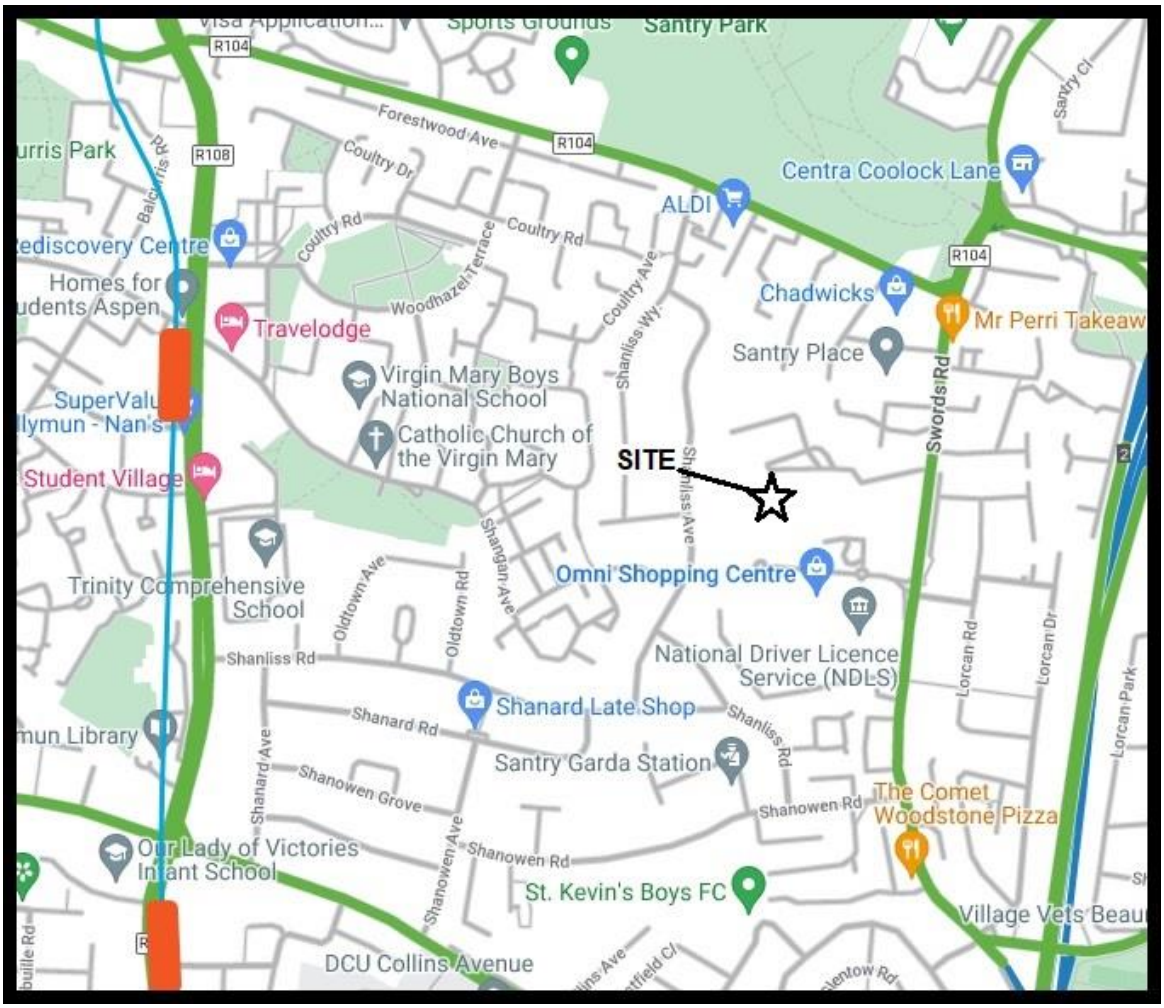


Figure 2.4 – Proposed Metrolink Alignment West of Site

2.15 The site is clearly also very well provided for in terms of non-car modes of travel, with the combination of current bus services, the future Bus Connects and Metrolink to the west, in addition to the walking and cycling facilities. However, this report focusses on current Bus Capacity and demand in order to provide assurance that sufficient capacity exists in current services.

2.16 In terms of **Bus Passenger Capacity**, a typical old-type Dublin Bus double decker bus has a capacity to accommodate ~91 passengers. However, it should be noted Dublin Bus are introducing new hybrid buses, some of which have extra capacity e.g., the new Wrightbus StreetDeck HEV 96 double-decker buses.

3.0 BUS USE PREDICTIONS, CAPACITY & DEMAND

3.1 We have used the CSO Local Small Area Mapping, selecting the settlements of Artane & Whitehall in order to establish the proportion of Bus Users within the local area and to estimate the additional demand for Buses that the developments will create. An annotated extract from the CSO Database showing the extent of the settlement areas selected for this purpose is included below as ***Figure 3.1.***

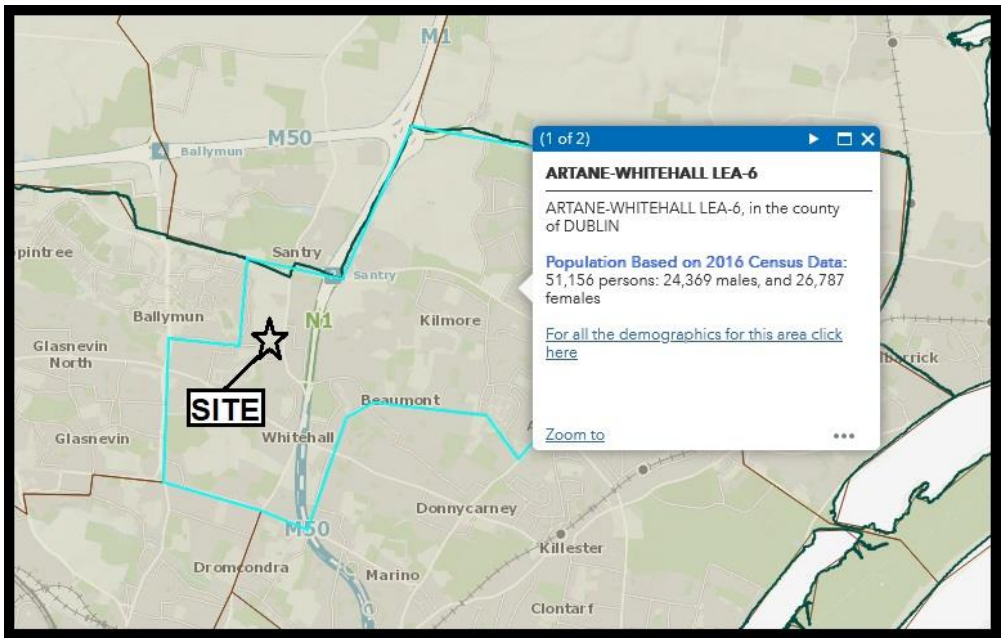


Figure 3.1 – Collated CSO Local Area Data

3.2 We have extracted information from the Census Data to calculate the demand for buses during the busy weekday AM Commuter period. The demand created by the subject application is isolation is illustrated below as ***Table 3.1***.

Table 3.1 – Bus Demand Based on CSO Data & Residential Population (Subject App)

SUBJECT APPLIATION ONLY IN PLACE				
Electoral Area	**Total Population**	**Total Commuters Age 5+ to Work, School or College**	**No. of Bus Users**	**No. of Commuters Leaving Home 7-9am to Work/Schl or College**
Artane/Whitehall	51156	29011	6284	20243
CALCULATION OF BUS DEMAND DUE TO SUBJECT DEVELOPMENT				
Percentage of Total Population in Area Commuting =				56.7%
Percentage of Total Population in Area Commuting By Bus =				12.3%
Percentage of Commuters Leaving Home 7-9am =				69.8%
1406	Residents within Occupied Proposed Development, based on Bed Spaces			
173	Bus Commuters (Consistent with the Local Area Census Data)			
121	**Total Additional Bus Commuters Between 7am and 9am**			

3.3 In a similar fashion we have undertaken an assessment of the additional demand for Buses due to the completion and occupation of the subject application and the adjacent "Omni Living" scheme together and this is illustrated below as ***Table 3.2***

Table 3.2 – Bus Demand Based on CSO Data & Resi Population (Both Developments)

SUBJECT APPLICATION AND ABP-307011 ("OMNI LIVING") IN PLACE				
Electoral Area	**Total Population**	**Total Commuters Age 5+ to Work, School or College**	**No. of Bus Users**	**No. of Commuters Leaving Home 7-9am to Work/Schl or College**
Artane/Whitehall	51156	29011	6284	20243
CALCULATION OF BUS DEMAND DUE TO BOTH DEVELOPMENTS IN PLACE				
Percentage of Total Population in Area Commuting =				56.7%
Percentage of Total Population in Area Commuting By Bus =				12.3%
Percentage of Commuters Leaving Home 7-9am =				69.8%
1856	**Residents within Both Developments Combined, based on Bed Spaces**			
228	Bus Commuters (Consistent with the Local Area Census Data)			
159	**Total Additional Bus Commuters Between 7am and 9am**			

BUS CAPACITY & DEMAND

3.4 The above confirms that the subject development in isolation will create an additional demand for approximately 121 seats on bus services between 7am and 9am. The demand created by the subject application and the permitted adjacent Omni Living development combined is predicted to be 159 seats.

3.5 Of course, it is not possible to predict the commuting destination of future residents. This should be considered in terms of the capacity locally, with approximately 4,370 bus seats available on city bound buses during the weekday AM commuter peak period, all within very short walk of the subject site. There are a similar number of services and seats during the weekday PM Peak period 4pm-6pm, however demand is greater during the weekday AM Peak (due to 'peak spreading' that occurs in the evenings, with much more significant staggered departure times from work locations in the evenings).

3.6 The resulting demand for bus seats has then been used to calculate the demand and impact upon services as illustrated in **Table 3.3** & **Table 3.4** below. Of course, there will possibly be a very low contra-flow demand for bus seats created by the small number of crèche & retail Staff, a number which is considered by us to be negligible in the context of this calculation.

Table 3.3: Total Predicted Peak Commuter Hr Demand for Bus Seats Due to Subject Development Alone

Details	Buses	Seats
Total Number of Buses (7-9am) All Routes	60	5460
Total Number of Buses (7-9am) Routes Via City Centre	48	4368
Total Demand for Seats Created by Proposed Development (7-9am)		121
Percentage Impact Upon Existing Services Adjacent Site (All Routes)		2.2%
Percentage Impact Upon Existing Services Adjacent Site (Routes Via City)		2.8%

Table 3.4: Total Predicted Peak Commuter Hr Demand for Bus Seats Due to Subject Development PLUS Permitted Omni Living

Details	Buses	Seats
Total Number of Buses (7-9am) All Routes	60	5460
Total Number of Buses (7-9am) Routes Via City Centre	48	4368
Total Demand for Seats Created by Proposed Development (7-9am)		159
Percentage Impact Upon Existing Services Adjacent Site (All Routes)		2.9%
Percentage Impact Upon Existing Services Adjacent Site (Routes Via City)		3.6%

3.7 The proposed development will therefore create an additional demand for bus seats, equating to 2.2% to 2.8% of the current bus capacity. With the permitted Omni Living development in place this increases to a total demand of 2.9% to 3.6% of the current bus capacity. We consider this to be a low impact, and we believe it can easily be accommodated within the current services.

3.8 In terms of assessing current service capacity, details of seat or space availability on any particular individual bus service, at any particular bus stop, is just not available. Service operators themselves accept cash fares, and as a result the availability of space for additional passengers cannot be accurately measured using Leap-Card software output (commercial information which is unavailable in any event). We therefore commissioned a sample survey of the space availability on buses passing immediately by the site as part of the Traffic Data Collection exercise on 25th and 26th May 2022.

3.9 We observed bus occupancy at Bus Stops #1640 and #1623 on Swords Rd, at Omni Shopping Centre. The occupancy on each service was observed by low resolution camera from the Bus Stop. This was undertaken over 2 days, Wednesday the 25th and Thursday 26th May 2022. This survey revealed an average Bus Occupancy for City Bound services of 53% during the peak 7-9am commuter time during the busiest day (Wednesday).

3.10 This observation survey confirmed that the buses are running with significant seat/space availability on both days. Out of over 37 buses surveyed on the busiest day (Wednesday) there was only 1 bus at full capacity (the 41c - capacity being 91 persons). In fact, for the most part buses were running at c.40%-50% of capacity.

3.11 We conclude that the expected demand can be accommodated within the existing services based on anticipated usage, supported by our observation of current bus occupancy. In future, there are also additional services to be created as part of Bus Connects as set out within Section 2.0 above. There will also be more than adequate capacity on the further improved services locally.

3.12 The analysis is based on CSO travel patterns, and whilst the development seeks to encourage modal shift, given the small increase in predicted bus demand, taking account of any possible future changes in demand due to improve modal shift (walking, cycling, increased working from home and public transport etc – and of course residents employed locally) the development will still have negligible impact on bus capacity here.

4.0 CONCLUSIONS

4.1 NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation issues associated with a planning application for a proposed residential development on lands to the north west corner of the Omni Park Shopping Centre and at Santry Hall Industrial Estate. The development consists of a total of 457 private residential apartment units, 431m^2 Gross Floor Area (GFA) of retail/commercial space and a small ancillary Crèche of 226m^2 GFA on the site.

4.2 The NRB Commission includes this assessment of current and future Bus Capacity, entitled 'Bus Services & Capacity Assessment Report'. The purpose of this Study is to review the potential impact of the development upon the existing and future bus services in the vicinity of the site.

4.3 The analysis of the existing and future bus services has been undertaken based on an assessment methodology which includes trip generation assessment, modal split assumptions, and assignment/distribution. These assumptions have been based on real data extracted from the Central Statistics Office (CSO) Small Area Map Data, available through the CSO online mapping tool. This data was used to quantify the anticipated demand for Buses as a result of the proposed development based on the established commuting patterns within the local area.

4.4 This Report contains details of current and future Bus Services and Bus Capacity serving the site and the local area. It also includes details of seat/space availability of existing services immediately at the site based on an observation survey.

4.5 The assessment confirms that the completion and full occupation of the development will result in an increased demand for bus seats, with an additional 121 customers during the weekday AM Commuter Peak 7-9am (and less during the PM Commuter peak period). This represents a total of 2.2% to 2.8% of the number of bus seats or capacity available locally during the AM Period. We conclude that the additional demand for Buses as a result of the proposed development can be accommodated on the existing and future improved bus services in the area in the context of an estimated average current occupancy rate of 40-50% of existing capacity.

4.6 Whilst this Report contains an assessment of Bus Capacity, it should be remembered that Bus Operators are commercial in nature, running their businesses based on demand rather than medium to longer term future demand. If there is an increased demand for services, or indeed if there is a deficit in a service provision, Operators generally react to improve facilities if it makes commercial sense to do so. More customers means more revenue generated.

APPENDIX A

A	Bus Timetable Information *(Correct at Time of Collating Data & Writing Report)*

A A A

1

Buses from/to
From Santry (Shanard Rd.) Towards Shaw Street
Operative Date: 28/11/2021
Version: TT 21.1

From Santry (Shanard Rd.) Towards Pearse Street (Shaw St.)

Seantrabh , Droim Conrach , Cearnóg Parnell , Sráid an Phiarsaigh (Sráid an tSeáigh)

Buses leave terminus at:

Monday - Friday				Saturday				Sunday			
06:30	06:42	06:54	07:06	07:00	07:30	08:00	08:30	09:00	09:30	10:00	10:30
07:18	07:30	07:40	07:50	08:50	09:10	09:30	09:50	11:00	11:20	11:40	12:00
then every 10-12 minutes until 1856				10:10	10:30	10:50	11:10	12:20	12:40	13:00	13:20
19:08	19:20	19:40	20:00	11:30	11:50	12:10	12:30	13:40	14:00	14:20	14:40
20:20	20:40	21:00	21:20	12:50	13:10	13:30	13:50	15:00	15:20	15:40	16:00
21:40	22:00	22:20	22:40	14:10	14:30	14:50	15:10	16:20	16:40	17:00	17:20
23:00	23:15	23:30		15:30	15:50	16:10	16:30	17:40	18:00	18:20	18:40
				16:50	17:10	17:30	17:50	19:00	19:20	19:40	20:00
				18:10	18:30	18:50	19:10	20:20	20:40	21:00	21:20
				19:30	19:50	20:10	20:30	21:40	22:00	22:20	22:40
				20:50	21:10	21:30	21:50	23:00	23:15	23:30	
				22:10	22:30	22:50	23:10				
				23:30							

Santry » 15mins » Drumcondra » 5mins » Parnell Sq. » 10mins » Pearse Street (Shaw St.)

All times are off peak estimates

From Pearse Street (Shaw St.) Towards Santry (Shanard Rd.)

Sráid an Phiarsaigh (Sráid an tSeáigh) , Cearnóg Parnell , Droim Conrach , Seantrabh

Buses leave terminus at:

Monday - Friday				Saturday				Sunday			
06:30	06:42	06:54	07:06	06:30	07:00	07:30	08:00	09:00	09:30	10:00	10:20
07:18	07:30	07:40	07:50	08:30	09:00	09:20	09:40	10:40	11:00	11:30	11:50
then every 10-12 minutes until 1856				10:00	10:20	10:40	11:00	12:10	12:30	12:50	13:10
19:08	19:20	19:40	20:00	11:20	11:40	12:00	12:20	13:30	13:50	14:10	14:30
20:20	20:40	21:00	21:20	12:40	13:00	13:20	13:40	14:50	15:10	15:30	15:50
21:40	22:00	22:20	22:40	14:00	14:20	14:40	15:00	16:10	16:30	16:50	17:10
23:00	23:15	23:30		15:20	15:40	16:00	16:20	17:30	17:50	18:10	18:30
				16:40	17:00	17:20	17:40	18:50	19:10	19:30	19:50
				18:00	18:20	18:40	19:00	20:10	20:30	20:50	21:10
				19:20	19:40	20:00	20:20	21:30	21:50	22:10	22:30
				20:40	21:00	21:20	21:40	22:50	23:10	23:30	
				22:00	22:20	22:40	23:00				
				23:30							

Pearse Street (Shaw St.) » 10mins » Parnell Sq. » 5mins » Drumcondra » 15mins » Santry

All times are off peak estimates

Fare Stages

17	83	Santry (Shanard Rd.)	
18	82	Swords Rd. (Shanowen Rd.)	
19	81	Swords Rd. (Collins Ave.)	
20	80	Drumcondra Rd. Upr. (Griffith Ave.)	
21	79	Drumcondra Rd. Upr. (Clonturk Park)	
22	78	Drumcondra Rail Station	
23	77	Dorset St. (North Circular Rd.)	
24	76	Dorset St. (North Frederick St.)	
25	75	O'Connell St.	
26	74	Pearse Street (Shaw St.)	

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

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16

Buses from/to
From Dublin Airport Towards Ballinteer (Kingston)
Operative Date: 26/01/2020
Version: TT 20.1

From Dublin Airport Towards Ballinteer (Kingston)

Aerfort Bhaile Átha Cliath , Seantrabh , Óstan Skylon , Stáisiún Dhroim Conrach , Sráid Uí Chonaill , Coirnéal Uí Cheallaigh , Crois Araild , Tír an Iúir , Bóthar na Gráinsí , Baile an tSaoir (Baile an Rí)

Buses leave terminus at:

Route Variations
d Not serving Beaumont Village

f From Dublin Airport, departs O'Connell St.at 23:30

c to City Centre only

Monday - Friday				Saturday				Sunday			
06:00	06:15	06:30	06:45	06:00	06:15	06:30	06:45	08:00	08:15	08:30	08:45
07:00	07:10d	07:20	07:30d	07:00	07:15	07:30	07:45	09:00	09:15	09:30	09:45
07:40	07:50d	08:00	08:10d	08:00	08:15	08:30	08:45	10:00	10:15	10:30	10:45
08:20	08:30d	08:40	08:50d	09:00	09:12	09:24	09:36	11:00	11:15	11:30	11:45
09:00	09:10	09:20	09:30	09:48	10:00	10:12	10:24	12:00	12:15	12:30	12:45
09:42	09:54	10:06	10:18	10:36	10:48	11:00	11:12	13:00	13:15	13:30	13:45
10:30	10:42	10:54	11:06	11:24	11:36	11:48	12:00	14:00	14:15	14:30	14:45
11:18	11:30	11:42	11:54	12:12	12:24	12:36	12:48	15:00	15:15	15:30	15:45
12:06	12:18	12:30	12:42	13:00	13:12	13:24	13:36	16:00	16:15	16:30	16:45
12:54	13:06	13:18	13:30	13:48	14:00	14:12	14:24	17:00	17:15	17:30	17:45
13:42	13:54	14:06	14:18	14:36	14:48	15:00	15:12	18:00	18:15	18:30	18:45
14:30	14:42	14:54	15:06	15:24	15:36	15:48	16:00	19:00	19:15	19:30	19:45
15:18	15:30	15:42	15:54	16:12	16:24	16:36	16:48	20:00	20:15	20:30	20:45
16:06	16:18	16:30	16:42	17:00	17:12	17:24	17:36	21:00	21:15	21:30	21:45
16:54	17:06	17:18	17:30	17:48	18:00	18:12	18:24	22:00	22:15	22:30	22:45f
17:42	17:54	18:06	18:18	18:36	18:48	19:00	19:15	23:00c	23:15c	23:30c	
18:30	18:42	18:54	19:06	19:30	19:45	20:00	20:15				
19:15	19:30	19:45	20:00	20:30	20:45	21:00	21:15				

20:15	20:30	20:45	21:00	21:30	21:45	22:00	22:15
21:15	21:30	21:45	22:00	22:30	22:45f	23:00c	23:15c
22:15	22:30	22:45f	23:00c	23:30c			
23:15c	23:30c						

Dublin Airport >> 10mins >> Santry >> 10mins >> Skylon Hotel >> 10mins >> Drumcondra Rail Station >> 10mins >> O'Connell St. >> 12mins >> Kelly's Corner >> 12mins >> Harold's Cross >> 12mins >> Terenure >> 12mins >> Grange Rd. >> 12mins >> Ballinteer (Kingston)

All times are off peak estimates

From Ballinteer (Kingston) Towards Dublin Airport

Baile an tSaoir (Baile an Rí) , Bóthar na Gráinsí , Tír an Iúir , Crois Araild , Coirnéal Uí Cheallaigh , Sráid Uí Chonaill , Stáisiún Dhroim Conrach , Óstan Skylon , Seantrabh , Aerfort Bhaile Átha Cliath

Buses leave terminus at:

Route Variations

f From Ballinteer, departs O'Connell St.at 23:30

c to City Centre only

Monday - Friday				Saturday				Sunday			
05:30	05:45	06:00	06:15	05:30	05:45	06:00	06:15	07:30	07:45	08:00	08:15
06:30	06:45	07:00	07:10	06:30	06:45	07:00	07:15	08:30	08:45	09:00	09:15
07:20	07:30	07:40	07:50	07:30	07:45	08:00	08:15	09:30	09:45	10:00	10:15
08:00	08:10	08:20	08:30	08:30	08:45	09:00	09:12	10:30	10:45	11:00	11:15
08:40	08:50	09:00	09:10	09:24	09:36	09:48	10:00	11:30	11:45	12:00	12:15
09:20	09:30	09:42	09:54	10:12	10:24	10:36	10:48	12:30	12:45	13:00	13:15
10:06	10:18	10:30	10:42	11:00	11:12	11:24	11:36	13:30	13:45	14:00	14:15
10:54	11:06	11:18	11:30	11:48	12:00	12:12	12:24	14:30	14:45	15:00	15:15
11:42	11:54	12:06	12:18	12:36	12:48	13:00	13:12	15:30	15:45	16:00	16:15
12:30	12:42	12:54	13:06	13:24	13:36	13:48	14:00	16:30	16:45	17:00	17:15
13:18	13:30	13:42	13:54	14:12	14:24	14:36	14:48	17:30	17:45	18:00	18:15
14:06	14:18	14:30	14:42	15:00	15:12	15:24	15:36	18:30	18:45	19:00	19:15
14:54	15:06	15:18	15:30	15:48	16:00	16:12	16:24	19:30	19:45	20:00	20:15
15:42	15:54	16:06	16:18	16:36	16:48	17:00	17:12	20:30	20:45	21:00	21:15
16:30	16:42	16:54	17:06	17:24	17:36	17:48	18:00	21:30	21:45	22:00	22:15
17:18	17:30	17:42	17:54	18:12	18:24	18:36	18:48	22:30	22:45f	23:00c	23:15c
18:06	18:18	18:30	18:42	19:00	19:15	19:30	19:45	23:30c			
18:54	19:06	19:15	19:30	20:00	20:15	20:30	20:45				

19:45	20:00	20:15	20:30	21:00	21:15	21:30	21:45
20:45	21:00	21:15	21:30	22:00	22:15	22:30	22:45f
21:45	22:00	22:15	22:30	23:00c	23:15c	23:30c	
22:45f	23:00c	23:15c	23:30c				

Ballinteer (Kingston) >> 12mins >> Grange Rd. >> 12mins >> Terenure >> 12mins >> Harold's Cross >> 12mins >> Kelly's Corner >> 12mins >> O'Connell St. >> 10mins >> Drumcondra Rail Station >> 10mins >> Skylon Hotel >> 10mins >> Santry >> 10mins >> Dublin Airport

All times are off peak estimates

Fare Stages

11	89	Dublin Airport	27	73	Aungier St. (Bishop St.)
12	88	Corner Collinstown Rd.	28	72	Kelly's Corner (Harrington St.)
13	87	Cloghran Service Station	29	71	Leonard's Corner
14	86	Swords Rd. (Turnapin Lane)	30	70	Harold's Cross Green
15	85	Swords Rd. (Santry Stadium)	31	69	Harold's Cross Rd. (Kenilworth Rd.)
16	84	Swords Rd. (Santry Ave.)	32	68	Terenure Cross
17	83	Swords Rd. (Lorcan Rd.) / Santry (Shanard Rd.)	33	67	Rathfarnham Rd. (Rathdown Park)
18	82	Swords Rd. (Shanowen Rd.) / Larkhill	34	66	Rathfarnham Castle
19	81	Swords Rd. (Collins Ave.)	35	65	Rathfarnham Church
20	80	Drumcondra Rd. Upr. (Griffith Ave.)	36	64	Grange Rd. (St Enda's Dr.)
21	79	Drumcondra Rd. Upr. (Clonturk Park)	37	63	Grange Rd. (Sarah Curran Ave.)
22	78	Drumcondra Rail Station	38	62	Grange Rd. (Eden Ave.)
23	77	Dorset St. (North Circular Rd.)	39	61	Elm Park (Marley Grange Estate)
24	76	Dorset St. (North Frederick St.)	40	60	The Grange
25	75	O'Connell St.	41	59	Ballinteer (Kingston)
26	74	South Great George's St.			

Route Information

Please note for safety reasons there is limited capacity for luggage on this service. Dublin Bus cannot guarantee that you will be able to board this service with luggage.

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

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33

Buses from/to
From Lower Abbey St. To Balbriggan
Operative Date: 28/11/2021
Version: TT 21.2

From Lwr. Abbey St. Towards Balbriggan

Sráid na Mainistreach Íochtarach , Sráid Ghairdinéir Uachtarach , Stáisiún Dhroim Conrach , Ionad Siopadóireachta Omni , Timpeallán an tAerfort , Sráidbhaile Shoird , Lusca , Ros , Na Sceirí , Baile Brigín

Monday to Friday

Buses leave terminus at

Route Variations
e To Skerries via Portrane

Lower Abbey Street	05:54	07:00e	07:24	08:05	08:50	10:20	11:50	13:20
Skerries North Cliff Heights	07:05	08:35e	08:50	09:31	10:16	11:46	13:16	14:46
Balbriggan	07:12		08:57		10:25	11:55	13:25	14:55

Lower Abbey Street	14:45	15:25	16:05	16:20	16:50	17:18	17:33	17:48
Skerries North Cliff Heights	16:29	17:06	17:52	18:07	18:36	19:03	19:18	19:33
Balbriggan	16:39			18:16			19:26	

Lower Abbey Street	18:21	18:56	19:23	21:00	22:34	23:30		
Skerries North Cliff Heights	20:03	20:31	20:49	22:18	23:48	00:48		
Balbriggan		20:39	20:57	22:26				

Saturday

Buses leave terminus at

Lower Abbey Street	07:34	08:56	10:26	11:51	13:17	14:47	16:20	17:05
Skerries North Cliff Heights	08:46	10:15	11:46	13:16	14:46	16:16	17:46	18:31
Balbriggan	08:54	10:23	11:55	13:25	14:55	16:25	17:55	18:40

Lower Abbey Street	17:50	18:40	19:30	21:04	22:35	23:30		
Skerries North Cliff Heights	19:16	20:05	20:48	22:18	23:48	00:48		

Balbriggan	19:25	20:56	22:26

Buses leave terminus at

Sunday

Lower Abbey Street	08:25	10:26	11:50	13:17	14:48	16:18	17:03	17:53
Skerries North Cliff Heights	09:38	11:46	13:16	14:46	16:16	17:46	18:31	19:16
Balbriggan		11:54	13:25	14:55	16:25	17:55	18:40	19:25

Lower Abbey Street	19:30	21:04	22:34	23:30
Skerries North Cliff Heights	20:48	22:18	23:48	00:48
Balbriggan	20:56	22:26		

Lwr. Abbey St. **» 3mins »** Upr. Gardiner St. **» 12mins »** Drumcondra Rail Station **» 15mins »** Omni Shopping Centre **» 10mins »** Airport Roundabout **» 10mins »** Swords Village **» 20mins »** Lusk **» 10mins »** Rush **» 15mins »** Skerries **» 15mins »** Balbriggan

All times are off peak estimates

From Balbriggan **Towards** Lwr. Abbey St.

Baile Brigín , Na Sceirí , Ros , Lusca , Sráidbhaile Shoird , Timpeallán an tAerfort , Ionad Siopadóireachta Omni , Stáisiún Dhroim Conrach , Sráid Ghairdinéir Uachtarach , Sráid na Mainistreach Íochtarach

Buses leave terminus at

Monday to Friday

Balbriggan	04:45		06:35				07:45	08:05
Skerries North Cliff Heights	04:55	05:45	06:45	07:00	07:25	07:35	07:55	08:15
Lower Abbey Street	06:14	07:05	08:26	08:41	09:06	09:16	09:36	09:56

Balbriggan		09:41		11:11		12:41		14:05
Skerries North Cliff Heights	09:00	09:51	10:36	11:21	12:06	12:51	13:36	14:15
Lower Abbey Street	10:30	11:20	12:05	12:50	13:35	14:20	15:05	15:45

Balbriggan		15:35		17:11	18:41			21:44
Skerries North Cliff Heights	15:00	15:45	16:36	17:21	18:51	19:40	20:25	21:54
Lower Abbey Street	16:41	17:21	18:10	18:57	20:20	21:01	21:47	23:17

Balbriggan	23:14
Skerries North Cliff Heights	23:24
Lower Abbey Street	00:40

Buses leave terminus at

Saturday

Balbriggan	05:44	06:44		09:41	11:11		12:41	14:11
Skerries North Cliff Heights	05:55	06:55	08:25	09:51	11:21	12:06	12:51	14:21
Lower Abbey Street	07:15	08:15	09:45	11:20	12:58	13:35	14:30	16:00

Balbriggan	15:41	17:11	18:45	20:14	21:44	23:14		
Skerries North Cliff Heights	15:51	17:21	18:55	20:25	21:55	23:25		
Lower Abbey Street	17:30	19:00	20:24	21:45	23:15	00:40		

Buses leave terminus at

Sunday

Balbriggan	07:44		11:11		12:41	14:11	15:41	17:11
Skerries North Cliff Heights	07:55	09:55	11:21	12:06	12:51	14:21	15:51	17:21
Lower Abbey Street	09:15	11:15	12:50	13:35	14:30	16:00	17:30	19:00

Balbriggan	18:44	20:14	21:44	23:14
Skerries North Cliff Heights	18:55	20:25	21:55	23:25
Lower Abbey Street	20:15	21:45	23:15	00:45

Balbriggan » 15mins » Skerries » 15mins » Rush » 10mins » Lusk » 20mins » Swords Village » 10mins » Airport Roundabout » 10mins » Omni Shopping Centre » 15mins » Drumcondra Rail Station » 12mins » Upr. Gardiner St. » 3mins » Lwr. Abbey St.

All times are off peak estimates

Fare Stages

75 25 Lwr. Abbey St.
76 24 Mountjoy Sq. / Dorset St. (North Fredrick St.)
77 23 Dorset St. (North Circular Rd.)
78 22 Drumcondra Rail Station
79 21 Drumcondra Rd. Upr. (Clonturk Park)
80 20 Swords Rd. (Griffith Ave.)
81 19 Swords Rd. (Collins Ave.)
88 12 Corner Collinstown Rd.
89 11 Kealy's Pub
90 10 Junction North Rd. to Airport
91 09 Swords Rd. (Coachman's Inn)
92 08 Swords Rd. (Kettles Lane)
93 07 Swords Rd. (Pinnock Hill House)
94 06 Swords Main St. (Arro)

82 18 Swords Rd. (Shanowen Rd.)
83 17 Swords Rd. (Lorcan Rd.)
84 16 Swords Rd. (Santry Ave.)
85 15 Swords Rd. (Santry Stadium)
86 14 Swords Rd. (Turnapin Lane)
87 13 Cloghran Service Station
95 05 Swords Main St.
96 04 Swords Main St. (The Big Tree)
97 03 Seatown Lane
98 02 Lissenhall
99 01 Hearse Rd.

Fare Information

Download fare chart for further information on stages and fares.

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

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Buses from/to
From Lower Abbey St. Towards Swords Manor
Operative Date: 13/12/2020
Version: 20.1

From Lwr. Abbey St. Towards Swords Manor

Sráid na Mainistreach Íochtarach , Sráid Ghairdinéir Uachtarach , Stáisiún Dhroim Conrach , Ionad Siopadóireachta Omni , Aerfort Bhaile Átha Cliath , Sráidbhaile Shoird , Mainéir Shoird

Buses leave terminus at:

Monday - Friday				Saturday				Sunday			
04:00	04:30	05:00	05:30	04:00	04:30	05:00	05:30	04:00	04:30	05:00	05:30
05:50	06:10	06:30	06:50	06:00	06:30	07:00	07:30	06:00	06:30	07:00	07:30
07:10	07:35	07:50	08:10	08:00	08:30	09:00	09:25	08:00	08:30	09:00	09:30
08:30	08:50	09:10	09:30	09:45	10:05	10:25	10:45	10:00	10:30	11:00	11:30
09:50	10:10	10:30	10:50	11:05	11:25	11:35	11:55	12:00	12:30	13:00	13:30
11:10	11:30	11:50	12:10	12:15	12:35	12:55	13:15	14:00	14:30	15:00	15:30
12:30	12:50	13:10	13:30	13:35	13:55	14:15	14:35	16:00	16:30	17:00	17:30
13:50	14:10	14:30	14:50	14:55	15:15	15:35	15:55	18:00	18:30	19:00	19:30
15:10	15:30	15:50	16:10	16:15	16:35	16:55	17:15	20:00	20:30	21:00	21:30
16:30	16:50	17:10	17:15	17:35	17:55	18:15	18:35	22:00	22:30	23:00	23:30
17:30	17:50	18:10	18:30	19:00	19:30	20:00	20:30	00:00	00:30	01:00	01:30
19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	02:00	02:30	03:00	03:30
21:00	21:30	22:00	22:30	23:00	23:30	00:00	00:30				
23:00	23:30	00:00	00:30	01:00	01:30	02:00	02:30				
01:00	01:30	02:00	02:30	03:00	03:30						
03:00	03:30										

Lwr. Abbey St. >> 3mins >> Upr. Gardiner St. >> 12mins >> Drumcondra Rail Station >> 15mins >> Omni Shopping Centre >> 10mins >> Dublin Airport >> 16mins >> Swords Village >> 12mins >> Swords Manor

All times are off peak estimates

From Swords Manor Towards Lwr. Abbey St.

Mainéir Shoird , Sráidbhaile Shoird , Aerfort Bhaile Átha Cliath , Ionad Siopadóireachta Omni , Stáisiún Dhroim Conrach , Sráid Ghairdinéir Uachtarach , Sráid na Mainistreach Íochtarach

Buses leave terminus at:

Monday - Friday				Saturday				Sunday			
04:00	04:30	05:00	05:30	04:00	04:30	05:00	05:30	04:00	04:30	05:00	05:30
06:00	06:15	06:25	06:35	06:00	06:30	07:00	07:30	06:00	06:30	07:00	07:20
06:55	07:00	07:10	07:25	08:00	08:30	09:00	09:30	07:45	08:15	08:45	09:15
07:45	08:05	08:25	08:50	10:00	10:20	10:40	11:00	09:45	10:15	10:45	11:15
09:10	09:30	09:50	10:10	11:20	11:40	12:00	12:20	11:45	12:15	12:45	13:15
10:30	10:50	11:10	11:30	12:40	13:00	13:20	13:40	13:45	14:15	14:45	15:15
11:50	12:10	12:30	12:50	14:00	14:20	14:40	15:00	15:45	16:15	16:45	17:15
13:10	13:30	13:50	14:10	15:20	15:40	16:00	16:20	17:45	18:15	18:45	19:15
14:30	14:50	15:10	15:30	16:40	17:00	17:20	17:40	19:45	20:15	20:45	21:15
15:35	15:50	16:10	16:30	18:00	18:30	19:00	19:30	21:45	22:00	22:30	23:00
16:50	17:10	17:30	17:40	20:00	20:30	21:00	21:30	23:30	00:00	00:30	01:00
18:00	18:20	18:40	19:00	22:00	22:30	23:00	23:30	01:30	02:00	02:30	03:00
19:20	19:40	20:00	20:30	00:00	00:30	01:00	01:30	03:30			
21:00	21:30	22:00	22:30	02:00	02:30	03:00	03:30				
23:00	23:30	00:00	00:30								
01:00	01:30	02:00	02:30								
03:00	03:30										

Swords Manor >> 12mins >> Swords Village >> 16mins >> Dublin Airport >> 10mins >> Omni Shopping Centre >> 15mins >> Drumcondra Rail Station >> 12mins >> Upr. Gardiner St. >> 3mins >> Lwr. Abbey St.

All times are off peak estimates

Fare Stages

75	25	Lwr. Abbey St.	87	13	Cloghran Service Station
76	24	Mountjoy Sq. / Dorset St. (North Fredrick St.)	88	12	Corner Collinstown Rd.
77	23	Dorset St. (North Circular Rd.)	89	11	Dublin Airport
78	22	Drumcondra Rail Station	90	10	North Rd. to Airport
79	21	Drumcondra Rd. Upr. (Clonturk Park)	91	09	Coachman's Inn
80	20	Drumcondra Rd. Upr. (Griffith Ave.)	92	08	Swords Rd. (Kettles Lane)
81	19	Swords Rd. (Collins Ave.)	93	07	Swords Rd. (Kilronan House)
82	18	Swords Rd. (Shanowen Rd.)	94	06	Swords Rd. (Pinnock Hill House)
83	17	Swords Rd. (Lorcan Rd.)	95	05	Swords Rd. (Malahide / Feltrim Roundabout)
84	16	Swords Rd. (Santry Ave.)	96	04	Swords Main St.
85	15	Swords Rd. (Santry Stadium)	97	03	Rathbeale Rd. (Shopping Centre)
86	14	Swords Rd. (Turnapin Lane)	98	02	Swords Manor

Route Information

Please note for safety reasons there is limited capacity for luggage on this service. Dublin Bus cannot guarantee that you will be able to board this service with luggage.

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

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41b

Buses from/to
From Lwr Abbey St. To Rolestown
Operative Date: 26/10/2021
Version: TT 20.1

From Lwr. Abbey St. Towards Rolestown

Sráid na Mainistreach Íochtarach , Sráid Ghairdinéir Uachtarach , Stáisiún Dhroim Conrach , Ionad Siopadóireachta Omni , Bóthar Shoird (ALSAA) , Sráidbhaile Shoird , Baile Róil

Buses leave terminus at:	Monday to Friday				Saturday				Sunday		
	06:20	11:35	16:25	18:35	08:20	11:20	17:00	23:15v	11:40	19:10	23:15v
	23:15v										

Route Variations
v Via River Valley

Lwr. Abbey St. >> 3mins >> Upr. Gardiner St. >> 12mins >> Drumcondra Rail Station >> 15mins >> Omni Shopping Centre >> 10mins >> Swords Rd. (ALSAA) >> 16mins >> Swords Village >> 16mins >> Rolestown

All times are off peak estimates

From Rolestown Towards Lwr. Abbey St.

Baile Róil , Sráidbhaile Shoird , Bóthar Shoird (ALSAA) , Ionad Siopadóireachta Omni , Stáisiún Dhroim Conrach , Sráid Ghairdinéir Uachtarach , Sráid na Mainistreach Íochtarach

Buses leave terminus at:	Monday to Friday				Saturday				Sunday	
	07:30	12:45	17:45	19:45	07:00	09:25	12:30	18:15	12:45	20:20

Rolestown >> 16mins >> Swords Village >> 16mins >> Swords Rd. (ALSAA) >> 10mins >> Omni Shopping Centre >> 15mins >> Drumcondra Rail Station >> 12mins >> Upr. Gardiner St. >> 3mins >> Lwr. Abbey St.

All times are off peak estimates

Fare Stages

75	25	Lwr. Abbey St.	92	08	Swords Rd. (Kettles Lane)
76	24	Mountjoy Sq. / Dorset St. (North Fredrick St.)	93	07	Swords Rd. (Kilronan House)
77	23	Dorset St. (North Circular Rd.)	94	06	Swords Rd. (Pinnock Hill House)
78	22	Drumcondra Rail Station	95	05	Swords Rd. (Malahide / Feltrim Roundabout)
79	21	Drumcondra Rd. Upr. (Clonturk Park)	96	04	Swords Main St.
80	20	Swords Rd. (Griffith Ave.)	97	03	Rathbeale Rd. (Shopping Centre)
81	19	Swords Rd. (Collins Ave.)	98	02	Holy Stud House
82	18	Swords Rd. (Shanowen Rd.)	99	01	Broadmeadows
83	17	Swords Rd. (Lorcan Rd.)	00	00	Kylemore House
84	16	Swords Rd. (Santry Ave.)	01	99	Rathbeale Cottages
85	15	Swords Rd. (Santry Stadium)	02	98	Rathbeale Hall
86	14	Swords Rd. (Turnapin Lane)	03	97	Rathbeale Cross
87	13	Cloghran Service Station	04	96	Lispopple (Lubber Wood)
88	12	Corner Collinstown Rd.	05	95	Lispopple Cross
89	11	Kealy's Pub	06	94	Rath Lane
90	10	North Rd. to Airport	07	93	Sandyhill (The Pump)
91	09	Coachman's Inn	08	92	Rolestown

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

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41c

Buses from/to
Lower Abbey St. Towards Swords Manor
Operative Date: 26/01/2020
Version: TT 20.1

From Lwr. Abbey St. Towards Swords Manor

Sráid na Mainistreach Íochtarach , Sráid Ghairdinéir Uachtarach , Stáisiún Dhroim Conrach , Ionad Siopadóireachta Omni , Kealy's Pub , Boroimhe , Glenn na hAbhann , Sráidbhaile Shoird , Mainéir Shoird

Buses leave terminus at:

Route Variations
*For a later departure serving River Valley please take Route 41b at 23.15

Monday to Friday				Saturday				Sunday			
07:00	07:20	08:00	08:20	06:15	07:15	07:45	08:15	09:15	09:45	10:15	10:45
08:40	09:00	09:20	09:40	08:45	09:15	09:35	09:55	11:15	11:45	12:15	12:45
10:00	10:20	10:40	11:00	10:15	10:35	10:55	11:15	13:15	13:45	14:15	14:45
11:20	11:40	12:00	12:20	11:45	12:05	12:25	12:45	15:15	15:45	16:15	16:45
12:40	13:00	13:20	13:40	13:05	13:25	13:45	14:05	17:15	17:45	18:15	18:45
14:00	14:20	14:40	15:00	14:25	14:45	15:05	15:25	19:15	19:45	20:15	20:45
15:20	15:40	16:00	16:20	15:45	16:05	16:25	16:45	21:15	21:45	22:15	22:45*
16:40	17:00	17:20	17:40	17:05	17:25	17:45	18:05				
18:00	18:20	18:45	19:15	18:25	18:45	19:15	19:45				
19:45	20:15	20:45	21:15	20:15	20:45	21:15	21:45				
21:45	22:15	22:45*		22:15	22:45*						

Lwr. Abbey St. >> 3mins >> Upr. Gardiner St. >> 12mins >> Drumcondra Rail Station >> 15mins >> Omni Shopping Centre >> 10mins >> Kealy's Pub >> 6mins >> Boroimhe >> 6mins >> River Valley >> 6mins >> Swords Village >> 10mins >> Swords Manor

All times are off peak estimates

From Swords Manor Towards Lwr. Abbey St.

Mainéir Shoird , Sráidbhaile Shoird , Glenn na hAbhann , Boroimhe , Kealy's Pub , Ionad Siopadóireachta Omni , Stáisiún Dhroim Conrach , Sráid Ghairdinéir Uachtarach , Sráid na Mainistreach Íochtarach

Buses leave terminus at:

Route Variations

v From CBS school via River Valley

Monday to Friday				Saturday				Sunday			
06:05v	06:20v	06:30	06:45	07:15	07:45	08:15	08:45	07:30	09:00	10:00	10:30
07:05	07:15	07:35	07:55	09:15	09:45	10:10	10:30	11:00	11:30	12:00	12:30
08:15	08:40	08:45v	09:20	10:50	11:10	11:30	11:50	13:00	13:30	14:00	14:30
09:40	10:00	10:20	10:40	12:10	12:30	12:50	13:10	15:00	15:30	16:00	16:30
11:00	11:20	11:40	12:00	13:30	13:50	14:10	14:30	17:00	17:30	18:00	18:30
12:20	12:40	13:00	13:20	14:50	15:10	15:30	15:50	19:00	19:30	20:00	20:30
13:40	14:00	14:20	14:40	16:10	16:30	16:50	17:10	21:00	21:30	22:15	22:45
15:00	15:20	15:40	16:00	17:30	17:50	18:15	18:45	23:15			
16:20	16:40	17:00	17:20	19:15	19:45	20:15	20:45				
17:50	18:10	18:30	18:50	21:15	21:45	22:15	22:45				
19:10	19:30	19:50	20:15	23:15							
20:45	21:15	21:45	22:15								
22:45	23:15										

Swords Manor >> 10mins >> Swords Village >> 6mins >> River Valley >> 6mins >> Boroimhe >> 6mins >> Kealy's Pub >> 10mins >> Omni Shopping Centre >> 15mins >> Drumcondra Rail Station >> 12mins >> Upr. Gardiner St. >> 3mins >> Lwr. Abbey St.

All times are off peak estimates

Fare Stages

75	25	Lwr. Abbey St.	
76	24	Mountjoy Sq. / Dorset St. (North Fredrick St.)	
77	23	Dorset St. (North Circular Rd.)	
78	22	Drumcondra Rail Station	
79	21	Drumcondra Rd. Upr. (Clonturk Park)	
80	20	Swords Rd. (Griffith Ave.)	
81	19	Swords Rd. (Collins Ave.)	
82	18	Swords Rd. (Shanowen Rd.)	
83	17	Swords Rd. (Lorcan Rd.)	
84	16	Swords Rd. (Santry Ave.)	
85	15	Swords Rd. (Santry Stadium)	
86	14	Swords Rd. (Turnapin Lane)	
87	13	Cloghran Service Station	
88	12	Corner Collinstown Rd.	
89	11	Kealy's Pub	
90	10	North Rd. to Airport	
91	09	Coachman's Inn	
92	08	Swords Rd. (Kettles Lane)	
93	07	Swords Rd. (Kilronan House)	
94	06	Swords Rd. (Boroimhe)	
95	05	River Valley	
96	04	Swords Main St.	
97	03	Swords Main St. (The Big Tree)	
98	02	Swords Manor	

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

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41d

Buses from/to
From Lower Abbey St. Towards Swords Business Park
Operative Date: 13/12/2020
Version: 20.1

From Lwr. Abbey St. Towards Swords Business Park

Sráid na Mainistreach Íochtarach , Stáisiún Dhroim Conrach , Ionad Siopadóireachta Omni , Kealy's Pub , Páirc Gnó Shoird

	Monday - Friday		Saturday	Sunday
Buses leave terminus at:	07:30	07:40	NO SERVICE	NO SERVICE

Lwr. Abbey St. >> 8mins >> Drumcondra Rail Station >> 15mins >> Omni Shopping Centre >> 10mins >> Kealy's Pub >> 15mins >> Swords Business Park

All times are off peak estimates

From Swords Business Park Towards Lwr. Abbey St.

Páirc Gnó Shoird , Kealy's Pub , Ionad Siopadóireachta Omni , Stáisiún Dhroim Conrach , Sráid na Mainistreach Íochtarach

	Monday - Friday		Saturday	Sunday
Buses leave terminus at:	09:00	17:20	NO SERVICE	NO SERVICE

Swords Business Park >> 15mins >> Kealy's Pub >> 10mins >> Omni Shopping Centre >> 15mins >> Drumcondra Rail Station >> 8mins >> Lwr. Abbey St.

All times are off peak estimates

Fare Stages

75 25 Lwr. Abbey St.

86 14 Swords Rd. (Turnapin Lane)

76	24	Mountjoy Sq. / Dorset St. (North Fredrick St.)	
77	23	Dorset St. (North Circular Rd.)	
78	22	Drumcondra Rail Station	
79	21	Drumcondra Rd. Upr. (Clonturk Park)	
80	20	Drumcondra Rd. Upr. (Griffith Ave.)	
81	19	Swords Rd. (Collins Ave.)	
82	18	Swords Rd. (Shanowen Rd.)	
83	17	Swords Rd. (Lorcan Rd.)	
84	16	Swords Rd. (Santry Ave.)	
85	15	Swords Rd. (Santry Stadium)	
87	13	Cloghran Service Station	
88	12	Corner Collinstown Rd.	
89	11	Kealy's Pub	
90	10	North Rd. to Airport	
91	09	Coachman's Inn	
92	08	Swords Rd. (Kettles Lane)	
93	07	Swords Rd. (Kilronan House)	
94	06	Swords Rd. (Pinnock Hill House)	
95	05	Swords Rd. (Malahide / Feltrim Roundabout)	
96	04	Swords Business Park	

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

Clontarf Station - DCU (The Helix)
via Beaumont Hospital

104 **Monday to Friday** **Valid from 29th of May 2022**

Service Number	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
Clontarf Station (4794)	06:47	07:47	08:50	10:00	11:00	12:00	13:00	14:00	15:00	16:05	17:05	18:05	19:05	20:10	21:10
Killester (608)	06:57	07:58	09:00	10:11	11:11	12:13	13:13	14:12	15:12	16:17	17:18	18:17	19:17	20:20	21:19
Beaumont Hospital (4597) arr	07:09	08:12	09:15	10:26	11:25	12:31	13:31	14:27	15:27	16:33	17:32	18:29	19:28	20:31	21:29
Beaumont Hospital (4597) dep	07:11	08:14	09:17	10:28	11:27	12:33	13:33	14:29	15:29	16:35	17:34	18:31	19:30	20:33	21:31
DCU Helix (7571)	07:23	08:28	09:31	10:42	11:42	12:48	13:48	14:45	15:45	16:50	17:49	18:45	19:44	20:46	21:44

DCU (The Helix) - Clontarf Station
via Beaumont Hospital

104 **Monday to Friday** **Valid from 29th of May 2022**

Service Number	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
DCU Helix (7571)	07:00	07:55	09:00	10:10	11:10	12:10	13:10	14:10	15:10	16:10	17:10	18:10	19:20	20:20	21:20
Beaumont Hospital (253) arr	07:15	08:10	09:15	10:24	11:25	12:26	13:25	14:26	15:26	16:28	17:27	18:24	19:34	20:33	21:31
Beaumont Hospital (253) dep	07:18	08:13	09:18	10:27	11:28	12:29	13:28	14:29	15:29	16:31	17:30	18:27	19:37	20:36	21:34
Killester (530)	07:29	08:24	09:29	10:38	11:39	12:40	13:40	14:42	15:40	16:44	17:41	18:39	19:47	20:45	21:42
Clontarf Station (4794)	07:42	08:36	09:40	10:49	11:50	12:51	13:52	14:53	15:52	16:57	17:54	18:50	19:59	20:55	21:52

Clontarf Station - DCU (The Helix)
via Beaumont Hospital

104 **Saturday** **Valid from 29th of May 2022**

Service Number	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
Clontarf Station (4794)	....	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:05	17:05	18:05	19:05	20:10	21:10
Killester (608)	....	08:10	09:10	10:10	11:11	12:12	13:12	14:13	15:12	16:18	17:18	18:16	19:16	20:21	21:19
Beaumont Hospital (4597) arr	....	08:18	09:22	10:25	11:26	12:31	13:30	14:29	15:26	16:30	17:30	18:28	19:28	20:32	21:28
Beaumont Hospital (4597) dep	07:05	08:21	09:25	10:28	11:29	12:34	13:33	14:32	15:29	16:33	17:33	18:31	19:31	20:34	21:30
DCU Helix (7571)	07:16	08:34	09:37	10:44	11:45	12:49	13:47	14:48	15:43	16:47	17:47	18:46	19:46	20:48	21:43

DCU (The Helix) - Clontarf Station
via Beaumont Hospital

104 **Saturday** **Valid from 29th of May 2022**

Service Number	104	104	104	104	104	104	104	104	104	104	104	104	104	104
DCU Helix (7571)	08:15	09:15	10:10	11:10	12:10	13:10	14:10	15:10	16:10	17:10	18:10	19:20	20:20	21:20
Beaumont Hospital (253) arr	08:30	09:29	10:24	11:25	12:25	13:25	14:26	15:25	16:28	17:23	18:24	19:34	20:34	21:32
Beaumont Hospital (253) dep	08:33	09:32	10:27	11:28	12:28	13:28	14:29	15:28	16:31	17:26	18:27	19:37	20:37	21:35
Killester (530)	08:41	09:40	10:35	11:40	12:40	13:39	14:40	15:39	16:44	17:37	18:36	19:46	20:46	21:43
Clontarf Station (4794)	08:52	09:51	10:47	11:52	12:52	13:52	14:52	15:51	16:56	17:47	18:47	19:57	20:56	21:53

Clontarf Station - DCU (The Helix)
via Beaumont Hospital

104 **Sunday** **Valid from 29th of May 2022**

Service Number	104	104	104	104	104	104	104	104	104	104	104	104	104
Clontarf Station (4794)	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:05	17:05	18:05	19:05	20:10	21:10
Killester (608)	09:09	10:09	11:10	12:11	13:11	14:12	15:11	16:17	17:16	18:16	19:16	20:19	21:19
Beaumont Hospital (4597) arr	09:20	10:20	11:25	12:23	13:24	14:24	15:24	16:29	17:29	18:29	19:26	20:29	21:29
Beaumont Hospital (4597) dep	09:23	10:23	11:28	12:26	13:27	14:27	15:27	16:32	17:32	18:32	19:29	20:32	21:32
DCU Helix (7571)	09:35	10:35	11:42	12:42	13:44	14:42	15:42	16:47	17:46	18:46	19:42	20:45	21:44

DCU (The Helix) - Clontarf Station
via Beaumont Hospital

104 **Sunday** **Valid from 29th of May 2022**

Service Number	104	104	104	104	104	104	104	104	104	104	104	104	104
DCU Helix (7571)	09:15	10:10	11:10	12:10	13:10	14:10	15:10	16:10	17:10	18:10	19:20	20:20	21:20
Beaumont Hospital (253) arr	09:26	10:22	11:24	12:23	13:25	14:24	15:23	16:23	17:23	18:23	19:35	20:32	21:32
Beaumont Hospital (253) dep	09:28	10:25	11:27	12:26	13:28	14:27	15:26	16:26	17:26	18:26	19:38	20:35	21:34
Killester (530)	09:37	10:34	11:37	12:36	13:40	14:38	15:37	16:37	17:37	18:36	19:48	20:44	21:43
Clontarf Station (4794)	09:48	10:45	11:47	12:50	13:52	14:51	15:51	16:51	17:50	18:47	19:59	20:56	21:52

DCU (The Helix) - Lady's Well Road (via Blanchardstown Shopping Centre) 220
DCU (The Helix) - Lady's Well Road (via Coolmine Fire Station) 220A Monday to Friday Valid from 29th of May 2022

Service Number	220	220	220A	220	220	220	220	220	220	220	220	220	220	220	220	220
DCU Helix (7571)	....	07:34	**08:50**	09:50	10:55	11:55	12:55	13:55	15:00	16:00	17:00	18:05	18:55	19:50	20:50	21:50
Shangan Road (4686)	06:40	07:41	**09:02**	09:58	11:03	12:04	13:04	14:04	15:09	16:09	17:09	18:13	19:03	19:58	20:57	21:57
Belclare Park (105)	06:46	07:46	**09:10**	10:04	11:10	12:11	13:11	14:10	15:15	16:15	17:15	18:20	19:08	20:03	21:03	22:02
St Canice's GNS (979)	06:51	07:53	**09:20**	10:10	11:17	12:19	13:19	14:19	15:23	16:23	17:24	18:27	19:14	20:09	21:09	22:08
Ratoath Road (1603)	07:03	08:03	**09:34**	10:24	11:31	12:36	13:33	14:34	15:37	16:37	17:38	18:40	19:25	20:21	21:19	22:18
Cappagh Cross (1580)	07:10	08:10	**09:41**	10:30	11:38	12:43	13:43	14:44	15:46	16:45	17:47	18:46	19:31	20:26	21:25	22:23
Corporate Park 2 (7343)	07:16	08:16	**09:47**	10:36	11:44	12:48	13:50	14:51	15:52	16:51	17:53	18:52	19:37	20:32	21:31	22:29
Connolly Hospital (7297)	07:25	08:24	**09:56**	10:44	11:54	12:57	14:00	15:00	16:01	17:00	18:02	19:00	19:45	20:40	21:39	22:37
Blanchardstown SC (7026) arr	07:34	08:33	....	10:57	12:09	13:13	14:15	15:15	16:17	17:17	18:16	19:13	19:57	20:51	21:48	22:44
Blanchardstown SC (7026) dep	07:39	08:38	....	11:02	12:14	13:18	14:20	15:20	16:22	17:22	18:21	19:18	20:02	20:56	21:52	22:46
Coolmine Fire Stn (1844)	....	....	**10:05**	....	....	....	....	....	....	....	....	....	....	....	....	....
St Ciaran's Church (1860)	07:44	08:43	**10:11**	11:08	12:20	13:24	14:27	15:27	16:29	17:31	18:31	19:25	20:07	21:01	21:57	22:52
Parslickstown Ave (1827)	07:53	08:52	**10:22**	11:18	12:31	13:35	14:39	15:39	16:42	17:44	18:45	19:36	20:17	21:11	22:07	23:01

Lady's Well Road - DCU (The Helix) via Blanchardstown Shopping Centre 220
Lady's Well Road - DCU (The Helix) via Coolmine Fire Station 220A Monday to Friday Valid from 29th of May 2022

Service Number	220	220	220	220	220	220	220	220	220	220A	220	220	220	220	220	220
Lady's Well Road (1828)	06:15	07:03	08:10	09:28	10:28	11:28	12:18	13:18	14:18	**15:20**	16:18	17:28	18:40	19:50	21:10	22:10
St Ciaran's Church (1877)	06:23	07:11	08:19	09:38	10:39	11:39	12:30	13:29	14:30	**15:33**	16:29	17:39	18:50	20:00	21:19	22:19
Blanchardstown SC (4747) arr	06:33	07:20	08:27	09:48	10:50	11:50	12:41	13:40	14:40	....	16:40	17:51	19:00	20:06	21:23	22:23
Blanchardstown SC (4747) dep	06:38	07:22	08:32	09:53	10:55	11:55	12:46	13:45	14:45	....	16:45	17:56	19:05	20:11	21:25	22:25
Porters Road (1884)	....	....	....	....	....	....	....	....	....	**15:41**	....	....	....	....	....	....
Connolly Hospital (7298)	06:46	07:30	08:41	10:02	11:06	12:06	12:57	13:57	14:58	**15:51**	16:57	18:08	19:13	20:19	21:32	22:31
Corporate Park 2 (7342)	06:56	07:41	08:51	10:12	11:16	12:17	13:09	14:07	15:08	**16:02**	17:07	18:18	19:22	20:28	21:41	22:39
Cappagh Cross (1581)	07:03	07:47	08:57	10:18	11:22	12:22	13:14	14:13	15:13	**16:09**	17:13	18:24	19:27	20:33	21:46	22:44
Ratoath Road (1603)	07:09	07:54	09:03	10:26	11:30	12:30	13:22	14:22	15:22	**16:18**	17:22	18:32	19:34	20:39	21:53	22:50
Finglas Village (4592)	07:18	08:04	09:13	10:37	11:42	12:43	13:34	14:34	15:33	**16:32**	17:34	18:45	19:44	20:49	22:01	22:59
Crannogue Road (107)	07:24	08:11	09:20	10:47	11:51	12:53	13:43	14:43	15:43	**16:42**	17:42	18:51	19:51	20:56	22:08	23:06
Shangan Road (4686)	07:30	08:17	09:26	10:54	11:58	13:00	13:49	14:49	15:49	**16:50**	17:48	18:59	19:58	21:02	22:13	23:11
DCU Helix (7571)	07:36	08:23	09:32	11:02	12:05	13:07	13:56	14:56	15:56	**17:00**	17:55	19:06	20:04	21:08	....	....

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

DCU (The Helix) - Lady's Well Road (via Blanchardstown Shopping Centre) 220 Saturday Valid from 29th of May 2022

Service Number	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
DCU Helix (7571)	....	07:20	08:45	09:50	10:55	11:55	12:55	13:55	14:55	15:55	17:00	18:00	18:55	19:50	20:50	21:50
Shangan Road (4686)	06:50	07:27	08:52	09:58	11:03	12:03	13:03	14:03	15:03	16:03	17:08	18:08	19:02	19:57	20:57	21:55
Belclare Park (105)	06:53	07:32	08:57	10:03	11:09	12:09	13:11	14:09	15:11	16:10	17:14	18:14	19:07	20:02	21:02	22:00
St Canice's GNS (979)	06:57	07:38	09:03	10:10	11:17	12:18	13:20	14:18	15:18	16:17	17:21	18:21	19:13	20:08	21:08	22:06
Ratoath Road (1603)	07:06	07:48	09:15	10:23	11:32	12:33	13:35	14:33	15:33	16:30	17:34	18:34	19:24	20:19	21:19	22:16
Cappagh Cross (1580)	07:13	07:54	09:21	10:29	11:38	12:40	13:44	14:43	15:40	16:36	17:40	18:40	19:30	20:24	21:24	22:22
Corporate Park 2 (7343)	07:19	07:59	09:27	10:35	11:43	12:45	13:50	14:48	15:46	16:42	17:45	18:45	19:36	20:30	21:30	22:27
Connolly Hospital (7297)	07:27	08:07	09:35	10:43	11:53	12:55	14:01	14:57	15:55	16:51	17:54	18:54	19:44	20:38	21:38	22:35
Blanchardstown SC (7026) arr	07:34	08:15	09:48	10:54	12:05	13:12	14:14	15:12	16:08	17:06	18:07	19:07	19:55	20:47	21:47	22:42
Blanchardstown SC (7026) dep	07:36	08:17	09:53	11:00	12:10	13:17	14:19	15:17	16:13	17:11	18:12	19:12	20:00	20:52	21:52	22:44
St Ciaran's Church (1860)	07:41	08:21	09:59	11:07	12:17	13:23	14:29	15:26	16:23	17:18	18:19	19:19	20:07	20:57	21:57	22:49
Parslickstown Ave (1827)	07:50	08:31	10:09	11:17	12:29	13:35	14:41	15:38	16:35	17:30	18:31	19:31	20:17	21:07	22:07	22:59

Lady's Well Road - DCU (The Helix) via Blanchardstown Shopping Centre 220 Saturday Valid from 29th of May 2022

Service Number	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Lady's Well Road (1828)	06:55	07:55	08:37	09:36	10:26	11:27	12:27	13:27	14:33	15:33	16:32	17:42	18:57	19:52	21:10	22:10
St Ciaran's Church (1877)	07:04	08:03	08:45	09:45	10:37	11:39	12:39	13:38	14:44	15:44	16:43	17:53	19:06	20:01	21:19	22:18
Blanchardstown SC (4747) arr	07:10	08:09	08:53	09:56	10:47	11:48	12:50	13:49	14:55	15:54	16:53	18:03	19:17	20:07	21:24	22:22
Blanchardstown SC (4747) dep	07:12	08:11	08:58	10:01	10:52	11:53	12:55	13:54	15:00	15:59	16:58	18:08	19:22	20:12	21:29	22:24
Connolly Hospital (7298)	07:19	08:18	09:07	10:09	11:05	12:06	13:06	14:07	15:13	16:11	17:10	18:18	19:29	20:19	21:36	22:31
Corporate Park 2 (7342)	07:28	08:27	09:16	10:17	11:15	12:16	13:17	14:17	15:23	16:20	17:19	18:27	19:38	20:28	21:45	22:40
Cappagh Cross (1581)	07:33	08:32	09:22	10:23	11:20	12:21	13:21	14:23	15:28	16:25	17:24	18:32	19:42	20:32	21:50	22:45
Ratoath Road (1603)	07:40	08:39	09:29	10:30	11:28	12:29	13:29	14:31	15:35	16:33	17:32	18:40	19:49	20:39	21:56	22:50
Finglas Village (4592)	07:49	08:49	09:39	10:43	11:41	12:41	13:42	14:45	15:47	16:45	17:44	18:52	19:59	20:50	22:05	23:01
Crannogue Road (107)	07:55	08:55	09:47	10:52	11:50	12:49	13:52	14:54	15:56	16:53	17:52	19:00	20:06	20:56	22:11	23:07
Shangan Road (4686)	07:59	09:00	09:53	10:58	11:56	12:55	13:58	14:59	16:01	17:00	17:59	19:07	20:13	21:02	22:16	23:12
DCU Helix (7571)	08:05	09:06	10:00	11:06	12:03	13:02	14:05	15:06	16:08	17:07	18:06	19:14	20:19	21:09	....	....

***220A - No Saturday Service**

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

DCU (The Helix) - Lady's Well Road (via Blanchardstown Shopping Centre) 220 Sunday Valid from 29th of May 2022

Service Number	220	220	220	220	220	220	220	220	220	220	220	220	220	220
DCU Helix (7571)	....	09:50	10:55	11:55	12:55	13:55	14:55	15:55	17:00	18:00	18:55	19:50	20:50	21:50
Shangan Road (4686)	08:25	09:57	11:02	12:02	13:03	14:03	15:03	16:03	17:08	18:08	19:02	19:58	20:56	21:56
Belclare Park (105)	08:30	10:02	11:07	12:07	13:08	14:08	15:08	16:08	17:13	18:14	19:07	20:03	21:01	22:01
St Canice's GNS (979)	08:36	10:08	11:13	12:15	13:14	14:15	15:15	16:15	17:20	18:21	19:13	20:09	21:06	22:06
Ratoath Road (1603)	08:46	10:18	11:25	12:27	13:27	14:27	15:27	16:27	17:32	18:32	19:25	20:19	21:18	22:17
Cappagh Cross (1580)	08:52	10:24	11:31	12:34	13:34	14:34	15:34	16:33	17:38	18:38	19:30	20:25	21:24	22:22
Corporate Park 2 (7343)	08:56	10:29	11:36	12:41	13:42	14:40	15:40	16:38	17:43	18:43	19:35	20:30	21:29	22:28
Connolly Hospital (7297)	09:04	10:37	11:46	12:50	13:51	14:49	15:49	16:47	17:52	18:53	19:44	20:39	21:36	22:35
Blanchardstown SC (7026) arr	09:12	10:46	12:00	13:05	14:07	15:03	16:03	17:03	18:08	19:05	19:54	20:49	21:45	22:43
Blanchardstown SC (7026) dep	09:14	10:51	12:05	13:10	14:12	15:08	16:08	17:08	18:12	19:10	19:59	20:54	21:45	22:43
St Ciaran's Church (1860)	09:19	10:57	12:12	13:18	14:20	15:15	16:15	17:14	18:18	19:17	20:05	21:00	21:51	22:47
Parslickstown Ave (1827)	09:29	11:08	12:21	13:30	14:32	15:28	16:28	17:27	18:31	19:29	20:15	21:10	22:00	22:56

Lady's Well Road - DCU (The Helix) via Blanchardstown Shopping Centre 220 Sunday Valid from 29th of May 2022

Service Number	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Lady's Well Road (1828)	08:50	09:35	10:28	11:28	12:28	13:28	14:33	15:33	16:33	17:43	18:53	19:53	21:10	22:10
St Ciaran's Church (1877)	08:59	09:45	10:37	11:39	12:39	13:39	14:44	15:43	16:43	17:54	19:02	20:02	21:17	22:17
Blanchardstown SC (4747) arr	09:06	09:56	10:46	11:49	12:51	13:49	14:55	15:54	16:54	18:03	19:13	20:12	21:26	22:26
Blanchardstown SC (4747) dep	09:08	10:01	10:51	11:54	12:56	13:54	15:00	15:59	16:59	18:08	19:18	20:17	21:31	22:30
Connolly Hospital (7298)	09:16	10:08	11:01	12:04	13:05	14:04	15:11	16:10	17:09	18:18	19:25	20:22	21:37	22:36
Corporate Park 2 (7342)	09:24	10:17	11:11	12:13	13:15	14:14	15:20	16:20	17:19	18:28	19:34	20:30	21:46	22:45
Cappagh Cross (1581)	09:29	10:22	11:16	12:18	13:21	14:18	15:25	16:25	17:24	18:33	19:39	20:35	21:50	22:49
Ratoath Road (1603)	09:35	10:28	11:24	12:26	13:28	14:27	15:33	16:31	17:31	18:40	19:46	20:42	21:56	22:55
Finglas Village (4592)	09:44	10:38	11:35	12:38	13:41	14:37	15:44	16:42	17:42	18:52	19:56	20:52	22:05	23:04
Crannogue Road (107)	09:50	10:44	11:44	12:46	13:48	14:45	15:53	16:50	17:50	19:01	20:02	20:58	22:11	23:10
Shangan Road (4686)	09:54	10:50	11:50	12:52	13:55	14:50	15:58	16:56	17:56	19:08	20:09	21:05	22:16	23:15
DCU Helix (7571)	10:01	10:59	11:59	13:00	14:02	14:59	16:06	17:03	18:03	19:15	20:17	21:13	....	....

***220A - No Sunday Service**

Table No.

DUBLIN - DROGHEDA 101

MONDAY TO FRIDAY

ROUTE	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Drogheda (Bus Station)	04:00	05:00	05:20	05:40	06:00	06:20	06:40	07:00	07:20	07:40	08:00	08:30	09:00	09:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:20	13:40	14:00	14:20	14:40	15:00	15:20	15:40	16:00	16:30	16:50	17:10	17:30	18:00	18:30	19:00	20:00	21:00	22:00	23:00	00:00[+1]
Drogheda (Opp St Marys Hospital)	04:03	05:03	05:23	05:43	06:03	06:23	06:44	07:04	07:24	07:44	08:04	08:34	09:04	09:34	10:04	10:34	11:04	11:34	12:04	12:34	13:04	13:24	13:44	14:04	14:24	14:44	15:04	15:24	15:44	16:04	16:34	16:54	17:14	17:34	18:04	18:33	19:03	20:03	21:03	22:03	23:03	00:03[+1]
Drogheda (Rail Station)	04:04	05:04	05:24	05:44	06:04	06:24	06:45	07:05	07:25	07:45	08:05	08:35	09:05	09:35	10:05	10:35	11:05	11:35	12:05	12:35	13:05	13:25	13:45	14:05	14:25	14:45	15:05	15:25	15:45	16:05	16:35	16:55	17:15	17:35	18:05	18:34	19:04	20:04	21:04	22:04	23:04	00:04[+1]
Drogheda (Dublin Rd Deepforde)	04:07	05:07	05:27	05:47	06:07	06:27	06:48	07:08	07:28	07:48	08:08	08:38	09:08	09:38	10:08	10:38	11:08	11:38	12:08	12:38	13:08	13:28	13:48	14:08	14:28	14:48	15:08	15:28	15:48	16:08	16:38	16:58	17:18	17:38	18:08	18:37	19:07	20:07	21:07	22:07	23:07	00:07[+1]
Drogheda (Dublin Rd Moorehall Lodge)	04:08	05:08	05:28	05:48	06:08	06:28	06:50	07:10	07:30	07:50	08:10	08:40	09:10	09:40	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:30	13:50	14:10	14:30	14:50	15:10	15:30	15:50	16:10	16:40	17:00	17:20	17:40	18:10	18:39	19:09	20:09	21:09	22:09	23:09	00:08[+1]
Julianstown (The Lime Kiln)	04:11	05:11	05:31	05:51	06:11	06:31	06:55	07:17	07:37	07:57	08:17	08:47	09:15	09:43	10:13	10:43	11:13	11:43	12:13	12:43	13:13	13:33	13:53	14:13	14:33	14:53	15:13	15:33	15:53	16:13	16:43	17:03	17:23	17:43	18:13	18:42	19:12	20:12	21:12	22:12	23:12	00:11[+1]
Whitecross (School)	04:12	05:12	05:32	05:52	06:12	06:32	06:56	07:19	07:39	07:59	08:19	08:49	09:16	09:44	10:14	10:44	11:14	11:44	12:14	12:44	13:14	13:34	13:54	14:14	14:34	14:54	15:14	15:34	15:54	16:14	16:44	17:04	17:24	17:44	18:14	18:43	19:13	20:13	21:13	22:13	23:13	00:12[+1]
Mosney Cross (Southbound)	04:14	05:14	05:34	05:54	06:14	06:34	06:57	07:21	07:41	08:01	08:21	08:51	09:17	09:45	10:15	10:45	11:15	11:45	12:15	12:45	13:15	13:35	13:55	14:15	14:35	14:55	15:15	15:35	15:55	16:15	16:45	17:05	17:25	17:45	18:15	18:44	19:14	20:14	21:14	22:14	23:14	00:14[+1]
Bellewstown Cross (Southbound)	04:15	05:15	05:35	05:55	06:15	06:35	06:58	07:22	07:42	08:02	08:22	08:52	09:18	09:46	10:16	10:46	11:16	11:46	12:16	12:46	13:16	13:36	13:56	14:16	14:36	14:56	15:16	15:36	15:56	16:16	16:46	17:06	17:26	17:46	18:16	18:45	19:15	20:15	21:15	22:15	23:15	00:15[+1]
Opp Huntsman Inn	04:17	05:17	05:37	05:57	06:17	06:37	07:00	07:24	07:44	08:04	08:24	08:54	09:20	09:48	10:18	10:48	11:18	11:48	12:18	12:48	13:18	13:38	13:58	14:18	14:38	14:58	15:18	15:38	15:58	16:18	16:48	17:08	17:28	17:48	18:18	18:47	19:17	20:17	21:17	22:17	23:17	00:17[+1]
Gormanstown Cross (Southbound)	04:18	05:18	05:38	05:58	06:18	06:38	07:01	07:25	07:45	08:05	08:25	08:55	09:21	09:49	10:19	10:49	11:19	11:49	12:19	12:49	13:19	13:39	13:59	14:19	14:39	14:59	15:19	15:39	15:59	16:19	16:49	17:09	17:29	17:49	18:19	18:48	19:18	20:18	21:18	22:18	23:18	00:18[+1]
Balbriggan (Opposite Garda Station)	04:21	05:21	05:41	06:01	06:21	06:42	07:05	07:29	07:49	08:09	08:29	08:58	09:25	09:53	10:23	10:53	11:23	11:53	12:23	12:53	13:23	13:43	14:03	14:23	14:43	15:03	15:23	15:43	16:03	16:23	16:53	17:13	17:33	17:53	18:23	18:51	19:21	20:21	21:21	22:21	23:21	00:21[+1]
Balbriggan (Bath Road)	04:23	05:23	05:43	06:03	06:23	06:44	07:07	07:31	07:51	08:11	08:31	09:00	09:27	09:55	10:25	10:55	11:25	11:55	12:25	12:55	13:25	13:45	14:05	14:25	14:45	15:05	15:25	15:45	16:05	16:25	16:55	17:15	17:35	17:55	18:25	18:53	19:23	20:23	21:23	22:23	23:23	00:23[+1]
Balbriggan (Apache Pizza)	04:24	05:24	05:44	06:04	06:24	06:45	07:08	07:32	07:52	08:12	08:32	09:01	09:28	09:56	10:26	10:56	11:26	11:56	12:26	12:56	13:26	13:46	14:06	14:26	14:46	15:06	15:26	15:46	16:06	16:26	16:56	17:16	17:36	17:56	18:26	18:54	19:24	20:24	21:24	22:24	23:24	00:24[+1]
Balbriggan (Bank of Ireland)	04:26	05:26	05:46	06:06	06:26	06:47	07:11	07:35	07:55	08:15	08:35	09:04	09:31	09:59	10:29	10:59	11:29	11:59	12:29	12:59	13:29	13:49	14:09	14:29	14:49	15:09	15:29	15:49	16:09	16:29	16:59	17:19	17:39	17:59	18:29	18:56	19:26	20:26	21:26	22:26	23:26	00:26[+1]
Peter & Paul Church	04:28	05:28	05:48	06:08	06:28	06:49	07:13	07:37	07:57	08:17	08:37	09:06	09:33	10:01	10:31	11:01	11:31	12:01	12:31	13:01	13:31	13:51	14:11	14:31	14:51	15:11	15:31	15:51	16:11	16:31	17:01	17:21	17:41	18:01	18:31	18:58	19:28	20:28	21:28	22:28	23:28	00:28[+1]
Balbriggan (Wavin)	04:28	05:28	05:48	06:08	06:28	06:49	07:14	07:37	07:57	08:17	08:37	09:07	09:34	10:02	10:32	11:02	11:32	12:02	12:32	13:02	13:32	13:52	14:12	14:32	14:52	15:12	15:32	15:52	16:12	16:32	17:02	17:22	17:42	18:02	18:32	18:59	19:29	20:29	21:29	22:29	23:29	00:28[+1]
Balbriggan (Golf Club)	04:29	05:29	05:49	06:09	06:29	06:50	07:15	07:38	07:58	08:18	08:38	09:08	09:35	10:03	10:33	11:03	11:33	12:03	12:33	13:03	13:33	13:53	14:13	14:33	14:53	15:13	15:33	15:53	16:13	16:33	17:03	17:23	17:43	18:03	18:33	19:00	19:30	20:30	21:30	22:30	23:30	00:29[+1]
Balrothery (Cedarwood Lodge)	04:30	05:30	05:50	06:10	06:30	06:51	07:16	07:39	07:59	08:19	08:39	09:09	09:36	10:04	10:34	11:04	11:34	12:04	12:34	13:04	13:34	13:54	14:14	14:34	14:54	15:14	15:34	15:54	16:14	16:34	17:04	17:24	17:44	18:04	18:34	19:01	19:31	20:31	21:31	22:31	23:31	00:30[+1]
Balrothery (Balrothery Inn)	04:31	05:31	05:51	06:11	06:31	06:52	07:17	07:40	08:00	08:20	08:40	09:10	09:37	10:05	10:35	11:05	11:35	12:05	12:35	13:05	13:35	13:55	14:15	14:35	14:55	15:15	15:35	15:55	16:15	16:35	17:05	17:25	17:45	18:05	18:35	19:02	19:32	20:32	21:32	22:32	23:32	00:31[+1]
Opp Courtlough	04:33	05:33	05:53	06:13	06:33	06:54	07:19	07:42	08:02	08:22	08:42	09:12	09:39	10:07	10:37	11:07	11:37	12:07	12:37	13:07	13:37	13:57	14:17	14:37	14:57	15:17	15:37	15:57	16:17	16:37	17:07	17:27	17:47	18:07	18:37	19:04	19:34	20:34	21:34	22:34	23:34	00:33[+1]
Opp Grooms	04:34	05:34	05:54	06:14	06:34	06:55	07:20	07:43	08:03	08:23	08:43	09:13	09:40	10:08	10:38	11:08	11:38	12:08	12:38	13:08	13:38	13:58	14:18	14:38	14:58	15:18	15:38	15:58	16:18	16:38	17:08	17:28	17:48	18:08	18:38	19:05	19:35	20:35	21:35	22:35	23:35	00:34[+1]
Opp Five Roads	04:36	05:36	05:56	06:16	06:36	06:57	07:22	07:45	08:05	08:25	08:45	09:15	09:42	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:00	14:20	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:10	17:30	17:50	18:10	18:40	19:07	19:37	20:37	21:37	22:37	23:37	00:36[+1]
Ballough (Man of War)	04:38	05:38	05:58	06:18	06:38	06:59	07:24	07:47	08:07	08:27	08:47	09:17	09:44	10:12	10:42	11:12	11:42	12:12	12:42	13:12	13:42	14:02	14:22	14:42	15:02	15:22	15:42	16:02	16:22	16:42	17:12	17:32	17:52	18:12	18:42	19:09	19:39	20:39	21:39	22:39	23:39	00:38[+1]
Turvey Avenue	D 04:42	D 05:42	D 06:02	D 06:22	D 06:42	D 07:03	D 07:28	D 07:51	D 08:11	D 08:31	D 08:51	D 09:21	D 09:48	D 10:16	D 10:46	D 11:16	D 11:46	D 12:16	D 12:46	D 13:16	D 13:46	D 14:06	D 14:26	D 14:46	D 15:06	D 15:26	D 15:46	D 16:06	D 16:26	D 16:46	D 17:16	D 17:36	D 17:56	D 18:16	D 18:46	D 19:13	D 19:43	D 20:43	D 21:43	D 22:43	D 23:43	D 00:42[+1]
Balheary Park	D 04:46	D 05:46	D 06:06	D 06:26	D 06:46	D 07:07	D 07:32	D 07:56	D 08:16	D 08:36	D 08:56	D 09:26	D 09:52	D 10:21	D 10:51	D 11:21	D 11:51	D 12:21	D 12:51	D 13:21	D 13:51	D 14:11	D 14:31	D 14:51	D 15:11	D 15:31	D 15:51	D 16:11	D 16:31	D 16:51	D 17:21	D 17:41	D 18:01	D 18:21	D 18:51	D 19:17	D 19:47	D 20:47	D 21:47	D 22:47	D 23:47	D 00:46[+1]
Seatown Road	D 04:47	D 05:47	D 06:07	D 06:27	D 06:47	D 07:08	D 07:33	D 07:58	D 08:18	D 08:38	D 08:58	D 09:28	D 09:53	D 10:22	D 10:52	D 11:22	D 11:52	D 12:22	D 12:52	D 13:22	D 13:52	D 14:12	D 14:32	D 14:52	D 15:12	D 15:32	D 15:52	D 16:12	D 16:32	D 16:52	D 17:22	D 17:42	D 18:02	D 18:22	D 18:52	D 19:18	D 19:48	D 20:48	D 21:48	D 22:48	D 23:48	D 00:47[+1]
N1 Business Park	D 04:51	D 05:51	D 06:11	D 06:31	D 06:51	D 07:13	D 07:38	D 08:03	D 08:23	D 08:43	D 09:03	D 09:33	D 09:58	D 10:27	D 10:57	D 11:27	D 11:57	D 12:27	D 12:57	D 13:27	D 13:57	D 14:17	D 14:37	D 14:57	D 15:17	D 15:37	D 15:57	D 16:17	D 16:37	D 16:57	D 17:27	D 17:47	D 18:07	D 18:27	D 18:57	D 19:22	D 19:52	D 20:52	D 21:52	D 22:52	D 23:52	D 00:51[+1]
Dublin Airport (Terminal Two)	D 04:56	D 05:56	D 06:16	D 06:36	D 06:56	D 07:18	D 07:44	D 08:10	D 08:30	D 08:50	D 09:10	D 09:40	D 10:04	D 10:33	D 11:03	D 11:33	D 12:03	D 12:33	D 13:03	D 13:33	D 14:03	D 14:23	D 14:43	D 15:03	D 15:23	D 15:43	D 16:03	D 16:23	D 16:43	D 17:03	D 17:33	D 17:53	D 18:13	D 18:33	D 19:03	D 19:27	D 19:57	D 20:57	D 21:57	D 22:57	D 23:57	D 00:56[+1]
Omni Park SC	D 05:06	D 06:06	D 06:26	D 06:46	D 07:06	D 07:29	D 07:55	D 08:22	D 08:42	D 09:02	D 09:22	D 09:51	D 10:15	D 10:43	D 11:13	D 11:43	D 12:13	D 12:43	D 13:13	D 13:43	D 14:13	D 14:33	D 14:53	D 15:13	D 15:33	D 15:53	D 16:13	D 16:33	D 16:53	D 17:13	D 17:43	D 18:03	D 18:23	D 18:43	D 19:13	D 19:38	D 20:08	D 21:08	D 22:08	D 23:08	D 00:08[+1]	D 01:06[+1]
Whitehall Church	D 05:08	D 06:08	D 06:28	D 06:48	D 07:08	D 07:32	D 07:58	D 08:26	D 08:46	D 09:06	D 09:26	D 09:54	D 10:18	D 10:47	D 11:17	D 11:47	D 12:17	D 12:47	D 13:17	D 13:47	D 14:17	D 14:37	D 14:57	D 15:17	D 15:37	D 15:57	D 16:17	D 16:37	D 16:57	D 17:17	D 17:47	D 18:07	D 18:27	D 18:47	D 19:17	D 19:40	D 20:10	D 21:10	D 22:10	D 23:10	D 00:10[+1]	D 01:08[+1]
The Village	D 05:10	D 06:10	D 06:30	D 06:50	D 07:10	D 07:34	D 08:02	D 08:31	D 08:51	D 09:11	D 09:31	D 09:58	D 10:22	D 10:52	D 11:22	D 11:52	D 12:22	D 12:52	D 13:22	D 13:52	D 14:22	D 14:42	D 15:02	D 15:22	D 15:42	D 16:02	D 16:22	D 16:42	D 17:02	D 17:22	D 17:52	D 18:12	D 18:32	D 18:52	D 19:22	D 19:42	D 20:12	D 21:12	D 22:12	D 23:12	D 00:12[+1]	D 01:10[+1]
Fitzroy Avenue	D 05:14	D 06:14	D 06:34	D 06:54	D 07:14	D 07:37	D 08:07	D 08:36	D 08:56	D 09:16	D 09:36	D 10:03	D 10:27	D 10:56	D 11:26	D 11:56	D 12:26	D 12:56	D 13:26	D 13:56	D 14:26	D 14:46	D 15:06	D 15:26	D 15:46	D 16:06	D 16:26	D 16:46	D 17:06	D 17:26	D 17:56	D 18:16	D 18:36	D 18:56	D 19:26	D 19:45	D 20:15	D 21:15	D 22:15	D 23:15	D 00:15[+1]	D 01:14[+1]
O'Connell St Upper	D 05:18	D 06:18	D 06:38	D 06:58	D 07:18	D 07:41	D 08:13	D 08:44	D 09:04	D 09:24	D 09:44	D 10:10	D 10:33	D 11:02	D 11:32	D 12:02	D 12:32	D 13:02	D 13:32	D 14:02	D 14:32	D 14:52	D 15:12	D 15:32	D 15:52	D 16:12	D 16:32	D 16:52	D 17:12	D 17:32	D 18:02	D 18:22	D 18:42	D 19:02	D 19:32	D 19:49	D 20:19	D 21:19	D 22:19	D 23:19	D 00:19[+1]	D 01:18[+1]
Dublin Busaras	05:25	06:25	06:45	07:05	07:25	07:51	08:23	08:54	09:14	09:34	09:54	10:17	10:43	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:00	17:20	17:40	18:10	18:30	18:50	19:10	19:40	19:55	20:25	21:25	22:25	23:25	00:25[+1]	01:25[+1]

MONDAY TO FRIDAY

ROUTE	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Dublin Busaras	03:30	05:30	06:00	06:30	07:00	07:30	08:00	08:20	08:40	09:00	09:20	09:40	10:00	10:20	10:45	11:15	11:45	12:15	12:45	13:15	13:45	14:15	14:45	15:05	15:25	15:45	16:05	16:25	16:45	17:05	17:35	17:55	18:15	18:35	18:55	19:15	19:40	20:00	20:30	21:30	22:30	23:30	00:30[+1]	01:30[+1]
Mountjoy Sq West	P 03:33	P 05:33	P 06:03	P 06:33	P 07:04	P 07:34	P 08:04	P 08:24	P 08:44	P 09:04	P 09:24	P 09:44	P 10:04	P 10:24	P 10:49	P 11:19	P 11:49	P 12:19	P 12:49	P 13:19	P 13:49	P 14:19	P 14:49	P 15:09	P 15:29	P 15:49	P 16:10	P 16:30	P 16:50	P 17:10	P 17:40	P 18:00	P 18:20	P 18:40	P 19:00	P 19:19	P 19:44	P 20:04	P 20:34	P 21:33	P 22:33	P 23:33	P 00:33[+1]	P 01:33[+1]
Drumcondra Rail Stn	P 03:36	P 05:36	P 06:06	P 06:36	P 07:07	P 07:37	P 08:07	P 08:27	P 08:47	P 09:07	P 09:27	P 09:47	P 10:07	P 10:27	P 10:52	P 11:22	P 11:52	P 12:22	P 12:52	P 13:23	P 13:53	P 14:23	P 14:53	P 15:13	P 15:33	P 15:53	P 16:16	P 16:36	P 16:56	P 17:15	P 17:45	P 18:05	P 18:24	P 18:44	P 19:04	P 19:23	P 19:48	P 20:08	P 20:38	P 21:36	P 22:36	P 23:36	P 00:36[+1]	P 01:36[+1]
Whitehall College	P 03:39	P 05:39	P 06:09	P 06:39	P 07:12	P 07:42	P 08:12	P 08:32	P 08:52	P 09:12	P 09:32	P 09:52	P 10:12	P 10:32	P 10:57	P 11:27	P 11:57	P 12:27	P 12:57	P 13:29	P 13:59	P 14:29	P 14:59	P 15:19	P 15:39	P 15:59	P 16:24	P 16:44	P 17:04	P 17:23	P 17:53	P 18:13	P 18:30	P 18:50	P 19:10	P 19:27	P 19:52	P 20:12	P 20:42	P 21:40	P 22:40	P 23:40	P 00:39[+1]	P 01:39[+1]
Whitehall Church	P 03:40	P 05:40	P 06:10	P 06:40	P 07:14	P 07:44	P 08:14	P 08:34	P 08:54	P 09:14	P 09:34	P 09:54	P 10:14	P 10:34	P 10:59	P 11:30	P 12:00	P 12:30	P 13:00	P 13:32	P 14:02	P 14:32	P 15:02	P 15:22	P 15:42	P 16:02	P 16:27	P 16:47	P 17:07	P 17:26	P 17:56	P 18:16	P 18:33	P 18:53	P 19:13	P 19:29	P 19:54	P 20:14	P 20:44	P 21:42	P 22:42	P 23:42	P 00:40[+1]	P 01:40[+1]
Omni Park SC	P 03:42	P 05:42	P 06:12	P 06:42	P 07:17	P 07:47	P 08:17	P 08:37	P 08:57	P 09:17	P 09:37	P 09:57	P 10:17	P 10:37	P 11:02	P 11:33	P 12:03	P 12:33	P 13:03	P 13:36	P 14:06	P 14:36	P 15:06	P 15:26	P 15:46	P 16:06	P 16:31	P 16:51	P 17:11	P 17:29	P 17:59	P 18:19	P 18:36	P 18:56	P 19:16	P 19:32	P 19:57	P 20:17	P 20:47	P 21:44	P 22:44	P 23:44	P 00:42[+1]	P 01:42[+1]
Dublin Airport(Atrium Rd Zone11 Stop6)	P 03:50	P 05:50	P 06:20	P 06:50	P 07:27	P 07:57	P 08:27	P 08:47	P 09:07	P 09:27	P 09:47	P 10:07	P 10:27	P 10:47	P 11:12	P 11:43	P 12:13	P 12:43	P 13:13	P 13:48	P 14:18	P 14:48	P 15:18	P 15:38	P 15:58	P 16:18	P 16:43	P 17:03	P 17:23	P 17:41	P 18:11	P 18:31	P 18:46	P 19:06	P 19:26	P 19:40	P 20:05	P 20:25	P 20:55	P 21:52	P 22:52	P 23:52	P 00:50[+1]	P 01:50[+1]
Airside	P 03:56	P 05:56	P 06:26	P 06:56	P 07:33	P 08:03	P 08:33	P 08:53	P 09:13	P 09:33	P 09:53	P 10:13	P 10:33	P 10:53	P 11:18	P 11:50	P 12:20	P 12:50	P 13:20	P 13:55	P 14:25	P 14:55	P 15:25	P 15:45	P 16:05	P 16:25	P 16:52	P 17:12	P 17:32	P 17:48	P 18:18	P 18:38	P 18:52	P 19:12	P 19:32	P 19:46	P 20:11	P 20:31	P 21:01	P 21:58	P 22:58	P 23:58	P 00:56[+1]	P 01:56[+1]
Swords Pavilions	P 03:57	P 05:57	P 06:27	P 06:57	P 07:35	P 08:05	P 08:35	P 08:55	P 09:15	P 09:35	P 09:55	P 10:15	P 10:35	P 10:55	P 11:20	P 11:52	P 12:22	P 12:52	P 13:22	P 13:56	P 14:26	P 14:56	P 15:26	P 15:46	P 16:06	P 16:26	P 16:54	P 17:14	P 17:34	P 17:50	P 18:20	P 18:40	P 18:54	P 19:14	P 19:34	P 19:48	P 20:13	P 20:33	P 21:03	P 22:00	P 23:00	P 00:00[+1]	P 00:57[+1]	P 01:57[+1]
Seatown Villas	P 03:59	P 05:59	P 06:29	P 06:59	P 07:37	P 08:07	P 08:37	P 08:57	P 09:17	P 09:37	P 09:57	P 10:17	P 10:37	P 10:57	P 11:22	P 11:54	P 12:24	P 12:54	P 13:24	P 13:59	P 14:29	P 14:59	P 15:29	P 15:49	P 16:09	P 16:29	P 16:58	P 17:18	P 17:38	P 17:53	P 18:23	P 18:43	P 18:56	P 19:16	P 19:36	P 19:50	P 20:15	P 20:35	P 21:05	P 22:02	P 23:02	P 00:02[+1]	P 00:59[+1]	P 01:59[+1]
Balheary Park	P 04:01	P 06:01	P 06:31	P 07:01	P 07:38	P 08:08	P 08:38	P 08:58	P 09:18	P 09:38	P 09:58	P 10:18	P 10:38	P 10:58	P 11:23	P 11:56	P 12:26	P 12:56	P 13:26	P 14:01	P 14:31	P 15:01	P 15:31	P 15:51	P 16:11	P 16:31	P 17:00	P 17:20	P 17:40	P 17:55	P 18:25	P 18:45	P 18:57	P 19:17	P 19:37	P 19:51	P 20:16	P 20:36	P 21:06	P 22:03	P 23:03	P 00:03[+1]	P 01:01[+1]	P 02:01[+1]
Turvey Avenue	P 04:05	P 06:05	P 06:35	P 07:05	P 07:42	P 08:12	P 08:42	P 09:02	P 09:22	P 09:42	P 10:02	P 10:22	P 10:42	P 11:02	P 11:27	P 12:00	P 12:30	P 13:00	P 13:30	P 14:05	P 14:35	P 15:05	P 15:35	P 15:55	P 16:15	P 16:35	P 17:06	P 17:26	P 17:46	P 18:00	P 18:30	P 18:50	P 19:01	P 19:21	P 19:41	P 19:55	P 20:20	P 20:40	P 21:10	P 22:07	P 23:07	P 00:07[+1]	P 01:05[+1]	P 02:05[+1]
Ballough (Opp Man of War)	04:09	06:09	06:39	07:09	07:47	08:17	08:47	09:07	09:27	09:47	10:07	10:27	10:47	11:07	11:32	12:04	12:34	13:04	13:34	14:10	14:40	15:10	15:40	16:00	16:20	16:40	17:10	17:30	17:50	18:04	18:34	18:54	19:06	19:26	19:46	20:00	20:25	20:45	21:15	22:11	23:11	00:11[+1]	01:09[+1]	02:09[+1]
Five Roads	04:10	06:10	06:40	07:10	07:48	08:18	08:48	09:08	09:28	09:48	10:08	10:28	10:48	11:08	11:33	12:06	12:36	13:06	13:36	14:11	14:41	15:11	15:41	16:01	16:21	16:41	17:12	17:32	17:52	18:06	18:36	18:56	19:07	19:27	19:47	20:01	20:26	20:46	21:16	22:13	23:13	00:13[+1]	01:10[+1]	02:10[+1]
Grooms	04:12	06:12	06:42	07:12	07:50	08:20	08:50	09:10	09:30	09:50	10:10	10:30	10:50	11:10	11:35	12:07	12:37	13:07	13:37	14:13	14:43	15:13	15:43	16:03	16:23	16:43	17:13	17:33	17:53	18:07	18:37	18:57	19:09	19:29	19:49	20:03	20:28	20:48	21:18	22:14	23:14	00:14[+1]	01:12[+1]	02:12[+1]
Courtlough	04:13	06:13	06:43	07:13	07:51	08:21	08:51	09:11	09:31	09:51	10:11	10:31	10:51	11:11	11:36	12:09	12:39	13:09	13:39	14:14	14:44	15:14	15:44	16:04	16:24	16:44	17:15	17:35	17:55	18:09	18:39	18:59	19:10	19:30	19:50	20:04	20:29	20:49	21:19	22:16	23:16	00:16[+1]	01:13[+1]	02:13[+1]
Balrothery (Opp Balrothery Inn)	04:15	06:15	06:45	07:15	07:53	08:23	08:53	09:13	09:33	09:53	10:13	10:33	10:53	11:13	11:38	12:10	12:40	13:10	13:40	14:16	14:46	15:16	15:46	16:06	16:26	16:46	17:16	17:36	17:56	18:10	18:40	19:00	19:12	19:32	19:52	20:06	20:31	20:51	21:21	22:17	23:17	00:17[+1]	01:15[+1]	02:15[+1]

MONDAY TO FRIDAY

ROUTE	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Balrothery (Opp Kingdom Hall)	04:16	06:16	06:46	07:16	07:54	08:24	08:54	09:14	09:34	09:54	10:14	10:34	10:54	11:14	11:39	12:11	12:41	13:11	13:41	14:17	14:47	15:17
Balbriggan (Opp Golf Club)	04:16	06:16	06:46	07:16	07:54	08:24	08:54	09:14	09:34	09:54	10:14	10:34	10:54	11:14	11:39	12:12	12:42	13:12	13:42	14:17	14:47	15:17
Balbriggan (Opp Wavin)	04:17	06:17	06:47	07:17	07:55	08:25	08:55	09:15	09:35	09:55	10:15	10:35	10:55	11:15	11:40	12:13	12:43	13:13	13:43	14:18	14:48	15:18
Balbriggan (Car Park)	04:18	06:18	06:48	07:18	07:56	08:26	08:56	09:16	09:36	09:56	10:16	10:36	10:56	11:16	11:41	12:14	12:44	13:14	13:44	14:19	14:49	15:19
Balbriggan (Community Centre)	04:19	06:19	06:49	07:19	07:58	08:28	08:58	09:18	09:38	09:58	10:18	10:38	10:58	11:18	11:43	12:16	12:46	13:16	13:46	14:21	14:51	15:21
Balbriggan (Community College)	04:21	06:21	06:51	07:21	08:00	08:30	09:00	09:20	09:40	10:00	10:20	10:40	11:00	11:20	11:45	12:18	12:48	13:18	13:48	14:23	14:53	15:23
Balbriggan (Bath Rd Service Station)	04:21	06:21	06:51	07:21	08:02	08:32	09:02	09:22	09:42	10:02	10:22	10:42	11:02	11:22	11:47	12:20	12:50	13:20	13:50	14:25	14:55	15:25
Balbriggan (Garda Station)	04:22	06:22	06:52	07:22	08:03	08:33	09:03	09:23	09:43	10:03	10:23	10:43	11:03	11:23	11:48	12:21	12:51	13:21	13:51	14:26	14:56	15:26
Gormanstown Cross (Northbound)	04:26	06:26	06:56	07:26	08:08	08:38	09:08	09:28	09:48	10:08	10:28	10:48	11:08	11:28	11:53	12:26	12:56	13:26	13:56	14:31	15:01	15:31
Huntsman Inn	04:27	06:27	06:57	07:27	08:09	08:39	09:09	09:29	09:49	10:09	10:29	10:49	11:09	11:29	11:54	12:27	12:57	13:27	13:57	14:32	15:02	15:32
Bellewstown Cross (Northbound)	04:30	06:30	07:00	07:30	08:12	08:42	09:12	09:32	09:52	10:12	10:32	10:52	11:12	11:32	11:57	12:29	12:59	13:29	13:59	14:35	15:05	15:35
Whitecross (Opp School)	04:32	06:32	07:02	07:32	08:14	08:44	09:14	09:34	09:54	10:14	10:34	10:54	11:14	11:34	11:59	12:32	13:02	13:32	14:02	14:37	15:07	15:37
Julianstown (Jctn Laytown Rd)	04:33	06:33	07:03	07:33	08:16	08:46	09:16	09:36	09:56	10:16	10:36	10:56	11:16	11:36	12:01	12:33	13:03	13:33	14:03	14:39	15:09	15:39
Ross Na Ri (Moore Hall Lodge)	04:36	06:36	07:06	07:36	08:18	08:48	09:18	09:38	09:58	10:18	10:38	10:58	11:18	11:38	12:03	12:36	13:06	13:36	14:06	14:41	15:11	15:41
Drogheda (Deepforde Estate)	04:37	06:37	07:07	07:37	08:20	08:50	09:20	09:40	10:00	10:20	10:40	11:00	11:20	11:40	12:05	12:37	13:07	13:37	14:07	14:43	15:13	15:43
Drogheda (Opp Rail Station)	04:40	06:40	07:10	07:40	08:24	08:54	09:24	09:44	10:04	10:24	10:44	11:04	11:24	11:44	12:09	12:41	13:11	13:41	14:11	14:49	15:19	15:49
Drogheda (Bus Station)	04:45	06:45	07:15	07:45	08:34	09:04	09:34	09:54	10:14	10:34	10:54	11:14	11:34	11:54	12:19	12:50	13:20	13:50	14:20	14:58	15:28	15:58

ROUTE	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Balrothery (Opp Kingdom Hall)	15:47	16:07	16:27	16:47	17:17	17:37	17:57	18:11	18:41	19:01	19:13	19:33	19:53	20:07	20:32	20:52	21:22	22:18	23:18	00:18[+1]	01:16[+1]	02:16[+1]
Balbriggan (Opp Golf Club)	15:47	16:07	16:27	16:47	17:18	17:38	17:58	18:12	18:42	19:02	19:13	19:33	19:53	20:07	20:32	20:52	21:22	22:19	23:19	00:19[+1]	01:16[+1]	02:16[+1]
Balbriggan (Opp Wavin)	15:48	16:08	16:28	16:48	17:19	17:39	17:59	18:13	18:43	19:03	19:14	19:34	19:54	20:08	20:33	20:53	21:23	22:20	23:20	00:20[+1]	01:17[+1]	02:17[+1]
Balbriggan (Car Park)	15:49	16:09	16:29	16:49	17:20	17:40	18:00	18:14	18:44	19:04	19:15	19:35	19:55	20:09	20:34	20:54	21:24	22:21	23:21	00:21[+1]	01:18[+1]	02:18[+1]
Balbriggan (Community Centre)	15:51	16:11	16:31	16:51	17:22	17:42	18:02	18:16	18:46	19:06	19:17	19:37	19:57	20:11	20:36	20:56	21:26	22:22	23:22	00:22[+1]	01:19[+1]	02:19[+1]
Balbriggan (Community College)	15:53	16:13	16:33	16:53	17:24	17:44	18:04	18:18	18:48	19:08	19:18	19:38	19:58	20:12	20:37	20:57	21:27	22:24	23:24	00:24[+1]	01:21[+1]	02:21[+1]
Balbriggan (Bath Rd Service Station)	15:55	16:15	16:35	16:55	17:26	17:46	18:06	18:20	18:50	19:10	19:20	19:40	20:00	20:14	20:39	20:59	21:29	22:24	23:24	00:24[+1]	01:21[+1]	02:21[+1]
Balbriggan (Garda Station)	15:56	16:16	16:36	16:56	17:27	17:47	18:07	18:21	18:51	19:11	19:21	19:41	20:01	20:15	20:40	21:00	21:30	22:25	23:25	00:25[+1]	01:22[+1]	02:22[+1]
Gormanstown Cross (Northbound)	16:01	16:21	16:41	17:01	17:31	17:51	18:11	18:25	18:55	19:15	19:25	19:45	20:05	20:19	20:44	21:04	21:34	22:29	23:29	00:29[+1]	01:26[+1]	02:26[+1]
Huntsman Inn	16:02	16:22	16:42	17:02	17:32	17:52	18:12	18:26	18:56	19:16	19:26	19:46	20:06	20:20	20:45	21:05	21:35	22:30	23:30	00:30[+1]	01:27[+1]	02:27[+1]
Bellewstown Cross (Northbound)	16:05	16:25	16:45	17:05	17:34	17:54	18:14	18:28	18:58	19:18	19:28	19:48	20:08	20:22	20:47	21:07	21:37	22:33	23:33	00:33[+1]	01:30[+1]	02:30[+1]
Whitecross (Opp School)	16:07	16:27	16:47	17:07	17:37	17:57	18:17	18:31	19:01	19:21	19:31	19:51	20:11	20:25	20:50	21:10	21:40	22:35	23:35	00:35[+1]	01:32[+1]	02:32[+1]
Julianstown (Jctn Laytown Rd)	16:09	16:29	16:49	17:09	17:38	17:58	18:18	18:32	19:02	19:22	19:32	19:52	20:12	20:26	20:51	21:11	21:41	22:36	23:36	00:36[+1]	01:33[+1]	02:33[+1]
Ross Na Ri (Moore Hall Lodge)	16:11	16:31	16:51	17:11	17:41	18:01	18:21	18:35	19:05	19:25	19:35	19:55	20:15	20:29	20:54	21:14	21:44	22:39	23:39	00:39[+1]	01:36[+1]	02:36[+1]
Drogheda (Deepforde Estate)	16:13	16:33	16:53	17:13	17:42	18:02	18:22	18:36	19:06	19:26	19:36	19:56	20:16	20:30	20:55	21:15	21:45	22:40	23:40	00:40[+1]	01:37[+1]	02:37[+1]
Drogheda (Opp Rail Station)	16:19	16:39	16:59	17:19	17:48	18:08	18:28	18:42	19:12	19:32	19:41	20:01	20:21	20:34	20:59	21:19	21:49	22:43	23:43	00:43[+1]	01:40[+1]	02:40[+1]
Drogheda (Bus Station)	16:28	16:48	17:08	17:28	17:58	18:18	18:38	18:50	19:20	19:40	19:46	20:06	20:26	20:39	21:04	21:24	21:54	22:48	23:48	00:48[+1]	01:45[+1]	02:45[+1]

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APPENDIX B

B	CSO Census Data for Artane-Whitehall Electoral Area (Commuting)

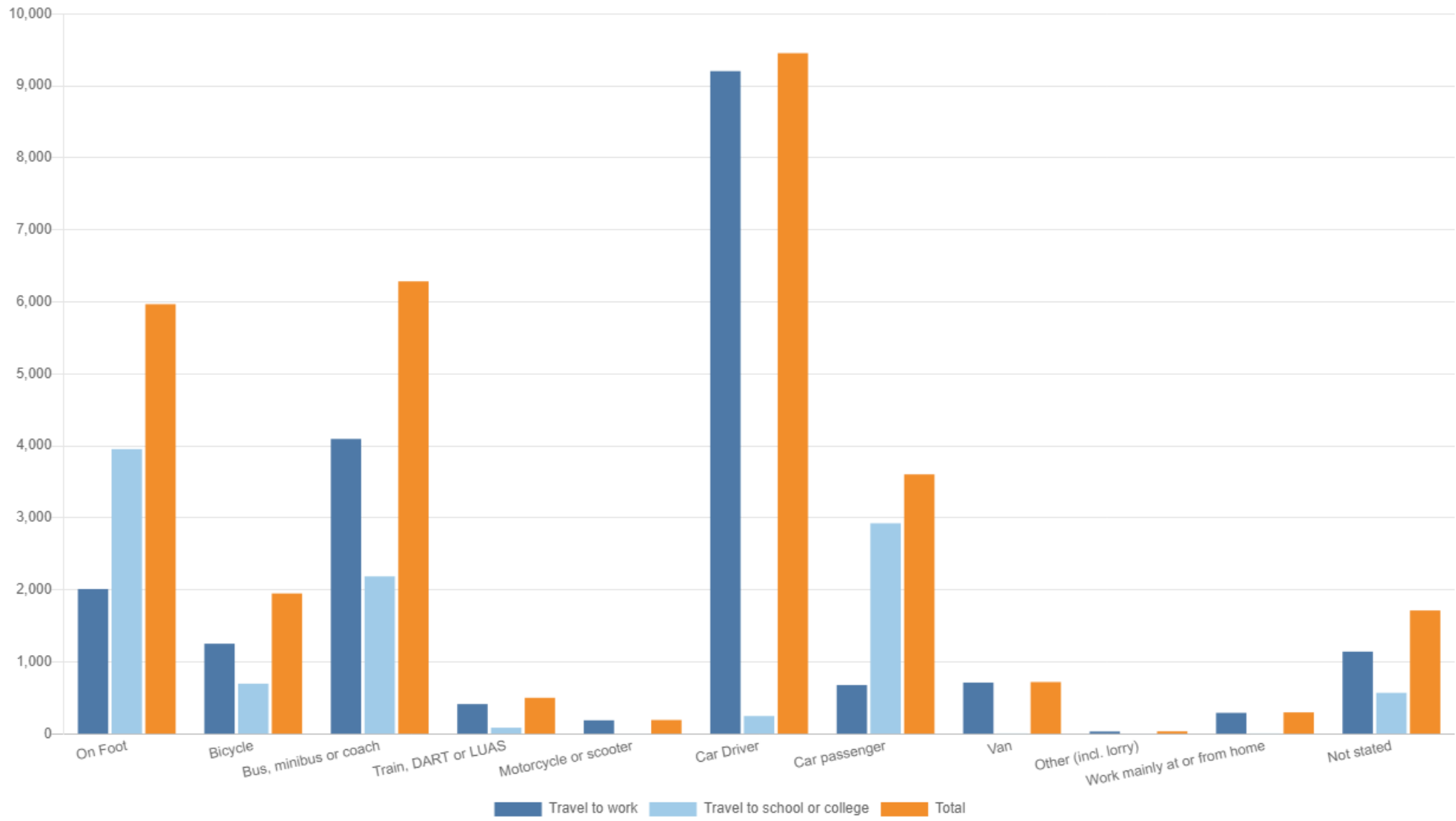
An Phríomh-Oifig Staidrimh Central Statistics Office

Census of Population 2016

ARTANE-WHITEHALL

Commuting

Population aged 5 years and over by means of travel to work, school or college



January 27, 2022 11:00:00 UTC

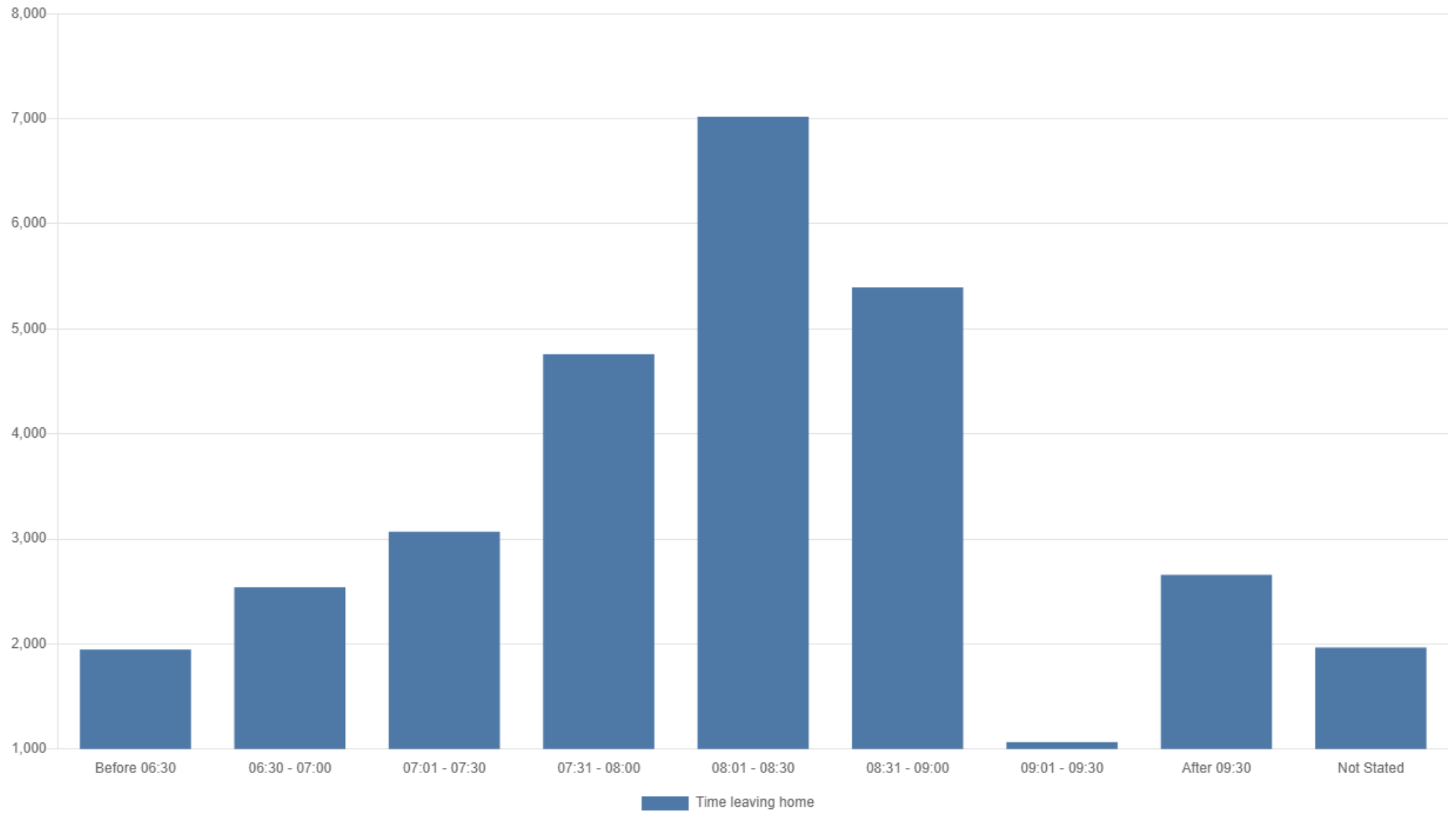
https://data.cso.ie/table/SAP2016T11T1LEA19

Means of Travel	Population aged 5 years and over by means of travel to work (Number)	Population aged 5 years and over by means of travel to school or college (Number)	Population aged 5 years and over by means of travel to work, school or college (total) (Number)
On Foot	**2,012**	**3,955**	**5,967**
Bicycle	**1,253**	**698**	**1,951**
Bus, minibus or coach	**4,096**	**2,188**	**6,284**
Train, DART or LUAS	**415**	**87**	**502**
Motorcycle or scooter	**190**	**4**	**194**
Car Driver	**9,203**	**249**	**9,452**
Car passenger	**679**	**2,925**	**3,604**
Van	**714**	**7**	**721**
Other (incl. lorry)	**34**	**2**	**36**
Work mainly at or from home	**293**	**7**	**300**
Not stated	**1,143**	**571**	**1,714**
Total	**20,032**	**10,693**	**30,725**

January 27, 2022 11:00:00 UTC

https://data.cso.ie/table/SAP2016T11T1LEA19

Population aged 5 years and over by time leaving home to travel to work, school or college



January 28, 2022 11:00:00 UTC

https://data.cso.ie/table/SAP2016T11T2LEA19

Time Leaving Home	Value
Before 06:30	**1,948**
06:30 - 07:00	**2,541**
07:01 - 07:30	**3,070**
07:31 - 08:00	**4,759**
08:01 - 08:30	**7,019**
08:31 - 09:00	**5,395**
09:01 - 09:30	**1,067**
After 09:30	**2,659**
Not Stated	**1,967**
Total	**30,425**

January 28, 2022 11:00:00 UTC
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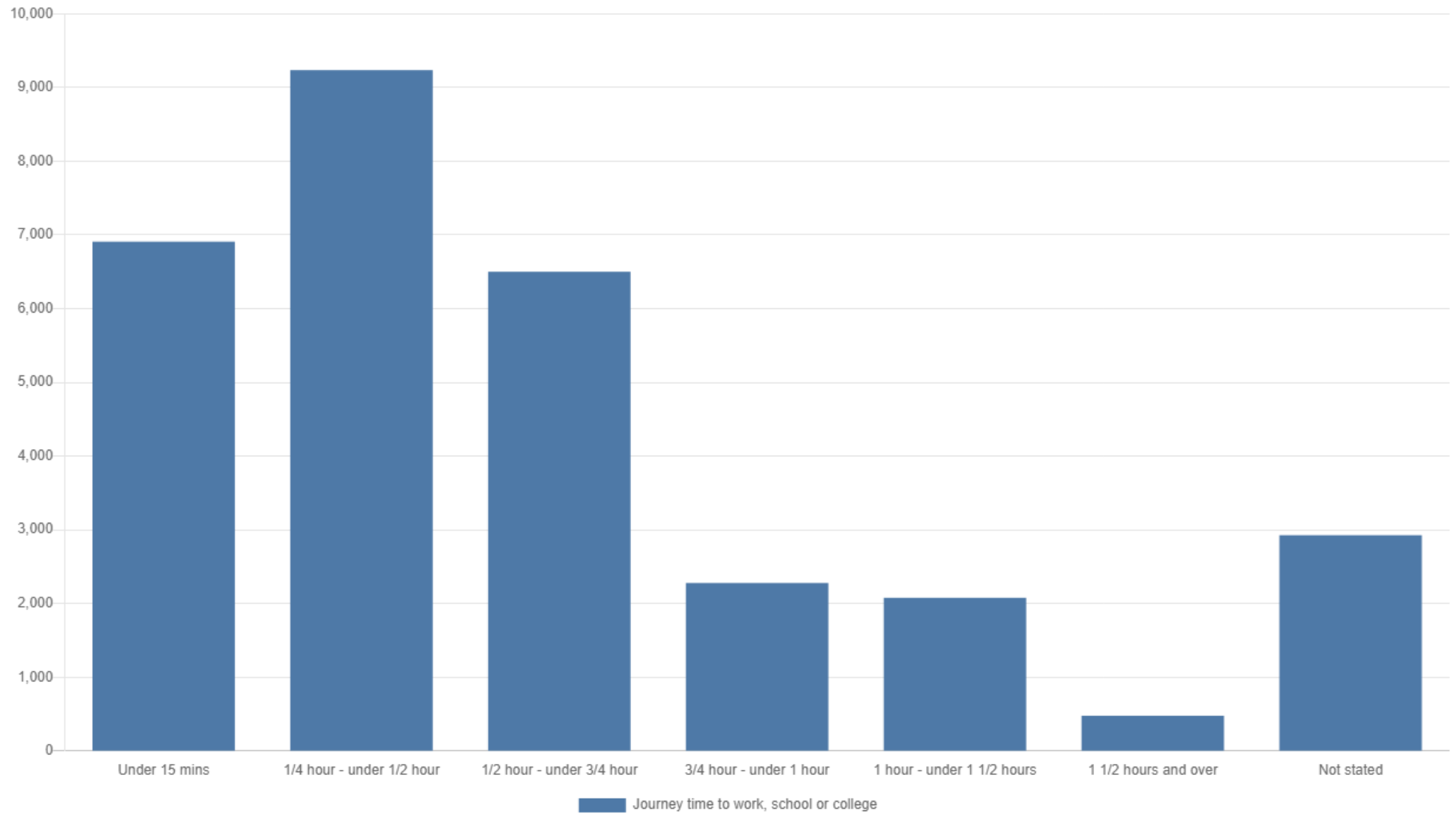
https://data.cso.ie/table/SAP2016T11T2LEA19

Population aged 5 years and over by journey time to work, school or college



January 28, 2022 11:00:00 UTC

https://data.cso.ie/table/SAP2016T11T3LEA19

Journey Time	Value
Under 15 mins	**6,913**
1/4 hour - under 1/2 hour	**9,241**
1/2 hour - under 3/4 hour	**6,505**
3/4 hour - under 1 hour	**2,280**
1 hour - under 1 1/2 hours	**2,079**
1 1/2 hours and over	**478**
Not stated	**2,929**
Total	**30,425**

January 28, 2022 11:00:00 UTC
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