CHAPTER 14

TRAFFIC AND TRANSPORTATION

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14.0 TRAFFIC & TRANSPORTATION

14.1 INTRODUCTION

14.1 This Chapter has been prepared by NRB Consulting Engineers Ltd and addresses the Traffic & Transportation issues arising from the proposal to construct a mixed-use development on lands to the north west corner of the Omni Park Shopping Centre, Santry and at Santry Hall Industrial Estate, Swords Road, Dublin 9 D09FX31 and D09HC84. 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 236m^2 GFA on the site. The scheme also includes associated residential amenity and community space. It should be read in conjunction with the more detailed Transportation Assessment Report, DMURS Statement of Consistency, Stage 1 Road Safety Audit, Mobility Management Plan & Bus Capacity/Demand Assessment that are submitted with this planning application.

14.2 METHODOLOGY

14.2 The Report has been prepared in accordance with TII's Traffic & Transportation Assessment Guidelines and addresses the worst-case traffic impact of the proposal.

14.3 The assessment is based on comprehensive Weekday AM & Weekday PM Peak classified interval turning movement surveys of the local roads carried out in 2022 during normal school term prior to the Covid 19 Pandemic (Refer to Data included as ***Appendix B*** *of the Transportation Assessment Report*).

14.4 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.

14.5 *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*.

14.3 RECEIVING ENVIRONMENT

14.6 The proposed development is primarily residential in nature, with private residential apartments, some small commercial/retail elements, residential amenity and community space and an ancillary crèche element. This is a direct replacement for the former industrial buildings/haulage uses on the site, which benefited from direct vehicular access onto Santry Hall Industrial Estate Road onto Swords Road.

14.7 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 to the east of 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.

14.8 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.

14.9 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. 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.

14.10 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.

14.11 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 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[1].

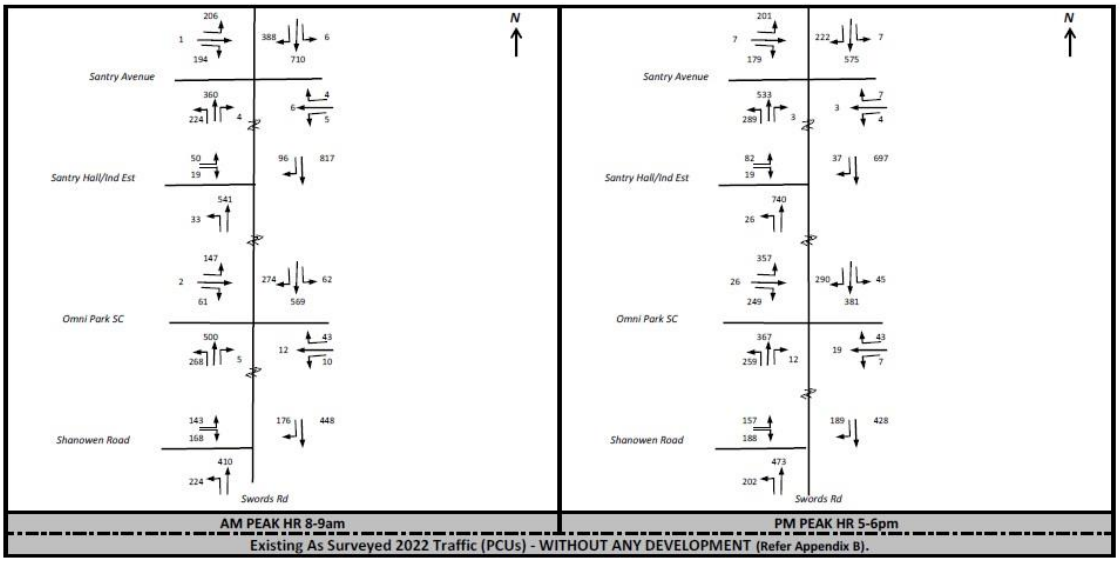
14.12 We have nonetheless undertaken detailed modelling and analysis of the established traffic signal controlled junction and the effect of the development otherwise on Swords Road and adjacent junctions on the network surrounding the site. Capacity Modelling using TII-approved software was undertaken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

14.13 A detailed classified interval turning movement survey was undertaken of the local roads during normal school term, prior to the Covid 19 Pandemic. This included a comprehensive classified interval survey for each of the 2 modelled periods. This data was used in order to establish current peak hour traffic conditions and to establish the current usage of the roadways. Details of the surveys undertaken are included as ***Appendix B*** *of the Transportation Assessment Report (TA)*, with the Peak Hour

[1] 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

Network flows (expressed as PCUs) identified. This traffic survey has been used as the basis for the study.

14.14 An extract from Appendix D of the NRB TA with the 2022 Surveyed flows is provided below.



14.15 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.

14.16 The Accident History from the RSA online database is reproduced in ***Figure 14.1***

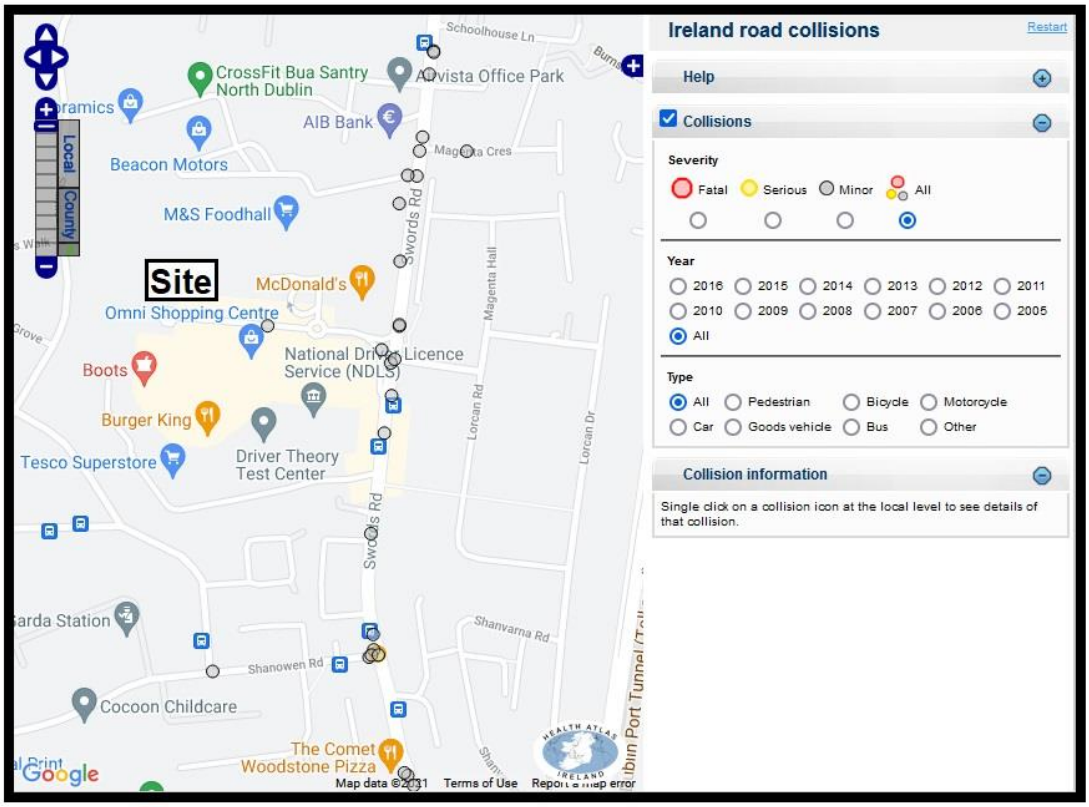


Figure 14.1 *– Extract from RSA On Line Database Accidents 2005-Date (All Types)*

14.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

14.17 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.

14.18 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.

14.19 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).

14.20 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.

14.21 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. A full description of the development is contained within the public notices, architectural drawings and accompanying application documents.

14.22 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 the TA Report.

14.23 The site is also very well located to benefit both from existing Dublin Bus 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 in the TA Report (submitted as part of this planning application) as ***Appendix F*** of the TA Report. A Bus Capacity and Demand assessment was undertaken and included as ***Appendix J*** of the TA Report.

14.24 The traffic generated by the proposed extension has been calculated based on the TRICS database, in accordance with industry standard practice, and the detailed calculation is included within the TA submitted with this planning application. This traffic has then been assigned to the road network to reflect conditions with & without the development in place and operational, and also with the adjacent planned and committed developments in place (cumulative impact).

14.25 A robust and onerous assessment has been undertaken in order to ensure that we thoroughly assess the impact in terms of stress testing the access junctions and the road capacity impact and implications of the scheme.

14.26 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. We have included as ***Appendix C*** within the TA Report (submitted as part of this planning application) 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 14.1,*** to ***Table 14.4*** below.

Table 14.1: *TRICS Data Summary, 457 Apartments - Proposed Scheme*

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

Table 14.2: *TRICS Data Summary, 431m² GFA Retail/Commercial - Proposed Scheme*

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

Table 14.3: *TRICS Data Summary, 230m² GFA Créche - Proposed Scheme*

236m² GFA Creche	Car Arrivals		Car Departures		Total 2-Way
Network Hour	Per 100m²	236m² GFA	Per 100m²	236m² GFA	Car Traffic Generated
Weekday AM Peak Hr	3.649	8	2.955	7	15
Weekday PM Peak Hr	2.538	6	3.169	7	13

Table 14.4: *Total Proposed Development – 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

14.27 The above illustrates and confirms that this development is clearly a low generator of vehicular traffic, in the context of the local traffic conditions and in the context of the capacity of the local roads.

14.28 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 "Santry Ave SHD 2"). 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 in the TA Report as ***Appendix C*** & ***Appendix D***.

Assignment/Distribution - Future Year Traffic

14.29 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.

14.30 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.

14.31 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 robust assumption that ALL of the traffic is new traffic, constituting Primary Trips.

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

14.33 We have selected a year of opening of 2024 for the purposes of this assessment, however it should be noted that minor changes of 2-4 years in the selected or actual year of opening will have no impact on the conclusions of the study. We have also undertaken assessment of the Design Year 2039, 15 years following opening.

14.34 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, 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 14.5*** below.

Table 14.5: *Traffic Growth Rates, TII PE-PAG-02017*

Year	to Year	Table 6.1
Survey	2024	1.027
2024	2039	1.135

14.35 With the committed developments in place, the worst case traffic generated by the subject development was then applied in order to establish Opening Year and Design Year Traffic Conditions for the AM and PM Commuter Peak Hours with all development open and operational. This is included in the traffic distribution and projection calculations included within the TA Report (submitted as part of this planning application).

14.36 It should be noted that we have selected an opening year of 2024 as being reasonable and appropriate, however, varying the opening year & associated design year by a number of years will have no significant impact whatsoever upon the

conclusions of the study. We have also selected a design year of 2039, 15 years following opening, as recommended in the TII Guidelines.

14.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

Construction Phase

14.37 There is the potential for construction operations to cause some impact on the operational performance of the road network, however it is considered unlikely to result in a traffic safety or traffic capacity issue arising.

14.38 It is anticipated that the proposed development would be constructed over a period of approximately 36 months. Following the completion of the initial site clearance works, the generation of HGV movements during the build period will be evenly spread throughout the day and, as such, will not impact significantly during the peak traffic periods. The worst case number of outward HGV movements per day is 10-50 vehicles per hour (converted to PCUs) maximum during the busiest period of 'build' works. An appropriate control and routing strategy for HGVs can also be implemented for the duration of site works, if necessary, as part of a traffic management plan to be agreed with DCC.

14.39 Given the robust operational stage assessment of an additional 140 vehicle movements in the AM peak hour and 146 in the PM peak hours, it is clear that 10-50 HGV construction movements will not have a significant traffic impact. It is therefore concluded that construction traffic will not give rise to any significant traffic concerns or impede the operational performance of the local road network and its surrounding junctions

14.40 Based on our assessment of traffic generated (Table 14.4), the operational phase will exceed the levels generated during construction. In these terms, the operational assessment represents very much a worst case scenario.

Operational Phase

14.41 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. The TII Guidelines are the Nationally applied Standard for assessment purposes. We have assessed the impact of the proposed development with a wide area of influence included.

14.42 This is important in this case as the development is located in proximity to important local arterial routes. The professional guidance referenced above sets out specific increases in traffic volume associated with new development, which, if 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.

14.43 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 up to & beyond the existing public road access point are expected to be **below** the Industry-Standard level of 5% above which further assessment is required.

14.44 Our assessment confirms that the absolute worst case traffic increase on the adjacent road network junctions including other committed developments, undertaken in accordance with Guidelines, is as summarised below as ***Table 14.6***

Table 14.6; *- Threshold Assessment, Worst-Case Impact - AM & PM Peak Hours*

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

14.45 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. 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.

14.46 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.

Capacity of Access Junction.

14.47 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%.

14.48 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 small impact of the proposal on network operation. The detailed output of the models is included within the TA Report (submitted as part of this application) as ***Appendix E***, and is summarised below as ***Table 14.7*** & ***Table 14.8***

Table 14.7: *Omni Park SC/Swords Rd Access – Summary LiNSiG Results, Worst Case Weekday AM & PM Commuter Peak Hours – 2024 and 2039* ***WITHOUT*** *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 14.8: *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

14.49 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).

Capacity of Santry Hall Ind Estate/Swords Rd Junction

14.50 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.

14.51 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 within the TA Report (submitted as part of this application) as ***Appendix F*** and are summarised below as ***Table 14.9***

Table 14.9: *Santry Hall Ind Est/Swords Rd – Summary PiCADY Results, Worst Case Weekday AM & PM Commuter Peak Hours – 2024 and 2039* ***WITH*** *Proposed 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

14.52 Given the very low modelled 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

14.53 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 or Linked Trips and quantifies the volumes of traffic on an individual basis. Furthermore, the subject site is adjacent to high quality public transport, with limited residential car parking provision which further limits trip generation

14.54 Therefore, we consider that the use of the assessment methodology adopted above is robust and conservative and in reality, lower trips rated are anticipated, reducing the assessed impact at the signal junction and on the Swords Road.

14.55 The above analysis confirms that the construction of the proposed development (with local committed developments) will have a negligible impact upon the capacity and safety of the road network in the area and can easily be accommodated.

14.6 REMEDIAL AND MITIGATION MEASURES

Construction Phase

14.56 In the event of a grant of Planning Permission, a detailed Project Construction/Traffic Management Plan will be prepared for agreement with the Local Authority prior to commencement. Such a document would include a description of the proposed works and how these works will be managed for the duration of the demolition and construction works on site. It is normal for these details to be agreed with the appointed Contractor for the works following a planning decision. This would include preliminary proposed details for access arrangements for labour, plant and materials and would indicate the locations of construction parking/plant and machine compounds. It should be recognised that such details are normally best dealt with when details of construction programme and phasing have been confirmed. Therefore, when the

contractor is appointed, they will prepare a detailed method statement having regard to their own operating procedures, the agreed construction programme, site conditions, and any relevant planning conditions.

14.57 A Draft Construction Environmental Management Plan (CEMP) has been prepared by AWN and is included with the submitted documentation. It includes details on the proposed construction traffic entrance, compound location and routing for construction traffic.

14.58 Any works on the public road (e.g. for services connections) will require an application for a Road Opening Licence and will be submitted by the contractor to the Local Authority which will include a full detailed Construction Traffic Management Plan prepared in accordance with Chapter 8 of the Traffic Signs Manual for pre-approval by the Local Authority.

14.59 Construction vehicle movements will be minimised through:

- Consolidation of delivery loads to/from the site and managing larger deliveries to occur outside peak traffic periods,
- Use of precast/prefabricated materials, where possible,
- Adequate storage space on site will be provided with no impact on public streets or areas,
- The Contractor will adhere to best practice mobility management measures for the site staff to encourage access to the site by means other than the private car. This will be considered by the appointed Contractor prior to works commencing on site

Operational Phase

14.60 No mitigation is proposed for the operational phase of the proposed development as it as a stand-alone development, and cumulatively with other local committed developments, is predicted to have an imperceptible impact on the operation of the local roads.

14.61 Given the location of the scheme within a District Centre and adjacent high quality public transport, the mobility management plan will be implemented to mitigate any potential traffic impacts.

14.7 RESIDUAL IMPACTS OF THE PROPOSED DEVELOPMENT

Construction Phase

14.62 The construction traffic volumes have been assessed and are expected to be equivalent to or below the operational stage traffic volumes. In these terms the effects of the construction traffic volumes are expected to be negligible and unnoticeable on the local road network. The implementation of a working Construction Traffic Management Plan will ensure that the effects are further minimised and controlled.

Operational Phase

14.63 Given the robust operational stage assessment of an additional 140 vehicle movements in the AM peak hour and 146 in the PM peak hours, using the TII Threshold

Assessment methodology, it is clear that the operational stage will not have a significant traffic impact.

14.64 The Assessment of the Operational Phase of the development has been undertaken, with all of the permitted proposed developments locally and with the subject development fully occupied and operational. The above analysis confirms that the operation of the proposed development (with local committed developments) will have a negligible impact upon the capacity and safety of the road network in the area and can easily be accommodated.

14.8 CUMULATIVE IMPACTS

14.65 As detailed above, the cumulative impact of the Operational Development has been assessed in accordance with the TII Guidelines for Traffic/Transport Assessment, based on a thorough traffic 2022 survey of the affected road network, together with full consideration of significant planned and permitted development within the local area of influence. As established above the impact has been determined to be negligible in the context of the established network flows.

14.9 DIFFICULTIES ENCOUNTERED IN COMPILING

14.66 There were no difficulties encountered when compiling this assessment.