

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE EXPANSION OF A MATERIALS RECOVERY FACILITY AT CAPPOGUE AND DUNSINK, BALLYCOOLIN ROAD, DUBLIN 11.

Volume 2 – Main Body of the EIAR Chapter 13 – Traffic and Transportation

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13. TRAFFIC AND TRANSPORTATION

13.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) is a Traffic & Transport Assessment (TTA) and provides details of the traffic characteristics of the existing development and proposed development and provides a comprehensive review of the potential significant traffic effects of the proposed development.

A Site Location Map is provided in Volume 4 of this EIAR (Drawing Reference: P21-150-0000-0002) and the location is illustrated in Figure 4-1. The existing facility is accessed via a single carriage access road within Cappogue Industrial Park from the Ballycoolin Road. The entrance gate is located on the eastern boundary of the facility.

13.2 Proposed Development

The proposed development is defined in Chapter 1 ‘Introduction’ of Volume 2 of this EIAR and a detailed description of both the existing and proposed developments is set out in Chapter 4 ‘Description of the Existing and Proposed Developments’ of Volume 2 of this EIAR. The assessments in this Chapter examine the existing and developing transportation infrastructure serving the site and the wider receiving road network serving the development site at Cappogue Industrial Park. It sets out the existing and baseline traffic environments and forecasts travel demand characteristics of the proposed development and provides an assessment of the existing, baseline and forecast impact on the receiving environment and assesses the ability of the transportation network to accommodate the traffic arising both directly and indirectly. The potential significant effects of the proposed development are assessed having taken account of mitigation measures to reduce or eliminate any residual impacts on the surrounding and receiving transport network.

13.3 Statement of Competency

This Chapter of the EIAR was prepared by Julian Keenan, a Director of Trafficwise Ltd. Julian Keenan has over thirty years engineering experience including approximately seven years in Local Government in the UK and over 23 years of private engineering consultancy services in Ireland. Holding a principal degree in Civil Engineering from UCG, Julian has specialised in Roads Design and Traffic & Transportation Planning for approximately 25 years. Consultancy experience includes advising clients in relation road schemes, residential, commercial, industrial and leisure developments for which the key work involves the provision of professional services in the design and appraisal of schemes including the preparation of planning applications and appeals. Julian has represented clients at An Bord Pleanála oral hearings for commercial development, strategic infrastructure development and represented landowners and stakeholders in relation to various road schemes and infrastructural works. He has given sworn evidence before the Property Arbitrator and has provided expert witness testimony in the High Court.

Appendices 13-1, 13-2, 13-3 and 13-4 have been prepared in support of this Chapter. They are included in Volume 3 of this EIAR.



13.4 Assessment Methodology

The approach to the study accords with policy and guidance both at a national and local level. The adopted methodology responds to current best practices and guidance as promoted in the Transport Infrastructure Ireland (TII) (2014) '*Traffic and Transport Assessment Guidelines*' which advocates this method of analysis.

13.4.1 Relevant Guidance

This assessment has been carried out in accordance with relevant local government policy and in accordance with national guidelines and standards of best practice. In completing this assessment reference has been made to the following publications:

- Fingal County Development Plan (2017 – 2023);
- Draft Fingal County Development Plan (2023 – 2029);
- Department of Transport, Tourism and Sport (2019) '*Traffic Signs Manual*';
- Transport Infrastructure Ireland (TII) (May 2014) '*Traffic and Transport Assessment Guidelines*', referred to hereafter as the TTA Guidelines;
- TII PE-PAG-02039 (Oct 2016) '*Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts*';
- TII PE-PAG-02017 (Oct 2021) '*Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections*';
- TII DN-GEO-03031 (Jun 2017) '*Rural Road Link Design*'; and
- TII DN-GEO-03060 (Jun 2017) '*Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions)*'.

13.4.2 Consultation

An overview of the scoping and consultation process is presented in Chapter 6 Scoping and Consultation.

One traffic related consultation response was received. A pre-planning consultation meeting took place with An Bord Pleanála on the 11th of February 2022. At this meeting the project was discussed with representatives from the SID section of An Bord Pleanála. The Board's representatives advised the Applicant to evaluate the impact proposed development related traffic will have on the local road network.

13.4.3 Impact Appraisal Methodology

The development assessment methodology can be summarised as follows:

- Review of Existing Receiving Road Network Traffic Flows;
- Establish Baseline Receiving Road Network Traffic Flows;
- Review of Existing and Proposed Site Operational Traffic;
- Review of Existing and Programmed/Planned Road Network and Travel Infrastructure;
- Calculate the trip generation arising from the proposed development;



- Calculate the trip generation arising from permitted development;
- Assess/evaluate network performance identifying potential effects and cumulative effects;
- Identify and assess potential effects and recommend mitigation measures.

Chapter 4 ‘Description of the Existing and Proposed Developments’ of Volume 2 of this EIAR sets out that there will be additional infrastructure development at the site which, with respect to roads and transportation, will principally consist of the development of a new second site access; the construction of a Materials Recovery Facility (MRF) with 3 No. separate buildings to facilitate the acceptance, processing and storage of 4 No. principal waste streams (residual Municipal Solid Waste (rMSW), food waste, Mixed Dry Recyclables (MDR) and Construction & Demolition waste (C&D); and the construction of ancillary site services. This Chapter appropriately provides assessment of the operational phase and construction stage of the proposed development. This Chapter assesses potential effects upon the receiving transport network arising from the proposed development, it also examines the cumulative effects of the proposed development together with other permitted developments.

13.4.4 Evaluation Criteria

This Chapter is based upon the specific guidance on the evaluation of impact set out in the TII (NRA) Traffic and Transport Assessment Guidelines (2014) and this is the primary reference for the assessment of the magnitude and significance of the forecast traffic impact of the proposed development on the receiving transport network.

13.4.5 Desk Study

This Chapter is based principally upon the assessment of forecast traffic generation and analyses of relevant traffic flow data gathering at the site and on the roads network in the study area. Some preliminary desktop based locational and haul route assessment and appraisal has been undertaken at the initial stages.

The existing waste management facility which is operated by the Applicant was granted planning permission under Planning Reg. Ref. FW11A/0033 for the construction of the offices, a yard area, weighbridge and the main materials recovery building which was authorised to process 24,500t per annum. Under Plan Reg. Ref. FW13A/0053 permission was granted to extend the facility footprint to the west thereby allowing for the lengthening of the yard area, the building of a timber shredding shed and a vehicle maintenance garage. Under Planning Reg. Ref. FW13A/0053 the processing capacity remains unchanged from 24,500t per annum of dry mixed recyclable material and construction and demolition waste (C&D). Under Plan Reg. Ref. FW20A/0122 permission was granted by decision dated 20-Sept-2020 for an increase in the rate of waste acceptance and processing at the facility up to 49,500 tonnes per annum, comprising mixed construction and demolition (C&D) wastes. Construction and Demolition (C&D) waste is accepted at the facility via skip collections from industrial/commercial and household sources. All waste accepted at the facility is collected by the Applicant’s dedicated fleet of waste collection vehicles or other approved third party permitted waste collectors. A record of all waste accepted at the facility is maintained, including weights and types of wastes.

Waste is accepted at the facility in skips and ro/ro (roll on, roll off) skips. Empty or unused skips are stored within a designated empty skip storage area along the western boundary of the facility. All material that is accepted and processed at the existing facility is subsequently transferred from site for recovery, recycling or disposal.



The proposed development principally consists of the expansion of the existing facility and construction of a MRF. It is proposed that the extended facility will accept and process up to 300,000 tonnes per annum (tpa) of waste material, to include:

- 100,000 tpa of residual municipal solid waste (rMSW);
- 50,000 tpa food waste;
- 100,000 tpa construction and demolition (C&D) Waste
- 50,000 tpa mixed dry recyclable (MDR) waste.

The assessments in this chapter will have regard to the records of traffic generation at the existing facility and the potential traffic generation arising from the proposed facility. The focus of the assessments will be upon the incremental increase in traffic arising from the proposed development.

Locally, planning permission was previously granted to the Applicant for the development of a MRF accepting 170,000t per annum (An Bord Pleanála PL06F.PA0048) at a site on the Cappagh Road to the north at Millennium Business Park. That permitted development will not be implemented and planning permission has since granted at the same site under Planning Reg. Ref. FW18A/0087 for expansion of a neighbouring concrete batching plant. The An Bord Pleanála Inspector's Report acknowledges in the assessment of the previous MRF development that the Transport Planning Section of the Council submitted a report which noted that the Cappagh Road and surrounding roads have been upgraded to a high standard to accommodate the locally zoned lands and that the receiving road network has been designed to cater for traffic generated by such developments. In recommending a grant of permission for the Applicant's previously proposed 170,000t per annum MRF the Inspector concluded that the increase in traffic on the receiving road network, designed for this type of traffic, to be acceptable.

13.4.6 Field Assessments

Classified turning count surveys were undertaken in November 2021 at the existing site access and at junctions on L3090 Ballycoolin Road and L3080 Cappagh Road. Site visits were conducted in March 2022 and May 2022 and included drive-over surveys of the principal haul routes and the network of regional roads including.

- L3080 Cappagh Road/L3090 Ballycoolin Road/L3095 (Dublin Enterprise Zone Circulatory Road System)
- Cappagh Road Finglas
- Damastown Avenue and Damastown Road (Ballycoolin to N3 Jn.4 Castaheany Interchange)
- Regional Road R121 Corduff Road (Ballycoolin to N3 Jn.3)
- Regional Road R843 Snugborough Road (Ballycoolin to N3 Jn.2 Snugborough Interchange)

13.4.7 Scope of Assessment

This Chapter of the EIAR constitutes a Traffic & Transport Assessment (TTA) and provides an assessment of the existing and forecast traffic conditions on the local roads network in the vicinity of the proposed development at Cappogue Industrial Park. The assessment compares the traffic scenario arising from (1) a baseline scenario without the proposed development, and (2) the proposed development which comprises a Materials Recycling Facility.



This traffic assessment is based upon November 2021 classified turning count surveys of the receiving local road traffic flows. This assessment includes a review of exiting traffic characteristics and forecast traffic generation arising at the proposed development at Cappogue Industrial Park and evaluates the influence of same upon the capacity and operation of the receiving road network. The study also examines site infrastructure and access arrangements serving the application site.

Junction turning surveys undertaken on the receiving road network identify existing traffic conditions. The November 2021 traffic surveys were carried out by Traffinomics (formerly Abacus Transportation Surveys) on behalf of Trafficwise Ltd. In the interest of a comprehensive appraisal of the receiving road traffic characteristics, this Chapter provides an assessment of the traffic flow variations recorded on L3080 Cappagh Road and L3090 Ballycoolin Road which are the principal haul routes to Cappogue Industrial Park.

As a frame of reference this Chapter provides an evaluation of the relative traffic effects on the local road network without the proposed development. Baseline network traffic flows are derived from the survey data and reflect a 'do-nothing' scenario where the site remains as currently developed. From this baseline the traffic assessment evaluates the existing traffic and this is compared with the forecast potential traffic arising from the proposed development when operating at capacity also referred to as the 'do-something' scenario.

This Chapter identifies how traffic arising from the proposed development can be accommodated on the local road network. Where considered appropriate, measures are discussed regarding the management of traffic generated by the proposed development.

The advice to Local Authorities in Spatial Planning and National Roads (Guidelines for Planning Authorities – January 2012), Chapter 3, '*Development Management and Roads*' is to make sure that development located close to national roads and/or their junctions can be catered for by the design assumptions underpinning such roads and junctions, thereby avoiding potentially compromising the capacity and efficiency of the national road. The assessments provided in this traffic study will examine if the traffic generated by the proposed development has the potential to give rise to a premature or unacceptable reduction in the level of service available to road users on national roads or their junctions in the vicinity of the existing development. Preliminary analyses suggest that the proposed development can proceed complementary to safeguarding the capacity, safety and operational efficiency of the national road network. Based upon consultations with the Local Authority, Transport Infrastructure Ireland (TII) and reference to TII programmes the proposed development is considered unlikely to have a significant effect upon existing or future national road schemes.

13.5 Baseline Environment

13.5.1 Location

The application site is located in the Cappogue Industrial Park to the north of the M50 Motorway and to the south of Ballycoolin Road. Cappogue Industrial Park is located in the southern part of Dublin Enterprise Zone which benefit from proximity to the M50 motorway and the M2/N3 link road. The Dublin Enterprise Zone is well served by road and there are five separate Dublin Bus routes traversing the zone. Figure 13-1 shows the location of the existing development in the context of the Dublin Enterprise Zone.

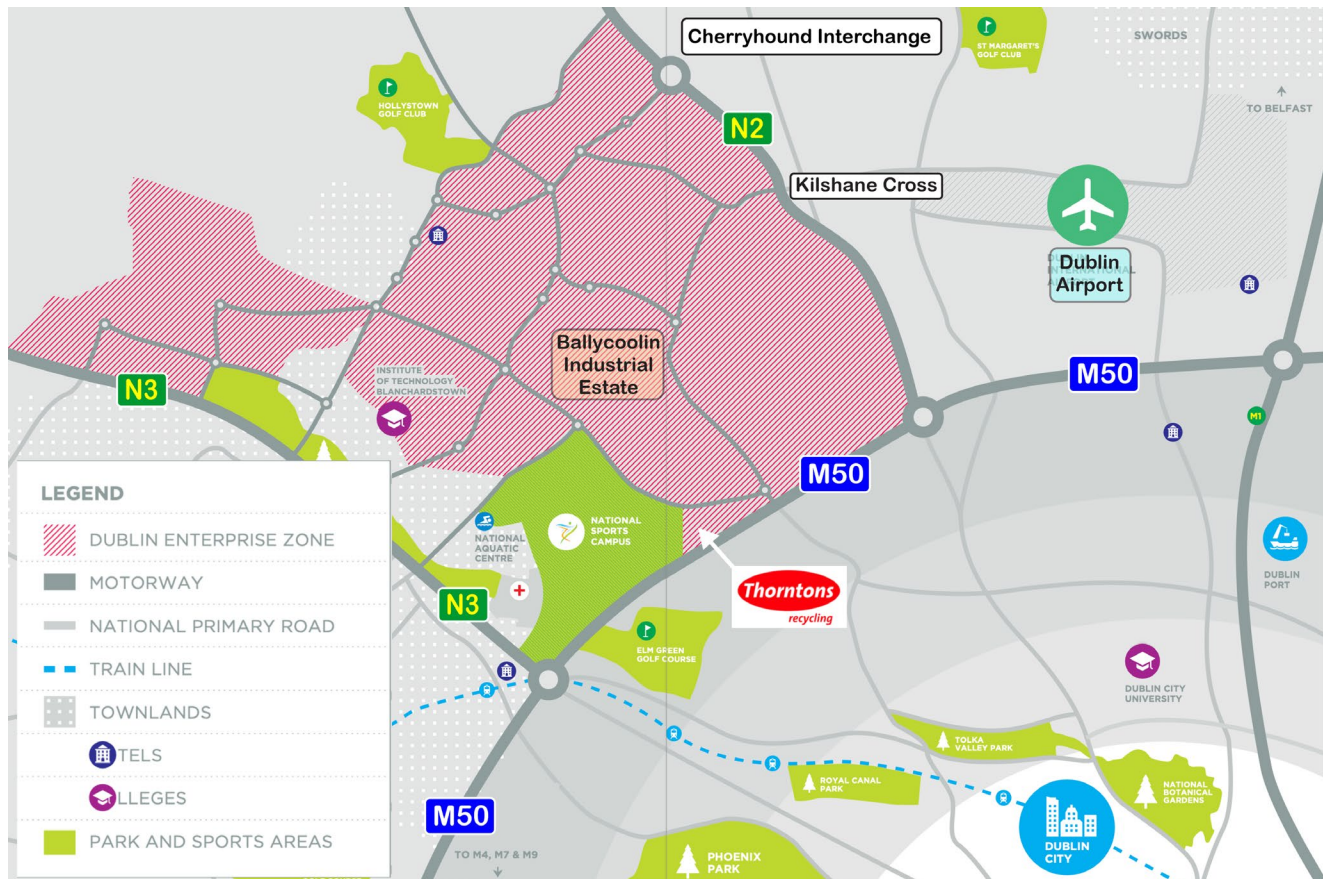


Figure 13-1: Site Location and DBZ (Source: DBZ Brochure – annotation added by TWL)

13.5.2 Site Access and Road Network

The proposed development site is located on the southern side of the L3090 Ballycoolin Road and is provided with direct vehicular access from a private access road connecting directly to L3090 at a signalised junction arrangement which includes access to Stadium Business Park to the north of Ballycoolin Road. Measured along the private access road the existing development site is approximately 250m from L3090. The private access road is signed for 'Premier Business Park'. The existing private road serves a number of existing industrial units which make up Premier Business Park. All traffic generated by the existing and proposed development both for construction and for the day-to-day operation of the site is accommodated by the private access road from L3090 Ballycoolin Road.

Based upon the existing business of the Applicant the distribution of traffic arising from the proposed development is estimated to have the greatest effect upon the section of the L3090 between the Premier Business Park access junction and the Cappagh Road. The relative influence of new traffic arising will have differing degrees of effect both east and west of the existing site access road. Under the future scenario the forecast distribution to the receiving local road network of all development generated HGV traffic associated with the transport of materials to and from the proposed development will be comprised approximately of 56% of all imports and over 53% of all exported material to/from the east of the site (Cappagh Road) and the remainder from the west (Ballycoolin).

Access to the existing waste management facility is provided through Cappogue Industrial Park. The site of the proposed development is currently provided with direct vehicular access from within Cappogue Industrial Park.



As set out by the Transportation Department and stated by the An Bord Pleanála Inspector under strategic infrastructure development reference number PL06F.PA0048, the general Ballycoolin area and Dublin Enterprise Zone is well served by a high quality road network. In such context the general receiving road network and access to the greater national strategic road network includes the following:

N3 National Primary Route

The route known as the Navan Road starts at M50 Junction 6 and bypasses Blanchardstown, Mulhuddart and Clonee with a dual carriageway. The dual carriageway changes into the M3 motorway near the Meath border by-passing Dunshaughlin and Navan. Near Kells the route continues as the N3 dual carriage way to the border with County Cavan. It then passes through Virginia, past Cavan Town and continues past Butlersbridge and through Belturbet. The route then crosses the border with Northern Ireland, becoming the A509 to Enniskillen. The A46 connects Enniskillen and the Donegal border, becoming the N3 across the border at Belleek, and connecting to Ballyshannon. From M50 Junction 6, N3 traffic can continue eastbound to Dublin City along the R147 Regional Road. M50 Junction 6 is notable as the Royal Canal and the Dublin-Sligo railway line pass through its centre.

N2 (M2) National Primary Route

The N2 starts at M50 Junction 5 where it runs as dual-carriageway for 17 km from the M50 to north of Ashbourne, County Meath. The N2 includes 3.5 km of three lane dual carriageway built to motorway standard. The route continues through Balrath towards Slane and continues through Collon in County Louth. Just after Ardee the N2 meets the N33, which connects the N2 to the nearby M1 motorway. North of this, in County Monaghan, the N2 bypasses Carrickmacross to the east. The route by-passes Castleblayney and Clontibret on the way to Monaghan. North of Monaghan town, the N12 diverges east to the border. The N2 continues north through Emyvale to reach the border at Moy Bridge directly south of Aughnacloy, County Tyrone. From here, the road becomes the A5 road to Omagh and Derry. Southbound N2 traffic can continue to Dublin City from M50 Junction 5 via the R135 Regional Road. M50 Junction 5 is a free-flow interchange.

N2/N3 Link Road

The N2/N3 link road runs south from N2 Junction 2 as far as the Ballycoolin Road. Between the Ballycoolin Road south to the N3 the link road is designated as the R121. The N2/N3 link road serves the Blanchardstown, Corduff and Mulhuddart industrial areas which include Ballycoolin, Millennium, Hollywood, Rosemount, Northwest, and Westpoint Business Parks, College Business and Damastown Technology Parks, and Damastown, Coolmine and Blanchardstown Industrial Parks. Between the N2 and the Ballycoolin Road the N2/N3 link road is dual carriageway. When the link road opened the then Minister (Varadkar) stated that this road was more than just a link between two motorways and an alternative route to and from the airport. He stated that it provides vital infrastructure to encourage businesses to settle in the area, and takes traffic and heavy vehicles away from other roads. The area has been provided with zones for science and technology developments, warehousing, light industrial and office accommodation and is home to Bristol Myers Squibb, IBM and eBay. Essential infrastructure has been pre-installed under and alongside the N2/N3 Link Road which commences at Church Road close to Tyrrelstown and joins the N2 at the Cherryhound interchange. Six roundabouts are constructed along the route and these link with existing local roads and provide access points to existing and future development lands.



13.5.2.1 M50 Motorway

The M50 Dublin orbital motorway forms a bypass of Dublin. The M50 runs from Dublin Port via the Dublin Port tunnel to an interchange with the M1 motorway near to Dublin Airport. From here the motorway forms a bypass around the west of Dublin, terminating at an interchange with the M11 motorway at the south of county Dublin. All of the National Primary Routes radiating from Dublin begin at their junctions with the M50. These junctions are in the form of grade-separated free-flowing interchanges. The M50 mainline itself was free-flow through all junctions. The other primary routes served are the N2 to Derry/Monaghan, N3 to Navan/Cavan/Northwest, N4/M4 to Galway/Sligo/Mayo, N7/M7 (M8) to Cork/Limerick/Waterford, and the N11/M11 to Wexford. Additional junctions along the motorway serve other suburbs of Dublin such as Ballymun, Tallaght, Naas, Dundrum, Sandyford and Cherrywood.

Ballycoolin Road L3090 and Cappagh Road L3080

Ballycoolin Road and Cappagh Road are significant Local Routes running between Finglas and Hollystown. In the vicinity of the Cappogue Industrial Park, these roads have been upgraded to a high standard with a series of roundabout junctions and right-turning lanes, as well as footpaths and cycle lanes on the Cappagh Road and a combination of roundabouts and large signal controlled junctions on the Ballycoolin Road.

The lands around the Cappagh Road and Ballycoolin Road are currently zoned in the Fingal County Development Plan 2017-2023 for heavy industry and for general enterprise and employment, and the standard to which the Cappagh Road and Ballycoolin Road are constructed reflects this. The Cappagh Road is a two-way single carriageway road, with a total width of 10.0-10.5m including a 3.0m ghost island central median. The median provides right turn lanes to various commercial and industrial developments along both sides of the route. The Ballycoolin Road is similar in carriageway width and pedestrian and cycle facilities. At the location of the Cappogue Industrial Park signal junction the road widens to provide substantial turning lanes to the industrial and commercial sites located north and south of Ballycoolin Road site entrance there are currently two entrances from the Cappagh Road.

The Ballycoolin Road connects the Cappagh Road with the R843 and other regional roads to the north of Blanchardstown and along the southern perimeter of the Ballycoolin Industrial Estate. The road has been upgraded to a high standard with a series of roundabout junctions and right-turning lanes, as well as footpaths and cycle lanes.

13.5.3 Relevant Planning Authority Policies and Objectives

In summarising current transportation policies and future objectives for the general area, reference has been made to the Fingal Development Plan 2017-2023.

Fingal Development Plan 2017-2023

The Fingal Development Plan 2017-2023 sets out the vision, policies, strategies and objectives for planning and sustainable development of Fingal. Traffic and Transport related policies and objectives considered relevant to the location of the proposed development are summarised below.



Movement and Infrastructure Objectives:

- Objective MT40 *“Implement a programme of road construction and improvement works closely integrated with existing and planned land uses, taking into account both car and non-car modes of transport whilst promoting road safety as a high priority. Major road construction and improvement works will include an appraisal of environmental impacts.”*
- Objective MT41 *“Seek to implement the Road Improvement Schemes indicated in Table 7.1 within the Plan period, subject to assessment against the criteria set out in Section 5.8.3 of the NTA Transport Strategy for the GDA, where appropriate and where resources permit. Reserve the corridors of the proposed road improvements free of development.”* Where Table 7.1 includes:
 - St Margaret’s Bypass to Northern Parallel Road
 - Sillogue Bridge Link
 - Cappagh Road to North Road Link
 - Cappagh Road to River Road Link
 - N3 Upgrade Littlepace to M50
 - N3 Snugborough Interchange Upgrade
 - N3 Castaheany Interchange Upgrade
 - Kellystown Road
 - N3-N4 Link Ongar to Barnhill
 - N3–N4 Barnhill to Leixlip Interchange”
- Objective MT43 *“Support and facilitate the TII, Meath County Council and Kildare County Council in the planning and delivery of the N2 Upgrade north of Ashbourne and a possible link between the M3 and M4.”*
- Objective DA01 *“Facilitate the operation and future development of Dublin Airport, in line with Government policy, recognising its role in the provision of air transport, both passenger and freight.”*

Development Management Standards:

- Objective DMS125 *“Restrict unnecessary new accesses directly off Regional Roads. Ensure premature obsolescence of all county/local roads does not occur by avoiding excessive levels of individual entrances. Ensure that necessary new entrances are designed in accordance with DMRB or DMURS as appropriate, thereby avoiding the creation of traffic hazards.”*
- Objective DMS128 *“Require developers to provide a Traffic Impact Assessment where new development will have a significant effect on travel demand and the capacity of the surrounding transport network.”*

13.5.4 Development Management Standards

Parking Standards

Reference has been made to Table 12.8 of the Fingal Development Plan 2017-2023 which outlines car parking standards. The proposed development site is located in the heart of the employment area of Ballycoolin. Notwithstanding that complex developments may be assessed separately with regard to the circumstances of each case it is noted that the standard parking requirement for ‘Offices’ (General) is one parking space per 30m². For ‘Industrial’ (General) the standard is 1 space per 40m².



13.6 Surveyed Existing Network Traffic Flows

13.6.1 National Road Network Traffic Counter Data

Transport Infrastructure Ireland (TII) maintains a network of traffic counters on motorways, national roads and some regional roads. Data for these counters is publicly available at trafficdata.tii.ie. In the context of the greater receiving road network traffic statistics re summarised in Table 13-1 for the M50 Motorway, and N3 and N2 National Primary Roads. Table 13-1 summarises the TII published Annual Average Daily Traffic (AADT) flows recorded for 2019, 2020 and 2021 and forecast for the present year.

Table 13-1: Greater Receiving Road Network Traffic Flows Statistics

Counter Ref. No.	Location	AADT (HGV%)			
		2019	2020	2021	2022 est.
N3 TMU N03 000.0 N	Between Junction 2, Blanchardstown and Junction 3, Clonsilla	7,849 (4.0%)	60,642 (5.0%)	66,859 (4.6%)	74,159 (4.2%)
M2 TMU M02 000.0 N	Between Junction 1, M50/N02 and Junction 2 Coldwinters	40,659 (11.2%)	32,383 (13-8%)	34,986 (12.8%)	39,657 (12.2%)
M50 TMU M50 010.0 N	Between Junction 6, N03/M50 and Junction 5, N02/M50, Finglas	149,234 (7.9%)	109,685 (10.6%)	127,447 (9.6%)	149,494 (8.5%)

13.6.2 Local Receiving Road Network Traffic Counts

Traffinomics (formerly Abacus) Transportation Surveys Ltd. carried out classified turning count surveys on the public road network in the vicinity of the site using CCTV on Tuesday 16th November 2021 between 07:00 and 19:00hrs. The surveys included enumeration and classification of all traffic movements and also 'tracked' the movements of all site generated HGV to and from the Ballycoolin Road in order to establish the current traffic distribution. The survey data and location mapping is provided in Appendix 13-1 which includes figures showing the junction count locations identified by Google Map co-ordinates.

Traffic data was collected for the following locations shown on Figure 13-2 where the prefix 'J' signifies a classified junction turning count site.

- Site 1: Premier Business Park/Cappogue Industrial Park Internal Junction
- Site 2: Ballycoolin Road/Premier Business Park Signal Junction
- Site 3: Ballycoolin Road/Cappagh Road Signal Junction



Figure 13-2: Traffic Count Locations (Source Bing Aerial Mapping)

The traffic data collected in the turning count surveys is a snapshot of traffic volumes and characteristics on the local road network. The Tuesday data was collected to reflect typical weekday traffic patterns and includes the commuter peak periods. The weekday commuter peak periods typically tend to have the heaviest hourly network flows. The traffic flow data from the November 2021 surveys forms the basis of the assessments of road network capacity and the likely impact of the proposed development on the operation of the receiving road network defined by the above scope understood to have been agreed with Fingal County Council Transportation Department at initial pre-planning and scoping meetings.

Covid-19 Pandemic measures did not include for travel restrictions during the traffic surveys. The development site is chiefly served by the N3 National Primary Road and it is reasonable to expect that traffic flow statistics for the N3 are likely to be a good comparator in the examination of the likely influences of Covid-19 on traffic volumes locally during the traffic counts. To investigate the extent to which the pandemic may have had some effect on surveyed network traffic flows the traffic data recorded at the closest TII traffic counter¹ site on the N3 has been examined for the count month of November 2021 (See Table 13-2 with detail for November 2019, 2020 and 2021).

¹ 000000001034 - TMU N03 000.0 N Between Jn 02 Blanchardstown and Jn 03 Clonsilla, Blanchardstown, Co. Dublin



Table 13-2: N3 Traffic Flows November Statistics

Month	Average Work Day 07:00-19:00hrs		Average 7-Day 07:00-19:00hrs	
	Flow	Diff. 2019	Flow	Diff. 2019
November 2019	65,494	NA	62,118	NA
November 2020	55,126	-16%	47,880	-23%
November 2021	62,778	-4%	59,655	-4%

The N3 traffic flow statistics for the month of November show that weekday traffic flows during the count period 07:00-19:00hrs in 2021 were 4% lower than those recorded pre-covid in 2019. The same statistic including for all days of the week similarly shows 2021 November traffic flows to be 4% lower than the pre-Covid values for November 2019.

The traffic counts that underpin the traffic modelling analyses in the Traffic and Transport Assessment were recorded on the Tuesday of the third week in November. The following Table 13-3 shows the TII traffic flow statistics recorded for the Tuesday of the third week in November for the count period 07:00-19:00hrs for 2019, 2020 and 2021.

Table 13-3: N3 Traffic Flows Count Day Statistics

Date	Total Traffic Flow 07:00-19:00hrs	
	Flow	Diff. 2019
Tue-19-Nov-2019	61,761	NA
Tue-17-Nov-2020	54,079	-12%
Tue-16-Nov-2021	62,368	+1%

The traffic flow statistics for the N3 confirm that the traffic flows recorded in the counts undertaken on 16 November 2021 are approximately 1% higher than had been recorded pre-Covid. Traffic volumes are acknowledged to fluctuate day to day. The degree of fluctuation about and average varies by location but in urban environments the amplitude of variation can be expected to be $\pm 10\%$.

A high-level review of TII reported 'Traffic Count Data and Analysis during Covid restrictions' and 'Covid Traffic Patterns' published on tii.ie suggests that traffic flows on the network so far in 2022 are similar to and consistent with the corresponding months in 2019 which suggests a return to 2019 flows. This confirms that 2019 is a valid comparator year for the calibration and validation of the 2021 surveyed traffic counts at Ballycoolin Road and Cappagh Road.



The difference between the count data and the corresponding pre-Covid (2019) flows is estimated to be approximately 1% with the higher of the flows experienced during the 2021 traffic count. The effect of this on the traffic analyses and modelling assessments in the Traffic and Transport Assessment is not likely to be significant. It is acknowledged that there would be an impact on the resulting calculations but not to an extent that it might reasonably be considered adverse nor of a magnitude that warrants adjustment of the baseline traffic flows underpinning the assessment of traffic impact arising from the proposed development.

13.6.3 Summary of Turning Count Network Traffic Flows

Daily traffic flow profiles recorded on the receiving road network during the course of the Tuesday 16th November 2021 survey are shown in Figures 1 through 12 of Appendix 13-2 as follows:

- Figure 1 Daily Total Traffic Flow Ballycoolin Road (East)
- Figure 2 Daily Total Traffic Flow Ballycoolin Road (West)
- Figure 3 Daily Total Traffic Flow Cappagh Road (North)
- Figure 4 Daily Total Traffic Flow Cappagh Road (South)
- Figure 5 Daily Total Traffic Flow Stadium Business Park
- Figure 6 Daily Total Traffic Flow Cappogue Industrial Park
- Figure 7 Daily HGV Traffic Flow Ballycoolin Road (East)
- Figure 8 Daily HGV Traffic Flow Ballycoolin Road (West)
- Figure 9 Daily HGV Traffic Flow Cappagh Road (North)
- Figure 10 Daily HGV Traffic Flow Cappagh Road (South)
- Figure 11 Daily HGV Traffic Flow Stadium Business Park
- Figure 12 Daily HGV Traffic Flow Cappogue Industrial Park

Daily traffic flows recorded on the receiving road network during traffic surveys on Tuesday 16 November 2021 are shown in Appendix 13-3 Figure 1 in network flow diagram format. The total car and light vehicle flow figures are shown 'blue', Rigid HGV flows are shown 'red', articulated HGV shown 'green' and bus traffic flows are shown bracketed. Appendix 13-3 Figure 1 shows all traffic turning movements at the local junctions included in the study area and includes all traffic generated by existing developments on the date of the survey. The survey traffic flows depicted in Appendix 13-3 Figure 1 covers a 12hr period 07:00-19:00hrs. Appendix 13-3 Figures 2 and 3 respectively show the morning and evening peak hour surveyed traffic flows.

Table 13-4 provides a summary of the surveyed traffic flows on the receiving road network during the turning count surveys of 2021. Traffic counts were undertaken in September 2018 in connection with a previous planning application at the development site. These counts are not used in the analysis but where available the traffic flow data recorded in September 2018 is provided for information and to aid the Planning Authority in judging how robust the future network assessment traffic flows are having applied the standard TII growth rates to local traffic flows in Ballycoolin.

Table 13-4 shows the total traffic flow, HGV flow, percentage HGV content enumerated over the survey period together with an estimate of the Annual Average Daily Traffic (AADT).



AADT is the standard measurement for vehicle traffic load on a section of road. Based upon TII Publication PE-PAG-02039 (October 2016) 'Project Appraisal Guidelines Unit 16.1 - Expansion Factors for Short Period Traffic Counts' the 12 hour surveys are estimated to account for 0.833 of the traffic flow over a 24 hour period. Weekly Average Daily Traffic (WADT) is estimated to be approximately 0.94 (Weekly Flow Index for Tuesday in Dublin Region) whilst the Annual Average Daily Traffic Flow (AADT) is 1.01 times (Monthly Flow Index for November in Dublin Region) the WADT.

Table 13-4: Surveyed Daily Traffic Flows 2021

Location	Link	Link Description	Surveyed Daily Flow 12hr			AADT
			Total	HGV	%HGV	
Ballycoolin Road	1	East of Premier Business Park	9,433 *[9,645]	1,257 *[733]	13% *[8%]	10,754(13%) *10,995(8.4%)
	2	West of Premier Business Park	9,858 *[9,892]	1,365 *[831]	14% *[9%]	11,238(14%) *11,277(8.4%)
Cappagh Road	3	North of Ballycoolin Road	5,312	1,153	22%	6,056(22%)
	4	South of Ballycoolin Road	11,465	970	8%	13,070(8%)
Stadium Business Park	5	Access from Ballycoolin Road	2,182 *[2,470]	425 *[405]	19% *[17%]	NA
Premier Business Park	6	Access from Ballycoolin Road	547 *[763]	237 *[221]	43% *[29%]	NA
Exiting Waste Facility *[Former A-Plus]	-	Premier B.P. Internal Junction	214 *[223]	189 *[153]	88% *[69%]	NA

Note: *[Corresponding Traffic Count Data Tuesday 18th September 2018]

By applying the relevant indices, the AADT is estimated to be 1.14 times the 12hr traffic flows recorded in November 2021. For the purposes of this assessment the AADT values are 14% higher than the surveyed 12 hour traffic flows recorded for the receiving road network.

Table 13-5 shows the existing surveyed traffic scenario derived from the November 2021 traffic data. Table 13-4 is based upon no further development whatsoever occurring at the proposed development site.

The forecast daily flows for the 'Year of Opening' 2025 and the future assessment years have been forecast in accordance with TII PE-PAG-02017 (Oct 2021) 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections' by applying the appropriate Link-Based Central Growth Rates for the Dublin Metropolitan Area.



The growth indices used to derive Opening Year (2025) and; Opening Year +5ys (2030) and Opening Year +15ys (2040) flows from the surveyed (Late 2021) flows are as follows and are applied to all roads included in the traffic study.

- 2021-2025 (Opening Year)-----1.066 (LV)-----1.123 (HGV)
- 2021-2030 (Opening Year +5ys)-----1.156 (LV)-----1.299 (HGV)
- 2021-2040 (Opening Year +15ys)-----1.216 (LV)-----1.487 (HGV)

The future year 'Do Nothing' network traffic flow data is provided in the following Table 13-5 'Network Forecast 2025 Daily Traffic Flows (Year of Opening – 'Do Nothing')', Table 13-6 'Network Forecast 2030 Daily Traffic Flows (Year of Opening +5ys – 'Do Nothing')' and Table 13-7 'Network Forecast 2040 Daily Traffic Flows (Year of Opening +15ys – 'Do Nothing')'.

Table 13-5: Network Forecast 2025 Baseline Daily Traffic Flows (Year of Opening – 'Do Nothing')

Location	Link	Link Description	Forecast Daily Traffic Flow (07:00-19:00hrs) 12hr			AADT
			Total	HGV	%HGV	
Ballycoolin Road	1	East of Premier Business Park	10,037	1,378	14%	11,442(14%)
	2	West of Premier Business Park	10,462	1,486	14%	11,926(14%)
Cappagh Road	3	North of Ballycoolin Road	5,728	1,295	23%	6,530(23%)
	4	South of Ballycoolin Road	12,227	1,089	9%	13,996(9%)

Tables 13-6 and 13-7 show the corresponding baseline daily traffic flows for the year of opening 2025 + 5ys and the design year 2040 and these are based upon the traffic flows set out in Table 13-4 as derived from the 2021 traffic surveys. The baseline traffic flows for 2030 and 2040 are calculated from the figures set out in Table 13-4 by factoring using the standard central growth rates set out in TII PE-PAG-02017 (Oct 2021) 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections'.

Table 13-6: Network Forecast 2030 Baseline Daily Traffic Flows (Year of Opening +5ys – 'Do Nothing')

Location	Link	Link Description	Forecast Daily Traffic Flow (07:00-19:00hrs) 12hr			AADT
			Total	HGV	%HGV	
Ballycoolin Road	1	East of Premier Business Park	10,868	1,552	14%	12,390(14%)
	2	West of Premier Business Park	11,293	1,660	15%	12,874(15%)
Cappagh Road	3	North of Ballycoolin Road	6,306	1,498	24%	7,188(24%)
	4	South of Ballycoolin Road	13,392	1,260	9%	15,267(9%)



Table 13-7: Network Forecast 2040 Baseline Daily Traffic Flows (Year of Opening +15yrs – ‘Do Nothing’)

Location	Link	Link Description	Forecast Daily Traffic Flow (07:00-19:00hrs) 12hr			AADT
			Total	HGV	%HGV	
Ballycoolin Road	1	East of Premier Business Park	11,492	1,737	15%	13,101(15%)
	2	West of Premier Business Park	11,917	1,845	15%	13,585(15%)
Cappagh Road	3	North of Ballycoolin Road	6,772	1,715	25%	7,720(25%)
	4	South of Ballycoolin Road	14,204	1,442	10%	16,193(10%)

Network flow diagrams corresponding to the above daily traffic flow scenarios can be found in Appendix 13-3 as follows:

- Figure 4 Forecast Baseline 2025 Year of Opening Daily Traffic Flows 07:00-19:00hrs
- Figure 5 Forecast Baseline 2030 Year of Opening +5yrs Daily Traffic Flows 07:00-19:00hrs
- Figure 6 Forecast Baseline 2040 Year of Opening + 15yrs Daily Traffic Flows 07:00-19:00hrs

13.6.4 Identification of the Network Assessment Peak Hours

It is best practice in preparing TTA to assess the impact of the proposed development during periods when the impact of development traffic flows on the receiving road network are greatest. The peak hours and associated traffic flows recorded in the November 2021 surveys are as follows:

- Weekday AM Network Peak Hour 08:00-09:00hrs
- Weekday PM Network Peak Hour 17:00-18:00hrs

Table 13-8 provides a summary of the recorded AM Peak Hour two-way peak hour traffic flows on the receiving road network. The corresponding flows in the PM Peak Hour are summarised in Table 13-9.

Table 13-8: Surveyed Traffic Flows 2021 (AM Peak Hour Traffic)

Location	Link	Link Description	Surveyed AM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	977 *[1098]	106 *[55]	11% *[5%]
	2	West of Premier Business Park	1022 *[1101]	104 *[58]	10% *[9%]
Cappagh Road	3	North of Ballycoolin Road	540	88	16%
	4	South of Ballycoolin Road	1261	92	7%
Stadium Business Park	5	Access from Ballycoolin Road	214 *[254]	27 *[42]	13% *[17%]



Location	Link	Link Description	Surveyed AM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Premier Business Park	6	Access from Ballycoolin Road	41 *[47]	25 *[5]	61% *[11%]
Existing Waste Facility *[Former A-Plus]	-	Premier B.P. Internal Junction	25 *[4]	24 *[2]	96% *[50%]

Note: *[Corresponding Traffic Count Data Tuesday 18th September 2018]

Table 13-9: Surveyed Traffic Flows 2021 (PM Peak Hour Traffic)

Location	Link	Link Description	Surveyed PM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	975 *[1068]	62 *[36]	6% *[4%]
	2	West of Premier Business Park	1055 *[1049]	74 *[42]	7% *[4%]
Cappagh Road	3	North of Ballycoolin Road	544	49	9%
	4	South of Ballycoolin Road	1359	69	5%
Stadium Business Park	5	Access from Ballycoolin Road	184 *[273]	22 *[25]	12% *[9%]
Premier Business Park	6	Access from Ballycoolin Road	34 *[54]	8 *[13]	24% *[24%]
Existing Waste Facility	-	Premier B.P. Internal Junction	8 *[14]	6 *[11]	75% *[79%]

Note: *[Corresponding Traffic Count Data Tuesday 18th September 2018]

Network flow diagrams of the recorded peak hour traffic flows can be found in Appendix 13-3 as follows:

- Figure 2 Surveyed Traffic Flows AM Peak Hour 08:00-09:00hrs
- Figure 3 Surveyed Traffic Flows PM Peak Hour 17:00-18:00hrs

The forecast morning and evening peak hour flows for the year of opening 2025 and the future assessment years have been forecast in accordance with TII PE-PAG-02017 (Oct 2021) 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections' by applying the appropriate Link-Based Central Growth Rates for the Dublin Metropolitan Area as set out above.

The future year 'Do Nothing' forecast morning peak hour forecast network traffic flow data is provided in the following Table 13-10 'Forecast 2025 AM Peak Hour Traffic Flows (Year of Opening – 'Do Nothing')', Table 13-11 'Forecast 2030 AM Peak Hour Traffic Flows (Year of Opening +5yrs – 'Do Nothing')' and Table 13-12 'Forecast 2040 AM Peak Hour Traffic Flows (Year of Opening +15ys – 'Do Nothing')'.



The future year 'Do Nothing' forecast evening peak hour forecast network traffic flow data is provided in Table 13-13 'Forecast 2025 PM Peak Hour Traffic Flows (Year of Opening – 'Do Nothing')', Table 13-14 'Forecast 2030 PM Peak Hour Traffic Flows (Year of Opening +5yrs – 'Do Nothing')' and Table 13-15 'Forecast 2040 PM Peak Hour Traffic Flows (Year of Opening +15ys – 'Do Nothing')'.

For the traffic modelling assessments in this Chapter the TII growth factors have been applied directly to peak hour traffic data. Growth factors are not always directly applicable to peak hour periods since the peak hour generally spreads out as opposed to intensifying. Ignoring this factor and adding growth directly to the peak hour generally results in robust calculations favoured by traffic experts in the assessment of road networks.

Table 13-10: Network Forecast 2025 Baseline AM Peak Traffic Flows (Year of Opening – 'Do Nothing')

Location	Link	Link Description	Forecast AM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	1,039	116	11%
	2	West of Premier Business Park	1,084	114	10%
Cappagh Road	3	North of Ballycoolin Road	581	99	17%
	4	South of Ballycoolin Road	1,349	103	8%

Tables 13-11 and 13-12 show the corresponding baseline traffic flows for the year of opening 2025 + 5yrs and the design year 2040 and these are based upon the traffic flows set out in Table 13-3 as derived from the 2021 traffic surveys. The baseline traffic flows for 2030 and 2040 are calculated from the figures set out in Table 13-3 by factoring using the standard central growth rates set out in TII PE-PAG-02017 (Oct 2021) 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections'.

Table 13-11: Network Forecast 2030 Baseline AM Peak Traffic Flows (Year of Opening +5yrs – 'Do Nothing')

Location	Link	Link Description	Forecast AM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	1,124	130	12%
	2	West of Premier Business Park	1,169	128	11%
Cappagh Road	3	North of Ballycoolin Road	637	114	18%
	4	South of Ballycoolin Road	1,471	120	8%

Table 13-12: Network Forecast 2040 Baseline AM Peak Traffic Flows (Year of Opening +15yrs – 'Do Nothing')

Location	Link	Link Description	Forecast AM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	1,187	144	12%
	2	West of Premier Business Park	1,232	142	12%
Cappagh Road	3	North of Ballycoolin Road	680	131	19%
	4	South of Ballycoolin Road	1,558	137	9%



Table 13-13: Network Forecast 2025 Baseline PM Peak Traffic Flows (Year of Opening – ‘Do Nothing’)

Location	Link	Link Description	Forecast PM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	1,038	69	7%
	2	West of Premier Business Park	1,118	81	7%
Cappagh Road	3	North of Ballycoolin Road	583	55	9%
	4	South of Ballycoolin Road	1,453	78	5%

Table 13-14: Network Forecast 2030 Baseline PM Peak Traffic Flows (Year of Opening +5yrs – ‘Do Nothing’)

Location	Link	Link Description	Forecast PM Peak Hour Traffic Flow		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	1,124	78	7%
	2	West of Premier Business Park	1,204	90	7%
Cappagh Road	3	North of Ballycoolin Road	636	64	10%
	4	South of Ballycoolin Road	1,581	90	6%

Table 13-15: Network Forecast 2040 Baseline PM Peak Traffic Flows (Year of Opening +15yrs – ‘Do Nothing’)

Location	Link	Link Description	Forecast PM Peak Hour Network Traffic		
			Total	HGV	%HGV
Ballycoolin Road	1	East of Premier Business Park	1,185	88	7%
	2	West of Premier Business Park	1,265	100	8%
Cappagh Road	3	North of Ballycoolin Road	675	73	11%
	4	South of Ballycoolin Road	1,671	103	6%

Network flow diagrams of the forecast peak hour traffic flows can be found in Appendix 13-.3 as follows:

- Figure 7 Forecast Baseline 2025 AM Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 8 Forecast Baseline 2030 AM Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 9 Forecast Baseline 2040 AM Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 10 Forecast Baseline 2025 PM Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 11 Forecast Baseline 2030 PM Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 12 Forecast Baseline 2040 PM Peak Hour Traffic Flows 08:00-09:00hrs



13.6.5 Existing Development Traffic Generation Characteristics

Details of the existing development and site infrastructure are set out in Chapter 4. Traffic generation arising at the existing waste management facility operated by the Applicant needs to be taken into account in the assessment of the baseline traffic scenario. The traffic surveys and existing weighbridge data aid in identifying the traffic generation characteristics of the existing development from which it is reasonable to identify the likely traffic generation characteristics of the C&D waste recycling element of the proposed development. Traffic generating characteristics relating to the other proposed waste streams will be derived from other similar waste facilities operated by the Applicant. The derivation of future traffic generation or trip attraction from existing site data is in its simplest form referred to as the comparison method which in this case is likely to be the most appropriate source of representative traffic generation and traffic distribution data for the particular land-use proposed at this location.

To establish the current levels of commercial traffic generated at the existing development we have examined the weighbridge records and delivery dockets for 2020 and 2021. This data has been used to validate the traffic turning count data at the development and has been used to establish typical daily traffic and payload characteristics. The weighbridge data also provides information on seasonal and monthly fluctuations throughout the calendar year. The primary sources of traffic derive from the importation of C&D wastes. The weighbridge data spans two full years of operation and is thus a suitably large data sample from which to source traffic generation trends and from which to evaluate the characteristics of traffic arising from the current permitted development. Based upon the data sample, materials are imported to the site in various vehicles as follows:

<u>Vehicle Type</u>	<u>Proportion</u>	<u>Load</u>
Cage Vehicle	0.2%	0.7t
Rear End Loader	24.8%	4.6t
Grab Lorry/Low Loader	0.2%	0.6t
Rear End Loader	27.4%	3.3t
Roll-on Roll-off	20.5%	1.9t
Skip Truck	16.2%	2.7t
Tipper Lorry	7.0%	4.2t
Tractor Unit/Curtain	2.7%	11.2t
Van	1.0%	0.3t

The import of waste is undertaken chiefly by Rear End Loader, Roll-on Roll-off and Skip Trucks. The average weight of inbound loads is recorded as 3.6t. Materials are exported from the site generally by articulated vehicles. The average payload of vehicles exporting materials after processing is recorded as 22.3t per vehicle.

The following Figure 13-3 shows a graphical representation of the monthly volume of traffic generated over the period 2019 – 2021 and includes for all import and export of materials. The figures for each month are shown as a proportion of the total annual traffic generation. Analysis of the weighbridge data shows similar proportions of inbound (importing materials) and outbound (exporting processed materials). Figure 13-3 shows a relatively steady rate of materials processing over the year with no notable fluctuations about the average value of 8% and this is borne out by the 85th Percentile value of 9%. Traffic generation is greatest during the early months with an upper value of 10% manifest in January. This pattern is repeated in each of the three years for which weighbridge statistics have been examined.

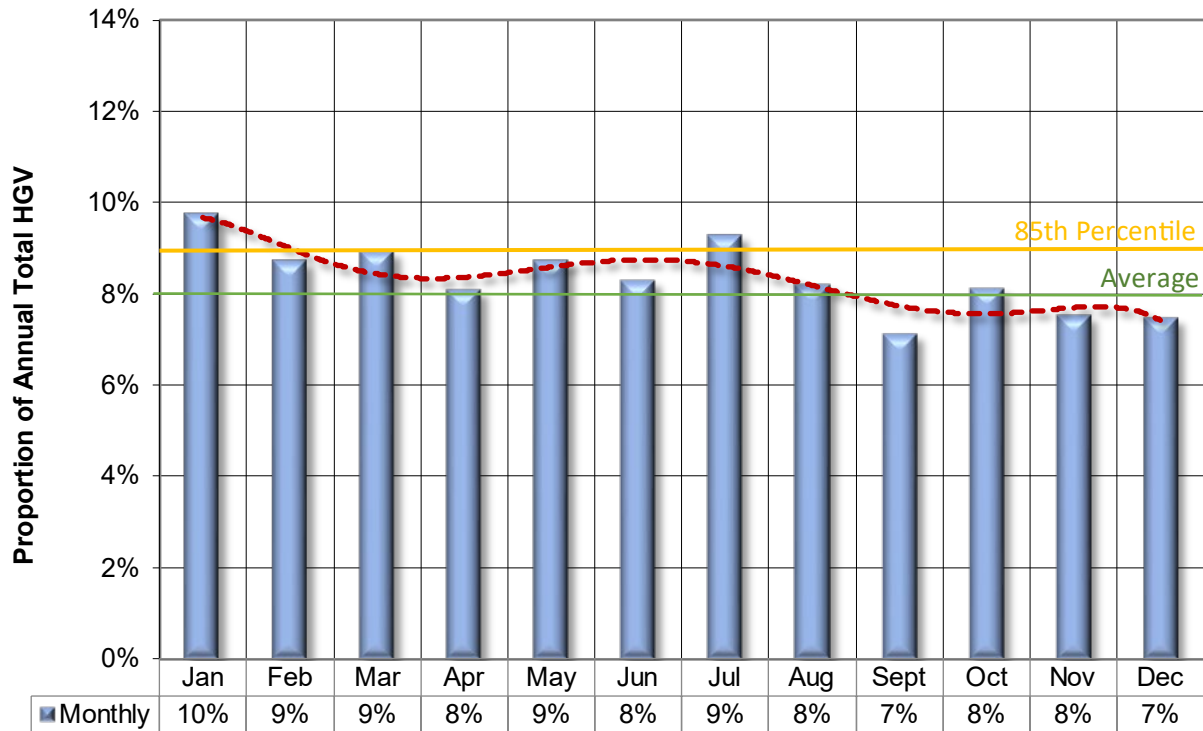


Figure 13-3: Recorded Seasonal Traffic Generation (2019-2021)

From Figure 13-3 the solid horizontal 'green' line represents the average monthly traffic generation which is approximately 8% of annual traffic generation whilst the horizontal 'orange' line represents the 85th percentile traffic generation which is approximately 9% of the annual traffic generation. The month of November when the traffic surveys were undertaken is representative of average traffic generation rates and the resulting traffic flow data is considered representative.

The existing waste management facility is permitted to receive 49,500t of waste per annum. Based upon detailed analysis and assessment of the weighbridge data for 2020 and 2021 the following Table 13-16 provides a summary of the volumes and traffic generation of the existing site. The figures in Table 13-16 show the number of vehicle trips on a monthly basis. Monthly traffic generation rates are derived directly from the weighbridge records averaged over two years.

Based upon the number of working days per month, less specified bank holidays, the average daily traffic generation of the site over the course of the two year period is recorded as 55 vehicle trips and the 85th percentile is 63 vehicle trips.

By reference to the annual tonnage and the inbound average payload of 3.6t per vehicle and the average outbound payload of 22.3t the average daily traffic generation of the site is calculated to be 55 trips per day comprising 47 No. inbound trips and 8 No. outbound trips.



Table 13-16: Existing Site Traffic Generation

Month	Year	No. Days	Traffic Generation			Traffic Generation			Daily Average
			Monthly (Veh)			Daily (Veh)			
			In	Out	Total	In	Out	Total	By Month
January	2019	23	1422	211	1633	62	9	71	66
	2020	25	1388	204	1592	56	8	64	
	2021	23.5	1277	208	1485	54	9	63	
February	2019	22	1215	206	1421	55	9	65	63
	2020	22.5	1263	207	1470	56	9	65	
	2021	22	1109	206	1315	50	9	60	
March	2019	23.5	1195	166	1361	51	7	58	62
	2020	24	1372	227	1599	57	9	67	
	2021	25	16	14	30	1	1	1	
April	2019	24	1239	166	1405	52	7	59	50
	2020	24	1174	193	1367	49	8	57	
	2021	24	720	107	827	30	4	34	
May	2019	25	1376	212	1588	55	8	64	54
	2020	23.5	1162	141	1303	49	6	55	
	2021	23.5	855	146	1001	36	6	43	
June	2019	22.5	1146	173	1319	51	8	59	53
	2020	24	1257	168	1425	52	7	59	
	2021	24	849	170	1019	35	7	42	
July	2019	25	1377	187	1564	55	7	63	55
	2020	25	1304	203	1507	52	8	60	
	2021	24.5	897	163	1060	37	7	43	
August	2019	24.5	1312	157	1469	54	6	60	53
	2020	23.5	1060	188	1248	45	8	53	
	2021	24	945	147	1092	39	6	46	
September	2019	23	1008	144	1152	44	6	50	49
	2020	24	1036	167	1203	43	7	50	
	2021	24	952	154	1106	40	6	46	
October	2019	25	1348	194	1542	54	8	62	50
	2020	24.5	1020	126	1146	42	5	47	
	2021	23.5	838	116	954	36	5	41	
November	2019	23.5	1055	197	1252	45	8	53	51
	2020	23	1064	176	1240	46	8	54	
	2021	24	930	137	1067	39	6	44	
December	2019	22	1013	177	1190	46	8	54	52
	2020	23	1099	181	1280	48	8	56	
	2021	23	938	156	1094	41	7	48	



The following Figure 13-4 shows a graphical representation of the volume of traffic generated by day of the week over the period 2019 – 2021 and includes for all import and export of materials. The figures for each day of the week are shown as a proportion of the total weekly traffic generation. Figure 13-4 shows a relatively steady rate of materials processing over the week with no notable fluctuations about the weekday average value of 20%. A relatively small proportion of the weekly traffic is generated on Saturday which is a half day.

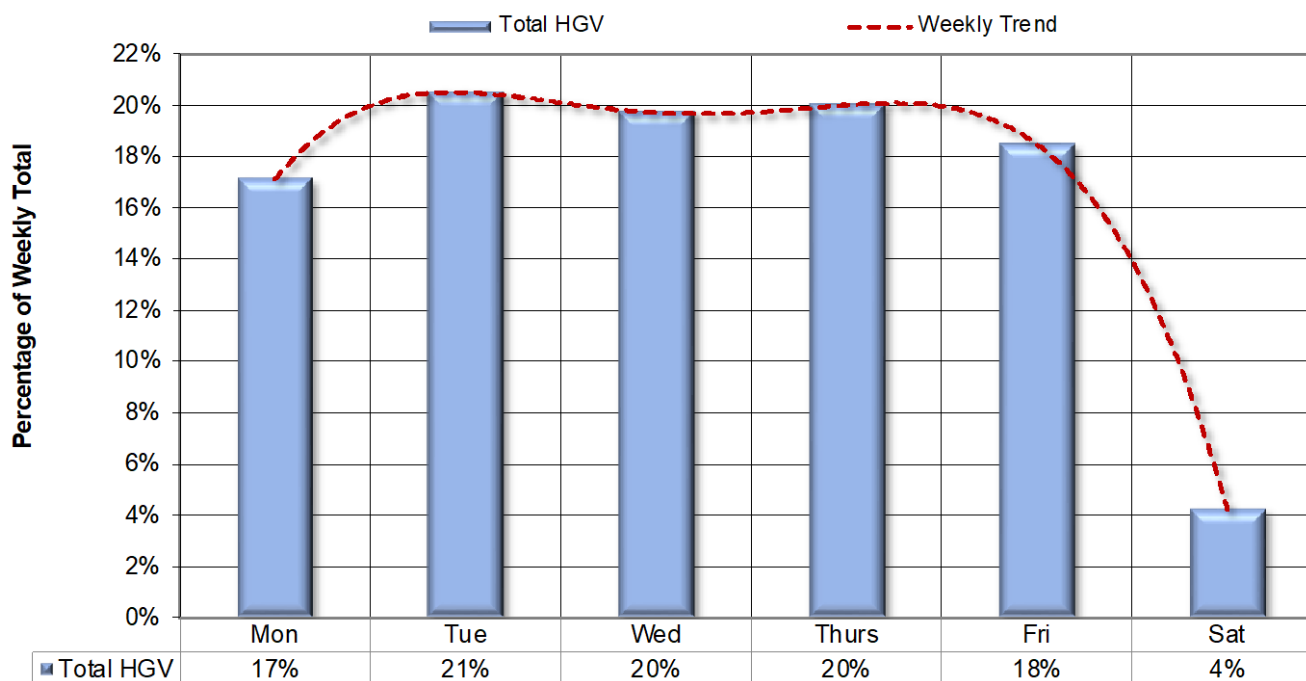


Figure 13-4: Recorded Weekday Fluctuations in Traffic Generation (2019-2021)

The following Figure 13-5 shows a graphical representation of the volume of traffic generated by hour of the day over the period 2019 – 2021 and includes for all import and export of materials. Traffic generation during the morning and evening commuter peak hours is in the order of 8% of the total daily traffic generation. The development peak hour occurs between 15:00-16:00hrs during which approximately 12% of daily traffic generation is manifest.

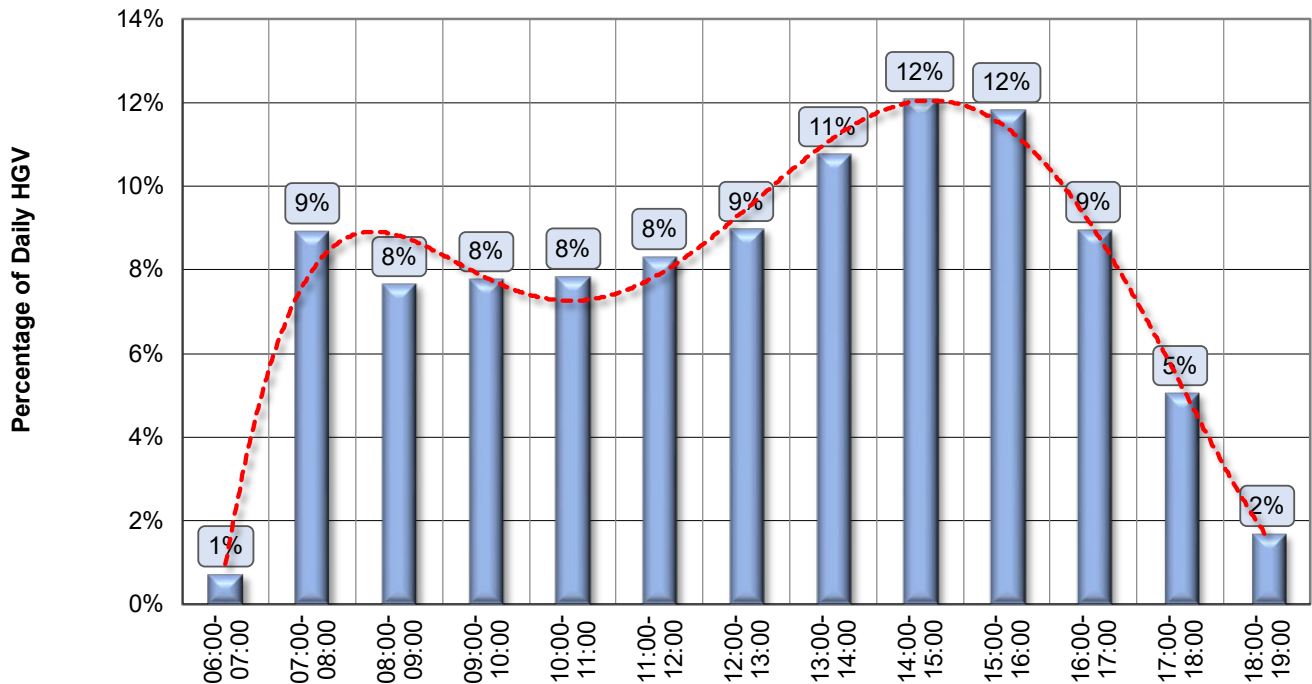


Figure 13-5: Recorded Daily Weekday Fluctuations in Traffic Generation (2019-2021)

In addition to commercial traffic, the existing facility generates cars and vans generally arising from the arrival and departure of staff and trips to and from the site associated with the day to day operation and servicing of the site. Light vehicles do not cross the weighbridge and are not ordinarily recorded entering or leaving the site. Light vehicle generation was recorded in the recent traffic surveys and in traffic surveys undertaken locally in 2018. The following Figure 13-6 shows the inbound movement of light traffic and Figure 13-7 shows the outbound movements recorded in both the 2018 and 2022 traffic surveys. The figures show that there is no record of a peak in the morning after 07:00hrs when the surveys commenced so there is no identifiable peak during the traditional morning commuter peak. The data shows an average traffic generation of approximately 2 No. vehicles per hour throughout the day. The data shows a peak in light traffic leaving the existing facility after 18:00hrs which is associated with staff finishing for the day.

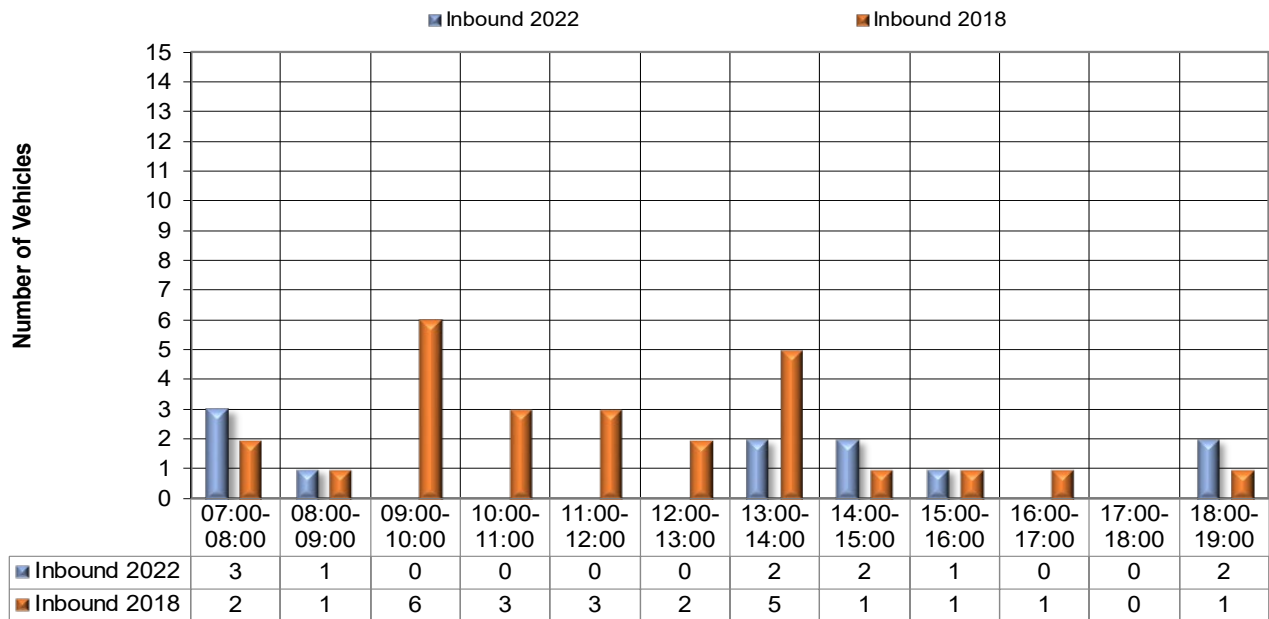


Figure 13-6: Recorded Daily Inbound Light Traffic Generation (2018-2022)

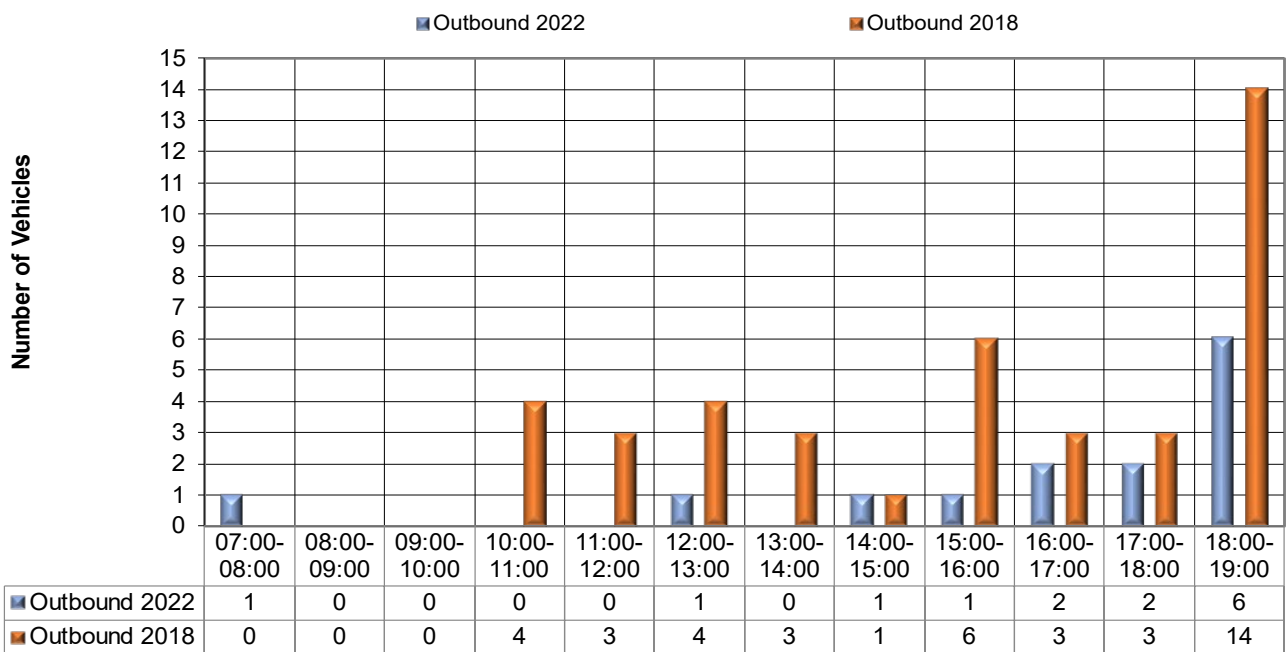


Figure 13-7: Recorded Daily Outbound Light Traffic Generation (2018-2022)



13.7 Potential Effects

13.7.1 The Proposed Development

The proposed development is described in full in Chapter 4 – Existing and Proposed Development, of Volume 2 of this EIAR.

A Proposed Site Layout Plan depicting the layout of the proposed development is shown in a drawing which accompanies this EIAR (See Drawing Reference P21-150-0200-0001 Proposed Site Layout Plan contained in Volume 4 of this EIAR).

13.7.2 Construction Phase of the Proposed Development

It is estimated that the proposed development will take 12 months to complete. It is preferable, from a construction viewpoint, that the majority of construction activities (in particular intensive construction activities) associated with the development take place during the summer months to take advantage of longer daylight hours and drier weather. However, this may be dependent on a number of factors and construction could occur over winter months. Upon appointment of a contractor for the works, a detailed construction programme will be developed. This programme shall have regard to a Construction Environmental Management Plan which adjoins this EIAR, as well as other Construction related Mitigation Measures defined within this EIAR.

Construction of the proposed extended facility will give rise to traffic generation on the receiving roads environment. Construction related traffic will include:

- Site personnel and contractors driving to the work site and site compounds (by car, van and 4x4),
- Delivery of construction materials, tanks, steel, cladding and equipment and other materials including fuel and oil by van and HGV,
- Import of fill material and concrete via HGV's,
- Export of wastes and material arising from site clearance and demolition works via HGV's.
- Delivery of processing equipment via HGV's,
- Delivery of solar panels and supporting equipment.

In the absence of suitable mitigation, the traffic associated with the construction works has the potential to give rise to negative effects on the road network including:

- Delay and disruption to existing road users,
- Road safety effects,
- Parking of construction related vehicles,
- Deposition of debris and detritus on the public road.

The above impacts, should they arise, will have a **temporary direct negative effect** on the receiving public road and upon existing road users.



Construction Traffic Generation

The potential effect of construction related traffic on the existing receiving road network can be determined by estimating first the quantum and characteristics of the traffic generated. This assessment has been undertaken based upon the ‘first principles’ method and by reference to other similar construction projects. In brief the method involves estimating the traffic generated by various activities during the construction programme which is estimated to be of approximately 12 months duration.

In calculating the potential number of vehicle trips generated HGV are generally assumed to be temporary visitors to the site undertaking a return or outbound movement from the site within the hour. The potential trip generation by light vehicles (cars, vans etc.) will rise predominantly by construction personnel and the day to day running of the construction project. The estimated number of trips by light vehicles has been multiplied by 1.5 to account for some additional LGV movements from site such as workers taking lunch breaks in the local area or running errands.

Some key assumptions underlying the construction trip generation estimates include:

- Ready mix concrete truck carries a load of approximately 7.5m³ of concrete.
- An average tipper truck carries approximately 10m³ of soil/rock/aggregate.
- Working Monday-Friday and half day Saturday (ex. 22 days Builders Holidays) equates to approximately 248 days allowing for the loss of Saturdays at various Bank Holidays builders holidays

Table 13-17 summaries the estimated number of construction related trips over the duration of the construction phase. The figures presented are a best estimate at this stage in the project and will likely change up or down depending upon the detailed design of the facility and depending upon the works programme and the availability of construction materials.

Table 13-17: Construction Traffic Generation

HGV Heavy Vehicle Trips	Works Programme by Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Drainage Materials	-	-	15	15	15	-	-	-	-	-	-	-
Structural Cladding	-	-	-	-	-	35	35	35	-	-	-	-
Structural Steel	-	-	-	45	45	45	-	-	-	-	-	-
Plant incl. Crane(s)	15	-	-	-	-	-	-	-	-	-	-	15
Site Offices and Staff Welfare	10	-	-	-	-	-	-	-	-	-	-	10
Mechanical & Electrical	-	-	-	-	-	5	5	-	50	25	10	5
Sundry Deliveries	10	10	10	10	10	10	10	10	10	10	10	10
Sundry Removal of Waste Materials	10	10	10	10	10	10	10	10	10	10	10	10
Fill Material incl. Drainage (est. 12,000m ³)	100	350	250	250	100	100	50	-	-	-	-	-
Concrete (est. 7,500m ³)	-	100	100	100	200	200	100	-	-	100	100	-



LV Light Vehicle Trips	Works Programme by Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Permanent Construction Staff (10-30)	420	420	630	630	630	630	630	630	420	420	420	315
Temporary Construction Staff (5-20)	-	-	-	210	420	420	210	-	210	210	105	105
Sundry Light Vehicles (1-8/day)	10	10	84	168	168	168	84	84	168	84	42	42
Estimated Trips Per day	Works Programme by Month											
	1	2	3	4	5	6	7	8	9	10	11	12
HGV Trips	7	22	18	20	18	19	10	3	3	7	6	2
LGV Trips	20	20	34	48	58	58	44	34	38	34	27	22

Construction phase effects will be short-term. It is proposed that construction traffic will access the site via L3090 Ballycoolin Road and the existing access arrangements within Cappogue Industrial Park. The construction access shall be managed by signage and flagmen. A banksman and active traffic control will be employed during times when construction activity is more intense, for example as during concrete pours.

The average complement of construction staff is estimated to be in the region of 30 persons which may rise to a total of 58 persons during peak construction activities. Based upon an expected car occupancy of 1.0 persons per vehicle is expected that light vehicle traffic generation during the construction phase will be on average approximately 36 trips per day (85th percentile 51) increasing to a peak of 58 trips per day during peak activities. This accounts for construction staff arriving in the morning and leaving in the evening. There is likely to be some staff generated traffic arising throughout the day for sundry supplies.

Normal site working hours are 07:00-19:00hrs on weekdays and 08:00-14:00hrs on Saturdays with no working on Sundays or Public Holidays. It is acknowledged that from time to time some construction activities might potentially need to be carried out beyond the prescribed hours and on such occasions it is understood that the Planning Authority will be contacted and the appropriate consents secured.

Construction traffic will typically arrive at site prior to the traditional commuter peak hour in the morning and after the evening peak hour. There is a quantity of soil and subsoil which will need to be excavated to facilitate the proposed project. The volume of material to be excavated has been estimated to be c. 1,200m³ and this material will be removed from the site for recovery off-site. The carrying capacity of articulated tipper vehicles is approximately 30 tonnes by weight and 33m³ by volume. Smaller rigid 8-wheel tippers have a payload capacity of 20 tonnes by weight and 15m³ by volume. For the purposes of the calculations in Table 13-17 the haulage vehicle is assumed to carry no more than 10m³ and the removal of excavated or site clearance materials is estimated to have the potential to generate a total of between 120 vehicles.

Average HGV traffic generation arising during construction activities is expected to be in the region of 12 HGV trips or less per day (85th percentile 19 HGV, peak 20 HGV). It is understood that the construction will require no movement of abnormal or accompanied loads to or from the site. It is anticipated that the generation of HGV's during the general construction period will be evenly spread throughout the day and as such will not impact significantly during the peak periods. An appropriate routing strategy for HGVs will be agreed and implemented as part of the Construction Management Plan. Construction traffic is not considered likely to give rise to reduced operational performance of the local road network.



The contractor will decide the construction programme to be implemented and will be required to finalise a Construction Management Plan with the Planning Authority. The existing road network serving the site can accommodate this type of traffic and the levels of construction activity forecast.

Impacts arising from construction traffic will be managed and mitigated through the agreement of suitable haul routes. To reduce insofar as practicable, the impact of construction generated traffic and to reduce the volume of site generated traffic during construction the following measures are proposed:

- Provision of sufficient onsite parking to accommodate construction personnel, visitor parking and deliveries and reducing insofar as practicable potential overflow onto the local network. No contractor parking will be permitted outside the proposed development site or any public roads outside the confines of the application site.
- Encourage/require the Contractor to transport construction personnel and to encourage staff to travel by public transport or to share vehicles to reduce parking demand at the site.
- Inform construction staff of the alternative modes of transport highlighting the availability of non-car modes of transport and the accessibility of the site by bus and bicycle.

Appendix 13-4, Figure 1 shows the haulage routes to the site to be used during the operational phase. It is likely that construction traffic will use the same haulage routes since they are the most suitable roads in the local area.

Table 13-17 shows that during the months when construction is likely to manifest the most intensive period for traffic demand it is estimated that construction has the potential to generate up to 20 HGV trips and 58 light vehicle trips per day.

These estimates include for all of the construction activity associated with the proposed development, including groundworks, building construction, and importation and removal of materials from site. Construction stage effects on network traffic will vary throughout the works depending on the nature of works being undertaken.

For the purposes of this appraisal it is assumed that an average of 36 car and 12 HGV additional trips per day arise as a result of the construction works.

The receiving local roads in the vicinity of the proposed development are generally subject to the majority of daily traffic movements between approximately 06:00hrs and 19:00hrs on weekdays. Relatively large fluctuations can be observed throughout the day with particular concentrations in traffic during the typical morning and evening commuter peak hours due principally to the commercial and industrial enterprise and employment characteristics of the surrounding lands. The local receiving roads are designed to accommodate such traffic and the traffic associated with the further development and construction of development in the area. The majority of construction staff and light traffic tends to be manifest on the network before the morning peak hour and after the evening peak hour, whilst construction HGV traffic is typically well distributed throughout the day. In this context it is reasonable to expect that the existing receiving road network will have sufficient capacity to accommodate the temporary increase in traffic associated with the construction of the proposed development.

Mitigation measures relating to the management of construction traffic are set out in Section 13.8.1.



The applicant intends to continue with permitted processing operations at the existing waste facility building whilst constructing the proposed MRF 3 building, and the proposed site infrastructural elements at the southern sections of the site, which works are outside the boundary of the existing waste facility site. Once construction of the MRF 3 building and site infrastructural elements at the southern sections of the site are completed then the existing waste facility operations will cease and the existing building will be upgraded and expanded to become MRF 1, and MRF 2 will be constructed, as proposed. Operations at MRF 3 will commence whilst MRF 1 and MRF 2 are being constructed.

13.7.3 Operational Phase of the Proposed Development

Haul Routes

Depending on the origin of materials, the site is generally accessed from the north or south with some lesser proportion element from the west and from the Finglas direction. A significant proportion of site traffic access the site via N3 Junction 2 and 3, using R843 and R121 to access the L3090 Ballycoolin Road. Traffic to and from the north generally uses the L3080 Cappagh Road link with the Cherryhound Link Road connecting to the N2 at Junction 2. The primary haul routes are shown in Appendix 13-4, Figure 1.

It should be noted that the wastes entering the site is demand driven. From the review of the 2020 and 2021 weighbridge data it is clear that the existing facility has and continues to receive waste from projects locally within the Ballycoolin area accordingly it can be appreciated that routes other than those shown in Appendix 13-4, Figure 1 which includes the likes of the Ratoath Road or Cruiserath Road are used for local demand albeit that they are used far less frequently than the primary haul routes to and from the strategic road network locally and comprising the N2 and N3 National Primary Routes.

Local Traffic Distribution

It is typical practice and recommended by the Chartered Institution of Highways and Transportation, that additional traffic generated by the proposed development can reasonably be distributed on the adjoining highway in accordance with the proportions of current traffic turning flows recorded during the traffic surveys. For the purposes of this assessment, it is assumed that the general distribution of future traffic on the greater road network will be the same as the distribution of traffic as recorded in the most recent 2021 traffic surveys. Cross-reference with weighbridge data of waste origin and destination for 2019, 2020 and 2021 suggests that this method is representative of the general distribution of traffic at the existing site. It is nonetheless acknowledged that the distribution of traffic on a day-to-day basis is demand driven and thus distribution to the network can vary. Based upon the 2021 traffic surveys the Network Flow Diagrams of Appendix 13-3 provide a summary of detailed assessment of traffic flow distribution on the receiving road network and include a breakdown of daily traffic flows and distribution for weekdays as follows:

- Figure 13 Daily Existing Waste Management Facility Traffic Distribution 07:00-19:00hrs
- Figure 14 AM Peak Hour Existing Waste Management Facility Traffic Distribution 08:00-09:00hrs
- Figure 15 PM Peak Hour Existing Waste Management Facility Traffic Distribution 17:00-18:00hrs



It is reasonable to consider a robust traffic generation scenario and to assume for the purposes of the traffic assessment that the incremental increase in traffic generated by the proposed development is totally new to the receiving road network and totally new to the Ballycoolin area. The traffic generated to the proposed development is assumed to distribute to the greater network in the proportions derived from the surveys of existing site traffic.

Traffic Generation

The Planning Application is being made for, inter alia, the operation of a MRF which will accept a maximum of 300,000 tonnes per annum of waste material for processing, and that the Environmental Impact Assessment Report adjoining this application considers the proposed operation at its ultimate maximum operational capacity.

The following waste activities will be carried out at the proposed facility:

- The acceptance, processing and onward transfer of 100,000 tpa of rMSW;
- The acceptance, bulking and onward transfer of 50,000 tpa of food waste;
- The acceptance, processing and onward transfer of 100,000 tpa of C&D waste;
- The acceptance, bulking and onward transfer of 50,000 tpa of MDR waste.

All waste acceptance, storage and processing activities will be carried out inside the proposed buildings. No waste storage or processing will be carried out externally.

Given the spatial extent and spread of waste collection areas in the region, waste acceptance times at the facility will be spread across a long day and will take place very early in the morning. The hours of waste acceptance are therefore 00:00hrs to 00:00hrs Monday to Sunday. The site will be accessible on a 24/7 basis and these operating, acceptance and access hours are in line with operational timeframes for similar facilities in the region. While the facility is proposed to operate on a 24/7 basis, it is expected that the vast majority of vehicle movements (c. 80%) will occur during daytime and evening hours 07:00hrs to 23:00hrs.

In total it is proposed that when operating at full potential the facility will receive 300,000t of materials per annum. For the purposes of the assessment of traffic generation and traffic impact the materials received can be broken into 3 no. broad streams as follows:

- Domestic and Commercial Municipal Solid Waste (rMSW)
- Construction and Demolition Waste (C&D)
- Commercial and Industrial waste types (C&I) and Dry Mix Recyclables (DMR)

The facility is forecast to receive 100,000t per annum of 'Domestic and Commercial Municipal Solid Waste' (rMSW) and 50,000t per annum of food waste. Appendix 13-3, Figure 1 shows the primary haul routes forecast to be used for the import rMSW and food waste. The source of this waste is from domestic and commercial refuse collections. This waste is transported to the facility in Refuse Collection Vehicles (RCVs) with a typical carrying capacity of 10-12t per vehicle.



Allowing a conservative estimate of 276 no. working days per year (5.5 days per week, no working on bank holiday) rMSW is estimated as likely to give rise to a daily average traffic generation in the order of 30-36 no. vehicle trips. Once processed this waste is exported from the site by articulated vehicles with a typical payload of 20t per vehicle giving rise to 7 no. vehicle trips per day.

The facility is forecast to receive 100,000t per annum of 'Construction and Demolition Waste' (C&D). The source of this waste is generally from skip collections from construction sites and from both household and commercial properties. Skip sizes can range from 6 yd skips to 40 yd skips depending on customer needs. The tonnage of material varies considerably depending upon skip size and the material type. Based upon the prospective operators' current operations the typical average skip payload over the long-term is approximately 3.2-4.8t. Based upon 276 working days C&D is estimated as likely to give rise to a daily average traffic generation in the order of 75-113 no. vehicle trips. Once processed these materials are exported from the site by articulated vehicles with a typical payload of 25t per vehicle giving rise to 15 no. vehicle trips per day.

The facility is forecast to receive 50,000t per annum of Dry Mixed Recyclables (DMR). This type of material is generally transported by compactor/skip, curtain sided vehicles and RCV from commercial, industrial and domestic sites where the average payload varies between 5-9t. This is forecast to generate approximately 20-36 no. vehicle trips per day. This waste is exported from the site by articulated vehicles with a typical payload of 15t per vehicle giving rise to 12 no. vehicle trips per day.

Table 13-18: Daily Traffic Generation

Waste Stream	Quantity Processed	Typical Vehicle Payload			Daily Trips		
		Import		Export	Import		Export
		Lower	Upper		Lower	Upper	
rMSW	100,000t	10t	12t	20t	30	36	18
Food Waste	50,000t	10t	12t	20t	15	18	9
C&D	100,000t	3.2t	4.8t	25t	75	113	15
DMR	50,000t	5t	9t	15t	20	36	12
				TOTAL	140	203	54

The forecast daily HGV traffic generation arising from the operational phase of the proposed development is 140-203 HGV importing materials and 54 Articulated HGV exporting processed materials. Based upon Table 13-18 and the typical daily distribution of traffic set out in Figure 13-5, for the purposes of the assessment of traffic generation the forecast morning peak hour traffic generation is estimated to comprise 11 HGV importing materials and 7 Articulated HGV exporting processed materials. The forecast evening peak hour traffic generation is 15 HGV importing and 5 Articulated HGV exporting. It is the upper figure of HGV traffic generation that is applied in the evaluation of daily and peak hour traffic effects and in the detailed capacity modelling assessments of the receiving road network operation both with and without the proposed development. These above forecast traffic generation figures are considered robust in that the daily figures assume a 5.5 day working week when the facility is proposed to be open 7 days. The peak hour figures are based upon the development receiving, processing and exporting 100% of materials between 07:00-19:00hrs where the facility is proposed to be open 24hrs accordingly the peak hour forces traffic flows can be considered to compound the already robust figures and so can reasonably be considered very conservative.



Figures 13-6 and 13-7 show that it is unlikely that light vehicle traffic will be generated in the peak hours, nevertheless a nominal value of 5 no. vehicles trips in both peak hours is included in the morning and evening peak hour assessments. Considering an estimated compliment of 24 no. staff at the site the daily light traffic generation is estimated to be approximately 46 vehicle trips per day which allows for 1.5 trips by each member of staff together with 10 no. sundry trips associated with the day to day running of the site (i.e. postman, meter reader, service engineer, cleaners etc.).

Forecast Development Traffic to Network

The forecast increase in traffic generation at the existing waste management facility with the proposed upgraded development operating at the proposed full annual tonnage is summarised in the following Table 13-19

Table 13-19: Network Forecast 2025 Daily Traffic Flows (Year of Opening)

Link	Link Description	Scenario	Forecast Development Traffic Generation			
			Total	LV (Car/Van)	OGV1 (Rigid)	OGV2 (Artic)
1	East of Premier Business Park	Daily	+207	+28	+158	+21
		AM Peak	+17	+6	+7	+5
		PM Peak	+18	+2	+11	+5
2	West of Premier Business Park	Daily	+177	+38	+110	+30
		AM Peak	+10	+3	+4	+2
		PM Peak	+10	+6	+4	+0
3	North of Ballycoolin Road	Daily	+113	+3	+92	+18
		AM Peak	+3	+1	+1	+1
		PM Peak	+8	+0	+3	+5
4	South of Ballycoolin Road	Daily	+144	+25	+66	+3
		AM Peak	+9	+5	+3	+1
		PM Peak	+10	+2	+8	+0
5	Stadium Business Park	Daily	+9	+2	+7	+0
		AM Peak	+0	+0	+0	+0
		PM Peak	+0	+0	+0	+0
4	Premier Business Park	Daily	+393	+68	+274	+51
		AM Peak	+27	+9	+11	+7
		PM Peak	+28	+8	+15	+5

The Network Flow Diagrams of Appendix 13-3 provide a summary of the forecast network traffic flows subject to the additional development traffic flows and include the following 'Do-Something' scenarios:

- Figure 16 Forecast 2025 Year of Opening Daily Traffic Flows 07:00-19:00hrs
- Figure 17 Forecast 2030 Year of Opening +5yrs Daily Traffic Flows 07:00-19:00hrs
- Figure 18 Forecast 2040 Year of Opening +15yrs Daily Traffic Flows 07:00-19:00hrs
- Figure 19 Forecast 2025 Year of Opening Morning Peak Hour Traffic Flows 08:00-09:00hrs



- Figure 20 Forecast 2030 Year of Opening +5yrs Morning Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 21 Forecast 2040 Year of Opening +15yrs Morning Peak Hour Traffic Flows 08:00-09:00hrs
- Figure 22 Forecast 2025 Year of Opening Evening Peak Hour Traffic Flows 17:00-18:00hrs
- Figure 23 Forecast 2030 Year of Opening +5yrs Evening Peak Hour Traffic Flows 17:00-18:00hrs
- Figure 24 Forecast 2040 Year of Opening +15yrs Evening Peak Hour Traffic Flows 17:00-18:00hrs

The following Tables 13-20, 13-21 and 13-22 correspond to the 'do-something' scenario daily traffic flow forecasts for the Year of Opening 2025 and for the 2030 and 2040 future year scenarios. Each table provides the baseline or 'Do-nothing' flows together with the 'Do-something' flows and separately identifies the magnitude of the incremental increase in traffic both numerically and expressed as a percentage of the existing or baseline traffic flows as is the typical methodology of expressing the effect of development traffic referenced to the standard threshold values set out in TII publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' (May 2014).

Separate tables are provided for the evaluation of incremental effects of traffic in the morning and evening peak hours as follows.

- Table 13-20 Forecast 2025 Year of Opening Daily Traffic Flows 07:00-19:00hrs
- Table 13-21 Forecast 2030 Year of Opening +5yrs Daily Traffic Flows 07:00-19:00hrs
- Table 13-22 Forecast 2040 Year of Opening +15yrs Daily Traffic Flows 07:00-19:00hrs
- Table 13-23 Forecast 2025 Year of Opening Morning Peak Hour Traffic Flows 08:00-09:00hrs
- Table 13-24 Forecast 2030 Year of Opening +5yrs Morning Peak Hour Traffic Flows 08:00-09:00hrs
- Table 13-25 Forecast 2040 Year of Opening +15yrs Morning Peak Hour Traffic Flows 08:00-09:00hrs
- Table 13-26 Forecast 2025 Year of Opening Evening Peak Hour Traffic Flows 17:00-18:00hrs
- Table 13-27 Forecast 2030 Year of Opening +5yrs Evening Peak Hour Traffic Flows 17:00-18:00hrs
- Table 13-28 Forecast 2040 Year of Opening +15yrs Evening Peak Hour Traffic Flows 17:00-18:00hrs



Table 13-20: Network Forecast 2025 Daily Traffic Flows (Year of Opening)

Link	Link Description	Scenario	Forecast Daily Traffic Flow (07:00-19:00hrs) 12hr			AADT
			Total	HGV	%HGV	
1	East of Premier Business Park	Do-Nothing	10,037	1,378	14%	11,442(14%)
		Do-Something	10,243	1,557	15%	11,677(15%)
		Incremental	+207[2.1%]	+179[13%]	+1.0%	+235
2	West of Premier Business Park	Do-Nothing	10,462	1,486	14%	11,926(14%)
		Do-Something	10,639	1,625	15%	12,128(15%)
		Incremental	+177[1.7%]	+139[9.4%]	+1.0%	+202
3	North of Ballycoolin Road	Do-Nothing	5,728	1,295	23%	6,530(23%)
		Do-Something	5,841	1,405	24%	6,659(24%)
		Incremental	+113[2.0%]	+110[8.5%]	+1.0%	+129
4	South of Ballycoolin Road	Do-Nothing	12,227	1,089	9%	13,996(9%)
		Do-Something	12,371	1,158	9%	14,103(9%)
		Incremental	+144[1.2%]	+69[6.3%]	+0.0%	+107
5	Stadium Business Park	Do-Nothing	2,182	425	19%	2,487(19%)
		Do-Something	2,191	432	20%	2,498(20%)
		Incremental	+9[0.4%]	+7[1.6%]	+1.0%	+11
4	Premier Business Park	Do-Nothing	547	237	43%	624(43%)
		Do-Something	940	562	60%	1,072(60%)
		Incremental	+393[72%]	+325[137%]	+17.0%	+448

Table 13-21: Network Forecast 2030 Daily Traffic Flows (Year of Opening +5yrs)

Link	Link Description	Scenario	Forecast Daily Traffic Flow (07:00-19:00hrs) 12hr			AADT
			Total	HGV	%HGV	
1	East of Premier Business Park	Do-Nothing	10,868	1,552	14%	12,390(14%)
		Do-Something	11,075	1,731	16%	12,625(16%)
		Incremental	+207[1.9%]	+179[12%]	+2.0%	+235
2	West of Premier Business Park	Do-Nothing	11,293	1,660	15%	12,874(15%)
		Do-Something	11,470	1,799	16%	13,076(16%)
		Incremental	+177[1.8%]	+139[8.4%]	+1.0%	+202
3	North of Ballycoolin Road	Do-Nothing	6,306	1,498	24%	7,188(24%)
		Do-Something	6,418	1,608	25%	7,317(25%)
		Incremental	+112[1.8%]	+110[7.3%]	+1.0%	+129
4	South of Ballycoolin Road	Do-Nothing	13,392	1,260	9%	15,267(9%)
		Do-Something	13,486	1,329	10%	15,374(10%)
		Incremental	+94[0.7%]	+69[5.5%]	+1.0%	+107
5	Stadium Business Park	Do-Nothing	2,182	425	19%	2,487(19%)
		Do-Something	2,191	432	20%	2,498(20%)
		Incremental	+9[0.4%]	+7[1.6%]	+1.0%	+11
4	Premier Business Park	Do-Nothing	547	237	43%	624(43%)
		Do-Something	940	562	60%	1,072(60%)
		Incremental	+393[72%]	+325[137%]	+17.0%	+448



Table 13-22: Network Forecast 2040 Daily Traffic Flows (Year of Opening +15yrs)

Link	Link Description	Scenario	Forecast Daily Traffic Flow (07:00-19:00hrs) 12hr			AADT
			Total	HGV	%HGV	
1	East of Premier Business Park	Do-Nothing	11,492	1,737	15%	13,101(15%)
		Do-Something	11,699	1,916	16%	13,337(16%)
		Incremental	+207[1.8%]	+179[10%]	+1.0%	+235
2	West of Premier Business Park	Do-Nothing	11,917	1,845	15%	13,585(15%)
		Do-Something	12,094	1,984	16%	13,787(16%)
		Incremental	+177[1.5%]	+139[7.5%]	+1.0%	+202
3	North of Ballycoolil Road	Do-Nothing	6,772	1,715	25%	7,720(25%)
		Do-Something	6,885	1,824	26%	7,849(26%)
		Incremental	+113[1.7%]	+109[6.4%]	+1.0%	+129
4	South of Ballycoolil Road	Do-Nothing	14,204	1,442	10%	16,193(10%)
		Do-Something	14,298	1,512	11%	16,300(11%)
		Incremental	+94[0.7%]	+70[4.9%]	+1.0%	+107
5	Stadium Business Park	Do-Nothing	2,182	425	19%	2,487(19%)
		Do-Something	2,191	432	20%	2,498(20%)
		Incremental	+9[0.4%]	+7[1.6%]	+1.0%	+11
4	Premier Business Park	Do-Nothing	547	237	43%	624(43%)
		Do-Something	940	562	60%	1,072(60%)
		Incremental	+393[72%]	+325[137%]	+17.0%	+448

Table 13-23: Network Forecast 2025 AM Peak Hour Traffic Flows (Year of Opening)

Link	Link Description	Scenario	Forecast Morning Peak Hour Traffic Flow (08:00-09:00hrs)		
			Total	HGV	%HGV
1	East of Premier Business Park	Do-Nothing	1,039	116	11%
		Do-Something	1,056	127	12%
		Incremental	+17[1.6%]	+11[9.5%]	+1.0%
2	West of Premier Business Park	Do-Nothing	1,084	114	10%
		Do-Something	1,094	120	11%
		Incremental	+10[0.9%]	+6[5.3%]	+1.0%
3	North of Ballycoolil Road	Do-Nothing	581	99	17%
		Do-Something	583	101	17%
		Incremental	+2[0.3%]	+2[2.0%]	+0.0%
4	South of Ballycoolil Road	Do-Nothing	1,349	103	8%
		Do-Something	1,358	107	8%
		Incremental	+9[0.7%]	+4[3.9%]	+0.0%
5	Stadium Business Park	Do-Nothing	214	27	13%
		Do-Something	214	27	13%
		Incremental	+0[0.0%]	+0[0.0%]	+0.0%
4	Premier Business Park	Do-Nothing	41	25	61%
		Do-Something	68	43	63%
		Incremental	+27[66%]	+18[72%]	+2.0%



Table 13-24: Network Forecast 2030 AM Peak Hour Traffic Flows (Year of Opening +5yrs)

Link	Link Description	Scenario	Forecast Morning Peak Hour Traffic Flow (08:00-09:00hrs)		
			Total	HGV	%HGV
1	East of Premier Business Park	Do-Nothing	1,124	130	12%
		Do-Something	1,142	141	12%
		Incremental	+17[1.6%]	+11[8.5%]	+0.0%
2	West of Premier Business Park	Do-Nothing	1,169	128	11%
		Do-Something	1,179	134	11%
		Incremental	+10[0.9%]	+6[4.7%]	+0.0%
3	North of Ballycoolin Road	Do-Nothing	637	114	18%
		Do-Something	640	117	18%
		Incremental	+3[0.5%]	+3[2.6%]	+0.0%
4	South of Ballycoolin Road	Do-Nothing	1,471	120	8%
		Do-Something	1,480	123	8%
		Incremental	+9[0.6%]	+3[2.5%]	+0.0%
5	Stadium Business Park	Do-Nothing	214	27	13%
		Do-Something	214	27	13%
		Incremental	+0[0.0%]	+0[0.0%]	+0.0%
4	Premier Business Park	Do-Nothing	41	25	61%
		Do-Something	68	43	63%
		Incremental	+27[66%]	+18[72%]	+2.0%

Table 13-25: Network Forecast 2040 AM Peak Hour Traffic Flows (Year of Opening +15yrs)

Link	Link Description	Scenario	Forecast Morning Peak Hour Traffic Flow (08:00-09:00hrs)		
			Total	HGV	%HGV
1	East of Premier Business Park	Do-Nothing	1,187	144	12%
		Do-Something	1,204	156	13%
		Incremental	+17[1.4%]	+12[8.3%]	+1.0%
2	West of Premier Business Park	Do-Nothing	1,232	142	12%
		Do-Something	1,242	149	12%
		Incremental	+10[0.8%]	+7[4.9%]	+0.0%
3	North of Ballycoolin Road	Do-Nothing	680	131	19%
		Do-Something	683	133	20%
		Incremental	+3[0.4%]	+2[1.5%]	+1.0%
4	South of Ballycoolin Road	Do-Nothing	1,558	137	9%
		Do-Something	1,567	141	9%
		Incremental	+9[0.6%]	+4[2.9%]	+0.0%
5	Stadium Business Park	Do-Nothing	214	27	13%
		Do-Something	214	27	13%
		Incremental	+0[0.0%]	+0[0.0%]	+0.0%
4	Premier Business Park	Do-Nothing	41	25	61%
		Do-Something	68	43	63%
		Incremental	+27[66%]	+18[72%]	+2.0%



Table 13-26: Network Forecast 2025 PM Peak Hour Traffic Flows (Year of Opening)

Link	Link Description	Scenario	Forecast Evening Peak Hour Traffic Flow (17:00-18:00hrs)		
			Total	HGV	%HGV
1	East of Premier Business Park	Do-Nothing	1,038	69	7%
		Do-Something	1,056	85	8%
		Incremental	+18[1.7%]	+16[23%]	+1.0%
2	West of Premier Business Park	Do-Nothing	1,118	81	7%
		Do-Something	1,128	85	7%
		Incremental	+10[0.9%]	+4[4.9%]	+0.0%
3	North of Ballycoolin Road	Do-Nothing	583	55	9%
		Do-Something	591	63	11%
		Incremental	+8[1.4%]	+8[14.5%]	+2.0%
4	South of Ballycoolin Road	Do-Nothing	1,453	78	5%
		Do-Something	1,463	86	6%
		Incremental	+10[0.7%]	+8[10.3%]	+1.0%
5	Stadium Business Park	Do-Nothing	184	22	12%
		Do-Something	184	22	12%
		Incremental	+0[0.0%]	+0[0.0%]	+0.0%
4	Premier Business Park	Do-Nothing	34	8	24%
		Do-Something	62	28	45%
		Incremental	+28[82%]	+20[250%]	+21.0%

Table 13-27: Network Forecast 2030 PM Peak Hour Traffic Flows (Year of Opening +5yrs)

Link	Link Description	Scenario	Forecast Evening Peak Hour Traffic Flow (17:00-18:00hrs)		
			Total	HGV	%HGV
1	East of Premier Business Park	Do-Nothing	1,124	78	7%
		Do-Something	1,142	94	8%
		Incremental	+18[1.6%]	+16[21%]	+1.0%
2	West of Premier Business Park	Do-Nothing	1,204	90	7%
		Do-Something	1,214	94	8%
		Incremental	+10[0.8%]	+4[4.4%]	+1.0%
3	North of Ballycoolin Road	Do-Nothing	636	64	10%
		Do-Something	644	72	11%
		Incremental	+8[1.3%]	+8[12.5%]	+1.0%
4	South of Ballycoolin Road	Do-Nothing	1,581	90	6%
		Do-Something	1,591	98	6%
		Incremental	+10[0.6%]	+8[8.9%]	+0.0%
5	Stadium Business Park	Do-Nothing	184	22	12%
		Do-Something	184	22	12%
		Incremental	+0[0.0%]	+0[0.0%]	+0.0%
4	Premier Business Park	Do-Nothing	34	8	24%
		Do-Something	62	28	45%
		Incremental	+28[82%]	+20[250%]	+21.0%



Table 13-28: Network Forecast 2040 PM Peak Hour Traffic Flows (Year of Opening +15yrs)

Link	Link Description	Scenario	Forecast Evening Peak Hour Traffic Flow (17:00-18:00hrs)		
			Total	HGV	%HGV
1	East of Premier Business Park	Do-Nothing	1,185	88	7%
		Do-Something	1,203	104	9%
		Incremental	+18[1.5%]	+16[18%]	+2.0%
2	West of Premier Business Park	Do-Nothing	1,265	100	8%
		Do-Something	1,275	104	8%
		Incremental	+10[0.8%]	+4[4.0%]	+0.0%
3	North of Ballycoolin Road	Do-Nothing	675	73	11%
		Do-Something	683	81	12%
		Incremental	+8[1.2%]	+8[11%]	+1.0%
4	South of Ballycoolin Road	Do-Nothing	1,671	103	6%
		Do-Something	1,681	111	7%
		Incremental	+10[0.6%]	+8[7.8%]	+1.0%
5	Stadium Business Park	Do-Nothing	184	22	12%
		Do-Something	184	22	12%
		Incremental	+0[0.0%]	+0[0.0%]	+0.0%
4	Premier Business Park	Do-Nothing	34	8	24%
		Do-Something	62	28	45%
		Incremental	+28[82%]	+20[250%]	+21.0%

Local Traffic Effects and Threshold Values

This section sets out the likely traffic characteristics of the proposed development and includes details of likely effects envisaged for both the construction and operational stages of the development. In Ireland, a Traffic and Transport Statement should generally accompany all planning applications for developments that could potentially act as traffic generators. A Traffic and Transport Statement is an outline of the transport requirements for the development and is used as a first step to identify the likely effects of any development and is used to determine if further, more detailed traffic modelling analysis is required to evaluate potential effects upon the capacity of junctions on the receiving road network. A further model-based in-depth capacity analysis of the effects of a development in terms of traffic generation is carried out through the preparation of a Traffic and Transport Assessment (TTA). Table 2.1 of TII publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' (May 2014) sets out threshold values above which a Transport Assessment is automatically required. The relevant thresholds are reproduced below:

- 100 trips (in/out combined) in the peak hour
- Development traffic exceeds 10% of two-way traffic flow on adjoining road
- Development traffic exceeds 5% of two-way traffic flow on adjoining road if congestive or sensitive
- 100 on-site parking spaces.



The threshold approach is used to establish the area of influence of the development. In general, the study area should include all road links and associated junctions where traffic to and from the development may be expected to exceed 10% of the existing traffic movements, or 5% in congested or other sensitive locations. The threshold approach should include all junctions with national roads affected by development generated traffic.

The assessments consider that the traffic generation of the proposed development will neither increase or decrease over time. The development is assumed to operate from the Opening Year 2025 up to the Design Year 2040 at the proposed annual tonnage. Since network traffic is forecast to increase in accordance with the published TII growth rates it follows that the period of when the incremental increase in traffic will be greatest is in the Opening Year 2025. The incremental increase in traffic during the morning and evening peak hours in 2025 are set out respectively in Table 13-23 and Table 13-26.

The following evaluates the incremental increase in network traffic referenced against the TII standard threshold values:

- 100 trips (in/out combined) in the peak hour: The proposed development is forecast to generate a total of 27 vehicle movements (in/out combined) comprising 7 light vehicles, 18 rigid HGV and 2 articulated HGV in the morning peak hour. In the evening peak hour the forecast increase is 28 vehicle movements comprising 8 light vehicles and 15 rigid HGV and 5 articulated HGV. The forecast traffic generation is a lower order fraction of the 100 trip threshold.
- Development traffic exceeds 10% of two-way traffic flow on adjoining road: Table 13-20 shows the 2025 Year of Opening forecast increase in daily traffic flows on the L3090 Ballycoolin Road to be in the order of 1.7-2.1% whilst the increase in L3080 Cappagh Road is in the order of 1.2-2.0%. The peak hour increases are set out in Tables 13-23 and 13-26 and are similarly of lower order and less than 1.7% for both the Ballycoolin Road and Cappagh Road.
- Development traffic exceeds 5% of two-way traffic flow on adjoining road if congestive or sensitive: The receiving road network is understood to be designed for the type of traffic generated by the proposed development and is not considered congestive or sensitive. In any case, the forecast increase in traffic arising in the peak hours and daily are less than half the threshold value of 5%.
- 100 on-site parking spaces. The Applicant proposes the provision of 36 no. on-site parking spaces (including accessible spaces and electric vehicle charging spaces) together with 8 no. parking spaces for HGV. As per the first listed criterion the forecast traffic generation is a lower order fraction of the 100 parking space threshold.

TII publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' (May 2014) advises that there may be some cases where the effects of traffic of increased volumes may not be significant and where the standard thresholds requiring a Traffic and Transport Assessment may not be exceeded, but where the type and volume of traffic may be of a nature to raise concerns about potential effects. The volume is sub-threshold, so to investigate if the type of traffic might raise concerns we reference planning of a similar MRF permitted under An Bord Pleanála PL06F.PA0048 at a site on L3080 Cappagh Road at Millennium Park for which the An Bord Pleanála Inspector's Report acknowledges that the Transport Planning Section of Fingal County Council submitted a report which noted that the L3080 Cappagh Road and surrounding roads that make up the principal haul routes to the current proposed development and that serve The Dublin Enterprise Zone, have been upgraded to a high standard to accommodate the zoned lands and that the receiving road network has been designed to cater for traffic generated by such developments. In recommending a grant of permission for the MRF processing 170,000t per annum the Inspector concluded that the increase in traffic on the receiving road network, designed for this type of traffic, to be acceptable. In light of the assessment of the Transport Planning Section of Fingal County Council it is not anticipated that the type and volume of traffic generated by the proposed development is of a nature to raise concerns about potential effects.



In the case of sub-threshold scenarios, TII publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' (May 2014) advise that the Planning Authority should consult evaluation criteria set out in Table 2.3 of the guidelines and recommends that if the proposed development meets two or more of the following criteria, then a Transport Assessment should be requested.

- 1) The character and total number of trips in/out combined per day are such that as to cause concern;
- 2) The site is not consistent with national guidance or local plan, policy or accessibility criteria contained in the Development Plan;
- 3) The development is part of incremental development that will have significant transport implications;
- 4) The development may generate traffic at peak times in a heavily trafficked/congested area or near a junction with a main traffic route;
- 5) The development may generate traffic, particularly heavy vehicles in a residential area;
- 6) There are concerns over the development's potential effects on road safety;
- 7) The development is in a tourist area with potential to cause congestion;
- 8) The planning authority considers that the proposal will result in a material change in trips patterns or raises other significant transport implications.

Under the current development proposals and corresponding to the above bullet points,

- 1) The total number of trips in and out of the site per day is <100 and practically one third of the standard threshold value and are not such that as to cause concern;
- 2) The proposed development is consistent with the development plan;
- 3) For the purpose of the traffic assessment the proposed development is assumed to operate at full capacity from the first day of opening and so it is not considered part of an incremental development;
- 4) Tables 13-19 to 13-28 shows the daily and peak hour traffic generation arising from the proposed development. The forecast trip generation values are robust for the reasons adduced herein yet they are not considered significant by the standard metrics set out in the guidelines. The receiving road network is neither heavily trafficked nor congested and the volume of traffic is unlikely to give rise to concern at the junctions with the main traffic route;
- 5) The proposed development does not typically generate traffic in a residential area save for where vehicles are servicing the residential area;
- 6) The proposed development will not result in a material change in established trip patterns or the type of vehicles generated, save for the intensification of use there are no extraordinary circumstances that would have an adverse impact upon road safety.
- 7) The development is not located in a tourist area, it is located in Cappogue Industrial Park which is part of Dublin Enterprise Zone;
- 8) Existing permitted development does not give rise to congestion on the receiving road network and the estimates of future traffic generation confirms that the proposed development will similarly not give rise to traffic congestion. There will be no significant material change in the type of vehicles generated.

Given the recorded network traffic flows and the forecast peak hour generation the proposed development and the sub-threshold incremental increase in traffic flows the proposed development is considered unlikely to give rise to capacity problems on the receiving road network.



The peak hour volume of traffic throughput at the Premier Business Park signal junction on L3090 Ballycoolin Road and at the L3090 Ballycoolin Road/L3080 Cappagh Road roundabout junction is not significant. In light of these considerations, the evaluation of junction capacity and traffic levels on the receiving road is not required under the TII guidelines to include detailed computer modelling of the capacity of these junctions. The forecast volume of traffic generation is not such as to be of concern with respect to capacity. This notwithstanding in the following we provide capacity assessments of the two junctions most heavily trafficked by development traffic, those being:

- Premier Business Park Traffic Signal Junction
- Ballycoolin Road/Cappagh Road Roundabout

Junction Capacity Assessments

As recommended by the NRA and the CIHT, the Transport Research Laboratory (TRL) computer modelling program OSCADY (Optimised Signal CAPacity and DelaY) has been used to assess the existing and future performance of the signal junction.

OSCADY is primarily intended as a means of assessing signal junction performance. The output provides performance indicators for roads designers and planners with regards to capacity, queuing and delay. ARCADY (Assessment Roundabout CAPacity and DelaY) has been used for the assessment of the Cappagh Road Roundabout. An 85% level of saturation corresponding to a Ratio of Flow to Capacity (RFC) of 0.850 is generally accepted at roundabout junctions in urban areas, although this figure should not be considered in isolation and should be viewed together with queuing and delay information. The indices for traffic signal operation are more complex, nonetheless an RFC of 0.900 is considered the rule of thumb target figure for a signal junction functioning well with queues clearing and little wastage of green time.

In the following we provide a summary of the salient output results for each assessment. The limitations of the OSCADY model mean that it will not accurately model exact traffic conditions especially in congested networks it also does not model the interaction with nearby junctions.

As such the output results of the analyses should primarily be viewed as a performance indicator facilitating a comparative analysis between the various traffic flow scenarios. An assessment of the existing network at 2021 using the surveyed existing traffic flow criteria is provided in the interest of affording a means by which to calibrate (through observation of the existing scenario) the models of future assessment value traffic scenarios, and thus to determine the likely effects of the proposed development upon capacity and traffic conditions on the receiving road network.

The Ballycoolin Road Signal Junction provides access to Premier Business Park and Stadium Business Park and is Survey Site 2 in the context of this EIAR. The existing junction is MOVA operated and includes the associated detector loops in the carriageway on the various approach lanes to the signals. The signals operate on variable sets of timing regimes which change depending on the time of day and the traffic demands registered with the controller from the detector loops on the various approach lanes to the junction.

For the purposes of the capacity assessments the traffic signals are set to operate on a typical maximum cycle time of 90 seconds and are vehicle actuated. The following Figure 13-8 shows that staging sequence that has been used in the analyses of junction performance, the staging diagram has been provided by Fingal County Council Transportation Department. As is the case with modern signal controller equipment such as the commonly installed Siemens ST800 system the cycle time and splits are optimised for each of the analyses. The following Figure 13-9 shows the phasing and staging used in the analyses of junction performance.

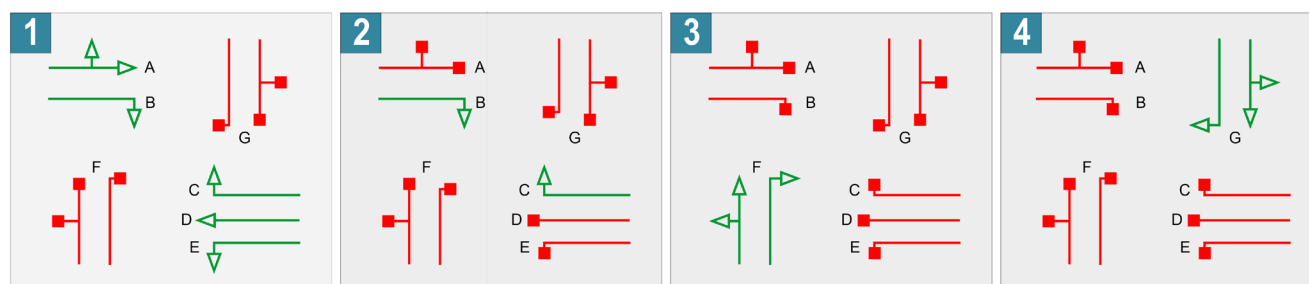


Figure 13-8: Staging Sequence

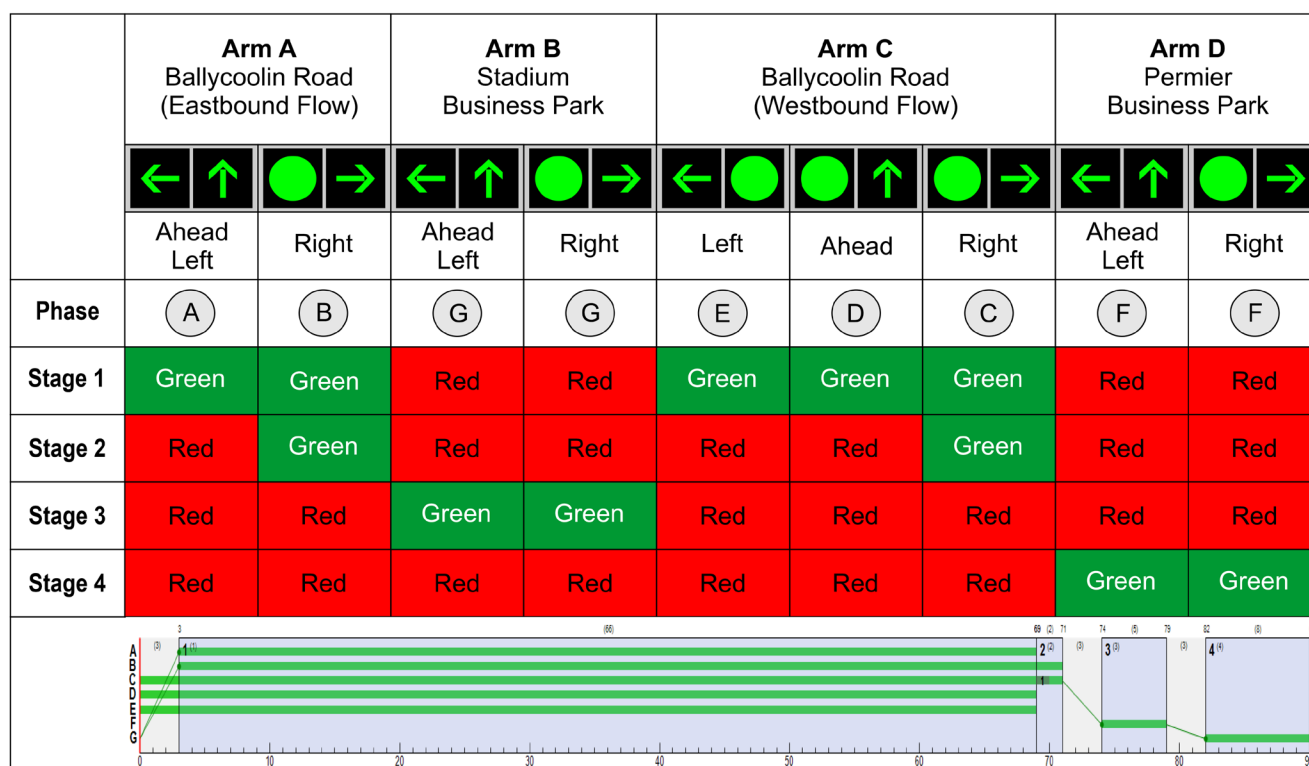


Figure 13-9: Ballycoolin Road Signal Junction – Signal Phases and Stages

It is appreciated that the signal junction will incorporate pedestrian crossings. Given the observed light footfall in the area the pedestrian phase has not been included in the peak hour assessment given that it is unlikely to be called up for every cycle and given that much of the crossing can be done in walk-with stages of the signals.

13.7.3.1.1 Assessment Scenarios

The modelling analyses of the receiving road network include various traffic flow scenarios aimed at providing a comprehensive assessment of the capacity of the existing infrastructure under various assumptions and various development scenarios between the forecast year of opening 2025 and the Design Year of 2040, 15 years after the opening of the proposed development. The criteria for each assessment and each of the scenarios is specifically set out and clearly detailed.



The various assessment traffic flow scenarios are as follows.

- Scenario 1 (S1): 2021 Assessment of the existing infrastructure using only the traffic flows recoded in the traffic surveys. This analysis is provided as a frame of reference and a standard comparator which may be verified or otherwise calibrated by observation.
- Scenario 2 (S2): 2025 Year of Opening baseline assessment which includes for the TII forecast growth in network traffic flows. Flows from specific permitted developments are included.
- Scenario 3 (S3): 2025 Year of Opening assessment that includes the network traffic flows of Scenario 2. Flows forecast to arise from the proposed development are considered.
- Scenario 4 (S4): 2030 Year of Opening +5 years baseline assessment which includes for the TII forecast growth in network traffic flows. Flows from specific permitted developments are included.
- Scenario 5 (S5): 2030 Year of Opening + 5 years assessment that includes the network traffic flows of Scenario 4. Flows forecast to arise from the proposed development are considered.
- Scenario 6 (S6): 2040 Year of Opening +15 years baseline assessment which includes for the TII forecast growth in network traffic flows. Flows from specific permitted developments are included.
- Scenario 7 (S7): 2040 Year of Opening + 15 years assessment that includes the network traffic flows of Scenario 6. Flows forecast to arise from the proposed development are considered.

It is assumed for the purposes of the traffic assessments that the entire development will be operational in 2025 and will receive 300,000t of waste materials per annum.

The results of the capacity analysis for Junction 2, the signal-controlled junction L3090/Stadium Business Park/Premier Business Park is provided for the morning and evening peak hours respectively in the following Table 13-29 and Table 13-30. The various network traffic flow scenarios are listed in column 1 and for ease of reference are cross-referenced to the network traffic flow diagrams provided in Appendix 13-3.

As set out above, in the interest of facilitating a direct comparison between traffic flow scenarios and to evaluate the incremental effects arising directly from the proposed development each of the assessments, both morning and evening are based upon a fixed cycle time of 90 seconds using the timings provided in Figure 13-9. Given the difference in the direction of flow and relative volumes of traffic there are efficiencies that are derived from the operation of the signals in practice and in real time where cycle times and cycle splits are optimised based on the demand and flows on each arm of the junction. Based upon the fixed 90 second cycle time the analysis confirm that the junction operates within normal parameters and has satisfactory capacity.

Comparing the Ratio of Flow to Capacity (RFC) for each of the 'Do-Nothing' and 'Do-Something' scenarios shows that there is little or no change in the value for the Ballycoolin Road or the access road serving Stadium Business Park. There is a modest increase in the RFC on the arm serving Premier Business Park where the highest value is 0.21 in the morning and 0.25 in the evening peak hours and where the maximum increases are 0.11 and 0.13 respectively.

The results indicate that the proposed development access road to Premier Business Park will operate significantly below the desirable maximum RFC of 0.85, up to and including the design year of 2040 with the inclusion of both permitted and proposed development generated traffic. The overall increases in junction delay between the 'do-nothing' and 'do-something' scenarios is not significant and the junction is shown to operate at a Level of Service (LOS) 'A' for all scenarios.



The results of the capacity analysis for Junction 3, the roundabout junction L3090 Ballycoolin Road/L3080 Cappagh Road is provided for the morning and evening peak hours respectively in Table 13-31 and Table 13-32. The various network traffic flow scenarios are listed in column 1 and for ease of reference are cross-referenced to the network traffic flow diagrams provided in Appendix 13-3.

Comparing the Ratio of Flow to Capacity (RFC) for each of the ‘Do-Nothing’ and ‘Do-Something’ scenarios shows that there is little change in the value for any of the entry arms with increases typically having a value of 0.01.

The results indicate that with the roundabout will operate significantly below the desirable maximum RFC of 0.85, up to and including the design year of 2040 with the inclusion of both permitted and proposed development generated traffic. The overall increases in junction delay between the ‘do-nothing’ and ‘do-something’ scenarios is generally less than 0.1 seconds and thus not significant. The junction is shown to operate in the peak hours at a Level of Service (LOS) ‘A’ for all scenarios. The reduction in junction residual capacity between the ‘Do-nothing’ and ‘Do-something’ scenarios is in the order of 1-2%.

The results of the analyses for both junctions confirms the earlier numerical analyses of receiving road network traffic flows set against the various assessment threshold values. The detailed modelling assessments serve to demonstrate that additional traffic arising from the proposed development will not have a significant effect upon the capacity and operation of the key junctions on the receiving road network of Ballycoolin and the greater network serving the Dublin Enterprise Zone.

Table 13-29: Junction 2 – L3090 Ballycoolin Road Signal Junction Capacity Assessment Results (AM Peak)

Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Cycle (s)	Delay (s)	LOS
Survey Year 2021 (S1) APP.13-3 FIG 2	A	3.4	5.12	0.37	A	90	6.96	A
	B	1.3	38.39	0.21	D			
	C	3.1	3.54	0.32	A			
	D	0.4	42.23	0.10	D			
Opening Year 2025 (S2) Do Nothing APP.13-3 FIG 7	A	3.7	5.56	0.42	A	90	7.04	A
	B	1.3	38.39	0.21	D			
	C	3.4	3.82	0.36	A			
	D	0.4	42.23	0.10	D			
Opening Year 2025 (S3) Do Something APP.13-3 FIG 19	A	3.7	5.53	0.42	A	90	7.77	A
	B	1.3	38.39	0.21	D			
	C	3.4	3.79	0.36	A			
	D	0.8	46.20	0.21	D			
Opening Year +5yrs 2030 (S3)	A	4.0	5.92	0.45	A	90	7.16	A
	B	1.3	38.39	0.21	D			
	C	3.7	4.09	0.40	A			



Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Cycle (s)	Delay (s)	LOS
Do Nothing	D	0.4	42.23	0.10	D			
Opening Year +5yrs 2030 (S4) Do Something APP.13-3 FIG 20	A	4.0	5.89	0.45	A	90	7.83	A
	B	1.3	38.39	0.21	D			
	C	3.7	4.06	0.40	A			
	D	0.8	46.20	0.21	D			
Opening Year 2040 (S5) Do Nothing APP.13-3 FIG 9	A	4.2	6.23	0.48	A	90	7.29	A
	B	1.3	38.39	0.21	D			
	C	3.9	4.27	0.42	A			
	D	0.4	42.23	0.10	D			
Opening Year 2040 (S6) Do Something APP.13-3 FIG 21	A	4.3	6.20	0.48	A	90	7.92	A
	B	1.3	38.39	0.21	D			
	C	3.9	4.24	0.42	A			
	D	0.8	46.20	0.21	D			
Arm A: Ballycoolin Road (W) ♦ Arm B: Stadium BP ♦ Arm C: Ballycoolin Road (E) ♦ Arm D: Premier BP								

Table 13-30: Junction 2 – L3090 Ballycoolin Road Signal Junction Capacity Assessment Results (PM Peak)

Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Cycle (s)	Delay (s)	LOS
Survey Year 2021 (S1) APP.13-3 FIG 3	A	2.6	4.58	0.30	A	90	9.54	A
	B	3.1	42.63	0.41	D			
	C	3.3	4.09	0.37	A			
	D	0.5	40.98	0.12	D			
Opening Year 2025 (S2) Do Nothing APP.13-3 FIG 10	A	2.9	4.85	0.33	A	90	9.36	A
	B	3.1	42.63	0.41	D			
	C	3.6	4.42	0.41	A			
	D	0.5	40.98	0.12	D			
Opening Year 2025 (S3)	A	2.9	4.79	0.33	A	90	10.11	A
	B	3.1	42.63	0.41	D			



Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Cycle (s)	Delay (s)	LOS
Do Something APP.13-3 FIG 22	C	3.6	4.39	0.41	A			
	D	1.0	46.37	0.25	D			
Opening Year +5yrs 2030 (S3) Do Nothing APP.13-3 FIG 11	A	3.1	5.06	0.36	A	90	9.28	A
	B	3.1	42.63	0.41	D			
	C	3.9	4.723	0.45	A			
	D	0.5	40.98	0.12	D			
Opening Year +5yrs 2030 (S4) Do Something APP.13-3 FIG 23	A	3.2	5.00	0.36	A	90	9.98	A
	B	3.1	42.63	0.41	D			
	C	4.0	4.70	0.45	A			
	D	1.0	46.37	0.25	D			
Opening Year 2040 (S5) Do Nothing APP.13-3 FIG 12	A	3.3	5.25	0.38	A	90	9.26	A
	B	3.1	42.63	0.41	D			
	C	4.2	4.97	0.47	A			
	D	0.5	40.98	0.12	D			
Opening Year 2040 (S6) Do Something APP.13-3 FIG 24	A	3.4	5.19	0.38	A	90	9.93	A
	B	3.1	42.63	0.41	D			
	C	4.2	4.94	0.47	A			
	D	1.0	46.37	0.25	D			
Arm A: Ballycoolin Road (W) ♦ Arm B: Stadium BP ♦ Arm C: Ballycoolin Road (E) ♦ Arm D: Premier BP								



Table 13-31: Junction 3 – L3080 Cappagh Road Roundabout Capacity Assessment Results (AM Peak)

Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Delay (s)	LOS	Residual Capacity
Survey Year 2021 (S1) APP.13-3 FIG 2	A	0.8	3.78	0.44	A	3.60	A	106% Arm 1
	B	0.5	3.51	0.32	A			
	C	0.3	3.32	0.22	A			
	D	0.0	0.00	0.00	A			
Opening Year 2025 (S2) Do Nothing APP.13-3 FIG 7	A	0.9	4.03	0.47	A	3.80	A	92% Arm 1
	B	0.5	3.67	0.34	A			
	C	0.3	3.46	0.24	A			
	D	0.0	0.00	0.00	A			
Opening Year 2025 (S3) Do Something APP.13-3 FIG 19	A	0.9	4.10	0.48	A	3.87	A	90% Arm 1
	B	0.5	3.78	0.35	A			
	C	0.3	3.48	0.24	A			
	D	0.0	0.00	0.00	A			
Opening Year +5yrs 2030 (S3) Do Nothing APP.13-3 FIG 8	A	1.1	4.49	0.52	A	4.16	A	75% Arm 1
	B	0.6	3.99	0.38	A			
	C	0.4	3.71	0.27	A			
	D	0.0	0.00	0.00	A			
Opening Year +5yrs 2030 (S4) Do Something APP.13-3 FIG 20	A	1.1	4.51	0.52	A	4.19	A	74% Arm 1
	B	0.6	4.05	0.39	A			
	C	0.4	3.72	0.27	A			
	D	0.0	0.00	0.00	A			
Opening Year 2040 (S5) Do Nothing APP.13-3 FIG 9	A	1.2	4.88	0.56	A	4.49	A	64% Arm 1
	B	0.7	4.29	0.42	A			
	C	0.4	3.95	0.29	A			
	D	0.0	0.00	0.00	A			
Opening Year 2040 (S6) Do Something APP.13-3 FIG 21	A	1.3	4.98	0.56	A	4.56	A	63% Arm 1
	B	0.7	4.36	0.42	A			
	C	0.4	3.97	0.30	A			
	D	0.0	0.00	0.00	A			
Arm A: Cappagh Road (S) ♦ Arm B: Ballycoolin Road (W) ♦ Arm C: Cappagh Road (N) ♦ Arm D: Future Link								



Table 13-32: Junction 3 – L3080 Cappagh Road Roundabout Capacity Assessment Results (PM Peak)

Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Delay (s)	LOS	Residual Capacity
Survey Year 2021 (S1) APP.13-3 FIG 3	A	0.9	3.90	0.47	A	3.52	A	98% Arm 1
	B	0.4	3.24	0.29	A			
	C	0.2	2.90	0.19	A			
	D	0.0	0.00	0.00	A			
Opening Year 2025 (S2) Do Nothing APP.13-3 FIG 10	A	1.0	4.17	0.51	A	3.72	A	85% Arm 1
	B	0.5	3.37	0.31	A			
	C	0.3	3.00	0.21	A			
	D	0.0	0.00	0.00	A			
Opening Year 2025 (S3) Do Something APP.13-3 FIG 22	A	1.0	4.20	0.51	A	3.79	A	84% Arm 1
	B	0.5	3.55	0.33	A			
	C	0.3	3.06	0.22	A			
	D	0.0	0.00	0.00	A			
Opening Year +5yrs 2030 (S3) Do Nothing APP.13-3 FIG 11	A	1.2	4.64	0.56	A	4.05	A	69% Arm 1
	B	0.5	3.58	0.34	A			
	C	0.3	3.17	0.24	A			
	D	0.0	0.00	0.00	A			
Opening Year +5yrs 2030 (S4) Do Something APP.13-3 FIG 23	A	1.3	4.75	0.56	A	4.17	A	67% Arm 1
	B	0.6	3.78	0.36	A			
	C	0.3	3.23	0.24	A			
	D	0.0	0.00	0.00	A			
Opening Year 2040 (S5) Do Nothing APP.13-3 FIG 12	A	1.4	5.10	0.59	A	4.38	A	59% Arm 1
	B	0.6	3.80	0.37	A			
	C	0.3	3.31	0.25	A			
	D	0.0	0.00	0.00	A			
Opening Year 2040 (S6) Do Something APP.13-3 FIG 24	A	1.5	5.15	0.59	A	4.45	A	58% Arm 1
	B	0.6	3.96	0.39	A			
	C	0.3	3.36	0.26	A			
	D	0.0	0.00	0.00	A			

Arm A: Cappagh Road (S) ♦ **Arm B:** Ballycoolin Road (W) ♦ **Arm C:** Cappagh Road (N) ♦ **Arm D:** Future Link



13.7.4 'Do Nothing' Effects

The 'Do-nothing' traffic flow scenario is set out in Section 13-6 which provides details on the existing flows of traffic on the receiving road network together with detailed information on the traffic generation characteristics of the existing permitted development. The 'Do-nothing' is the scenario in which the proposed development were not to go ahead and the existing waste management facility were to continue operate to operate at existing capacities and throughput. It can reasonably be concluded therefore that the 'Do-nothing' impact is not significant as there would be no traffic flow changes to consider.

13.7.5 Summary of Construction Phase Effects

The construction programme is estimated to be of approximately 12 months duration so construction phase effects will be short-term. It is proposed that construction traffic will access the site via L3090 Ballycoolin Road and the existing access arrangements within Cappogue Industrial Park.

The average complement of construction staff is estimated to be in the region of 30 persons which may rise to a total of 58 persons during peak construction activities. Light vehicle traffic generation during the construction phase will be on average 36 trips per day increasing to a peak of 58 trips per day during peak activities. Normal site working hours are 07:00-19:00hrs on weekdays and 08:00-14:00hrs on Saturdays with no working on Sundays or Public Holidays. Construction traffic will typically arrive at site prior to the traditional commuter peak hour in the morning and after the evening peak hour. Average HGV traffic generation arising during construction activities is expected to be in the region of 12 HGV trips or less per day.

The receiving local roads in the vicinity of the proposed development are generally subject to the majority of daily traffic movements between approximately 06:00hrs and 19:00hrs on weekdays. Relatively large fluctuations can be observed throughout the day with particular concentrations in traffic during the typical morning and evening commuter peak hours due principally to the commercial and industrial enterprise and employment characteristics of the surrounding lands. The local receiving roads are designed to accommodate such traffic and the traffic associated with the further development and construction of development in the area. The majority of construction staff and light traffic tends to be manifest on the network before the morning peak hour and after the evening peak hour, whilst construction HGV traffic is typically well distributed throughout the day. In this context it is reasonable to expect that the existing receiving road network will have sufficient capacity to accommodate the temporary increase in traffic associated with the construction of the proposed development.

The forecast traffic generation during construction is less than that forecast as arising on the receiving road network during the operational phase. Given that the effects of the operational volume of traffic have been shown not to be significant, it follows that the volume of construction traffic will not give rise to significant effects upon the capacity of the receiving roads. No specific detailed analysis of the lesser volume of traffic is considered necessary.

13.7.6 Summary of Operational Phase Effects

The results of the capacity analysis for Junction 2, the signalcontrolled junction L3090/Stadium Business Park/Premier Business Park is provided for the morning and evening peak hours respectively in Table 13-29 and Table 13-30. Comparing the Ratio of Flow to Capacity (RFC) for each of the 'Do-Nothing' and 'Do-Something' scenarios shows that there is little or no change in the value for the Ballycoolin Road or the access road serving Stadium Business Park.



There is a modest increase in the RFC on the arm serving Premier Business Park where the highest value is 0.21 in the morning and 0.25 in the evening peak hours and where the maximum increases are 0.11 and 0.13 respectively.

The results indicate that the proposed development access road to Premier Business Park will operate significantly below the desirable maximum RFC of 0.85, up to and including the design year of 2040 with the inclusion of both permitted and proposed development generated traffic. The overall increases in junction delay between the 'do-nothing' and 'do-something' scenarios is not significant and the junction is shown to operate at a Level of Service (LOS) 'A' for all scenarios. The effect of proposed development traffic is not significant.

The results of the capacity analysis for Junction 3, the roundabout junction L3090 Ballycoolin Road/L3080 Cappagh Road is provided for the morning and evening peak hours respectively in Table 13-31 and Table 13-32.

Comparing the Ratio of Flow to Capacity (RFC) for each of the 'Do-Nothing' and 'Do-Something' scenarios shows that there is little change in the value for any of the entry arms with increases typically having a value of 0.01.

The results indicate that with the roundabout will operate significantly below the desirable maximum RFC of 0.85, up to and including the design year of 2040 with the inclusion of both permitted and proposed development generated traffic. The overall increases in junction delay between the 'do-nothing' and 'do-something' scenarios is generally less than 0.1 seconds and thus not significant. The junction is shown to operate in the peak hours at a Level of Service (LOS) 'A' for all scenarios. The reduction in junction residual capacity between the 'Do-nothing' and 'Do-something' scenarios is in the order of 1-2%. The effect of proposed development traffic is not significant.

13.7.7 Decommissioning phase

Upon cessation of operations the site will be decommissioned in accordance with the current proposal. The potential effects of decommissioning the site on the capacity and operation of the receiving road network are not considered to be potentially significant effects.

13.7.8 Cumulative Effects

The Junction Capacity Assessments of the operational phase include for no specific local developments other than the proposed development. By virtue of the base network traffic counts developments already in operation are inherently considered. Other future development that may give rise to the generation of new traffic on the receiving roads network is included for by the application of TII published growth rates to all traffic on all routes within the study area. The additional traffic generation arising on the receiving road network assumed in this Chapter through the application of the TII growth rates is as follows:

- 2021-2025 (Opening Year)-----+6.6% (LV)-----+12.3% (HGV)
- 2021-2030 (Opening Year +5yrs)-----+15.6% (LV)-----+29.9% (HGV)
- 2021-2040 (Opening Year +15yrs)-----+21.6% (LV)-----+48.7% (HGV)

The cumulative traffic arising from future economic growth and development resulting in traffic growth on the receiving Regional Road network are included for in both the 'do nothing' and 'do something' road network assessment scenarios.



It is reasonable to expect that traffic arising from the proposed development would by definition be included, or at least included in part in the TII growth rates. This factor is disregarded in the traffic assessments since the incremental increase in traffic to the proposed development (over that currently generated at the existing permitted development) is considered totally new to the road network for the proposed period of operation commencing in 2025.

Notwithstanding the above, there is development potential in Premier Business Park/Cappogue Industrial Park, the traffic generation of which might not be fully represented by application of the TII growth rates. So as to examine the potential cumulative effect of development of the sites potentially served from the Ballycoolin Road Table 13-34 provides results of a further sensitivity assessment of the operation of the signal-controlled junction under higher traffic loading arising from the south.

In the interest of simplicity, it is assumed for the purpose of the sensitivity analysis of cumulative effects that the traffic arising within Premier Business Park/Cappogue Industrial Estate would be double that currently experienced plus double that predicted to arise from the proposed development.

This equates to approximately a four-fold increase in traffic generation over the exiting scenario, which is considered a sufficiently robust basis upon which to evaluate the capacity of the infrastructure serving the development site from the public road network.

By reference to the surveyed and forecast traffic flow data provided in this Chapter the forecast traffic generation assumed in the cumulative effects sensitivity assessment are as follows in Table 13-33.

Table 13-33: Cumulative Sensitivity Assessment Traffic Generation

Scenario	Direction	Traffic Generation								
		Current Surveyed			Forecast With Development			Sensitivity Cumulative		
		LV	HGV	Total	LV	HGV	Total	LV	HGV	Total
Daily 07:00-19:00hrs	Arrive	151	123	274	186	282	468	372	564	936
	Depart	159	114	273	192	280	472	384	560	944
AM Peak 08:00-09:00hrs	Arrive	12	14	26	16	22	38	32	44	76
	Depart	4	11	15	9	31	40	18	62	80
PM Peak 17:00-18:00Hrs	Arrive	4	7	11	9	15	24	18	30	48
	Depart	22	1	23	25	13	38	50	26	76

The capacity assessment is conducted for 2030 and include two sets of analyses, firstly where the cycle time and cycle splits are optimised to show potential junction performance and secondly in the interest of facilitating a direct comparison with the operational assessments, both morning and evening analyses are based upon the same fixed cycle time of 90 seconds using the timings provided in Figure 13-9.



The former analysis serves to demonstrate that the existing traffic signal system is sufficiently sophisticated to operate within capacity through optimisation when subject to the sensitivity value traffic flows. The latter does not give rise to efficiency in the operation of the signal system but is provided to facilitate direct comparison with the earlier analyses of the operational phase of the development.

The results of the cumulative sensitivity assessment indicate that the proposed development access road to Premier Business Park will operate significantly below the desirable maximum RFC of 0.85 with the inclusion of double the existing permitted and proposed development generated traffic. Under the sensitivity traffic flow conditions, the overall increase in junction delay between the 'do-something' and 'sensitivity' scenarios is not significant, and the junction is shown to operate at a Level of Service (LOS) 'A' for all scenarios.

The results of the cumulative sensitivity detailed modelling assessments serve to demonstrate that additional traffic arising from the proposed development and the potential future development of zoned lands in the adjoining business park will not have a significant effect upon the capacity and operation of the key junction on the receiving L0390 Ballycoolin Road and by reference to the operational capacity assessments, the greater network serving the Dublin Enterprise Zone.

Table 13-34: Junction 2 – L3090 Ballycoolin Road Signal Junction Cumulative Assessment (Sensitivity)

Scenario	Arm	Queue (Veh)	Delay (s)	RFC	Stream LOS	Junction		
						Cycle (s)	Delay (s)	LOS
Opening Year +5yrs 2030 AM Peak Hour Cycle Optimised	A	3.6	6.04	0.48	A	68	8.18	A
	B	1.1	32.40	0.26	C			
	C	3.3	3.94	0.41	A			
	D	1.2	37.64	0.32	D			
Opening Year +5yrs 2030 AM Peak Hour Comparator	A	3.6	4.58	0.43	A	90	8.65	A
	B	1.5	47.36	0.34	D			
	C	3.3	3.04	0.38	A			
	D	1.6	51.58	0.36	D			
Opening Year +5yrs 2030 PM Peak Hour Cycle Optimised	A	2.9	6.75	0.44	A	52	9.49	A
	B	1.9	25.79	0.39	C			
	C	3.6	6.20	0.52	A			
	D	1.1	24.48	0.29	C			
Opening Year +5yrs 2030 PM Peak Hour Comparator	A	3.3	4.91	0.36	A	90	11.71	A
	B	3.2	45.42	0.46	D			
	C	4.0	4.65	0.45	A			
	D	2.0	52.81	0.44	D			
Arm A: Ballycoolin Road (W) ♦ Arm B: Stadium BP ♦ Arm C: Ballycoolin Road (E) ♦ Arm D: Premier BP								



13.8 Mitigation Measures

13.8.1 Construction Phase Mitigation

Construction phase effects will be short-term. It is proposed that construction traffic will access the site via L3090 Ballycoolin Road and the existing access arrangements within Cappogue Industrial Park. The construction access shall be managed by signage and flagmen. A banksman and active traffic control will be employed during times when construction activity is more intense, for example as during concrete pours.

Normal site working hours are 07:00-19:00hrs on weekdays and 08:00-14:00hrs on Saturdays with no working on Sundays or Public Holidays.

Construction traffic will be scheduled to typically arrive at site prior to the traditional commuter peak hour in the morning and after the evening peak hour. It is anticipated that the generation of HGV's during the general construction period will be evenly spread throughout the day and as such will not impact significantly during the peak periods. An appropriate routing strategy for HGVs will be agreed and implemented as part of the Construction Management Plan. Construction traffic is not considered likely to give rise to reduced operational performance of the local road network.

The contractor will decide the construction programme to be implemented and will be required to finalise a Construction Management Plan with the Planning Authority. The existing road network serving the site can accommodate this type of traffic and the levels of construction activity forecast.

Impacts arising from construction traffic will be managed and mitigated through the agreement of suitable haul routes. To reduce insofar as practicable, the impact of construction generated traffic and to reduce the volume of site generated traffic during construction the following measures are proposed:

- Provision of sufficient onsite parking to accommodate construction personnel, visitor parking and deliveries and reducing insofar as practicable potential overflow onto the local network. No contractor parking will be permitted outside the proposed development site or any public roads outside the confines of the application site.
- Encourage/require the Contractor to transport construction personnel and to encourage staff to travel by public transport or to share vehicles to reduce parking demand at the site.
- Inform construction staff of the alternative modes of transport highlighting the availability of non-car modes of transport and the accessibility of the site by bus and bicycle.

The transportation of construction materials and commuting of construction staff will not have a significant impact upon the operation or capacity of the receiving public road network. Given the distance of the development site from the public road there is unlikely to be any direct impacts arising from the deposition of debris, nevertheless it is the intention of the Applicant to comply with Local Authority policy on maintaining the roads serving the site clean of dirt and debris associated with the development of the site. If further detail regarding the control of the construction project and specifically the control of construction traffic is required by the Local Authority it is suggested that a Construction Traffic Management Plan can be prepared as a condition of planning.

A detailed Traffic Management Plan incorporating the mitigation measures set out in the outline CEMP included as part of the EIA, will be formalised and agreed with the local authority prior to the commencement of construction.



The detailed Traffic Management Plan will include mitigation measures as outlined below.

Traffic Management Coordinator - A dedicated competent Traffic Management Coordinator will be appointed for the duration of the project and this person will be the main point of contact for all matters relating to traffic management on the project.

Haul Routes - The plan will identify those roads that will be used to access this project and where appropriate will indicate roads not to be used by construction traffic.

Site Induction - All workers and all drivers delivering materials to site will receive a comprehensive site induction which will include, as appropriate, a section on traffic management and clear guidance on the routes to site to be used/not used.

Traffic Management and Traffic Control- All temporary traffic management will be planned and executed in accordance with best practice and by reference to Chapter 8 of the Traffic Signs Manual.

Wheel/Vehicle washing facilities - temporary wheel/vehicle washing facilities will be provided subject to agreement with the planning authority.

13.8.2 Operational Phase Mitigation

The operational phase of the development is forecast to have the potential to increase the volume of traffic at the proposed development site which will give rise to increase in traffic flows, particularly HGV traffic, on the Ballycoolin Road and Cappagh Road. In relation to a similar proposed MRF on Cappagh Road the Transport Planning Section of Fingal County Council reported to An Bord Pleanála noting that the Cappagh Road and surrounding roads in the Dublin Enterprise Zone have been upgraded to a high standard to accommodate the locally zoned lands and that the receiving road network has been designed to cater for traffic generated by such developments. The traffic assessments provided in this Chapter demonstrate that the forecast increase in traffic on the receiving road network will not have a significant effect on capacity and serve to confirm that the existing roads infrastructure in the Dublin Enterprise Zone is designed for this type and volume of traffic. No mitigation of the direct effects on capacity are warranted. That notwithstanding there are measures that will, by design, serve to mitigate effects and these measures are outlined as follows.

Logistics Coordination - A dedicated Logistics Coordinator will be appointed during the operational phase of the materials processing and transfer facility, and this person will be the main point of contact for all matters of traffic management relating to the project. It is likely that this role will be fulfilled by the existing site Operations Manager.

Haul Routes - The haul routes to be used for access to the proposed facility are identified in Appendix 13-4, Figure 1. All drivers and companies delivering to or collecting from the site, during both the construction and operational phases, will be made aware of the haul routes to use.

Alternative Transport Modes – L3090 Ballycoolin Road and L3080 Cappagh Road are provided with dedicated bicycle lanes, footways and crossings which provide access to Premier Business Park. Bus stop 7237 (westbound) and 7224 (eastbound) are located on the Ballycoolin Road either side of the traffic signal controlled junction serving Premier Business Park. 40D (Dublin Bus: Parnell Street to Tyrrelstown), 220 and 220 A (Go-Ahead: DCU to Lady's Well Road) and N4 (Dublin Bus: Point Village to Blanchardstown Shopping Centre). In line with national programmes to promote and incentivise alternative modes of transport there is potential to encourage both construction site personnel and operational staff and visitors to travel by non-car modes.



'Night-time' Traffic Movements - The proposal for 24-hour operation of the facility results in approximately 20% of the HGV movements occurring between 9pm and 6am. These traffic movements will be during times when the receiving road network of Ballycoolin Road and Cappagh Road experience low traffic volumes. The assessments provided in this Chapter do not consider the reduced volume of traffic during the daytime. The effect of traffic on the daytime operation of the receiving road network will be mitigated by the proposed night-time operation of the facility.

Site Inductions - All workers and all drivers delivering or collecting materials to site will receive a comprehensive site induction which will include, as appropriate, a section on traffic management and clear guidance on the haul routes to the facility to be utilised.

Mobility Management Plan - The Applicant intends implementing a Mobility management Plan during the operational phase of the proposed development. This plan will encourage the use of other modes of transport other than private, namely cycling, walking and public transport. The Plan will create awareness among site staff of the environmental cost associated with private car use and will promote and support sustainable travel patterns at a site-specific level.

13.9 Residual Impacts

Construction Phase

The construction phase of the proposed development will have an **imperceptible** impact on traffic conditions or capacity.

Operational Phase

The residual effects on traffic conditions is not significant and can reasonably be categorised as **imperceptible**. Any residual impacts on traffic capacity on the receiving road network can be categorised similarly.

13.10 Monitoring

13.10.1 Construction Phase

None required.

13.10.2 Operational Phase

The implementation and performance of Traffic Management and haul route management measures and initiatives including any ongoing revisions or new initiatives will be monitored and evaluated throughout the Operational Phase.



13.11 Interactions

13.11.1 Noise and Vibration

Traffic related noise and vibration is considered in Chapter 12 of Volume 2 of this EIAR.

13.11.2 Air Quality and Climate

Traffic related impacts on air quality and climate are considered in Chapter 11 of Volume 2 of this EIAR.

References

1. FCC (2017 – 2023). Fingal County Development Plan.
2. DECLG (2015). Towards a National Planning Framework: A Roadmap for the Delivery of the NPF.
3. DTO & DoELG (2003). Traffic Management Guidelines.
4. CIHT (1994). Guidelines for Traffic Impact Assessments.
5. TII (2014). Traffic and Transport Assessment Guidelines.
6. TII (2016). Project Appraisal Guidelines (2016);
7. TII PE-PAG-02039 (Oct 2016). *'Unit 16.1 – Expansion Factors for Short Period Traffic Counts'*.
8. TII PE-PAG-02017 (Oct 2021). *'Unit 5.3 – Travel Demand Projections'*.
9. Department of Transport, Tourism and Sport (2019) *'Traffic Signs Manual'*.



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