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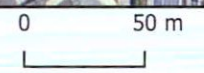


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CLIENT
 Irish Recycling Ltd

TITLE
 Archeological Test Trenches Location

DETAILS
 — Site Boundary
 — Archeological Test Trenches



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FIGURE 12.4



Photograph 12.1 Test Trench 1 from North



Photograph 12.2 Test Trench 2 from North



Photograph 12.3 Test Trench 3 from North



Photograph 12.4 Test Trench 4 from North



Photograph 12.5 Test Trench 5 from North



Photograph 12.6 Test Trench 6 from North



Photograph 12.7 Test Trench 7 from North

12.5.1.6 Cultural Heritage Value

The proposed development site does not contain any previously recorded archaeological or built heritage sites. The closest Recorded Monument is a ring ditch site [DU014-015], situated 500m to the north. The archaeological test excavations in Phase 1 did not uncover any archaeological deposits, features, structures or objects in any of excavated trenches.

12.6 **Baseline Scenario**

If the development does not proceed the site will remain in its current condition, with no changes to the potential impacts on the overall cultural heritage.

12.7 **Prevention and Mitigation Measures**

12.7.1 *Design Stage*

Based on the cultural heritage value of the proposed development area design mitigation measures are not required.

12.7.2 *Construction Stage*

Although there is no evidence for archaeological materials within Phase 1 the scale of the development gives rise to the possibility that archaeological materials could be impacted in later construction stage. Therefore a structured programme of archaeological monitoring by a suitably experienced archaeologist of all sub-surface groundworks, associated with the development will be undertaken under licence from the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.

Where archaeological features are encountered, the monitoring archaeologist will be empowered to halt construction works in the affected area pending receipt of further recommendations from the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.

Following completion of the monitoring programme, and any other possible archaeological interventions/investigations, the archaeologist will prepare a full and final report for submission to Fingal County Council, the Department of Housing, Local Government and Housing and National Museum of Ireland. It is considered the most likely outcome will be preservation by record.

12.7.3 Operational Stage

As there will be no impacts on cultural heritage features in the operational stage mitigation measures are not required.

12.8 Monitoring

12.8.1 Construction Stage

All topsoil stripping/general ground disturbance works into the subsoils outside of the area investigated in 2021 will be monitored by an archaeologist during construction stage.

12.8.2 Operational Stage'

Operational stage monitoring is not required.

12.9 Cumulative Impacts

It is not envisaged that any negative cumulative effects will occur with respect to Cultural Heritage assets as a result of the proposed development.

12.10 Residual Impacts

In terms of the overall Cultural Heritage it is considered that the only potential residual Impact relates to any previously unidentified subsurface archaeological features that might be uncovered in the construction stage. In the event that such features are identified, they will be subject to a process of 'preservation by record, adding a significant value to the archaeological heritage record of the area.

12.10.1 Summary of Residual Impacts

Likely Significant Effect	Quality	Significance	Extent	Probability	Duration
Construction Stage					
Loss of Archaeological Features	Neutral	Imperceptible	Local	Likely to occur	Permanent

12.11 References

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13. MATERIAL ASSETS: BUILT SERVICES

13.1 Introduction

This Chapter describes the material assets on and in the environs of the site. It identifies the potential impacts, describes the proposed prevention mitigation and monitoring measures and assesses the impacts, including residual impacts. It also addresses a 'baseline' scenario.

Material Assets as defined in the 'Advice Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022) are 'built services and infrastructure'. This includes roads and traffic, electricity, telecommunications, gas, water supply infrastructure, sewerage systems and waste management. Roads and traffic are addressed separately in Chapter 14. This Chapter was prepared by Dr Martina Gleeson and Mr Jim O'Callaghan of OCM and should be read in conjunction with Chapter 5 Climate and Chapter 14 Traffic and Transport.

13.2 Relevant Legislation & Guidance

In addition to the guidance documents referenced in Section 1.5 the following legislation and guidance were taken into consideration:

- The Waste Management Act 1996, as amended;
- Waste Management Plan for the Eastern Midlands Region (2015 to 2021)
- Fingal Local Economic and Community Plan (2016-2020)
- Waste Action Plan for a Circular Economy (Department of Environment, Climate & Communications 2021).
- Building Regulations Part G (S.I. No. 335/2008), Part H (S.I. No. 561/2010) and Part L (S.I. No 292/2019 –
- European Commission (2018) Revised Energy Performance of Buildings Directive (EPBD) (2018/844/EU)
- European Union (Energy Performance of Building) (No.2) Regulations 2019),
- Part L and European Union (Energy Performance of Buildings) (No. 2) Regulations 2019 Technical Guidance Document (Department of Housing, Planning and Local Government).
- European Union (Energy Performance of Buildings) Regulations 2021 (S.I. No. 393 of 2021).

13.3 Methodology

The assessment was based on the Coyle Civil & Structural Engineering Services Report and information derived from the current County Development Plan, Eastern Midlands Region Waste Management Plan, Uisce Eireann database. The Engineering Report is in Appendix 14.1 and should be consulted for the detailed information on the existing and proposed water supply, wastewater and surface water services.

13.4 Proposed Development

Chapter 3 describes the existing site and the proposed development. Those aspects that are relevant to the Materials Assets are water, electricity and energy supplies, surface water drainage, waste management, and natural resource consumption.

13.5 Receiving Environment

13.5.1 Services

There is no water supply and foul water drainage system serving the development site. There is no existing surface water drainage system and incident rain fall infiltrates to ground.

There are two 38 kv and one 110 kv overhead powerlines running from south-east to north-west across the north-eastern part of the site, and a 10kv line running from south-west to north-east through the centre of the site, off of which is a south-east to north-west spur. Currently works are on-going to remove the overhead lines and lay them underground inside the eastern and northern development site boundaries.

Uisce Eireann permanent and temporary wayleaves run from north to south through the site for the Greater Dublin Orbital Sewer route.

13.5.2 Waste Management

In 2020, the government published its 'Waste Action Plan for a Circular Economy' to take cognisance of the European Commission's (Commission) Action Plan on the Circular Economy. The purpose of Commission's Action Plan the is to transition the European Union (EU) to an economy where the value of products, materials and resources is maintained for as long as possible and the generation of waste minimised. This transition is essential to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy.

The Commission recognises that recycling is a pre-condition for a circular economy, where resources and materials can be recycled, returned back to the economy and used again, meaning that what was once considered a waste can become a valuable resource. To achieve this, materials at the end of their life cycle should be recovered through recycling and ideally reintroduced to the product lifecycle. These "secondary raw materials" can then be traded like primary raw materials.

The objective of the government's Waste Action Plan for a Circular Economy is to inform and direct waste planning and management in Ireland over the coming years. While the thrust of the Plan is to prevent waste arising through reuse its objectives include ensuring that measures support sustainable economic models (for example by supporting the use of recycled over virgin materials).

The Plan promotes the development – for environmental and economic reasons – of adequate and appropriate treatment capacity at indigenous facilities to ensure that the full circularity and resource potential of materials is captured in Ireland.

Efforts to decouple waste generation from economic growth have not yet been successful and the economic recovery that started in 2014, in conjunction with population growth, has resulted in a continuing increase in the quantities of waste arising, both nationally and in the Greater Dublin Area.

The Eastern Midlands Regional Waste Management Plan estimates that the increase in municipal wastes (combined household and commercial) between 2012 and 2021 will be in the region of 2-3% annually. Growth at the higher rates presents a challenge to the region to ensure adequate collection and treatment capacity is required. Furthermore, the need to treat more of these wastes in the country in support of Circular Economy initiatives means that treatment capacity needs to increase above the projected rates, making the provision of capacity even more challenging.

To ensure that national and regional recovery and recycling targets are met, to minimise the amount of waste disposed to landfill and to roll out circular economy initiatives there is a need to increase indigenous waste recycling and recovery capacity.

It is strategic policy of the Fingal Local Environmental Community Plan to ensure, from environmental, business and public health needs, that waste management remains a priority for local authorities and waste management regions in continuing to invest in promoting and facilitating reuse and recycling by residential and commercial sources and that high standard options for treatment and final disposal of waste are available within the Greater Dublin Area.

13.6 Impacts

13.6.1 Water Supply

In the operational stage water for potable use and for use in the dust control measures will be obtained from the mains supply. Rainwater will be harvested for use as 'grey water' in the staff well fare facilities.

13.6.2 Surface Drainage Systems

A surface water drainage system will be provided that incorporates SuDs measures to harvest rainwater for use in the processes, with surplus water collected and percolated to ground via soakaways. There will be no discharge to off-site water courses.

13.6.3 Foul Water Drainage

Sanitary wastewater and process wastewater will discharge to the Uisce Eireann foul sewer.

13.6.4 Resource Consumption

A connection will be made to the existing overhead electrical power line running along North Road. This may require a temporary disruption of supply locally. An electricity substation will be provided in the north-east of the site.

In the construction stage, electricity will be required for lighting and power in the construction compound. In the operational stage electricity will be needed in the buildings for lighting, ventilation, waste processes, washing the food containers, wastewater treatment plant, electrically powered fork lifts and external lighting. The electricity from the roof mounted solar panels will be directly used on-site.

The development will result in an increase in the consumption of natural resources in the construction and operational stage associated with the use of construction materials, vehicle fuels, water, diesel and oil used in the mobile plant items.

13.6.5 Waste Management /Circular Economy

The proposed development will increase the waste treatment capacity in the Greater Dublin Area to significantly assist in the achievement and maintenance of national and regional recycling and recovery targets and circular economy initiatives, including the avoidance of single use plastics.

13.7 Baseline Scenario

If the proposed development does not proceed there will be no new connections to the electricity networks, mains water supply and foul water network and no generation of electricity from renewable sources. There will be no expansion of the waste treatment capacity in the Greater Dublin area and no contribution to the achieving circular economy initiatives

13.8 Prevention & Mitigation Measures

13.8.1 Design Stage

13.8.1.1 Energy Efficiency

The requirements for the conservation of fuel and energy for buildings other than dwellings are laid out in Part L of the Second Schedule to the Building Regulations 1997 (S.I. No. 497 of 1997), as amended by the Building Regulations (Part L Amendment) Regulations 2011 (S.I. 259 of 2011), the Building Regulations (Amendment) Regulations 2017 (S.I. 4 of 2017). The Second Schedule, insofar as it relates to works related to buildings other than dwellings is:

L1 A building shall be designed and constructed so as to ensure that the energy performance of the building is such as to limit the amount of energy required for the operation of the building and the amount of carbon dioxide (CO₂) emissions associated with this energy use insofar as is reasonably practicable.

For new buildings other than dwellings, the requirements of L1 shall be met by: –

(a) providing that the energy performance of the building is such as to limit the calculated primary energy consumption and related Carbon Dioxide (CO₂) emissions to a Nearly Zero Energy Building level insofar as is reasonably practicable, when both energy consumption and Carbon Dioxide emissions are calculated using the Non-domestic Energy Assessment Procedure (NEAP) published by Sustainable Energy Authority of Ireland;

(b) providing that the nearly zero or very low amount of energy required is covered to a very significant extent by energy from renewable sources produced on-site or nearby;

(c) limiting the heat loss and, where appropriate, availing of the heat gains through the fabric of the building;

(d) providing and commissioning energy efficient space heating and cooling systems, heating and cooling equipment, water heating systems, and ventilation systems, with effective controls;

(e) ensuring that the building is appropriately designed to limit need for cooling and, where air-conditioning or mechanical ventilation is installed, that installed systems are energy efficient, appropriately sized and adequately controlled;

(f) limiting the heat loss from pipes, ducts and vessels used for the transport or storage of heated water or air;

(g) limiting the heat gains by chilled water and refrigerant vessels, and by pipes and ducts that serve air conditioning systems;

(h) providing energy efficient artificial lighting systems and adequate control of these systems; and

(i) providing to the building owner or occupants sufficient information about the building, the fixed building services, controls and their maintenance requirements so that the building can be operated in such a manner as to use no more fuel and energy than is reasonable.

In accordance with the EU Energy Performance of Buildings Directive Recast (EPBD Recast) 2010/31/EU of 19th May 2010 definition for Nearly Zero Energy Buildings (NZEB) Part L provides for buildings with a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

The above guidance on energy performance was considered at the design stage and the Design Team decided that the appropriate energy options for the development included:

- Installation of roof mounted Photovoltaic (PV) Solar Panels to supplement the electricity supply.
- Insulation of pipes conveying heated water
- Provision of energy efficient artificial lighting systems
- Provision of electric vehicle charging points.

13.8.1.2 Surface Water Drainage

The capacity of the proposed storm network was modelled and analysed to cater for a 1-in-2 year and a 1-in-30 year rainfall event using the Rational Method. A roughness coefficient (ks) of 0.6mm was used in design to achieve a minimum self-cleansing velocity of 0.75m/s when flowing half full.

The soakaway design complies with guidance published by the Building Research Establishment (BRE), Digest 365 Soakaway Design. The subsoil infiltration characteristics were established by the on-site testing by Site Investigation Ltd. to BRE digest 365.

13.8.1.3 Natural Resource Consumption

The design mitigation measures implemented to minimise energy usage will also reduce indirect natural resource consumption.

13.8.2 *Construction Stage*

13.8.2.1 Natural Resource Consumption

The Resource & Waste Management Plan will identify all of the measures to maximise the reuse/recovery of construction and demolition waste generated by the development and also the opportunities to use recycled aggregates in the construction as alternative to natural materials.

The use of fuels by the construction traffic and the plant and equipment will be minimised by:

- Optimising schedules for the delivery and removal of construction related materials;
- Prohibition of vehicle idling, and
- The proper maintenance and efficient use of construction plant and equipment.

13.8.3 *Operational Stage*

13.8.3.1 Water

There is no scope for mitigation measures in addition to those already 'designed in'.

13.8.3.2 Foul Water

There is no need for mitigation measures.

13.8.3.3 Waste Management

Food waste from the canteen will be collected and sent to the Brown Bin Bay in the MRF. Waste oils, batteries and electrical items will be stored in appropriate containers e.g. battery and light bulb boxes, before being sent off-site. All wastes sent off-site will be transported by authorised waste collectors and go to appropriately authorised waste management facilities.

13.8.3.4 Natural Resource Consumption

The on-site use of the electricity generated by the solar panels in conjunction with the mitigation measures for the reduction of the impact on energy demands will contribute to the mitigation of the impacts on natural resource consumption.

13.9 Monitoring

13.9.1 Construction Stage

The Resource Waste Manager will monitor construction activities to ensure that the waste segregation and storage specified in the RWEMP are implemented.

13.9.2 Operational Stage

Energy, fuel and water usage will be monitored.

13.10 Cumulative Effects

In the operational stage the proposed development will contribute to the cumulative natural resource consumption in the Greater Dublin Area. The installation of the roof mounted solar panels on the processing buildings will reduce reliance on non-renewable energy sources. The development will contribute to a cumulative increase in the waste recycling and recovery capacity in the Greater Dublin Area.

13.11 Residual Impacts

There will be a demand on the national electricity grid, but this will be somewhat off-set by the electricity generated in by the solar panels. In relation to the regional waste management capacity and circular economy initiatives the development will have a positive, moderate, likely, national and long term impact.

13.11.1 Summary of Residual Impacts

Likely Significant Effect	Quality	Significance	Extent	Probability	Duration
Construction Stage					
Waste Management	Negative	Not Significant	Subject site	Likely	Temporary
Operational Stage					
Resource Consumption:	Negative	Not Significant	National	Likely	Long Term
Waste Management	Positive	Moderate	Greater Dublin Area	Likely	Long Term

14. MATERIAL ASSETS: TRAFFIC AND TRANSPORT

14.1 Introduction

This Chapter describes the existing road network and traffic conditions and the impacts of the proposed development, including a 'baseline' scenario. It identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of the impacts and assesses the residual impacts.

This Chapter was prepared by Mr Julian Keenan BEng (Hons) of Trafficwise Ltd and is based on the Traffic and Transport Assessment completed by Trafficwise Ltd, which has been submitted separately with the planning application and should be referred to for the supporting data.

Mr Keenan is a director of Trafficwise Limited and is a member of the Institution of Engineers of Ireland and a member of the Chartered Institution of Highways and Transportation. He has over 30 years engineering experience and has specialised in roads design and traffic and transportation planning for approximately 25 years.

Mr Keenan is familiar with the receiving road network generally comprising the 'Dublin Enterprise Zone' and has previously carried out various traffic studies in the vicinity of the application site in the past including:

- Planning Reg. Ref. FW13A/0089: Applicant Stream Bio Energy. Planning permission for the construction of a Renewable Bioenergy Plant to generate up to 3.8MW of electricity from 90,000 tonnes of non-hazardous biodegradable waste per annum utilising Anaerobic Digestion technology on a 2.38 hectares site within Roadstone Wood's Huntstown Quarry, Huntstown, North Road, Finglas, Dublin 11.
- Planning Reg. Ref. FW18A/0159: Applicant Veridian Renewables. Planning Permission is sought for an increase in the annual volume of waste to be imported to the permitted bioenergy plant at Huntstown, North Road, Finglas, Dublin 11. The proposed increase is 9,900 tonnes, which would take the permitted volume from 90,000 tonnes to 99,900 tonnes.
- Planning Reg. Ref. FW18A/0087: Applicant Kilsaran Concrete. Development consists of the expansion of the existing Concrete Batching Plant Facility within the northern portion of the site and construction of a 2 storey Building for Office / Logistics / Training / Staff Welfare uses and associated facilities within the south-western portion of the site.
- Planning Reg. Ref. F02A/1474: Applicant Greenstar Holdings. Phased development of a proposed Waste Materials Recovery Facility and Biowaste Treatment facility at Millennium Business Park, Cappagh Road, Ballycoolin.
- Planning Reg. Ref. FW20A/0122: Applicant Pdraig Thornton Waste Disposal Limited. Permission for development an existing C&D waste facility.

14.2 Relevant Legislation & Guidance

In addition to the guidance documents referenced in Section 1.5 of the EIAR the following legislation and guidance were taken into consideration.

- The requirements of EU Directives and national legislation (primary and secondary) concerning Environmental Impact Assessment (especially having due regard to the revised provisions of Directive 2014/52/EU);
- EPA (2002) Guidelines on the Information to be Contained in Environmental Impact Statements;
- EPA (2003) Advice Notes on Current Practice in the Preparation of Environmental Impact Statements;
- EPA (September 2015) Advice Notes for Preparing Strategic Environmental Assessments;
- EPA (August 2017) Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- DHPCLG (15/05/17) Circular Letter PL 1/2017 Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on Administrative Provisions in Advance of Transposition;
- DHPCLG (May 2017) Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems: Key Issues Consultation Paper;
- Fingal County Development Plan 2023-2029;
- Department of Transport, Tourism and Sport (2019) 'Traffic Signs Manual';
- Transport Infrastructure Ireland (TII) (2014) PE-PDV-02045 'Traffic and Transport Assessment Guidelines', referred to hereafter as the TTA Guidelines;
- TII (2016) PE-PAG-02039 Project Appraisal Guidelines for National Roads 'Unit 16.1 – Expansion Factors for Short Period Traffic Counts';
- TII (2021) PE_PE-PAG-02017 Project Appraisal Guidelines for National Roads 'Unit 5.3 – Travel Demand Projections';
- TII (2016) PE_PE-PAG-02016 Project Appraisal Guidelines for National Roads 'Unit 5.2 – Data Collection';
- TII (2017) 'Rural Road Link Design' DN-GEO-03031 and
- TII (2017) 'Geometric Design of Junctions' (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) DN-GEO-03060-02; and

14.3 Methodology

The general methodology was discussed and agreed as appropriate at a pre-planning scoping meeting with the Local Authority Roads Department. This Chapter is structured generally in accordance with the Chartered Institution of Highways & Transportation (CIHT) document '*Guidelines for Traffic Impact Assessment*' (September 1994) and the TII Publication PE-PDVp02045 '*Traffic and Transport Assessment Guidelines*' (2014).

This Chapter describes the receiving roads environment and reports upon past, present and forecast future traffic conditions arising at the site and on the receiving road network. The quantum of traffic generated by the development has been reviewed together with traffic survey data which provides a frame of reference with respect to present, baseline and future forecast traffic flows on the receiving road network.

Under the current proposal vehicles transporting materials to and from the site will principally use North Road (Former N2 National Primary Road) connecting with N2/M2 and to Ballycoolin, St. Margaret's and north via R135 North Road.

The comprehensive appraisal of the existing receiving road network in this EIAR is intended as a desktop aid to the Planning Authority in assessing the receiving roads environment. It is important to note that the current proposal relies on the existing haul routes serving the South-eastern portion of the Dublin Enterprise Zone and benefits from the new road infrastructure intersecting R135 North Road. In general, practically all roads in the receiving area can be observed to carry HGV traffic during traffic surveys in 2022.

The assessment was completed in accordance with Transport Infrastructure Ireland's Traffic and Transport Assessment Guidelines PE-PDV-02045 (May 2014). Information from the Fingal County Council Development Plan 2023-2029 was used to describe the development location and its local context in relation to transportation objectives. The general methodology adopted for the assessment was as follows:

- Traffic data – 12-hour classified vehicular traffic count surveys were undertaken on Thurs 08-Sept-2022 by Traffinomics Transportation Surveys. The surveys cover 07:00 and 19:00hrs at 6 locations on North Road.
- Trip Generation – A development trip generation assessment was carried out using the comparison method, which is underpinned by surveys and weighbridge analysis for similar land-uses to determine the potential vehicular and person trips to and from the proposed development.
- Trip Distribution – Based upon existing traffic characteristics on the surrounding road network an appropriate distribution was assigned to the proposed development vehicular trips across the road network.
- Future Road Network Assessments – Future year traffic forecasts were derived from the application of TII PAG growth factors to baseline survey data. Traffic generation arising from permitted development was included in the future year road network assessments. The assessment included forecast development trip generation and separately considered the potential traffic generation arising from the development of zone masterplan lands. Traffic flows and thus impact upon the performance of the receiving road network were modelled for the proposed year of opening, 5 years after opening and 15 years after opening. Assessments

were undertaken both with and without the proposed development to assess the incremental impact arising directly from the construction and operation of the proposed development.

- Parking – Car parking and bicycle parking provision within the proposed development were assessed with reference to demand.
- Mobility Management – The availability of sustainable transport options in the vicinity of the development site assessed and mobility measures, by which the proposed development may reduce the rate of private car use by employees and visitors, were identified.

14.3.1 Consultation

Based on consultation with Fingal County Council the scope of the key transportation aspects addressed included the requirement for pedestrian and cycle accessibility, service arrangements, emergency vehicle access, public transport accessibility and internal car park design parameters. The key matters were:

- Design of car parks and service roads in accordance with relevant standards;
- Access to North Road to accommodate pedestrian/cycles;
- No parking provision along internal service roads;
- Overall car and cycle parking provision to be commensurate with use;
- Consider Pedestrian/Cycle connectivity to public transport facilities;
- The methodology adopted in preparing the TTA should accord with Transport Infrastructure Ireland (TII) Publication TII-PE-PDV-02045 'Traffic and Transport Assessment Guidelines' and to have regard to the Chartered Institution of Highways & Transportation (IHT) 'Traffic Impact Assessment Guidelines';
- Traffic surveys and junction assessments include;
 - Site 1: North Road - Huntstown Quarry Access,
 - Site 2: Coldwinters N2 Northbound Off-Slip,
 - Site 3: Dublin Airport Logistics Park Roundabout (N2 On-Slip),
 - Site 4: N2 Southbound On-Slip North Road Traffic Signals,
 - Site 5: North Road – Kilshane Cross Traffic Signals,
 - Site 6: Ward Cross Roundabout, and
 -
 - Site 7: ESB Service Road (future North Rd./Cappagh Rd. Link)
 -
- Future year roads network capacity assessment scenarios to include;
 - Opening Year
 -

- Opening Year +5 years
-
- Opening Year +15 years

14.4 Development Description

Chapter 3 presents a detailed description of the proposed development and those aspects that are relevant to the Traffic Impact Assessment are discussed in this section. The development is Phase 1 of the 'Huntstown Circular Economy Hub'. The Hub will be developed in phases or stages, with Phase 1 comprising a MRF and FCCP on a plot in the west of the overall landholding.

The MRF will be used to sort municipal solid waste (MSW), source segregated and mixed dry recyclables and construction and demolition wastes into recoverable and recyclable streams. In addition brown bin waste will be accepted, bulked up and transferred to biological treatment plants. Subsequent stages of the Hub will include recycling facilities that will process the recyclables separated in Phase 1 into materials that meet end of waste criteria. The proposed FCCP Plant will provide a centralised tray washing/sterilisation facility for large food retailers in the Greater Dublin Area to facilitate the multiple use of these trays. The combined annual materials intake to Phase 1 will be 95,000 tonnes.

The development will be accessed via the existing direct vehicle access junction from North Road that currently serves the Finglas 220kV Substation. It is an objective of the Fingal Development Plan 2023-2029 to connect this service road to the Cappagh Road at Cappogue. The future connecting road will function as a local distributor road and will serve to provide access to zoned lands including the development site.

It is proposed that the direct access to the ESB service road will make provision for a right turning lane. The turning lane is not required in the short term, but was provided in anticipation of the realisation of the connecting local access and distributor road between North Road and Cappagh Road. A right turn lane is proposed at the direct development access to preserve the future carrying capacity of the link road. No modifications are proposed at the T-junction on North Road to the east of the site.

The proposed development access junction was designed in accordance with Transport Infrastructure Ireland's Design Geometry publications formerly the National Roads Authority's Design Manual for Roads and Bridges. The proposed road design and road improvement works to provide the right turn lane on the North Road Cappagh Road future link road were the subject of an independent Road Safety Audit (Stage 1) prepared by Traffico Road Safety Engineering Consultants in March 2023. A copy of the Road Safety Audit (RSA) including Designer Feedback Form is included in the TTA at Appendix C.

In accordance with Table 1.2 of TII-DN-GEO-03031 the Design Speed for the proposed North Road Cappagh Road link and thus the design of the development access is 60km/h, which is the Design Speed consistent with a speed limit of 50km/h which applies on both North Road and Cappagh Road and is reasonably expected to apply to the new link road when constructed.

The proposed horizontal alignment of the link road is unchanged from existing. The access junction serving the proposed development from the North Road Cappagh Road Link Road must accommodate all turning movements. The layout of the turning radii appropriately accords with TII-DN-GEO-03060 Section 5.6.5 and incorporates a compound radius curve as per DN-GEO-03060 Appendix C, Figure C.1, 'Design of Compound Curve'.

TII-DN-GEO-03060 Section 4.3. sets out that the use of computer software to predict the swept path of large vehicles is mandatory in the design of all junction types accordingly the junction has been assessed using AutoDesk Tracking for the vehicle type used in the haulage of materials. The same checking of swept paths was completed for the internal junctions, weighbridge bypass lanes and service yards within the development.

The drawings accompanying the planning submission include vehicle track assessments using a design vehicle with the specification, dimensions and steering characteristics of articulated tipper vehicles that will be used to service the proposed development. The assessments confirm that the junction and internal geometry can accommodate articulated heavy goods vehicles (HGV).

14.4.1 DMURS Guidance

The Design Manual for Urban Roads and Streets (DMURS) provides a set of principles, approaches and standards necessary to achieve best practice in urban areas which includes cities, towns and villages. Local Authorities are required to facilitate implementation of the principles set out in the manual in carrying out their development and planning functions under the Planning Code.

The principles, approaches and standards set out in the DMURS apply to the design of all urban roads and streets which are defined as those roads and streets in cities, in towns and in villages subject to a speed limit of 60km/h or less. The subject site connects to existing roads infrastructure subject to 50km/h locally accordingly from the perspective of roads design and the provision of visibility sightlines at and within the proposed development, the receiving road locally comes under that category of road where the principles of the DMURS apply.

In relation to 'Place' and 'Context' DMURS acknowledges that the place status varies from high in urban centres, lowering in proportion to distance decreasing to Neighbourhood, Suburb and Business Park/Industrial Areas. Business Park/Industrial Areas are the lowest order of place next to the rural fringe. DMURS advises that designers must consider the context of a street or street network noting the greater need for connectivity, and integration and ease of movement for vulnerable road users where the 'place' value is high, such as in urban centres.

DMURS acknowledges the challenges presented by industrial estates and business parks stating the following:

"Business Parks / Industrial Estates are areas that are primarily focused on (and often purpose built for) providing areas of commercial and industrial activity outside of Centres. Streets within these areas generally have a low place status as buildings have little street presence and they are largely devoid of pedestrian activity. Many of these areas are in a state of transition toward more intensive commercial and residential uses replacing older industrial ones. As this transition occurs, the status of these places will rise. Place status in existing campus style Business Parks also tends to be higher and pedestrians can be highly active in these areas during business hours.

Managing transitions within Business Parks/Industrial Estates presents a series of challenges to designers. As development within these areas intensifies, designers are encouraged to move toward standards that are better suited to densely populated urban areas (i.e. Centres and/or Neighbourhoods). However, the implementation of standards which seek to slow vehicular movement and increase pedestrian mobility (such as narrower carriageways or tighter corner radii), may be more difficult to implement due to the manoeuvrability requirements of larger vehicles. Under such circumstances designers may consider additional mitigation measures (as further detailed in Chapters 4 and 5)."

The Fingal County Development Plan sets out future plans for the ESB service road to become a local distributor road or spine road generally running parallel to the M50 through zoned lands connecting between North Road in the east and Cappagh Road in the west. The existing service road is single carriageway and has a cross-section in the order of approximately 7.5m carriageway with generous adjoining verges on both sides but with no adjoining footways or cycleways.

No cycleways are provided on the existing service road or on the greater local road network serving the area. In the interest of a consistent layout it is proposed that in developing the access to the site the existing service road will be improved with the addition of cycleways and footways on both sides reflecting the same configuration as that of the Cappagh Road to which it will connect and that of the greater road infrastructure serving the Dublin Enterprise Zone.

DMURS advises that in circumstances where there are regular turning movements by articulated vehicles corner radii may be increased to 9.0m and examples Industrial Estates. The primary internal junctions with the development spine road will be required to accommodate frequent access by articulated vehicles and have corner radii of 9.0m.

The spine road within the proposed development is provided with 2.0m verge and a minimum of 3.0m shared footway/cycleway accordingly internal junction visibility splays are generous. All visibility splays will be maintained clear of obstructions, however, objects that would not be large enough to wholly obscure a vehicle, pedestrian or cyclist are acceptable providing their impact on the overall visibility envelope is not significant. Landscaping along the internal roads is mindful of the cumulative effect of street trees within the verge area.

The internal road network of the proposed development will generally be subject to 30 km/h speed limit. The minor roads connecting to the individual units and service yards are intended to support a lower speed environment in accordance with the general principles of DMURS. Dedicated cycle lanes are not proposed within the site since demand is likely to be low, pedestrian and cyclist volumes will be low and traffic volumes will similarly be low which should contribute toward a safe environment in which to share footway space.

The proposed development area will provide for an appropriate speed environment. In accordance with DMURS Table 4.1 all internal roads are designed to a maximum Design Speed of 50kph, while the minor roads serving the local needs of the industrial units will be subject to a 30kph speed limit designed to be self-enforcing through the principles of DMURS and the inclusion of signage and road markings.

The road network for the proposed development will provide safe and appropriate conditions for pedestrians and cyclists. This should encourage, insofar as practicable, a modal shift in favour of cycling and walking over use of private motor vehicles especially for those living and employed locally. Given the frequency of commercial vehicle access it is not intended that raised thresholds/crossings will be provided. Pedestrian crossings in the form of dropped kerbs incorporating tactile paving are designed and located so as to accommodate the expected pedestrian desire lines. Dropped crossings will be provided to accommodate pedestrians crossing at all internal junctions with the internal spine road.

14.4.2 Forecast Traffic Generation – Proposed Phase 1

In the context of estimating the trip attraction the 'Comparison' method involves comparing the proposed development with a similar existing development and applying survey information from that site to the proposed development. This method can often be cross referred to a trip attraction database such as TRICS which often provides a larger number of sample sites.

In the case of the proposed development there are no relevant survey sites in the TRICS database so the trip attraction model is based upon detailed examination of a large sample of traffic data for a similar facility located in Greenogue Business Park situated in Rathcoole, County. Dublin. Greenogue Business Parks comprises a mix of industrial, warehousing and manufacturing facilities, with primary access to the business park from Regional Road R120 which runs from Rathcoole and N7 Junction 4 south of Greenogue northwest to Newcastle.

At the time of examination the rate of acceptance of waste materials permitted at the Comparison Site under Planning Reg. Ref. SD03A/0607 was 95,000 tonnes per annum. The generation of HGV and the volume of product transported by each vehicle entering and leaving the site is not only product dependent but is commercially driven. Waste is delivered in a variety of vehicles in correspondingly varied quantities.

Vehicle types chiefly include roll-on-roll-off containers ranging in capacity from 15 to 35m³ together with small and standard skip lorries. Waste is delivered in the quantity prescribed by the various sources. There are sources which by their nature may require many loads and logistical efficiency is typically the objective in those cases. Such efficiency is achieved by ensuring that in the case of multiple loads as many as practicable are full loads. Equally there are smaller deliveries arising from specific demands relating to finite activities on larger sites or simply arising from smaller jobs or one-off loads such as house extensions and the like.

To assess the traffic generation characteristics of the Comparison Site, weighbridge records for the site were analysed, chiefly recording the mass of waste entering the site and mass of processed wastes leaving the site. The weighbridge data analysis period extends for the 12-month period from 01-Jun-2017 to 31-May-2018. Based upon an assessment of weighbridge data the haulage of waste to and from the site does not typically occur all in full loads. Over the course of the 12-month period of analysis the average payload of vehicles entering the site with waste was recorded as 2.39 tonnes while the average payload of outbound vehicles carrying processed waste was 20.14 tonnes.

The Comparison Site was used to derive various statistics such as seasonal, weekly, daily and hourly profiles for vehicles arriving and departing the site and these are set out in detail in Section 5 of the TTA.

The Comparison Site is considered likely to be a suitable model in terms of traffic generation to the MRF element of the proposed development. The FCCP will provide a centralised washing/sterilisation facility for large food retailers in the Greater Dublin Area and will operate on similar principles. There are no traffic generation data bases for such a facility however based on the processes involved it is considered likely that the FCCP will generate less HGV traffic than a traditional MRF.

The proposed development is for a combined import to Phase 1 of 95,000 tonnes per annum as per the Comparison Site. In this assessment the HGV traffic generation associated with Phase 1 is modelled on the Comparison Site and is assumed to have similar traffic generation characteristics.

Given that the FCCP is likely to be a lesser generator of traffic than a traditional MRF, modelling the whole as an MRF is considered robust. On this basis the proposed development site assessment HGV daily traffic generation rate adopted in this study comprises 72 no. HGV importing materials and 8 no. HGV exporting. Table 14.1 summaries the forecast daily traffic generation of the development.

Table 14.1 Forecast Daily Traffic Generation

Time Period	Proposed Units Operating at 95,000t/a Combined (2 x 5,032m ²)				
	Light Vehicles		Goods Vehicles		
	Arrive No.	Depart No.	Import Rigid (No.)	Export Artic (No.)	Combined Two-way Flow
07:00-08:00	5	0	2	1	6
08:00-09:00	6	1	4	1	8
09:00-10:00	2	2	8	1	17
10:00-11:00	4	2	8	1	17
11:00-12:00	4	4	9	1	20
12:00-13:00	3	5	6	1	13
13:00-14:00	7	3	5	1	11
14:00-15:00	2	4	8	1	19
15:00-16:00	3	4	9	1	20
16:00-17:00	2	9	7	1	14
17:00-18:00	1	6	10	1	20
Daily	37	37	72	9	162

The distribution of development traffic to the receiving road network both in the short-term, when access is exclusively via North Road, and in the long term via the link road joining North Road and Cappagh Road, is set out in the Appendix C of the TTA, which provides detailed network traffic flow diagrams.

14.4.3 Forecast Traffic Generation – Masterplan

In considering the overall development of the site this assessment includes for the forecast traffic generation of the masterplan development. Since the masterplan envisages related circular economy type development it is assumed for the purposes of the assessment that typical MRF operation would likely be the most intensive traffic generator of that genre of operation.

In the interest of simplicity and based upon approximate floor areas the forecast traffic generation of the masterplan lands, in concert with the Phase 1 lands, is estimated to be twice that of Phase 1 taken in isolation. On the basis of 144 no. HGV importing waste and 18 no. HGV exporting waste daily, the peak hour assessment value is 17 no. HGV trips arising from waste receipts and 2 no. HGV trips from waste exportation giving a total peak hour traffic generation rate of 19 no. HGV trips per hour.

14.4.4 Committed Development Traffic

The assessments of traffic impact includes for development and traffic increases associated with economic development and this is done by the application of published network traffic growth rates. This assessment also makes allowance for the traffic generated by local third party committed

developments (under construction but not occupied) that have the potential to generate additional vehicle movements in the study area over and above those movements recorded in the September 2022 traffic surveys.

There are a number of developments that can be considered committed development at the time of the base traffic surveys. There have also been developments that have received planning permission but have yet to be commenced. Traffic generated by the following developments has been included in the assessment of network traffic impact arising. The traffic generation characteristics of the following developments were considered where the traffic details of traffic generation have been determined from review of the respective traffic assessments accompanying those applications:

- Planning Reg. Ref. F16A/0128: Rohan Holdings Ltd. Dublin Airport Logistics Park, St. Margaret's Road, St. Margaret's, Co. Dublin. Four single storey units for industrial and/or warehouse use with ancillary two storey office with a gross floor area of 15,692 square metres. This development was completed at the time of the traffic surveys.
- Planning Reg. Ref. F17A/0769: Coldwinters Devco Ltd. Coldwinters, St. Margaret's, Co. Dublin. Development will consist of the construction of two single story units for industrial and/or warehousing use with ancillary two storey offices with a gross floor area of 9,422sq.m.
- Planning Reg. Ref. SID/02/18: Irish Water. Newtown, North Road (R135), Dublin 1. Provision of 2no. biosolids storage buildings, each approximately 50m wide, 105m long and 15m in height, including solar panels on the roof of one building.
- Planning Reg. Ref. FW20A/0211: Coldwinters Devco Ltd. Lands between the N2 and R135 (north of the N2-R135 link road), at Coldwinters, St. Margaret's, Co. Dublin. The development will consist of 3 no. buildings for industrial/warehouse/logistics use (Units 3, 4 and 5) with gross floor area of 24,356q.m.
- Planning Reg. Ref. FW22A/0068: Abbey Issuer DAC Lands between the N2 and R135 (north of the N2-R135 link road), at Coldwinters, St. Margaret's, Co. Dublin. The development will consist of 1 no. building for warehouse/logistics use, to be known as Unit 6, with a gross floor area of 9,821 sq.m. This development is part of a phased development which includes Planning Reg. Ref. FW20A/0211.
- Planning Reg. Ref. FW20A/0126: IPUT Newtown, Kilshane Cross, Co Dublin. The development will comprise the provision of 4 No. warehouses with marshalling offices, ancillary office space, staff facilities and associated development.
- Planning Reg. Ref. FW21A/0144: TLI Group. Permission has been sought for the installation of two underground cable circuits of approximately 1.2km length (110kV) and one circuit 1.2km length (38kV) and associated underground ducting, joint bays and associated infrastructure between the existing ESB Finglas substation and Huntstown Power Station.
- Planning Reg. Ref. FW21A/0151: Huntstown Power Company Limited, permission for the development of 2 no. data hall buildings and ancillary structures on a site located east of the existing Huntstown Power Station.

Figure 14.1 shows the location of the various developments for which forecast peak hour traffic generations have been derived from their respective planning application submissions. The forecast peak hour traffic arising from these developments is distributed to the existing road network in accordance with the regime set out in their respective traffic assessment reports.

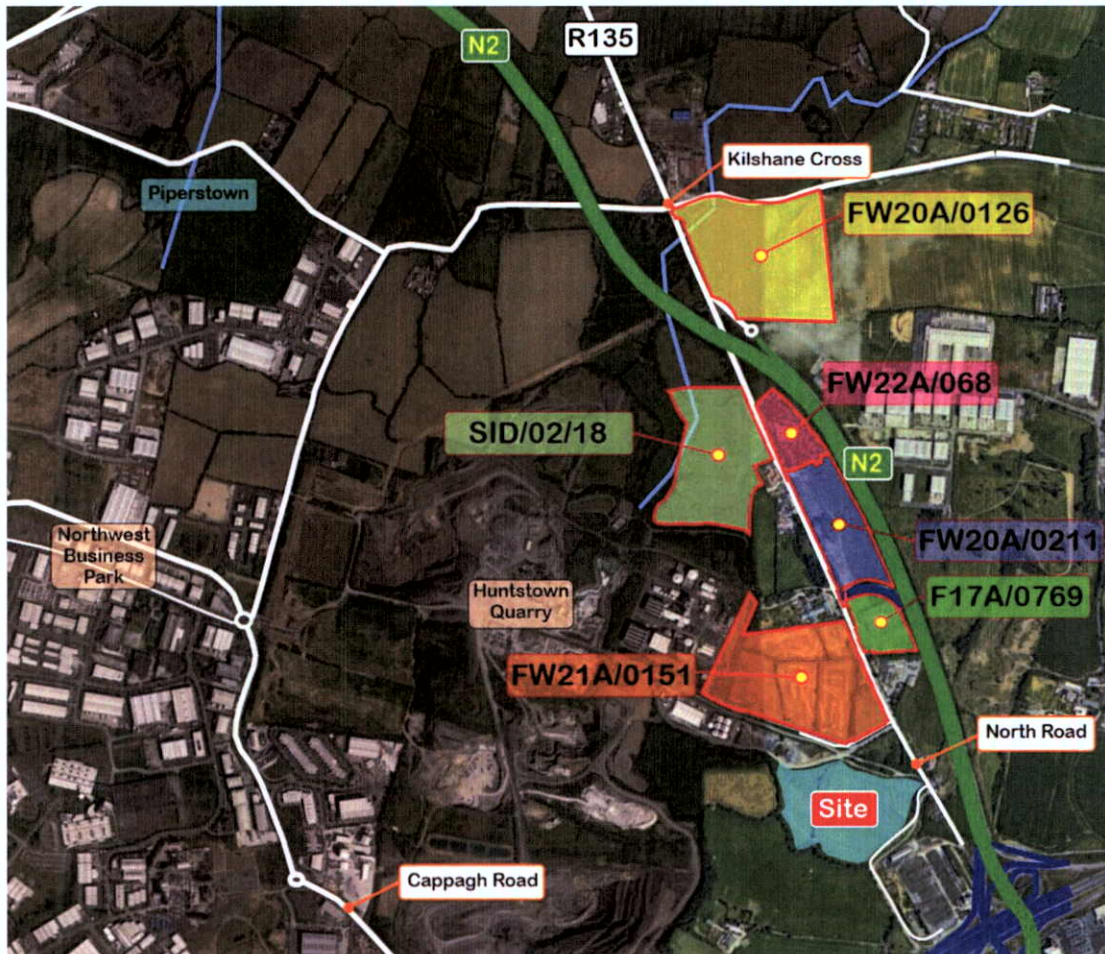


Figure 14-1: Committed Development

14.5 Receiving Environment

14.5.1 Existing Receiving Roads Environment

The site is currently a greenfield site with no direct vehicle access to the public road network. The landownership within which the site is located is identified in Figure 14-2. Located to the east of North Road the site is bounded to the north by Huntstown Quarry, to the west by open fields and to the south by an existing service road to Finglas 220kv Substation (ESB).

The Huntstown Quarry lands to the north of the development site currently accommodate Huntstown Power Station, the Huntstown Bioenergy Plant and a quarry together with ancillary manufacturing. On site quarry operations include the extraction and processing of aggregates together with the manufacturing of concrete blocks, readymade concrete and asphalt products.

The primary access to greater Huntstown Quarry site is provided from North Road (permitted under planning register reference F06A/0164). The internal access road from North Road into the quarry is shared by quarry traffic and traffic arising from the power station and the bioenergy plant.

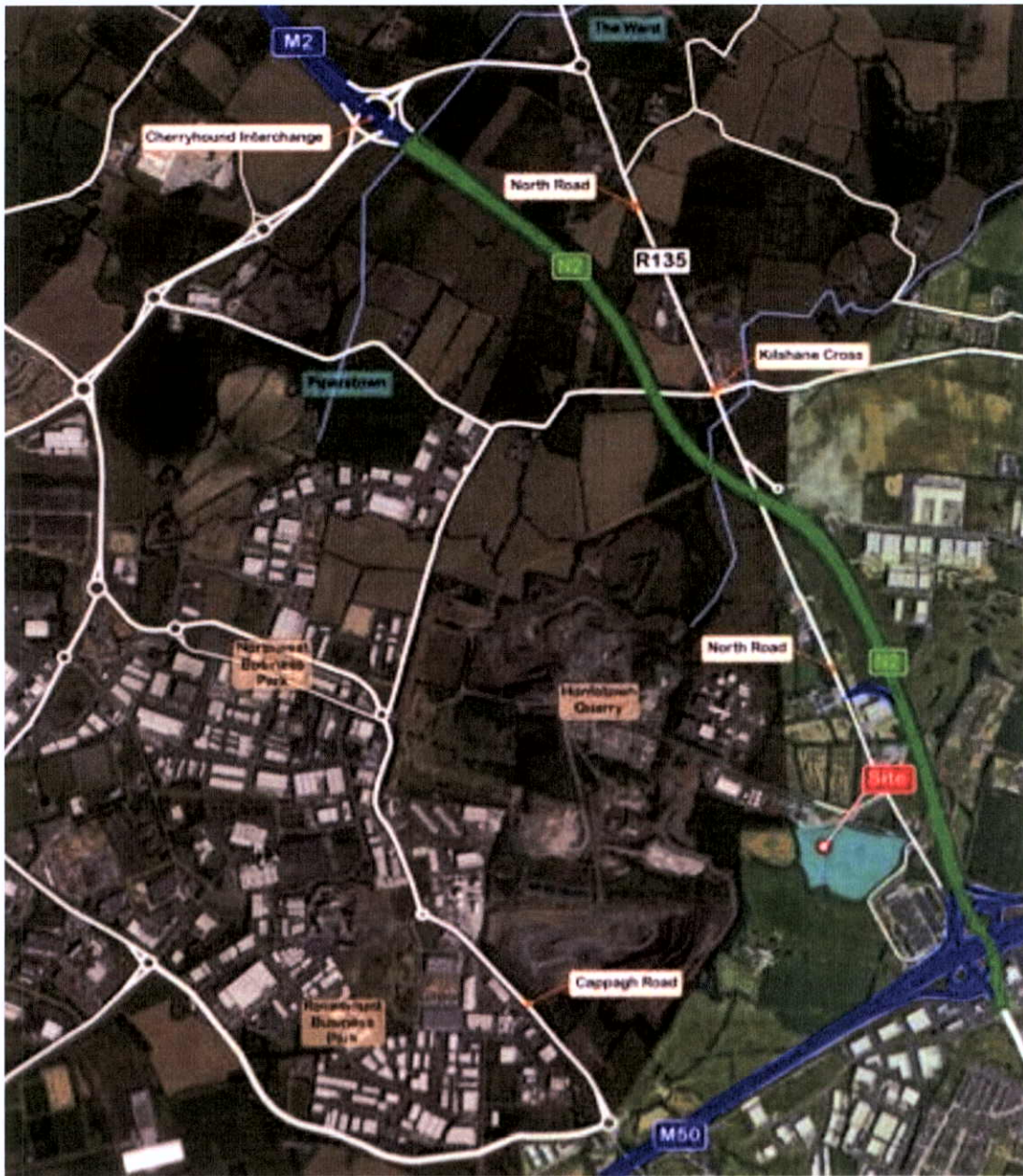


Figure 14-2: Site Location and Receiving Road Network

14.5.2 Receiving Road

North Road was formerly the N2 and had been directly connected to the M50 north of Finglas. The upgraded N2 and M2 road scheme bypasses the former N2 at its southern end and thus that section has become a cul-de-sac for vehicular traffic.

There is a cycle and footbridge crossing at the southern end of North Road which partially overflies the northern connecting arms of M50 Junction 5. A footway and adjoining cycleway continue through the interchange and south into Finglas along the N2.

In the vicinity of the Coldwinters cul-de-sac North Road is subject to a 50kph speed limit which is in effect to a point approximately 100m north of the Coldwinters off-slip junction. Thereafter North Road is subject to a 60km/h speed limit northward as far as the 'Brock Inn Roundabout' near 'The Ward'.

The visibility envelope at the existing ESB service road junction is measured to be in excess of 120m ('y' distance along carriageway) from a set-back or 'x' distance of 3.0m. This is the level of visibility provision required in Transport Infrastructure Ireland (TII) publication DN-GEO-0360 and corresponds to a Design Speed of 70kph (two design steps above speed limit of 50km/h). A Design Speed of 50km/h requires a sightline in the order of 70m and for 60km/h the distance is 90m.

The existing road infrastructure in the vicinity of the site is of a reasonably high quality. North Road is a single mainline carriageway of 7.0m width adjoined by a 2.0m wide footway on the eastern side. North Road has a relatively straight and flat alignment between the Coldwinters cul-de-sac and as far as the Brock Inn Roundabout approximately 3km to the north.

The road pavement in the vicinity of the ESB service road junction is in good condition. Until the opening of the N2/M2 scheme North Road accommodated an Annual Average Daily Traffic (AADT) Flow of approximately 20,000 vehicles of which 15% or 3,000 were HGV so it is expected that the underlying structure of North Road is satisfactory to accommodate development generated HGV traffic.

14.5.3 Accessibility

The centre of the site is located approximately 500m northwest of the M50/N2 interchange and is provided with excellent accessibility to both of these strategic roads. Traffic coming to the site from the M50 must travel a short distance (900m) northbound along the N2 before taking the Coldwinters off-slip exit. This slip road from the N2 forms a priority T-junction with the North Road approximately 400m to the north of the existing entrance to the Huntstown Quarry lands. The junction of the existing service road with North Road is approximately 230m further south of the Huntstown Quarry access.

Traffic coming to the site from the N2 north (travelling southbound) must exit the N2 at the Cherryhound Interchange (St. Margaret's/Blanchardstown Exit) and travel via the R135 link road to the roundabout at the Brock Inn. They must take the 3rd exit at the Brock Inn Roundabout and travel southwards along the R135 North Road for approximately 3km to access the ESB service road.

Southbound traffic leaving the site and travelling towards the M50 are provided with direct access onto the N2 via a slip road which is accessible at the North Road traffic signal junction located approximately 1.5km north of the existing North Road junction with the ESB service road.

Northbound traffic leaving the site along the N2 must travel along the North Road for approximately 3km and take the first exit at the Brock Inn Roundabout to access the N2 via the N2/N3 link road.

The development lands are proposed to be accessed from the existing service road that principally provides access to the ESB Finglas 220kV Station from North Road. The service road also provides access to agricultural lands and a farm house with a large farm yard and sheds located between M50 to the south, Huntstown Quarry to the north, Cappagh Road to the west and Finglas 220kV Station to the east. The service road intersects North Road at a simple priority junction located approximately 600m south of the Coldwinters N2 off-slip near the Dogs Trust property.

A footway generally measuring 1.5m in width is provided along the eastern side of the R135 North Road between the ESB service road junction and the Dogs Trust. A short section of footway continues on the western side of the road past the Dogs Trust. To the south of the ESB service road the footway continues along the eastern side of the road terminating approximately 40m short of the end of the pedestrian/cycle overbridge of the M50.

The closest bus stop to the application site is situated on North Road, immediately north of the Dogs Trust. The bus stop is Bus Eireann Stop 134451 (St. Margaret's, Kildonan) and serves northbound travellers. The closest southbound serviced bus stop is Stop 101121 (Suncourt) located between Kilshane Cross and the M50 overbridge of the N2. Both bus stops are serviced by Bus Eireann Routes 103 and 105X.

Route 103 (Dublin – Ashbourne – Ratoath – Tayto Park). The service from Ratoath to Dublin operates every day of the week, with drop-off-only approximately every 20 mins between 06:38hrs and 01:06hrs on weekdays. Service on Saturday is reduced to approximately half-hourly and on Sundays it is hourly. The service from Dublin is pick-up only. Route 105X (Fairhouse Road – Ratoath – Dublin) runs three city-bound services in the morning stopping at Suncourt at 07:38, 07:53 and 08:08hrs. Three services to Fairhouse Cross run in the evening stopping at Kildonan at 17:41, 17:57 and 18:27hrs.

There are no proposals in the Bus Connects Network to provide services along R135, with the existing and programmed services concentrated in the locality north of the M50 generally in the Ballycoolin area in the west, or the Airport in the east.

14.5.4 Future Roads Infrastructure Objectives

The Fingal Development Plan 2023-2029 Blanchardstown North Sheet No. 12 shows an indicative routing of the proposed Metro West rail line adjacent to the M50 northern boundary. A proposed metro stop will be located at Kildonan, which is proximate to the application site.

The proposed light rail scheme will link the principal towns/suburbs along the western fringes of Dublin (beyond the M50 Motorway) including Tallaght, Lucan and Blanchardstown to the proposed Metro North scheme, which will serve Dublin Airport and Swords.

The objectives of the Fingal Development Plan 2011-2017 that have been realised and that benefit the Huntstown area include the N2-N3 Link Road, which comprises high quality road sections from Tyrrelstown to Cherryhound and from Castaheany to Damastown. The link between Tyrrelstown and the Cherryhound Interchange began construction in September 2011 and was opened in May 2013 by the Minister for Transport who stated that "This road is more than just a link between two motorways and an alternative route to and from the airport. It's about providing vital infrastructure to encourage businesses to settle in the area, and take traffic and heavy vehicles away from other roads. The project also includes off-road bike lanes to encourage more people to cycle."

The objective of the Dublin Enterprise Zone is to encourage employment, with zones for science & technology developments, warehousing, light industrial and office accommodation. The N2-N3 Link Road and associated infrastructure has been designed to be future-proof, with essential infrastructure pre-installed under and alongside the road. The road commences at Church Road close to Tyrrelstown and joins the N2 at the Cherryhound interchange. Six roundabouts have been constructed along the route to link with existing local roads and provide access points to future development lands. The road ultimately links to the N3 at Damastown and connects with the N2 at Cherryhound Interchange.

Fingal County Council has future proposals to provide a western link from the Broghan Roundabout on the R135 (old N2) to Dublin Airport. This East West Link Road scheme is set as development Objective EA04 in the Dublin Airport Local Area Plan 2020. It is envisaged that existing traffic flows at the signal controlled Kilshane Cross on the R132 (North Road) will significantly reduce pending the construction of the airport link road scheme (principally due to re-distribution of traffic flow).

Recent improvements and upgrade of the Kilshane Crossroad junction were implemented as part of development carried out under Planning Reg. Ref. F18A/0146 (Killeen Properties). Improvements

include the provision of an additional lane on the eastern arm of the signal-controlled junction together with a left filter lane to North Road (south) and improvement in the provision for pedestrians and cyclists on the approaches to the junction and in the traffic signal operation.

It is understood that the junction of the N2 off-slip at Coldwinters with North Road is required to be upgraded to signal operation. In the grant of permission determined under Planning Reg. Ref. FW21A/0151 (Huntstown Power) Condition No.22 of the grant of permission for the development requires a special contribution in respect of upgrading the junction of R135 North Road with the northbound slip road from the N2 at Coldwinters.

From a review of that planning file it is understood that Fingal County Council has assessed the operation of the Huntstown Quarry access on North Road and has considered the possible future control of this junction be signals. It is understood that the objective of the change from priority control is in the interest of improved safety and controlling or reinforcing the priority of the major road over the access road.

The Greater Dublin Cycle Network Plan includes an objective to implement an Inter-urban cycle route (F9) along R135 North Road to Ashbourne. The route will be along the hard shoulders of R135 (formerly N2).

15.5.2 Existing Network Traffic Flows

Traffinomics Transportation Surveys Ltd. carried out classified turning count surveys on the public road network in the vicinity of the site using CCTV on Thurs 08-Sept-2022 between 07:00 and 19:00hrs at the junctions shown on Figure 15.3. A copy of the survey data is provided in Appendix A of the TTA in Appendix 15-1 of this EIAR. The traffic data collected in the turning count surveys is a snapshot of traffic volumes and characteristics on the local road network. Mid-week 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.

Traffic data was collected for the junctions identified in Figure 15-3 where 'J' signifies a classified junction turning count and the number corresponds to the site-specific identifier in the base data provided in Appendix A of the TTA.

- Site 1: Huntstown Quarry Access – Priority Access T-junction
- Site 2: N2 Off-slip (Dogs Trust) – Priority T-junction
- Site 3: Dublin Airport Logistics Park – Roundabout
- Site 4: N2 Southbound On-slip – Traffic Signal Control T-junction
- Site 5: Kilshane Cross – Traffic Signal Control Crossroad
- Site 6: Brock Inn Roundabout
- Site 7: ESB Finglas 220kV Substation T-junction (Not counted)

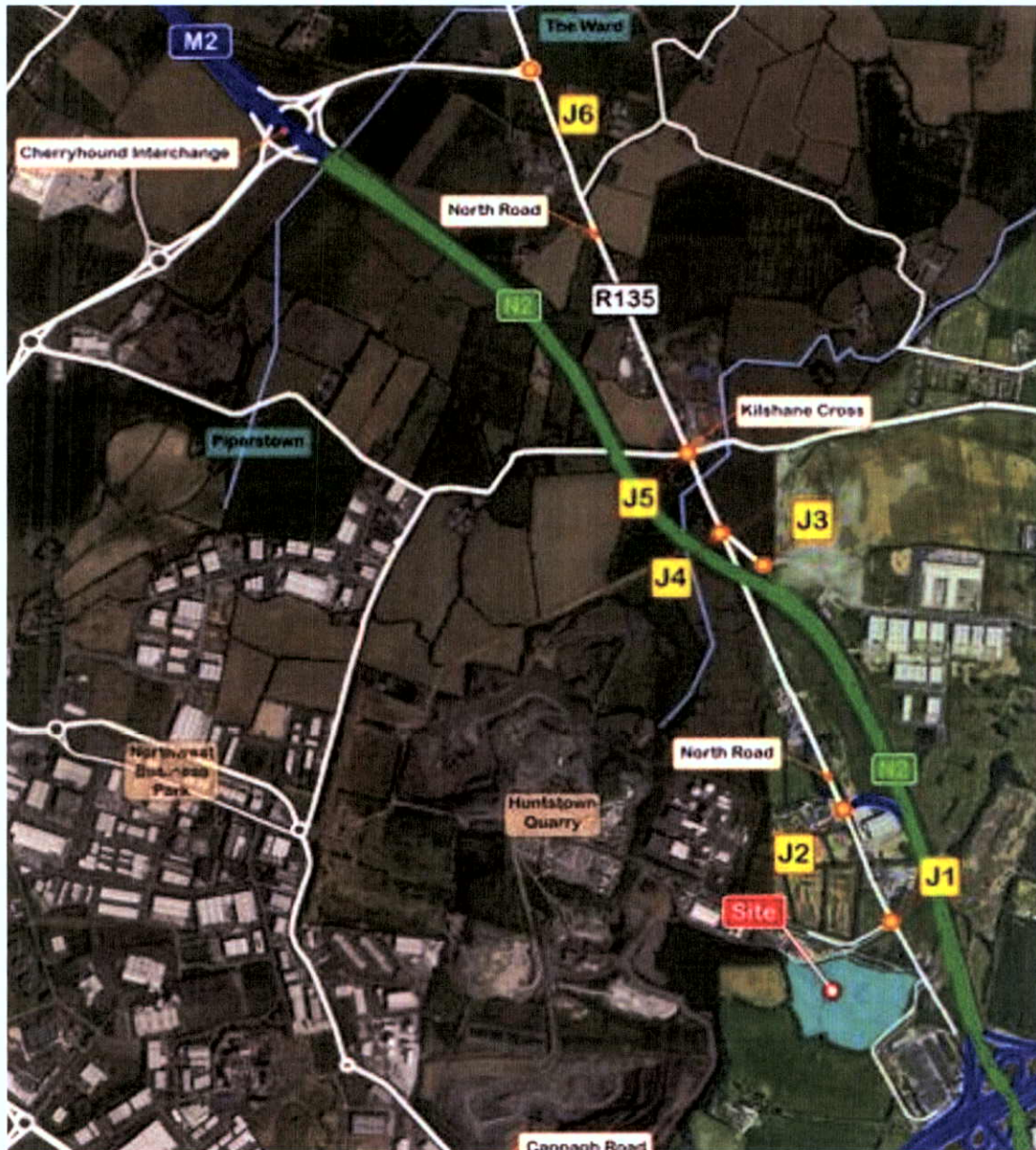


Figure 14-3: Local Road Network Traffic Survey Sites

Daily traffic flows recorded on the receiving road network over the course of the Thurs 08-Sept-2022 surveys are shown in the TTA at Appendix B, Figure 1 'Surveyed Daily Traffic Flows 07:00-19:00hrs', which presents the traffic flow data in network flow diagram format. Each of the numbered Link Roads is identified in TTA Appendix B, Figure 1.

Table 14.2 provides a summary of the recorded traffic flows at Survey Sites 1 through Site 7 over the course of the survey, with the recorded traffic flow and percentage HGV content enumerated between 07:00 and 19:00hrs. Based upon TII Publication PE-PAG-02039 (Oct 2016) Project Appraisal Guidelines Unit 16.1 'Expansion Factors for Short Period Traffic Counts' Table 15.2 also shows an estimate of Annual Average Daily Traffic. The underlying calculation in the derivation of AADT is set out in Section 3.3 of the TTA.

Table 14.2 Surveyed Daily Network Traffic Flows

Road Link		Daily Traffic Flows 07:00-19:00hrs			
		Total	Heavy	%HGV	AADT
1	North Road (South of ESB)	282	52	18%	300
2	North Road (South of Huntstown Quarry)	292	59	20%	311
3	North Road (North of Huntstown Quarry)	2,610	1517	58%	2,777
4	N2 Coldwinters Off-slip	4,590	1538	34%	4,883
5	R135 North Road (Between N2 on/Off Slips)	5,743	2055	36%	6,110
6	N2 Southbound On-slip Link Road	7,248	1804	25%	7,711
7	N2 Southbound On-slip	5,207	1504	29%	5,539
8	R135 North Road (South of Kilshane Cross)	7,657	2023	26%	8,146
9	L3120	5,860	1222	21%	6,234
10	L3125	8,753	1459	17%	9,312
11	R135 North Road (North of Kilshane Cross)	5,165	1041	20%	5,495
12	Blanchardstown (N2/N3) Link Road	5,562	1089	20%	5,917
13	R135 Wards Cross	5,493	800	15%	5,844

In the interest of clarity, Figure 14-4 shows the numbered Links referred to in the Tables which corresponds with the convention applied in the TTA report.

It is best practice in preparing traffic assessments to evaluate the impact of the proposed development during periods when the effects of development generated traffic flows on the receiving road network are likely to be greatest.

The peak hours and associated traffic flows recorded in the Sept-2022 surveys are as follows: Weekday AM Network Peak Hour 08:00-09:00hrs and Weekday PM Network Peak Hour 16:00-17:00hrs. Table 14.3 provides a summary of the recorded two-way peak hour traffic flows on the receiving road network.

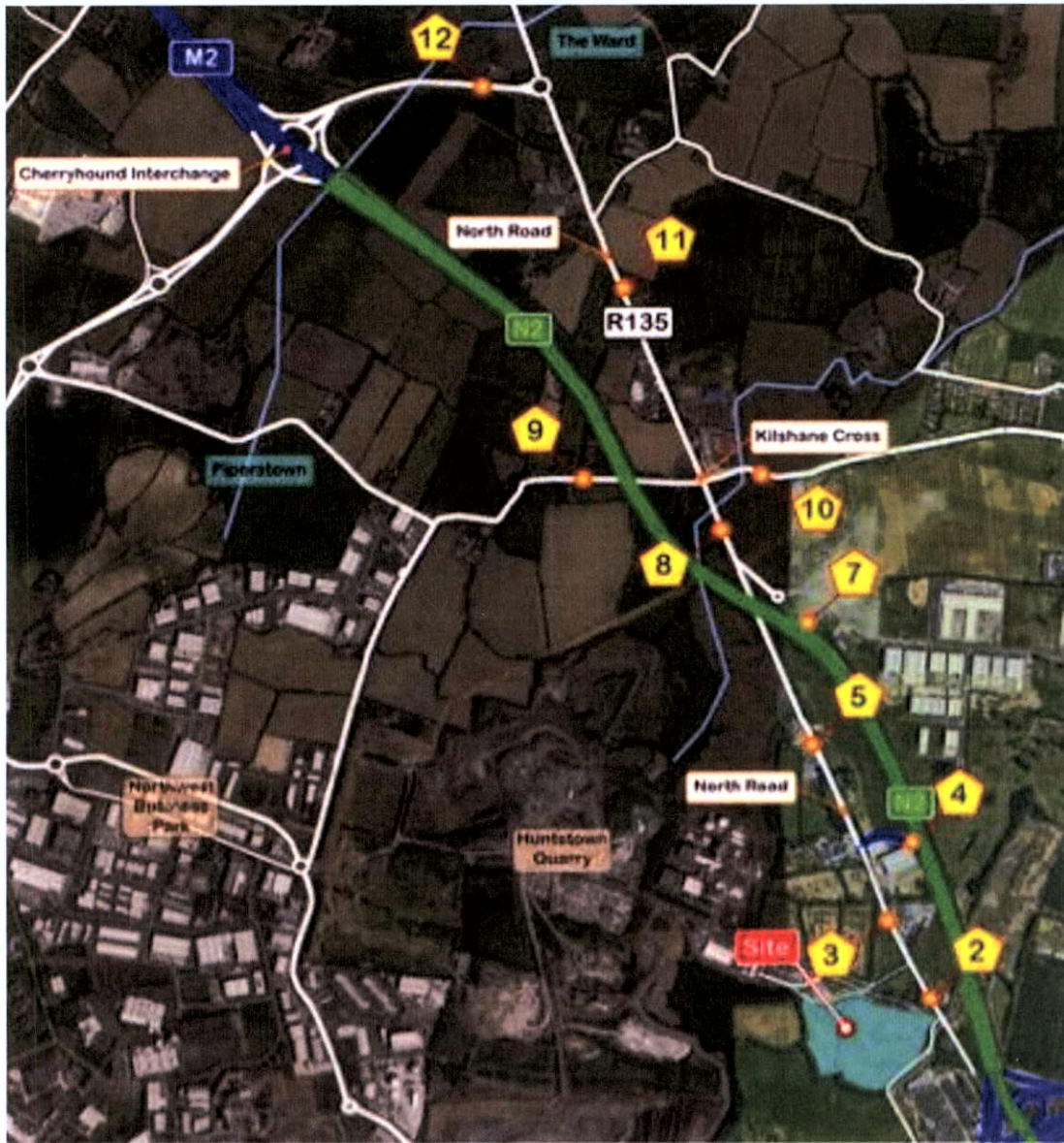


Figure 14-4: Local Road Network Numbered Links

Table 14.3 Surveyed Peak Hour Network Traffic Flows

Road Link		AM Peak Hour Traffic Flows			PM Peak Hour Traffic Flows		
		Total	HGV	%HGV	Total	HGV	%HGV
1	North Road (South of ESB)	25	8	32%	15	1	7%
2	North Road (South of Huntstown Quarry)	26	9	35%	15	1	7%
3	North Road (North of Huntstown Quarry)	246	159	65%	203	51	25%
4	N2 Coldwinters Off-slip	476	106	22%	326	115	35%
5	R135 North Road (Between N2 on/Off Slips)	548	154	28%	502	121	24%
6	N2 Southbound On-slip Link Road	687	159	23%	693	111	16%

7	N2 Southbound On-slip	457	153	33%	608	75	12%
8	R135 North Road (South of Kilshane Cross)	726	184	25%	706	116	16%
9	L3120	517	101	20%	661	88	13%
10	L3125	1054	150	14%	871	93	11%
11	R135 North Road (North of Kilshane Cross)	500	97	19%	541	63	12%
12	Blanchardstown (N2/N3) Link Road	525	89	17%	593	77	13%
13	R135 Wards Cross	471	72	15%	600	54	9%

Corresponding network flow diagrams of the recorded peak hour traffic flows are provided in network flow diagram format in TTA Appendix B, Figure 2 'Surveyed Morning Peak Hour Traffic Flows 08:00-09:00hrs' and Appendix B, Figure 3 'Surveyed Evening Peak Hour Traffic Flows 16:00-17:00hrs'.

In the interest of showing the general pattern of traffic flow on the receiving road network the TTA Figure 3.3 through Figure 3.12 show graphically the daily profile of two-way traffic flows recorded on the link roads covered by the scope of the traffic surveys. The various 'Links' correspond to those set out in Figure 14-3 and correspond with the junction and link numbering regime used in the various network flow diagrams included in TTA Appendix B.

Impacts Operational Stage

14.5.5 Operational Stage Scoping Analysis

Table 14.4 summarises the forecast daily development traffic generation set against the recorded 2022 daily traffic flows expanded to AADT in accordance with TII PE-PAG-02038-01 Unit 16.0 to which the committed development traffic has been added.

Table 14.4 Study Area Daily Traffic Flows AADT

Road Link	Baseline 2022 AADT		Dev. Generated Traffic		Incremental Increase	
	Total	HGV	Total	HGV	Total	HGV
1 North Road (South of ESB)	245	55	0	0	0.0%	0.0%
2 North Road (South of Huntstown Quarry)	248	63	74	162	29%	258%
3 North Road (North of Huntstown Quarry)	1644	1717	74	162	4.5%	9.4%
4 N2 Coldwinters Off-slip	3906	1912	20	54	0.5%	2.8%
5 R135 North Road (Between N2 on/Off Slips)	4540	2516	54	108	1.2%	4.3%
6 N2 Southbound On-slip Link Road	6463	2238	80	153	1.2%	6.8%

7	N2 Southbound On-slip	4610	1914	26	45	0.6%	2.3%
8	R135 North Road (South of Kilshane Cross)	6578	2385	28	62	0.4%	2.6%
9	L3120	4995	1354	13	28	0.3%	2.0%
10	L3125	8437	1828	8	15	0.1%	0.8%
11	R135 North Road (North of Kilshane Cross)	4664	1194	7	19	0.2%	1.6%
12	Blanchardstown (N2/N3) Link Road	4906	1213	4	12	0.1%	1.0%
13	R135 Wards Cross	5123	884	3	7	0.1%	0.8%

Notwithstanding that the proposed development will not be completed and occupied for some time in the future, the forecast traffic generation set against the recent 2022 network traffic flow data shows that save for the immediate section of R135 North Road (Link 2) the proposed development does not have the potential to exceed 5% of daily traffic.

Table 14.5 and Table 14.6 provide summaries of the forecast peak hour traffic generation set against the recorded 2022 two-way peak hour traffic flows on the receiving road network to which the committed development traffic flows have been added but no allowance has been made for traffic growth.

Table 14.5 Study Area Morning Peak Hour Traffic Flows

Road Link		Baseline 2022		Dev. Generated Traffic		Incremental Increase	
		Total	HGV	Total	HGV	Total	HGV
1	North Road (South of ESB)	11	6	0	0	0.0%	0.0%
2	North Road (South of Huntstown Quarry)	18	17	7	10	63%	142%
3	North Road (North of Huntstown Quarry)	147	176	7	10	4.9%	5.9%
4	N2 Coldwinters Off-slip	446	136	3	3	0.8%	2.3%
5	R135 North Road (Between N2 on/Off Slips)	454	189	4	7	0.8%	3.8%
6	N2 Southbound On-slip Link Road	554	179	4	10	0.8%	5.7%
7	N2 Southbound On-slip	328	181	1	3	0.2%	1.5%
8	R135 North Road (South of Kilshane Cross)	605	204	3	4	0.5%	2.1%
9	L3120	407	109	1	2	0.2%	1.5%

10	L3125	1009	162	1	1	0.1%	0.7%
11	R135 North Road (North of Kilshane Cross)	422	104	1	2	0.1%	1.5%
12	Blanchardstown (N2/N3) Link Road	433	102	0	1	0.1%	0.9%
13	R135 Wards Cross	406	68	0	1	0.1%	0.9%

Save for the southern section of R135 North Road either side of Huntstown Quarry site access junction, the forecast development traffic generation set against the recent 2022 network peak hour traffic flow data shows that the proposed development in both the morning peak hour and the evening peak hour does not have the potential to exceed the 10% threshold for the greater receiving road network as set out in the TII Traffic and Transport Assessment Guidelines PE-PDV-02045.

Based upon the 2022 figures and the traffic flow assumptions of development generated traffic the proposed development, save for the short section between the development site and Huntstown Quarry access, does have the potential to increase the two-way daily volume of traffic on the adjoining road network by more than 10% which is the typical threshold triggering a transport assessment.

The data in Table 14.4 and Table 14.5 confirms that save for the southern section of R135 North Road traffic generated by the proposed development does not exceed 5% which is the lower value threshold typically used in the evaluation of traffic impact in congested or sensitive environments.

Table 14.6 Study Area Evening Peak Hour Traffic Flows

	Road Link	Baseline 2022		Dev. Generated Traffic		Incremental Increase	
		Total	HGV	Total	HGV	Total	HGV
1	North Road (South of ESB)	18	3	0	0	0.0%	0.0%
2	North Road (South of Huntstown Quarry)	29	20	11	16	61%	400%
3	North Road (North of Huntstown Quarry)	207	113	11	16	5.6%	16%
4	N2 Coldwinters Off-slip	262	147	1	6	0.3%	4.3%
5	R135 North Road (Between N2 on/Off Slips)	431	189	10	10	2.4%	5.6%
6	N2 Southbound On-slip Link Road	649	176	15	15	2.4%	9.2%
7	N2 Southbound On-slip	609	130	5	5	0.9%	3.8%
8	R135 North Road (South of Kilshane Cross)	584	151	5	5	0.8%	3.6%
9	L3120	534	99	2	3	0.3%	3.2%
10	L3125	786	123	2	1	0.2%	0.9%

11	R135 North Road (North of Kilshane Cross)	466	79	1	1	0.3%	1.4%
12	Blanchardstown (N2/N3) Link Road	507	93	1	1	0.1%	0.9%
13	R135 Wards Cross	524	58	1	0	0.1%	0.6%

Based upon the 2022 preliminary scoping evaluation, aside from R135 North Road close to the proposed development which is relatively lightly trafficked no road link is considered likely to experience a peak hour traffic increase above the lower threshold value of 5%.

Based upon the surveyed network traffic flows of September 2022 Table 14.7 summarises development generated turning traffic and the total turning movements at Junction 2 'N2 Off-slip' and Junction 4 'N2 On-slip'. The Table includes the forecast daily development turning traffic set against the estimated 2022 AADT (including committed development traffic) turning traffic at the N2 junctions.

Table 14.7 Study Area Evening Peak Hour Traffic Flows

Junction		Baseline 2022 Turning AADT		Development Generated Traffic Flow		Increase %	
		Total	Heavy	Total	Heavy	Total	Heavy
2	N2 Off-slip (Daily)	8223	3055	236	162	2.9%	5.3%
	N2 Off-slip (AM Peak)	812	273	17	10	2.1%	3.7%
	N2 Off-slip (PM Peak)	600	164	27	16	4.5%	9.8%
4	N2 On-slip (Daily)	11583	3342	162	108	1.4%	3.2%
	N2 On-slip (AM Peak)	1101	307	11	11	1.0%	3.6%
	N2 On-slip (PM Peak)	1114	218	20	20	1.8%	9.2%

The forecast increase in total traffic at the two closest junctions leading to or coming from the national road network is estimated to be in the order 1.5-3.0% of daily traffic flows. In the morning and peak hour the forecast increase in turning movements is in the order of peak hours 1.4-2.1% while in the evening peak hour the estimated increase is in the order of 1.8-4.5%.

14.5.5.1 NRA Thresholds (Evaluation Criteria)

In Ireland, a TTA or a Traffic Impact Assessment must accompany all planning applications for developments which could potentially generate significant traffic volumes. A Traffic and Transport Assessment should be carried out if the proposed development exceeds the following thresholds:

- Development traffic exceeds 10% of the traffic flow on the adjoining road.
- Development traffic exceeds 5% of the traffic flow on the adjoining road where congestion exists or the location is sensitive.
- Residential development in excess of 200 dwellings.

- Retail and leisure development in excess of 1,000m².
- Office, education and hospital development in excess of 2,500m².
- Industrial development in excess of 5,000m².
- Distribution and warehousing in excess of 10,000m².
- Relevant thresholds for Traffic Assessment where the development has the potential to affect national roads are as follows:
 - 100 trips in / out combined in the peak hours for the proposed development.
 - Development traffic exceeds 10% of turning movements at junctions with and on National Roads.
 - Development traffic exceeds 5% of turning movements at junctions with National Roads if location has potential to become congested or sensitive.
- Industrial development in excess of 5,000m².
- Distribution and warehousing in excess of 10,000m².
- 100 on-site parking spaces.
- Sub-threshold criteria for Traffic Assessment are as follows:
 - The character and total number of trips per day is such that as to cause concern.
 - Location of the site is not consistent with national guidance or local plan policy or accessibility criteria contained in the Development Plan.
 - The development is part of incremental development that will have significant transport implications.
 - The development may generate traffic at peak times in a heavily trafficked/ congested area or near a junction with a main traffic route.
 - The development may generate heavy vehicles in a residential area.
 - There are concerns over the development's potential effects on road safety.
 - The development is in a tourist area with potential to cause congestion.
 - The planning authority considers that the proposal will result in a material change in trips patterns or raises other significant transport implications.

The following sets out the forecast traffic generation scenario against the various standard threshold criteria:

- The proposed development is forecast to generate 17 combined two-way in / out combined movements in the morning peak hour and 27 movements combined two-way in /out in the evening peak hour which is significantly less than the threshold value of 100 trips in / out. In the case of the masterplan development, the equivalent two-way traffic generation is 29 movements in the morning and 60 in the evening which is also less than the threshold value.
- The forecast peak hour traffic flows show that it is unlikely that development traffic will exceed 10% of turning movements on the receiving road network.
- Development traffic at junctions with National Roads will not exceed 5% of turning movements. The forecast is in the order of 3% or less in the case of the junction (Junction 2 – N2 Off-slip at Coldwinters) that is forecast to experience the greatest number of development traffic turning movements.
- The proposed development comprises 2 x 5,032m² Industrial Development. The floor area exceeds the Industrial Development threshold of 5,000m².
- There are less than 100 on-site parking spaces.

The following sets out the forecast traffic generation scenario against the various sub-threshold criteria for Traffic Assessment are as follows:

- The lands are zoned appropriately and the character and total number of trips in / out combined per day is not such that it should not reasonably give cause for concern.
- The location of the site is consistent with national guidance and local plan policy and is consistent with the accessibility criteria in the Development Plan.
- The development is not part of incremental development that will have significant transport implications.
- The development will generate modest, sub-threshold traffic volumes at peak times in a relatively heavily trafficked area and near junctions with a main traffic route. The greatest increases are significantly lower than the threshold values.
- The development will not generate heavy vehicles in a residential area.
- The site is appropriately zoned and the receiving roads have been designed to cater for traffic with the characteristics of the proposed development accordingly it is not considered that serious concerns should arise with respect to the potential effects on road safety.
- The development is not in a tourist area and has no potential to cause congestion.

Given the forecast peak hour traffic generation it can reasonably be concluded that the impact of the proposed development on the capacity and operation of the receiving road network is not likely to be significant. Nevertheless, a number of the threshold criteria set out in the guidelines are either exceeded or are borderline, accordingly the traffic impact of the proposed development warrants further investigation.

14.5.6 Operational Stage Impact Assessment

The capacity of any road network is dictated by the operation of the links and junctions within that network. Capacity assessments of the key junctions in the vicinity of the site are modelled for base and future year scenarios to provide a comparative basis upon which to evaluate the incremental impact of the proposed development and to appraise the overall performance of the road network under future assumed network traffic flow criteria. To prepare a traffic network model various base assumptions are made with respect to the future growth of traffic on the receiving road network.

Regarding the choice of appropriate assessment years the NRA: Traffic and Transport Assessment Guidelines advise as follows; “Timescale: Traffic volumes for opening year, opening +5 and opening year +15. These timescales are fairly standard and should be expected”.

The applicant aspires to have the development constructed by the end of 2025 and therefore for the purposes of this traffic assessment the year 2025 was selected as the opening year. In line with the guidance provided in the National Roads Authority ‘Traffic and Transport Assessment Guidelines’, modelling analyses of the capacity of the receiving road network have been carried out for (1) Opening Year 2025; (2) Opening Year +5yrs 2030, and (3) Opening Year +15yrs 2040.

The following junctions were included in the scope of the modelling assessments:

- Site 1: Huntstown Quarry Access – Priority Access T-junction.
- Site 2: N2 Off-slip (Dogs Trust) – Priority T-junction.
- Site 3: Dublin Airport Logistics Park – Roundabout.
- Site 4: N2 Southbound On-slip – Traffic Signal Control T-junction.
- Site 5: Kilshane Cross – Traffic Signal Control Crossroad.
- Site 6: Brock Inn Roundabout.
- Site 7: ESB Finglas 220kV Substation T-junction (Not counted).

The traffic flow data from the September 2022 surveys forms the basis of the assessments of road network capacity and the assessment of the likely impact of the proposed development on the operation of the receiving road network.

For the purposes of the traffic assessment, traffic generation arising directly from the proposed development has been assumed not to grow over time. Background traffic flows on the public road network have been assumed to grow in accordance with the latest growth factors published by Transport Infrastructure Ireland (TII) in October 2021 in Publication PE-PAG-02017 ‘Project Appraisal Guidelines for National Roads: Unit 5.3 Travel Demand Projections’.

Central growth rate factors were used to derive the future traffic flows from the surveyed 2022 flows. The growth indices used to derive Opening Year (2025) and; Opening Year +5yrs (2030) and Opening Year +15yrs (2040) flows from the surveyed (2022) flows are as follows:

- | | | |
|----------------------------------|--------------|-------------|
| • 2022-2025 (Opening Year) | 1.055 (Cars) | 1.098 (HGV) |
| • 2022-2030 (Opening Year +5yrs) | 1.153 (Cars) | 1.284 (HGV) |

- 2022-2040 (Opening Year +15yrs) 1.227 (Cars) 1.474 (HGV)

TII growth factors were directly applied to peak hour traffic data. Growth factors are not always directly applicable to peak hour periods (the peak hour generally spreads out as opposed to intensifying) therefore 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.

The traffic generated by permitted local developments (under construction or not fully unoccupied) were included in the traffic analysis since they neighbour the proposed development and are considered likely to give rise to direct increases in traffic on the local receiving road network in the short-term (over and above those traffic flows recorded in the September 2022 surveys).

The application of TII growth rates to the receiving network is considered likely to account for the cumulative traffic arising as a result of economic growth and development locally over the specified assessment period.

The main corridor upon which the new traffic generated by the development will have an impact is R135 North Road and accordingly the scope of future year assessments focuses on its operation and interaction with the junctions between M50 and The Ward. The assessments aim to show that the infrastructure provided by the receiving road network, including the strategic network, is suitable to accommodate the forecast traffic arising from the proposed development. The various 'do-nothing' and 'do-something' traffic flow scenarios were assessed for the Opening Year 2025, Opening Year +5yrs and the Design Year of 2040.

The future year assessments include for scenarios both with and without the proposed development, so that the incremental impact of development traffic can be evaluated.

Where threshold values are exceeded ordinarily the TRL suite of programs is used to assess network junction performance in the identified peak hours. Where the magnitude of traffic increases is not significant enough to adversely affect the operation of junctions the road network no detailed modelling assessment is carried out, since the increases in traffic flows are of an order that is unlikely to affect junction performance to the degree that it might be measured meaningfully by transport modelling.

The 'do something' scenarios include for the forecast assessment value development traffic flows being added to the forecast network flows derived from the 2022 traffic surveys factored as set out above.

The TII Traffic and Transportation Assessment Guidelines 2014, Table 2.1 'Traffic Management Guidelines Thresholds for Transport Assessments' set out the general threshold value of 10% to determine whether the preparation of a TTA is required to assess how development traffic might affect network operation.

Table 14.8 Evaluation Criteria

Magnitude of Impact	Definition
High	Scale of additional traffic exceeds 25% of do-nothing traffic flow on the receiving road network
Medium	Scale of additional traffic is between 10% and 25% of do-nothing traffic flow on the receiving road network
Low	Scale of additional traffic is between 5% and 10% of do-nothing traffic flow on the receiving road network
Negligible	Scale of additional traffic is less exceeds 2%-5% of do-nothing traffic flow on the receiving road network

In congested or sensitive networks the threshold is typically lowered to 5%. The threshold values are a generally prompt for whether or not detailed junction modelling and a TTA is required. The threshold values are typically used as a reference to determine the significance of effects.

It is standard practice in TTA to reference the scale of percentage increases in traffic flows when assessing the forecast long-term operational impact of proposed developments. As a measure of the potential magnitude of impact or effect on the receiving road network the following has regard to the percentage threshold values set out in the TII guidelines.

The breakdown of the magnitude of impacts is based upon judgement in the scale of percentage impacts of the additional traffic flows imposed on the receiving road network. The magnitude of the effect of development traffic on the receiving road is highlighted in the following tables as per the above evaluation criteria.

Table 14.9 Link 1 – North Road (South of Dev. Access Junction) - Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
North Road (Site 1 ¹² – Link 1 ¹³) Do Nothing Scenario	2025	12	7	18	19	3	22	319 (19.0%)
	2030	13	8	20	21	4	25	353 (20.1%)
	2040	13	9	22	22	4	27	382 (21.4%)
North Road (Site 1 – Link 1) Do Something Scenario	2025	12	7	18	19	3	22	319 (19.0%)
	2030	13	8	20	21	4	25	353 (20.1%)
	2040	13	9	22	22	4	27	382 (21.4%)
North Road (Site 1 – Link 1) Incremental Increase	2025	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0 +(0.0%)
	2030	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0 +(0.0%)
	2040	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0 +(0.0%)

¹² Traffic Data Collection Site used in Analysis see Network Flow Diagrams of Appendix B for Index of Site Numbering

¹³ see Network Flow Diagrams of Appendix B for Index of Road Links

Table 14.10 Link 2 – North Road (South of Huntstown Quarry)

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
North Road (Site 1 – Link 2) Do Nothing Scenario	2025	12	8	19	19	4	23	331 (20.9%)
	2030	13	9	22	21	5	26	336 (22.0%)
	2040	13	10	24	22	6	28	397 (23.3%)
North Road (Site 1 – Link 2) Do Something Scenario	2025	19	18	36	30	20	50	567 (40.8%)
	2030	20	19	39	32	21	53	602 (40.3%)
	2040	20	20	41	33	22	55	633 (40.2%)
North Road (Site 1 – Link 2) Incremental Increase	2025	+60.3%	+130%	+88.1%	+57.9%	+364%	+115%	+71.4% (+19%)
	2030	+55.2%	+111%	+78.4%	+53.0%	+311%	+104%	+64.4% (+18%)
	2040	+51.9%	+96.9%	+71.4%	+49.8%	+271%	+96.5%	+59.5% (+17%)

Table 14.11 Link 3 – North Road (North of Huntstown Quarry)

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
North Road (Site 1 – Link 3) Do Nothing Scenario	2025	145	181	326	205	106	310	3583 (52.3%)
	2030	154	211	365	220	122	342	3997 (54.4%)
	2040	161	240	401	231	138	370	4390 (56.5%)
North Road (Site 1 – Link 3) Do Something Scenario	2025	152	191	343	216	122	337	3819 (53.3%)
	2030	161	221	382	231	138	369	4233 (55.2%)
	2040	168	250	418	242	154	397	4626 (57.2%)
North Road (Site 1 – Link 3) Incremental Increase	2025	+4.8%	+5.5%	+5.2%	+5.4%	+15.2%	+8.7%	+6.6% (+1.0%)
	2030	+4.5%	+4.7%	+4.7%	+5.0%	+13.1%	+7.9%	+5.9% (+0.8%)
	2040	+4.4%	+4.2%	+4.2%	+4.8%	+11.6%	+7.3%	+5.4% (+0.6%)

Table 14.12 Link 4 – N2 Coldwinters Off-slip

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
N2 (Site 2 – Link 4) Do Nothing Scenario	2025	463	143	605	273	153	427	6157 (33.7%)
	2030	498	161	658	295	177	472	6780 (35.1%)
	2040	524	179	703	312	201	512	7331 (36.7%)
N2 (Site 2 – Link 4) Do Something Scenario	2025	466	146	612	274	159	433	6232 (34.1%)
	2030	501	164	665	296	183	479	6854 (35.5%)
	2040	528	182	710	313	207	519	7406 (37.0%)
N2 (Site 2 – Link 4) Incremental Increase	2025	+0.7%	+2.1%	+1.1%	+0.3%	+3.9%	+1.6%	+1.2% (+0.5%)
	2030	+0.7%	+1.9%	+1.0%	+0.3%	+3.4%	+1.5%	+1.1% (+0.4%)
	2040	+0.7%	+1.7%	+0.9%	+0.3%	+3.0%	+1.3%	+1.0% (+0.4%)

Table 14.13 Link 5 – R135 North Road (Between N2 Off/On-slips)

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
R135 (Site 4 – Link 5) Do Nothing Scenario	2025	471	196	667	442	194	636	7486 (36.5%)
	2030	508	224	732	478	222	701	8278 (37.9%)
	2040	537	252	788	506	252	758	8983 (39.5%)
R135 (Site 4 – Link 5) Do Something Scenario	2025	475	203	678	452	204	656	7648 (37.1%)
	2030	512	231	743	488	232	721	8439 (38.4%)
	2040	540	259	799	516	262	778	9145 (40.0%)
R135 (Site 4 – Link 5) Incremental Increase	2025	+0.8%	+3.5%	+1.6%	+2.3%	+5.2%	+3.2%	+2.2% (+0.6%)
	2030	+0.7%	+3.1%	+1.4%	+2.1%	+4.5%	+2.9%	+2.0% (+0.6%)
	2040	+0.7%	+2.8%	+1.3%	+2.0%	+4.0%	+2.7%	+1.8% (+0.5%)

Table 14.14 Link 6 – N2 Southbound On-slip Link Road

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
N2 (Site 4 – Link 6) Do Nothing Scenario	2025	578	183	762	664	173	837	9208 (26.4%)
	2030	629	210	840	717	197	914	10132 (27.5%)
	2040	667	238	906	757	220	978	10926 (28.8%)
N2 (Site 4 – Link 6) Do Something Scenario	2025	583	193	776	679	188	867	9441 (27.3%)
	2030	633	220	853	733	211	944	10365 (28.3%)
	2040	672	248	919	773	235	1008	11159 (29.6%)
N2 (Site 4 – Link 6) Incremental Increase	2025	+0.7%	+5.3%	+1.8%	+2.3%	+8.5%	+3.6%	+2.5% (+1.0%)
	2030	+0.7%	+4.6%	+1.7%	+2.2%	+7.5%	+3.3%	+2.3% (+0.9%)
	2040	+0.6%	+4.1%	+1.5%	+3.0%	+6.7%	+3.1%	+2.1% (+0.8%)

Table 14.15 Link 7 – N2 Southbound On-slip

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
N2 (Site 3 – Link 7) Do Nothing Scenario	2025	343	193	536	632	134	766	6897 (30.0%)
	2030	372	222	594	682	150	833	7581 (31.2%)
	2040	394	252	646	720	167	888	8177 (32.7%)
N2 (Site 3 – Link 7) Do Something Scenario	2025	344	196	540	638	139	776	6968 (30.4%)
	2030	373	225	598	688	155	843	7651 (31.5%)
	2040	394	255	649	726	172	898	8247 (32.9%)
N2 (Site 3 – Link 7) Incremental Increase	2025	+0.2%	+1.4%	+0.6%	+0.8%	+3.6%	+1.3%	+1.0% (+0.3%)
	2030	+0.2%	+1.2%	+0.6%	+0.8%	+3.2%	+1.2%	+0.9% (+0.3%)
	2040	+0.2%	+1.1%	+0.5%	+0.7%	+2.9%	+1.1%	+0.9% (+0.3%)

Table 14.16 Link 8 – R135 North Road (South of Kilshane Cross) - Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
R135 (Site 5 – Link 8) Do Nothing Scenario	2025	631	217	847	609	159	768	9504 (27.3%)
	2030	682	248	930	663	184	847	10492 (28.6%)
	2040	721	280	1002	703	210	913	11344 (30.0%)
R135 (Site 5 – Link 8) Do Something Scenario	2025	634	221	855	614	164	778	9594 (27.7%)
	2030	685	252	938	667	189	857	10582 (28.9%)
	2040	724	284	1009	708	215	923	11435 (30.3%)
R135 (Site 5 – Link 8) Incremental Increase	2025	+0.5%	+2.0%	+0.8%	+0.8%	+3.3%	+1.3%	+0.9% (+0.4%)
	2030	+0.4%	+1.7%	+0.8%	+0.7%	+2.8%	+1.2%	+0.9% (+0.3%)
	2040	+0.4%	+1.5%	+0.7%	+0.7%	+2.5%	+1.1%	+0.8% (+0.3%)

Table 14.17 Link 9 – L3120 – Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
L3120 (Site 5 – Link 9) Do Nothing Scenario	2025	428	117	545	561	105	666	6748 (22.0%)
	2030	467	136	604	612	122	734	7473 (23.1%)
	2040	497	156	653	651	139	790	8086 (24.4%)
L3120 (Site 5 – Link 9) Do Something Scenario	2025	429	119	548	563	108	671	6788 (22.2%)
	2030	468	138	606	614	125	739	7514 (23.3%)
	2040	498	157	655	653	142	795	8126 (24.6%)
L3120 (Site 5 – Link 9) Incremental Increase	2025	+0.2%	+1.4%	+0.5%	+0.3%	+2.9%	+0.7%	+0.6% (+0.3%)
	2030	+0.2%	+1.2%	+0.4%	+0.3%	+2.5%	+0.7%	+0.5% (+0.2%)
	2040	+0.2%	+1.0%	+0.4%	+0.3%	+2.2%	+0.6%	+0.5% (+0.2%)

Table 14.18 Link 10 – L3125- Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
L3125 (Site 5 – Link 10) Do Nothing Scenario	2025	1059	174	1233	825	132	957	10843 (18.3%)
	2030	1150	1998	1348	897	151	1048	11893 (19.1%)
	2040	1219	223	1442	951	170	1122	12762 (20.1%)
L3125 (Site 5 – Link 10) Do Something Scenario	2025	1061	175	1235	826	133	959	10867 (18.4%)
	2030	1152	199	1351	898	152	1050	11916 (19.2%)
	2040	1221	224	1444	953	171	1124	12785 (20.2%)
L3125 (Site 5 – Link 10) Incremental Increase	2025	+0.1%	+0.7%	+0.2%	+0.2%	+0.8%	+0.3%	+0.2% (+0.1%)
	2030	+0.1%	+0.6%	+0.2%	+0.2%	+0.7%	+0.2%	+0.2% (+0.1%)
	2040	+0.2%	+0.6%	+0.2%	+0.2%	+0.1%	+0.4%	+0.2% (+0.1%)

Table 14.19 Link 11 - R135 North Road (North of Kilshane Cross) - Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
R135 (Site 5 – Link 11) Do Nothing Scenario	2025	443	111	554	489	85	574	6208 (21.0%)
	2030	481	129	610	533	98	631	6844 (22.0%)
	2040	510	147	657	565	111	677	7379 (23.3%)
R135 (Site 5 – Link 11) Do Something Scenario	2025	443	113	556	491	86	577	6234 (21.2%)
	2030	482	130	612	534	99	633	6870 (22.2%)
	2040	511	148	659	567	112	679	7406 (23.5%)
R135 (Site 5 – Link 11) Incremental Increase	2025	+0.1%	+1.3%	+0.4%	+0.3%	+1.3%	+0.4%	0.4% (+0.2%)
	2030	+0.1%	+1.2%	+0.3%	+0.3%	+1.1%	+0.4%	0.4% (+0.2%)
	2040	+0.1%	+1.0%	+0.3%	+0.2%	+1.0%	+0.4%	0.4% (+0.2%)

Table 14.20 Link 12 – Blanchardstown Link Road - Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
N2 Link Road (Site 6 – Link 12) Do Nothing Scenario	2025	456	110	566	533	101	634	6494 (20.4%)
	2030	497	128	625	582	117	699	7176 (21.5%)
	2040	528	146	674	618	134	752	7748 (22.7%)
N2 Link Road (Site 6 – Link 12) Do Something Scenario	2025	456	111	568	534	101	635	6510 (20.6%)
	2030	497	129	626	582	118	700	7191 (21.6%)
	2040	528	147	675	619	135	753	7764 (22.9%)
N2 Link Road (Site 6 – Link 12) Incremental Increase	2025	+0.1%	+0.8%	+0.2%	+0.1%	+0.8%	+0.2%	+0.2% (+0.1%)
	2030	+0.1%	+0.7%	+0.2%	+0.1%	+0.7%	+0.2%	+0.2% (+0.1%)
	2040	+0.1%	+0.6%	+0.2%	+0.1%	+0.6%	+0.2%	+0.2% (+0.1%)

Table 14.21 Link 13 – R135 Wards Cross - Forecast Traffic Impact

Road Link (Survey Site)	Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
		LV	HGV	Total	LV	HGV	Total	
R135 (Site 6 – Link 13) Do Nothing Scenario	2025	428	73	501	551	63	614	6365 (15.2%)
	2030	466	85	552	601	73	675	7013 (16.0%)
	2040	495	98	593	639	84	723	7544 (17.1%)
R135 (Site 6 – Link 13) Do Something Scenario	2025	428	74	502	552	64	616	6376 (15.3%)
	2030	466	86	552	602	74	676	7024 (16.1%)
	2040	495	98	594	640	84	724	7555 (17.1%)
R135 (Site 6 – Link 13) Incremental Increase	2025	+0.1%	+0.8%	+0.2%	+0.1%	+0.5%	+0.2%	+0.2% (+0.1%)
	2030	+0.1%	+0.7%	+0.2%	+0.1%	+0.4%	+0.2%	+0.2% (+0.1%)
	2040	+0.1%	+0.6%	+0.1%	+0.1%	+0.4%	+0.2%	+0.1% (+0.1%)

The detailed assessment of baseline and forecast future network traffic flows confirms the results of the preliminary scoping assessment of Section 14.7.1 as summarised in Table 14.4, Table 14.5, Table 14.6 and Table 14.7.

The incremental increase in traffic arising from the proposed development in the peak hours is sub-threshold and less than 5% for all but for Link 2 which is the section of North Road between the development access road and the access serving Huntstown Quarry.

For ease of reference the magnitude of traffic effects expressed as incremental values over baseline are highlighted in the Tables using the evaluation criteria set 14.4.6 and Table 14.8. In the case of Link 2 the incremental increases exceeds 10% in all cases. The relative order of magnitude on Link 2 results from the current low traffic flows on this link road.

It is worth noting that in 2012, the N2 North Road was reclassified upon opening of the M2 motorway and this resulted in changes to traffic patterns and volumes in the area. The section of North Road between the Coldwinters N2 Off-slip and the M50 effectively became a cul-de-sac and traffic flows on Link 2 reduced to an AADT in the order of 300(20%).

TII historic traffic counter data shows that Link 2 had an AADT in the order of 29,161(9.8%). Under the provisions of the Fingal Development Plan 2023-2029 this link is due to again become a through route connecting North Road through zoned lands and connecting to the existing Cappogue Roundabout on the Cappagh Road.

Excluding Link 2 North Road (south of Huntstown Quarry Access) the average increase in traffic flows on the surrounding road network in the morning and evening peak hours are summarised as follows:

Table 14.22 Average Percentage Impact on Receiving Road Network

Year	AM Peak Hour 08:00-09:00hrs			PM Peak Hour 16:00-17:00hrs			AADT
	LV	HGV	Total	LV	HGV	Total	
2025	+0.7%	+2.1%	+1.0%	1.1%	3.8%	+1.8%	+1.3%
2030	+0.6%	+1.8%	+0.9%	1.0%	3.3%	+1.6%	+1.2%
2040	+0.6%	+1.6%	+0.9%	1.0%	3.0%	+1.5%	+1.1%

Excluding Link 2 – North Road (south) the average increase in the total traffic flow across the receiving road network in the morning peak hour is less than +1.0%, while the increase in light vehicle traffic is less than +0.7% and for HGV the increase is forecast to be less than +2.1%. In the evening peak hour the forecast increase in total traffic flow is less than +1.8% while the increase in light vehicle traffic is less than +1.1% and for HGV the increase is forecast to be less than +3.8%. The forecast increase in AADT is less than +1.3%.

The only link in the road network to experience potential increases in traffic flow above the +10% threshold is Link 2 which is the section of North Road located to the south of the existing Huntstown Quarry site access. Link 2 is forecast to experience an increase in AADT in the order of +70%. The forecast increase in the total traffic flow on Link 2 in the morning peak hour is approximately +88% while the increase in light vehicle traffic approximately +60% and for HGV the increase is forecast to be approximately +130%. In the evening peak hour the forecast increase in total traffic flow is approximately +115%, while the increase in light vehicle traffic is approximately +58% and for HGV the

increase is forecast to be in the order of +364%. As set out above these percentages are set against a very low baseline flow on the existing cul-de-sac.

Except for the southern section of North Road at Link 2, the forecast increases in traffic on the receiving road network are significantly sub-threshold with all increases in traffic categorised as low or negligible based upon the evaluation criteria set out herein.

With the exception of Link 2, the forecast increases in traffic flows are significantly less than half the lower +5% threshold value used for sensitive areas or where peak hour congestion exists. It follows that the impact of development generated traffic on the receiving road network will not have a significant impact upon capacity and operation of the links and junctions through which it is forecast to travel.

Ordinarily increases in traffic of the order forecast do not warrant detailed computer modelling, as the changes between the 'Do-Nothing' and 'Do-Something' Scenarios is such that it is highly unlikely that a capacity model will show an appreciable differential between the scenarios. Save for Link 12 the impact of the traffic generated by the proposed development is likely to be imperceptible to existing road users on the greater receiving road network.

In the case of Link 2 where the percentage increases in traffic flow are shown to exceed the threshold percentage values, the increases are not significant, especially in the context of the Fingal Development Plan 2023-2029 which seeks to make Link 2 a through route connecting North Road to Cappagh Road in the west.

The baseline morning peak hour traffic flow on Link 2 at the year of opening 2025 is 20 no. vehicles of which 12 no. are light vehicles and 8 no. are HGV. The forecast average increase in the total traffic flow in the morning peak hour is +17 no. vehicles where the forecast increase in light vehicles is approximately +7 no. and the increase in HGV is +10 no.

The baseline evening peak hour traffic flow on Link 2 at the year of opening 2025 is 23 no. vehicles of which 19 no. are light vehicles and 4 no. are HGV. The forecast average increase in the total traffic flow in the evening peak hour is +27 no. vehicles where the forecast increase in light vehicles is approximately +11 no. and the increase in HGV is +16 no.

Based upon the forecast network traffic flows the 15.23 summarises development generated turning traffic and the total turning movements at Junction 2 'N2 Off-slip' and Junction 4 'N2 On-slip'. Table 14.23, Table 14.24 and Table 14.25 include the forecast daily development turning traffic set against the forecast future AADT at the junctions with the N2 for the future years 2025, 2035 and 2040 respectively (including committed development traffic).

Table 14.23 – Junctions with National Roads - Assessment of Future Turning Traffic 2025

Junction		AADT 2025		Dev. Traffic		Increase %	
		Total	Heavy	Total	Heavy	Total	Heavy
2	N2 Off-slip (Daily)	9572	3717	236	162	+2.5%	+4.4%
	N2 Off-slip (AM Peak)	833	284	17	10	+2.0%	+3.5%
	N2 Off-slip (PM Peak)	633	180	27	16	+4.3%	+8.9%
4	N2 On-slip (Daily)	13757	4266	162	108	+1.2%	+2.5%

	N2 On-slip (AM Peak)	1100	320	11	7	+1.0%	+2.2%
	N2 On-slip (PM Peak)	1114	227	20	10	+1.8%	+4.4%

Table 14.24 – Junctions with National Roads - Assessment of Future Turning Traffic 2035

Junction		AADT 2035		Dev. Traffic		Increase %	
		Total	Heavy	Total	Heavy	Total	Heavy
2	N2 Off-slip (Daily)	10341	4289	236	162	+2.3%	+3.8%
	N2 Off-slip (AM Peak)	911	333	17	10	+1.9%	+3.0%
	N2 Off-slip (PM Peak)	692	211	27	16	+3.9%	+7.6%
4	N2 On-slip (Daily)	14890	4908	162	108	+1.1%	+2.2%
	N2 On-slip (AM Peak)	1203	374	11	7	+0.9%	+1.9%
	N2 On-slip (PM Peak)	1218	266	20	10	+1.6%	+3.8%

Table 14.25 – Junctions with National Roads - Assessment of Future Turning Traffic 2040

Junction		AADT 2040		Dev. Traffic		Increase %	
		Total	Heavy	Total	Heavy	Total	Heavy
2	N2 Off-slip (Daily)	10921	4873	236	162	+2.2%	+3.3%
	N2 Off-slip (AM Peak)	969	382	17	10	+1.8%	+2.6%
	N2 Off-slip (PM Peak)	736	242	27	16	+3.7%	+6.6%
4	N2 On-slip (Daily)	15746	5563	162	108	+1.0%	+1.9%
	N2 On-slip (AM Peak)	1280	429	11	7	+0.9%	+1.6%
	N2 On-slip (PM Peak)	1296	305	20	10	+1.5%	+3.3%

The forecast increase in total traffic at the two closest junctions leading to or coming from the national road network in the year of opening is estimated to be in the order 1.2-2.5% of daily traffic flows. In the morning peak hour the forecast increase in junction turning movements is in the order of 1.0-2.0% while in the evening peak hour the estimated increase is in the order of 1.8-4.3%.

Based on the analysis and findings of the traffic impact assessment, it can be concluded that the impact on the receiving road network is below the 5% threshold and is sub-threshold. Therefore, the proposed development will not have a significant adverse impact on the traffic flow or the road network, and the existing infrastructure can accommodate the additional traffic generated by the development.

The impact arising from the realisation of the masterplan development might reasonably be estimated as double that of the proposed Phase 1 development. Given that the Huntstown Circular Economy Hub is intended to be occupied by independent developments where the products of one facility is

expected to be the input to neighbouring facilities it is likely that the overall traffic impact will be less than the simple doubling scenario set out in the traffic flow diagrams of Appendix B. Given the magnitude of impact arising from the proposed development of Phase 1 it is not though necessary to provide a separate analysis for the masterplan.

The objectives of the Fingal Development Plan 2011-2017 that have been realised in recent times and that benefit the Huntstown area include the N2-N3 Link Road which comprises high quality road sections from Tyrrelstown to Cherryhound and from Castaheany to Damastown. The link between Tyrrelstown and the Cherryhound Interchange began construction in September 2011 and was opened in May 2013 and significantly altered the area wide travel demand characteristic of the road network in and around Ballycoolin and Huntstown.

The N2-N3 provides a primary link between the M2 and M3 motorways and also an alternative route to and from the airport. It has provided important infrastructure to serve the Dublin Enterprise Zone which expressly encourages employment, with zones for science & technology developments, warehousing, light industrial and office accommodation.

Fingal Development Plan 2023-2029 has a future objective to connect Cappagh Road at Cappogue to Huntstown R135 North Road. This future road will function as a local distributor road and will serve to provide access to lands zoned GE to the south of Huntstown Quarry.

Fingal County Council has future proposals to provide a western link from the Broghan Roundabout on the R135 (old N2) to Dublin Airport. This East West Link Road scheme is set as development Objective EA04 in the Dublin Airport Local Area Plan 2020. It is envisaged that existing traffic flows at the signal controlled Kilshane Cross on the R135 (North Road) will significantly reduce pending the construction of the airport link road scheme (principally due to re-distribution of traffic flow).

TTA Figure 6.1 is based upon the location plans provided in this Chapter showing the various junction traffic counts overlain by an excerpt from Dublin Airport Local Area Plan 2020, Figure 8.1 'Dublin Airport Surface Access'. TTA Figure 6.1 shows the western access to the airport highlighted magenta and shows the future link from North Road to Cappagh Road highlighted cyan.

Recent improvements and upgrade of the Kilshane Crossroad junction were implemented as part of development carried out under Planning Reg. Ref. F18A/0146 (Killeen Properties). Improvements include the provision of an additional lane on the eastern arm of the signal-controlled junction together with a left filter lane to North Road (south) and improvement in the provision for pedestrians and cyclists on the approaches to the junction and in the traffic signal operation.

It is understood that the junction of the N2 off-slip at Coldwinters with North Road will be upgraded to signal operation. In the grant of permission determined under Planning Reg. Ref. FW21A/0151 (Huntstown Power) Condition No.22 of the grant of permission for the development requires a special contribution in respect of upgrading the junction of R135 North Road with the northbound slip road from the N2 at Coldwinters.

From a review of that planning file it is understood that Fingal County Council has assessed the operation of the Huntstown Quarry access on North Road and has considered the possible future control of this junction be signals. It is understood that the objective of the change from priority control is in the interest of improved safety and controlling or reinforcing the priority of the major road over the access road.

The network flow diagrams in Appendix B of the TAA show that the development of the North Road link to Cappagh Road will provide the opportunity for development generated traffic to redistribute.

The various percentage diversions to the west of the development site are shown and the assumptions are set out in Section 5.3 'Traffic Distribution of the TAA'.

There is no area-wide mode associated with the addition of either the Dublin Airport Local Area Plan 2020 objective or the objective of the Fingal Development Plan 2023-2029, but it is clear that the addition of these links will afford the opportunity for development traffic to reduce on the R135 North Road.

Since the impact of development traffic on the existing receiving road network is low or negligible it stands to reason, without the need for complex area-wide modelling, to conclude that that the same would be true of development impact once the new infrastructure has been realised.

The assessment calculations show that development traffic will not adversely impact the operation of the N2 Off-slip junction with North Road at Coldwinters and so development traffic is not likely to impact negatively or impeded in any way the upgrade of the junction to signal control. Similarly, the proposed development does not preclude the potential to convert the Huntstown Quarry access to signal control. Development traffic and the connection to the Cappagh Road will effect a balance of flows on the arms of the Huntstown Quarry access junction.

14.6 Impacts: Construction Stage

The construction phase impacts will be short-term. It is expected that the construction period will be in the region of 14 months. It is proposed that construction traffic will access the site via North Road and the existing access road serving the ESB substation. The construction access shall be located at the proposed development access point and will 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 60 persons, which may rise to a total of 120 persons during peak construction activities. Based upon an expected car occupancy of 1.8 persons per vehicle it is expected that light vehicle traffic generation during the construction phase will be on average approximately 32 trips per day, increasing to a peak of 64 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 will be 07:00-19:00hrs on weekdays and 08:00-14:00hrs on Saturdays with no working on Sundays or Public Holidays. Construction staff traffic will typically arrive at site prior to the traditional commuter peak hour in the morning and leave after the evening peak hour.

A quantity of soil and subsoil which will need to be excavated to facilitate the proposed development. The volume of material to be excavated has been estimated to be c. 31,136m³ and this material will be removed from the site for appropriate reuse, recycling or disposal.

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. Depending upon the haulage vehicle type the removal of excavated materials has the potential to generate a total of between 943 and 2,075 vehicles. Modern haulage fleets tend to carry a mix of rigid and articulated tippers and it is conservatively estimated that approximately 70% of loads are likely to be transported by articulated vehicles. On this basis the disposal of excavated materials

in the early stages of the project is forecast to generate a total of 1,283 HGV trips which equates to approximately 25 HGV trips per day over a 4-week period.

Average HGV traffic generation arising during subsequent construction activities is expected to be in the region of 25 HGV or less per day. 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 HGVs 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. For the purposes of this assessment it is assumed that construction traffic would distribute to the network in similar proportions as operational traffic. Given that construction traffic equates to less than half that of the operational phase there is no need for an entirely separate set of calculation and it can reasonably be concluded from the operational analyses that construction traffic is not likely to give rise to reduced operational performance of the local road network.

14.7 Prevention & Mitigation Measures

14.7.1 Design Stage

The proposed design incorporates measures to comply with DMURS, whose primary objectives are; (1) Prioritise pedestrians and cyclists in urban settings without unduly compromising vehicular movement; (2) Provide good pedestrian permeability and connectivity in urban environments to encourage walking. The specific design measures include:

- Street lighting will meet the standards required by Fingal County Council. Light emitting diode (LED) luminaires will be used and positioned to ensure a uniform lighting spread is achieved and dark corners are avoided.
- Proposed segregated footway and cycleways are provided on the access road from North Road which will become the future link between North Road and Cappagh Road to the west. The configuration of cycleways and footways and the turning lanes serving the development are all consistent with the existing Cappagh Road cross-section and the greater road network serving the Dublin Enterprise Zone within which the proposed development site is located.
- Internal provision for pedestrians and cyclists includes for 3.0m shared segregated facilities on both sides of the spine road. High quality and slip resistant materials will be used in the construction and gradients at dropped crossings will be sufficiently shallow to allow access for users of all abilities.
- Sightlines at the junction of the access road and North Road are measured as 120m from a setback of 3.0m. Similarly the sightlines at the proposed development access junction are 120m from a setback of 3.0m. Roadside features and landscaping is so positioned not to obstruct visibility for drivers approaching or emerging from these junctions.

14.7.2 Construction Stage

As part of the Safety Health & Welfare assessment of the construction stage of the project, the Applicant/Developer, and the appointed contractor will develop a site-specific construction traffic management plan. Details of the signing layout regimen will be provided in the Construction Traffic

Management Plan, the detail of which is to be agreed with the Planning Authority prior to work commencing on the site.

Construction Traffic Management Plans are typically prepared for developments involving significant construction activity. The management plan should contain measures to mitigate the effects of construction, addressing issues such as traffic management, hours of working, delivery times and methods of prevention of noise and dust, reinstatement of damaged roadways, footways and grass verges, and the accommodation of construction and staff parking within the development during the construction period.

The construction works associated with the proposed development will involve normal construction activities such as excavation, filling, lifting, pumping, pipe laying, concrete works, mechanical installation etc. A detailed Construction Traffic Management Plan will be drawn up prior to the commencement of construction activities (typically prepared together with programme of works upon appointment of a contractor), in order to minimize the impacts to the environment during construction.

The Construction Traffic Management Plan will detail the allowable working day, construction traffic, parking arrangements and will incorporate environmental protection measures. Provisions to reduce the environmental impact of the construction activities will include the following:

- Requiring contractors to ensure that the public roads in the vicinity of the site are maintained free from all mud, dirt and rubbish, which may arise from or by reason of the execution of the works. To facilitate this, the Contractor could be required to provide a wheel cleaning facility to an approved standard within the construction site.

14.7.3 Operational Stage

Mitigation measures are not required.

14.8 Monitoring

In the construction stage the Resource & Waste Manager will monitor construction vehicle movements in and out of the site to ensure the guidance set out in the Construction Traffic Management Plan is being followed. Monitoring is not required in the operational stage.

14.9 Cumulative Impacts

The road network assessments include for specific local developments other than the proposed development. The developments considered are those already in operation or granted planning permission but yet to be implemented and are set out in detail in Section 15.5.4 and in the Traffic and Transport Assessment Report at Appendix 15.1.

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 to traffic survey data collected in 2022 is as follows:

- 2022-2025 (Opening Year) +5.5% (LV) +10.9% (HGV)

- 2022-2030 (Opening Year +5yrs) +15.3% (LV) +28.4% (HGV)
- 2022-2040 (Opening Year +15yrs) +22.7% (LV) +47.4% (HGV)

The cumulative traffic arising from future economic growth and development resulting in traffic growth on the receiving 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 (and the specific developments) would by definition be included, or at least included in part in the TII growth rates. This factor is disregarded in the traffic assessments that all traffic to the proposed development is considered totally new to the road network for the proposed period of operation commencing in 2025.

14.10 Baseline Scenario

If the proposed development does not proceed traffic volumes will be as per the future year 'baseline' or 'do-nothing' scenarios set out in Tables 14.9 through 14.21.

14.11 Residual Impacts

14.11.1 Construction Stage

Construction traffic will be generated by the proposed development. In the interest of simplicity it is assumed that the buildings and facilities will be developed in a single construction phase. For the purposes of this traffic assessment a singular construction period of fourteen months is envisaged.

All concrete and stone input materials can be sourced from local providers within or close to the Greater Dublin Area. All inert excavation or demolition related waste material generated during construction will be removed from the site and transported to an appropriate Soil Recovery Facility.

The primary generators of traffic on the public road network during construction will be construction staff and the delivery of construction materials. Construction materials for are expected to be predominantly structural steel, cladding and concrete. Based on our experience of similar projects it is estimated that no more than 25 no. HGV trips per day would be required to cater for the delivery of these materials to the site during the most intensive construction period. This figure is considered to represent an upper value construction HGV traffic generation. Average construction HGV traffic generation is expected to be in the region of 15 no. HGV trips per day.

Construction plant for the proposed processing facilities proposed under the current application is expected to mainly consist of rigid body vehicles, 8-wheel tippers, ready mix HGV and articulated vehicles.

In the interest of simplicity the traffic assessment does not include for a separate construction period scenario combined with site operation scenarios. It can easily be appreciated that the proposed on site processing facility cannot generate waste traffic until such time as they are constructed. In all cases the HGV traffic generated by the operation of the proposed facility exceeds by more than double that of the respective construction period accordingly it follows that the traffic scenario where the facilities are operational represents a worst case scenario typically associated with the assessment values used in traffic impact studies.

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 detailed Construction Traffic Management Plan can be prepared prior to the project commencing.

The proposed development includes the construction of a private access road and a new development access junction and will involve road improvement works to the existing ESB access road (programmed to become the future North Road link to Cappagh Road). There will also be site preparatory works which include the movement to earth and transport of road construction materials. Notwithstanding that these activities will require a greater number of personnel on site, it is considered highly unlikely that the daily HGV traffic arising during construction will exceed that of the operational phase and is forecast to be half or less of that volume.

It is acknowledged that the construction of the improved section of new link road will need to be carefully phased and co-ordinated with the Roads Authority so ensure that the impact, principally delays to exiting traffic on North Road arising from the initial construction and site preparation works is controlled. There will clearly be some short-term direct impact arising on the ESB access road arising from the road widening and cycleway/footway construction works and these impacts will be commensurate with general road maintenance type works. These works will be prioritised to provide access to the construction site. Delays to existing road users will be limited to users of the existing ESB access road.

14.11.2 Operational Stage

The likely impact of HGV traffic movements on the local road network is forecast not to be significant and for the most part will have a negligible impact on network capacity and operation. Direct impact is limited to a short section of R135 North Road to the south of Huntstown Quarry Access Junction which is currently a lightly trafficked cul-de-sac where the relative increases in traffic flow are high when compared with the existing background network traffic flow.

This section of North Road was formerly the N2 and under the current proposals in the Fingal Development Plan 2023-2029 the existing cul-de-sac is planned to be re-opened to through traffic to facilitate access to zoned lands such as the proposed development site all located north of the M50 and between North Road and Cappagh Road. Access to the development site via the North Road is consistent with the development plan objectives for the proper and sustainable development of the area.

Based upon detailed assessments and standard industry evaluation criteria it is not envisaged that there will be a significant increase in traffic throughput or impact upon capacity at any junction in the vicinity of the site or on the available haul routes.

In terms of the spatial extent of the impact of HGV traffic, it will be limited to the proposed haul route principally along North Road. The impact of HGV traffic on North Road is expected up to medium-term (i.e. 25 years), occurring 5.5 days a week, between the hours of 07:00 and 19:00 (to 14:00 on Saturdays) and are expected to continue as long as the proposed development has license to operate.

14.11.3 Summary of Residual Impacts

Based on the scale and phasing of the development, the haul routes and the implementation of Traffic Management Plan, construction stage traffic will not result in any localised traffic congestion in the vicinity of the development site. Construction traffic will have a negative, not significant, local, likely and temporary impact on the local road network.

In the operational stage the development will have a negative, not significant, likely, local and long term impact on traffic.

Likely Significant Effect	Quality	Significance	Extent	Probability	Duration
Construction Stage	Negative	Not Significant	Local	Likely	Temporary
Operational Stage	Negative	Not Significant	Local	Likely	Long Term

15. INTERACTION OF THE FOREGOING

15.1 Introduction

Previous Chapters describe the impacts associated with the proposed development and the prevention and mitigation measures that will be implemented. This Chapter discusses the significance of the actual and potential direct, indirect and cumulative effects of the changes due to interaction between relevant receptor. It is based on the physical and environmental conditions of the subject site and the predicted impacts of the development.

15.2 Population & Health/Air/Material Assets: - Traffic

The proposed development has the potential to impact on human beings from air quality, traffic movements and noise. The local road network has the capacity to accommodate the additional traffic and the air quality assessment has established that the development will not result in any breaches of ambient air quality limits. The noise assessment has determined that noise from traffic on a section of the North Road will have a not significant/slight impact

15.3 Land & Geology/Biodiversity

The land take will remove the agricultural product value of the site and the biodiversity value of the existing habitat. The impacts were taken into consideration and appropriate mitigation measures identified.

15.4 Climate/Water

The effects of Climate Change were factored into the design of the surface water drainage system. .

15.5 Climate/Traffic/Material Assets

The development will impact on Climate as a result of increased greenhouse gas emissions from traffic and the raw materials consumption in the construction stage and the energy consumption in the operational stage. The cumulative effects will somewhat off-set by the carbon savings associated with the recycling of materials that would otherwise have gone to landfill and incineration.

Table 15.1 Interactions

		Climate	Land & Soil	Water	Biodiversity	Air	Population & Human Health	Landscape & Visual Impact	Archaeology Architecture Cultural Heritage	Material Assets	Materials Assets Traffic
Climate				√						√	√
Land & Soil					√						
Water											
Biodiversity											
Air											
Population & Human Health						√					√
Landscape & Visual Impact											
Archaeology & Cultural Heritage											
Material Assets :											
Material Assets : Traffic											