

14 TRAFFIC AND TRANSPORT

14.1 INTRODUCTION

14.1.1 Background and Objectives

This chapter assesses the potential effects of traffic associated with the Project on the public road network and on sensitive receptors in the vicinity of the Proposed Development, describes the existing public road and junction network, identifies whether there is any potential for significant effects to arise (both in isolation and in combination with other developments) and outlines the mitigation measures that will be implemented to avoid, reduce, or offset any potential significant effects that might arise. The assessment will consider the potential effects of traffic generated by the Project during the following phases:

- Construction of the Project,
- Construction of proposed Grid Connection for two separate options in the public road network between the Onsite Substation and Control Building and Dunmanway 110 kV substation (Option A) or Carrigdangan 110 kV substation (Option B). The Onsite Substation and Control Building and Grid Connection will be subject to a separate planning application.
- Transportation of turbine components on the public road network between the Port of Cork and the Proposed Development. The Turbine Delivery Route (TDR) works will be subject to a separate planning application.
- Enabling works for the transportation of turbine components on the public road network between the Port of Cork and the Proposed Development. The Turbine Delivery Route will be subject to a separate planning application.
- Operation and maintenance of the Proposed Development.
- Decommissioning of the Proposed Development.

Table 14.1: Glossary of Common Acronyms

Glossary of Common Acronyms	
ADR	International Carriage of Dangerous Goods by Road
BE	Bachelor of Engineering
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement

Glossary of Common Acronyms	
HCV	Heavy Commercial Vehicles
HGV	Heavy Goods Vehicle
IT Sligo	Institute of Technology, Sligo
km	Kilometre
km/h	Kilometres per hour
kV	Kilovolt
LCV	Light Commercial Vehicles
LGV	Light Goods Vehicle
LOS	Level of service
MSc	Master of Science
m	Metre
NCT	National Car Test
PPP	Public Private Partnership
TDR	Transport Delivery Route
TII	Transport Infrastructure Ireland
TTA	Traffic and Transport Assessment
UK	United Kingdom

14.1.2 Statement of Authority

This chapter of the EIAR has been prepared by John Doogan, Senior Designer at Jennings O'Donovan & Partners Limited who holds a Higher national diploma (Level 7) in Civil engineering from Bolton Street College of Technology. John has over 34 years of road design and traffic experience in Ireland and the UK and has worked on the design, planning and construction of over 30 wind farms projects in Ireland, UK, Europe and Mexico.

This report has been reviewed by David Kiely, Director, Jennings O'Donovan & Partners Limited who holds a BE in Civil Engineering from University College Dublin and MSc in Environmental Protection from IT Sligo. He is a Fellow of Engineers Ireland, a Chartered Member of the Institution of Civil Engineers (UK) and has 42 years' experience. He has extensive experience in the preparation of Traffic and Transport Assessments, Traffic Management Plans, EIARs and EISs for environmental projects including Wind Farms, Solar Farms, Wastewater Projects and various Commercial Developments. David has also been involved in the construction of over 60 wind farms since 1997.

14.1.3 Site Location, Context and Proposed Development

The Site is located 9.7 km north-west of Dunmanway, to the north of the R585 regional road and to the south of the R584 regional road. Access to the Proposed Development will be from an existing entrance on the L8544 local road. The existing entrance will be upgraded as part of the Proposed Development. The Proposed Development will consist of Eight wind turbines, Site access tracks, Turbine Hardstands, Site drainage network, Underground power and communications cabling, Met Mast, Temporary Construction Compound, Site borrow pit, Biodiversity improvements and Recreational community improvements

The assessment also includes the proposed Onsite Substation and Control Building and the Grid Connection route options to Dunmanway and Carrigdangan 110kV Substations. The Location and layout of Proposed Development is shown on **Figure 14.1**. The Grid Connection route options are shown on **Figure 14.2**. The turbine components for Proposed Development will be shipped to the Port of Cork. The turbine components will be transported on the public road network using abnormal load vehicles between the Port of Cork and the Proposed Development. The proposed TDR between the Port of Cork and the Proposed Development is shown on **Figure 14.3**. The proposed TDR on the local road network in the vicinity of the Proposed Development is shown on **Figure 14.4**.

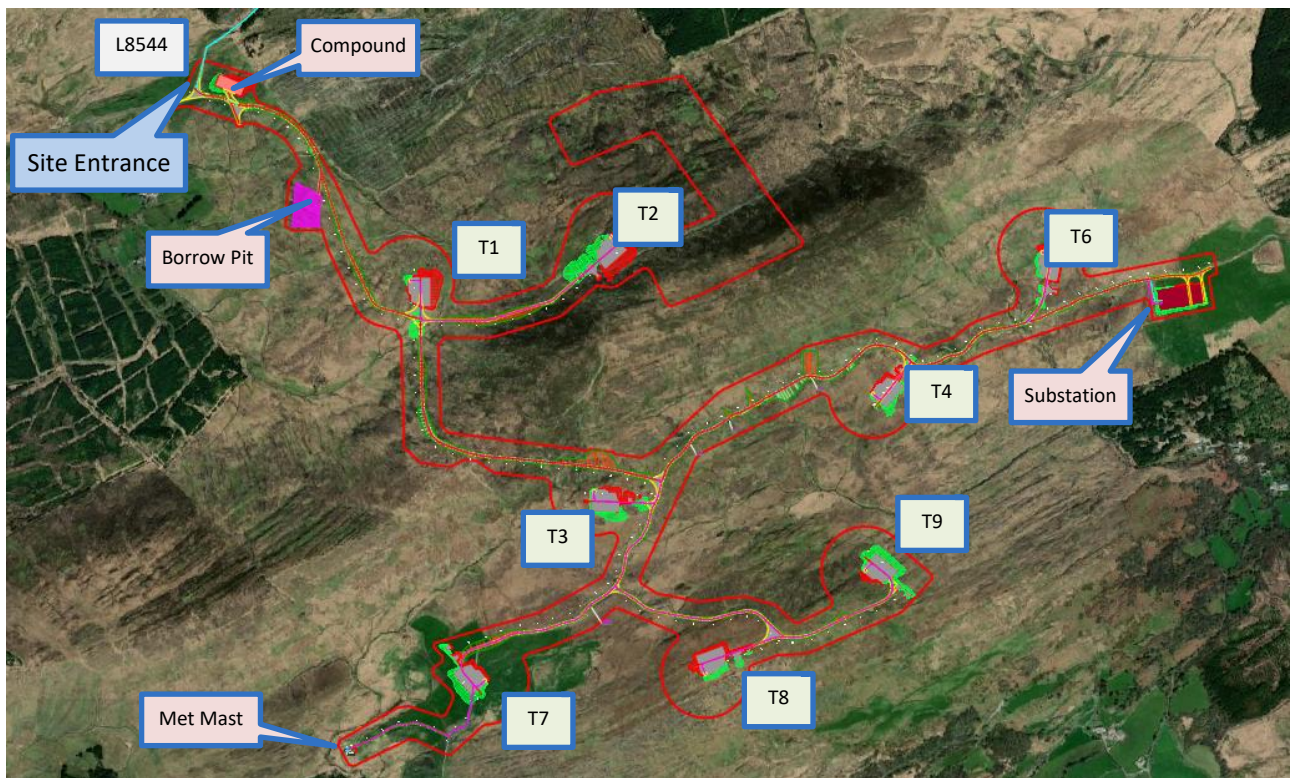


Figure 14.1 – Site Layout

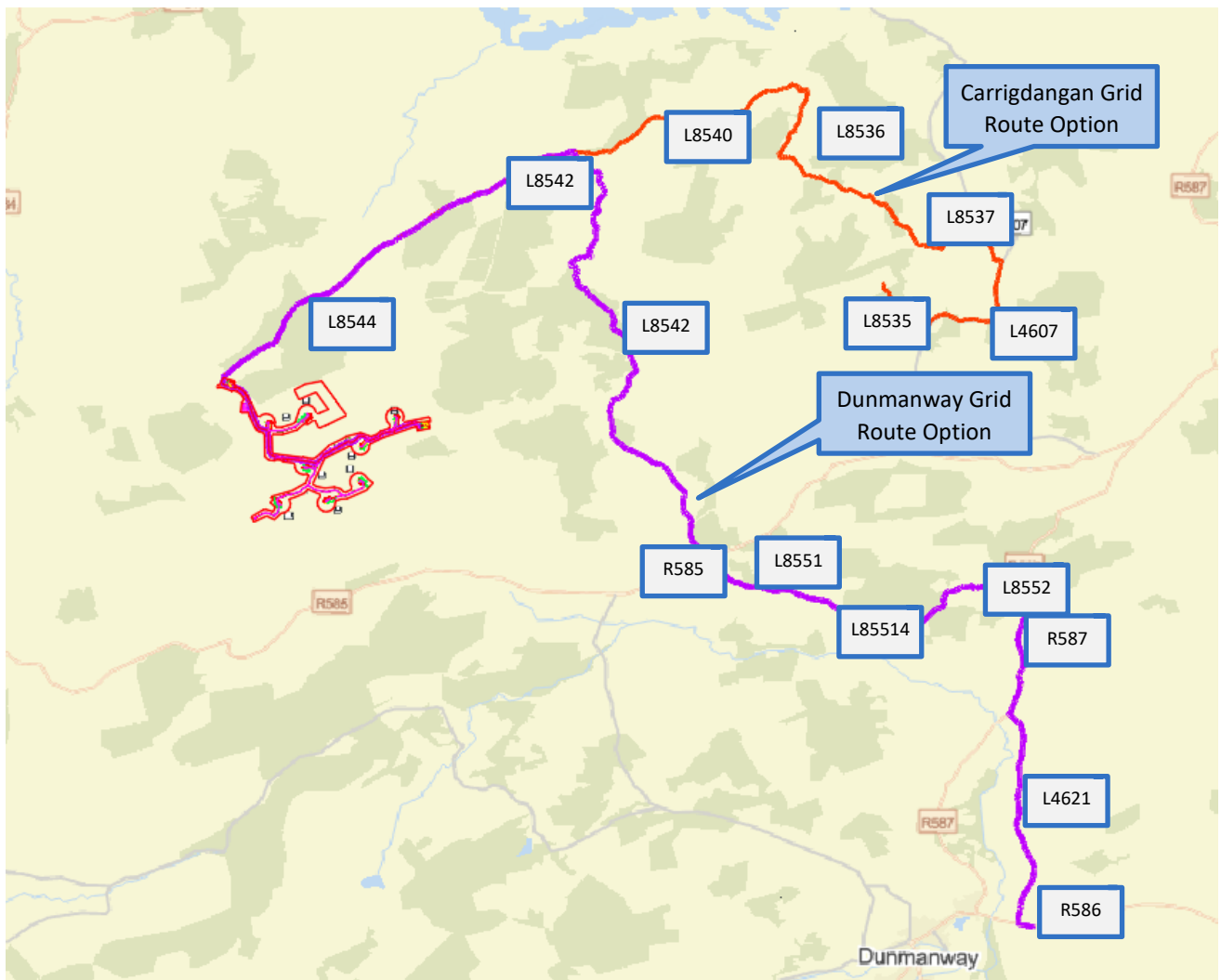


Figure 14.2 – Grid Connection Route Options

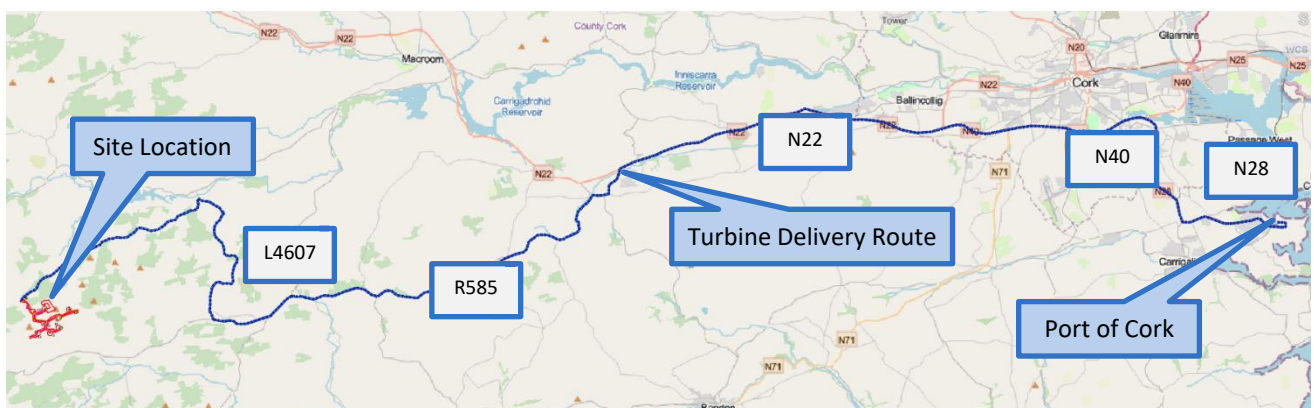


Figure 14.3 – Turbine Delivery Route

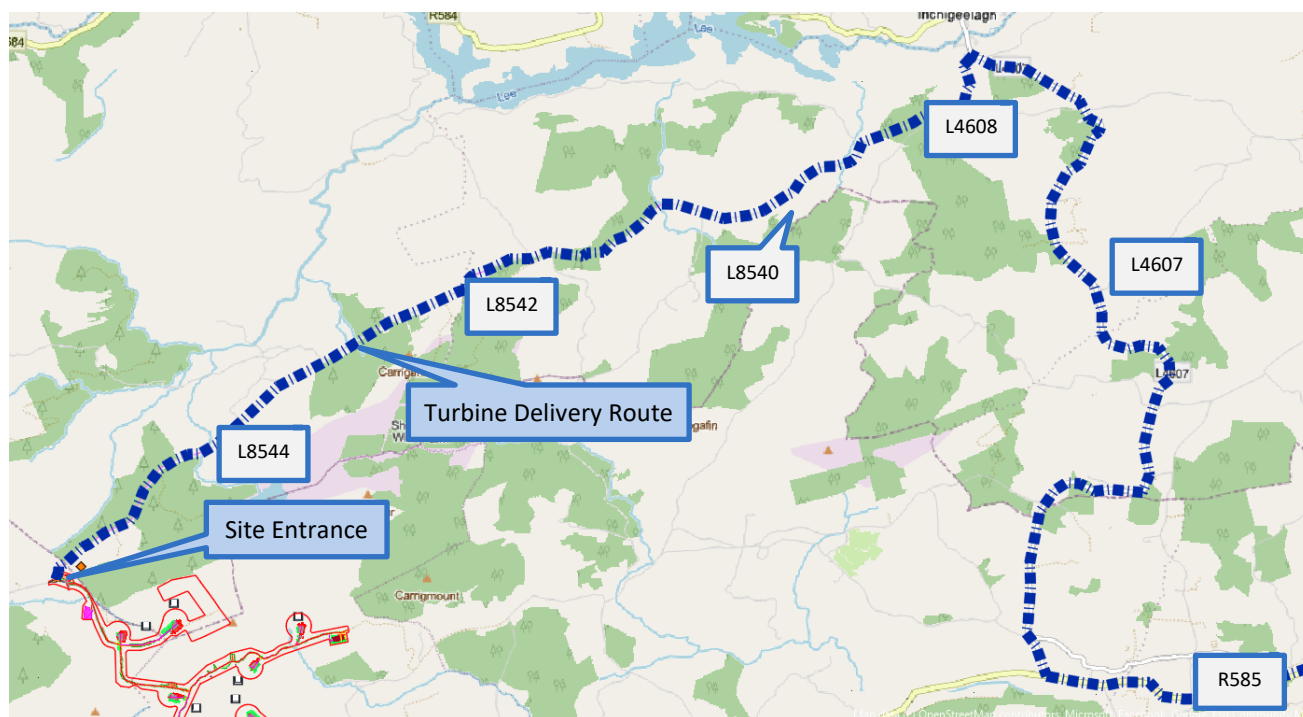


Figure 14.4 – Turbine Delivery Route – Local Roads

Common acronyms used throughout this EIAR can be found in **Appendix 1.2**. This chapter of the EIAR is supported by Figures provided in **Volume III** and is to be read in conjunction with the following Appendix documents provided in **Volume IV** of this EIAR:

- **Appendix 14.1:** Traffic and Transport Assessment:
- **Appendix 14.2:** Traffic Management Plan:
- **Appendix 14.3:** Swept Path Analysis

14.1.4 Scoping Responses and Consultation

The Project management team contacted relevant stakeholders as part of the scoping process for the wind farm design. The consultation responses are shown in **Table 14.2**.

Table 14.2: Consultation Responses

Consultee	Type & Date	Summary of Response	Response to Consultee
Cork County Council	11/04/22	<u>Engineering</u> The Area Engineer makes the following observations: Developer will need examination options, other than the routing of cables along the public road. It is important that applications for significant service connections between the increasing number of remote power generating facilities and interconnectors, be planned in great detail at application stage so that nothing is left to chance at construction stage.	Traffic Addressed in this Chapter and in the Traffic and Transport Assessment (Appendix 14.1) and the

Consultee	Type & Date	Summary of Response	Response to Consultee
		- In summary the significant issues that need to be addressed at this stage are: Their installation of services within the lands associated with the public road may affect the stability of the road. In particular where the road is a "legacy road" (where there is no designed road structure and the subgrade may be poor). - The position of service trenches along a road needs to be agreed in advance and any deviation from the detailed design, at construction stage, should require the approval of the local authority. - The location of cables is required to be recorded as accurately as possible so as to facilitate the further use of road space for utilities and the maintenance of the public road by the Roads authority. This record should be lodged with the local authority and with the Utility for retention on their records. - Cables shall be routed away from bridge structures and developers specifically prevented from attaching cables to road bridges. Proposed alternatives such as river bed crossings need to be feasibility proofed at planning stage by trial-holing etc. and included in EIS assessments so as to avoid having to consider alternatives which may be deemed not covered by planning/EIS. - Any chambers proposed within the public road cross section need to be designed to minimise the effect on the Roads Authority in its role of construction and maintenance. - Rationalisation of the number of cables involved (including existing electric or possible future cables) and their diversion into one trench, in order to minimise the impacts on the road network and the environment along the road boundary (hedgerows) should also be demonstrated as having been considered by the Developer. - Developer to comply with all appropriate standards and the Guidelines for Managing Openings in Public Roads, 2017 in order to ensure orderly development or conditioning even further reinstatement requirements as deemed appropriate allowing for damage to roads from construction traffic etc.. The conditioning of a bond, equivalent to full road overlay on roads to be used for deliveries etc. or requiring the Developer to strengthen such roads in advance, to ensure that the standard of the road surface is at least restored to its original condition or to an improved condition if such routes are to be used for access for maintenance of the facility thereafter. - Suitable routes for services, construction traffic and delivery must be set out and agreed at planning stage	Traffic Management Plan in Appendix 14.2

Consultee	Type & Date	Summary of Response	Response to Consultee
		with no deviation thereafter. Diversion routes for traffic temporarily diverted whilst the works are being undertaken must also be agreed and detailed at planning stage. • Details of all surface water culverts to drawing on the route map, and any damaged during the laying of the service must be properly repaired and notified to the Area Engineer. Likewise for watermain, to Irish Water Engineers. • On step sections of rural roads, consideration needs to be given to the use of a backfill material which is resistant to being washed away during severe weather events. • Trenchless pipelaying will only be considered in exceptional circumstances. The Area Engineer notes little detail is supplied regarding the turbine delivery route and indicates that the submitted map is very difficult to read, despite extensive knowledge of the area. The report notes a large number of residential properties with a dwelling located 600m from T6 but not shown on figure 14.1. Conclusion The Information to be contained in EIAR — the Scoping Report submitted covers the various EIAR requirements already — should follow all relevant guidelines including EIA guidelines, relevant Wind Energy Guidelines, EPA advice notes and relevant legislation. The developer should be advised that the Planning Authority has serious concerns regarding the scale and location of the proposed development and likely adverse visual impact and serious concerns regarding the likely impact on the quality of views obtainable from an important designated Scenic Route — as was indicated during pre-planning engagement. The Planning Authority notes that a Viewpoint Selection report will be prepared for consultation and agreement with relevant stakeholders and particularly with Cork County Council. Selected viewpoints from the 'Wild Atlantic Way' tourist route and designated 'high value landscape' areas should also be included. Reasonable alternatives considered shall be included and must also indicate the main reasons for the site selected taking into account the effects of the project on the environment. The above planning policy considerations and comments from internal departments should be forwarded to the developer for inclusion within the scope of the Environmental Impact Assessment Report. The developer should be advised that the issues highlighted by the Planning Authority are not	

Consultee	Type & Date	Summary of Response	Response to Consultee
		intended to be definitive and further issues may evolve as the project progresses.	
Transport Infrastructure Ireland (TII)	06/01/22	Dear Ms. Gallagher, Thank you for your correspondence of 21 December 2021, which was forwarded by the Minister for Transport, to Transport Infrastructure Ireland (TII), for direct response and of 22 December 2021 to TII, regarding the above EIAR scoping exercise. The position in relation to your enquiry is as follows. TII will endeavour to consider and respond to planning applications referred to it, given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidelines as outlined in the Section 28 Ministerial Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities' (DoECLG, 2012). Regard should also be had to other relevant guidance available at www.TII.ie. The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals, following the examination of any valid planning application referred. National Strategic Outcome 2 of the National Planning Framework includes the objective to maintain the strategic capacity and safety of the national road network. It is also an investment priority of the National Development Plan, 2018 – 2027, to ensure that the extensive transport networks, which have been greatly enhanced over the last two decades, are maintained to a high level to ensure quality levels of service, accessibility and connectivity to transport users. This requirement is further reflected in the recent publication of the Draft National Investment Framework for Transport in Ireland and also the existing Statutory Section 28 'Spatial Planning and National Roads Guidelines for Planning Authorities' (DoECLG, 2012). With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network. The developer/scheme promoter should have regard, inter alia, to the following: It appears that the proposed windfarm site accesses the local and regional road network prior to access to the national road network. Access to the road network shall be developed in accordance with official policy and road	Traffic Addressed in this Chapter and in the Traffic and Transport Assessment (Appendix 14.1) and the Traffic Management Plan in Appendix 14.2

Consultee	Type & Date	Summary of Response	Response to Consultee
		safety considerations, as outlined above. Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to the locations of existing and future national road schemes. • TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) in proximity to the proposed development. • The developer should assess visual impacts from existing national roads. • The developer should have regard to any EIAR/EIS and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should, in particular, have regard to any potential cumulative impacts. • The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works). • The developer, in preparing EIAR, should have regard to TII's Environmental Assessment and Construction Guidelines, including the 'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes' (National Roads Authority (NRA), 2006). • The EIAR/EIS should consider the 'Environmental Noise Regulations 2006' (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see 'Guidelines for the Treatment of Noise and Vibration in National Road Schemes' (1st Rev., NRA, 2004)). • It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site, with reference to impacts on the national road network and junctions of lower category roads with national roads. In relation to national roads, TII's 'Traffic and Transport Assessment Guidelines' (2014) should be referred to in relation to proposed development, with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of TII's TTA Guidelines, which addresses requirements for sub-threshold TTA. Any improvements required to facilitate development should be identified. It will be the	

Consultee	Type & Date	Summary of Response	Response to Consultee
		responsibility of the developer to pay for the costs of any improvements to national roads to facilitate the private development proposed, as TII will not be responsible for such costs. - The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required. - In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network. - TII recommends that that applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Where abnormal 'weight' loads are proposed, separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route through all the relevant County Council administrative areas, should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed. The national road network is managed by a combination of Public Private Partnership (PPP) Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) and local road authorities, in association with TII. The applicant/developer should also consult with all PPP Companies, MMaRC Contractors and road authorities over which the haul route traversed, to ascertain any operational requirements such as delivery timetabling, etc. and to ensure that the strategic function of the national road network is safeguarded. Additionally, any damage caused to the pavement on the existing national road network arising from any temporary works due to the turning movement of abnormal 'length' loads (e.g. tearing of the surface course, etc.), shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development on site. Designers should consult TII Publications to determine whether a Road Safety Audit is required for any of the temporary works proposed. Any recommendations should be incorporated into designs. - Grid connection and cable routing proposals should be developed to safeguard proposed road schemes, as TII	

Consultee	Type & Date	Summary of Response	Response to Consultee
		will not be responsible for costs associated with future relocation of cable routing, where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc. In the context of the existing national road network, in accordance with the National Planning Framework National Strategic Outcome no. 2 'Enhanced Regional Accessibility', there is a requirement to maintain the strategic capacity and safety of the network. This requirement is further reflected in the National Development Plan, the recent publication of the Draft National Investment Framework for Transport in Ireland and also the existing Statutory Section 28 'Spatial Planning and National Roads Guidelines for Planning Authorities'. There are around 99,000km of roads in Ireland. The national road network, which caters for strategic inter-urban travel, consists of approx. 5.4% of this. There is a critical requirement to ensure the strategic capacity and safety of this national road network is maintained and significant Government investment already made in the national road network is safeguarded. The provision of cabling along the national road network represents a number of significant implications for TII and road authorities in the management and maintenance of the strategic national road network and TII is of the opinion that grid connection cable routing should reflect the foregoing provisions of official policy. Therefore, TII advises that grid connection cable routing should seek to utilise the extensive existing local road network, or alternatives, as opposed to the strategic national road network, contrary to the provisions of official policy. Other consents or licences may be required from the road authority for any trenching or cabling proposals crossing the national road. The Authority requests referral of all proposals agreed and licensed between the road authority and the applicant, which affect the national road network. Cable routing should avoid all impacts to existing TII infrastructure, such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII. Any costs attributable shall be borne by the applicant/developer. The developer should also be	

Consultee	Type & Date	Summary of Response	Response to Consultee
		aware that separate approvals may be required for works traversing the national road network. Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practice. I hope that this information is of assistance to you.	
Department of Transport	123/1/22	Dear Andrew, It is noted by the Department of Transport that Section 9 of the Scoping Document is entitled: ACCESS, TRAFFIC AND TRANSPORT <i>At section 9.3 the study area is defined as the haul route to the site for both turbine components, likely to be from Port of Cork and the local roads leading to the site which will be used for delivery of stone, concrete and other building materials during construction.</i> The scope does not appear to include for the potential effects of the provision of connection cables to the national grid which is essential to the development as the cable route(s) do not appear to be included in the study area. It should be noted that the Department considers the construction involved in providing these connection cables may have effects on both the environment and the Regional and Local road network. Where the developer proposes the placement of any cables (or additional cables) in one or more trenches within the extents of the (regional and local) public road network, it is necessary to consider the following: • Their presence within the public road could significantly restrict the Road Authority in carrying out its function to construct and maintain the public road and will likely add to the costs of those works. • Their installation within the lands associated with the public road may affect the stability of the road. In particular where the road is a "legacy road" (where there is no designed road structure and the subgrade may be poor or poorly drained) the design needs to take account of all the variable conditions and not be based on a sample of the general conditions.	Traffic Addressed in this Chapter and in the Traffic and Transport Assessment (Appendix 15.1) and the Traffic Management Plan in Appendix 15.2

Consultee	Type & Date	Summary of Response	Response to Consultee
		- The possible effect on the remaining available road space (noting that there may be need to accommodate other utilities within the road cross-section in the future). - The necessity to have the power in the cables switched off where the Road Authority considers this necessary in order to carry out its function to construct and maintain the public road. The Department of Transport considers it important that the examination of the proposal should include consideration of the following: - Examination of options other than the routing of cables along the public road, - Examination of options for connection to the national grid network at a point closer to the wind farm in order to reduce the adverse impact on public roads. - Details of where within the road cross section cables are to be placed so as to minimise the effect on the Roads Authority in its role of construction and maintenance, - Examination of details of any chambers proposed within the public road cross section so as to minimise the effect on the Roads Authority in its role of construction and maintenance and, - Rationalisation of the number of cables involved (including existing electric or possible future cables) and their diversion into one trench, in order to minimise the impacts on the road network and the environment along the road boundary (hedgerows). The Department considers the following should be considered when applying conditions to any approval. - A condition requiring the specific approval of the local authority to the detail of the final route of cables through the public road space. If during construction there is a need to deviate from the detailed design then the approval of the local authority would again be sought. This would assist in minimising the impact on the public road. - A condition requiring the developer to comply with all appropriate standards and, inter alia the Guidelines for Managing Openings in Public Roads, 2017 in order to ensure orderly development.	

Consultee	Type & Date	Summary of Response	Response to Consultee
		3. A condition requiring that the location of the cables would be recorded as exactly as possible (maybe using BIM type technology) so as to facilitate the further use of road space for utilities and the maintenance/construction of the public road by the Roads authority. This record should be lodged with the local authority and with the ESB Networks for retention on their records. 4. A condition requiring the developer to route cables away from bridge structures and specifically preventing the developer from attaching cables to road bridges. This would allow for the future maintenance of bridges without interruption of the electricity supply along the cables. 5. A condition requiring the developer to notify the Roads Authority of the owner of the cables (Owner) and the controller (Power Controller) of the power transmitted along the cables. In addition, the condition should require Owner and Power Controller to notify the Roads Authority of any change in ownership of the cables or change of Power Controller transmitting power along the cables. In all instances the Owner and Power Controller should be required to maintain an agreed contacts list with the Roads Authority.	

14.2 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

14.2.1 Assessment Methodology

This assessment of the impact and effects on the traffic generated by the Proposed Development on the existing public road network and its sensitive receptors has been carried out using the following methodology:

- Policy and guidance review.
- Desk study, including review of available maps and published information.
- Site visit (driving the route) including review of road network to be used.
- Classified traffic count data.
- Topographical Survey of potential 'constraints'.
- Swept Path Analysis of the TDR.
- Establishment of Baseline Scenario and existing traffic flows / junction capacity.
- Traffic and transport Assessment of junctions in the vicinity of the Site.
- Evaluation of potential effects.
- Evaluation of the significance of these effects.

- Identification of measures to avoid and mitigate potential effects.

Traffic generated by existing developments, permitted developments and known proposed plans and projects are cumulatively assessed in the Traffic and Transport chapter of the EIAR and in the Traffic and Transport Assessment (TTA) in **Appendix 14.1**. This includes plans and projects that are pending a decision from the planning authority, An Bord Pleanála and other known projects which are in the advanced stages of being prepared to be submitted for planning and have the potential for in combination effects and including the evaluation of residual effects following implementation of mitigation measures. Further details of the assessment are provided in the following sections.

14.2.2 Planning Policy and Guidelines / Guidance

In addition to the EIAR standards outlined in **Chapter 1: Introduction**, this assessment has been prepared and carried out in accordance with guidance contained in the documents shown in **Table 14.3**.

Table 14.3: Policy and Guidance

Policy / Author	Title	Policy
Cork County Council	Cork County Development Plan 2022 - 2028	Chapter 12 Transport & Mobility TM 12-8: Traffic/Mobility Management and Road Safety TM 12-13: National, Regional and Local Road Network TM 12-15: Port of Cork and Other Ports ET 13-1 Energy ET 13-2 Renewable Energy ET 13-4: Wind Energy ET 13-5: Wind Energy Projects Appendix a – Ministerial Guidelines
Department of Transport, Tourism and Sport and Department of Environment, Community and Local Government	The Design Manual for Urban Roads and Streets (DMURS)	This document outlines guidelines on the design of urban roads and streets in terms of street networks, street signage, pedestrians and cyclists, carriageways (widths, surfaces, junctions etc.), policies and plans, design process and audits (safety and quality).

Policy / Author	Title	Policy
Transport Infrastructure Ireland (TII)	Standards and Technical Documents	A full list of the TII standards and specifications are found on the TII website at the following link, www.tiipublications.ie/current-documents/2024-/Current-Documents-(May-2024).pdf a summary of the TII specifications and standards used during the design of the proposed Development are listed below.
Transport Infrastructure Ireland (TII)	Introduction (INT)	GE-1INT-01029 Introduction to the TII publications system
Transport Infrastructure Ireland (TII)	Drainage (DNG)	Road drainage
Transport Infrastructure Ireland (TII)	Environment (ENV)	Management of waste / landscape treatment / invasive species / Air quality / noise
Transport Infrastructure Ireland (TII)	Geometry (GEO)	Road link design / junction design / cross sections & headroom
Transport Infrastructure Ireland (TII)	Pavement (PAV)	Pavement and foundation design / materials / skid resistance
Transport Infrastructure Ireland (TII)	Planning & Development (PDV)	Traffic & transport assessment guidelines
Transport Infrastructure Ireland (TII)	Policy (POL)	TII policy guidelines
Transport Infrastructure Ireland (TII)	Project Appraisal Guidelines (PAG)	Travel demand projections and calculations
Transport Infrastructure Ireland (TII)	Road equipment (REQ)	Design and assessment of road restraint systems
Transport Infrastructure Ireland (TII)	Safety (STY)	Guidance for road safety audits
Transport Infrastructure Ireland (TII)	Specification For Works (SPW)	Specification for materials and workmanship
Transport Infrastructure Ireland (TII)	Standard Construction Details (SCD)	Details for road construction
Department of the Environment and Local Government and Department of Transport	Traffic Management Guidelines 2012	This document outlines guidelines for traffic management and sustainability, consultation and monitoring, speed management, junctions, vulnerable road users, public transport and parking. The guidelines recommend that consultation is carried out for schemes that involve a long construction period or area. The guidelines outline the relevant legislation governing different types of road works. The guidelines outline safety measures to be taken in the design of roads and junctions.

Policy / Author	Title	Policy
		The guidelines outline the arrangements for temporary traffic management where construction and improvement of roads is taking place and who should be consulted in planning for roadworks and the factors to consider.
Department of Transport, Tourism and Sport	Guidelines for Managing Openings in Public Roads (Second Edition, April 2017)	The document prescribes standards in respect of the work of forming openings, backfilling and the reinstatement of road surfaces and the associated materials to be used on all roads other than National Roads. It also prescribes procedures and requirements in relation to the use of MapRoad Roadworks Licensing (MRL) and its use for all road openings in public roads other than those openings carried out by a road authority.
Department of Transport	Traffic Signs Manual www.trafficsigns.ie	Temporary traffic measures and signs for roadworks. Regulatory / directional / information / warning signs and roadmarkings for the public road network.
Transport Infrastructure Ireland (TII)	Spatial Planning and National Roads Guidelines (2012)	It is in the public interest, in so far as is reasonably practicable, that the national road network continues to serve its intended strategic purpose. The EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network, in order to demonstrate that the development can proceed complementary to safeguarding the capacity, safety and operational efficiency of that network.

14.2.3 Study Area

The Study Area for Traffic and Transport Assessment is focused on the public road network, its associated junctions and sensitive receptors which will be used by traffic generated by the Proposed Development during the following activities:

- Transportation of building materials and electrical components.
- Transportation of granular materials for wind farm access road and Turbine Hardstand construction.
- Transportation of concrete and steel reinforcement for the construction of Turbine Foundations.
- Transportation of turbine components using abnormal load vehicles along the Turbine Delivery Route from the Port of Cork to the Proposed Development site entrance on the L8544.
- Enabling works at junctions and pinch points on the public road network to facilitate the swept path of abnormal load vehicles delivering turbine components along the Turbine Delivery Route between the Port of Cork and the Proposed Development site entrance on the L8544.

- Works associated with the Grid Connection to the national electricity grid, which will be via an underground cable connection to the existing ESB 110kV Substation at either Dunmanway 110 kV substation or Carrigdangan 110 kV substation.
- Traffic associated with the operation and maintenance of the proposed Development during the 40-year operational life, subject to planning permission being granted.
- Traffic associated with the decommissioning of the Proposed Development.

14.2.4 Desk Study

A desk study of the existing road network in the vicinity of the Proposed Development was carried out to determine potential locations for the Site entrance and to determine potential haul routes for the delivery of turbine components using abnormal load vehicles. The desk study involved using AutoCAD and AutoTRACK software combined with Lidar survey, OSI / Bing / Google Maps and Streetview to assess the suitability of public road network for junction visibility and vehicle turning movements. The Swept Path Analysis in **Appendix 14.3** has been carried out using a 73.9m long blade for a turbine with 150m rotor diameter, the blade represents the largest components to be transported. The blade will be transported using a Superwing blade delivery vehicle loaded with a horizontal blade between the Port of Cork and the blade transshipment area on the R584 and a blade transporter carrying a blade elevated at 60 degrees between the transshipment area and the site entrance. The blade delivery vehicle will have the greatest impact on the public road network due to the length of the loaded vehicle.

A desk study was also carried out to determine potential grid connection routes between the Onsite Substation and Control Building and the existing ESB 110kV substation at either Dunmanway 110 kV substation or Carrigdangan 110 kV substation.

14.2.5 Field Work

The preliminary wind farm design, haul route assessment and turbine delivery route assessment has been carried out using Lidar data supplied by Ordnance Survey Ireland (OSI) and supplemented using detailed topographical survey information carried out at the proposed site entrances and at pinch points on the turbine delivery route. The topographical survey was carried out by GHE Surveying, topographical surveyor at various stages of the design process.

A site visit to assess the turbine delivery routes from the R584 regional road to the wind farm site entrance was carried out by design team staff was carried out on 13th May 2021. Details of the assessment are included in **Chapter 3: Alternatives Considered**.

The haul route for the transportation of turbine components between the Port of Cork and the R585 blade transfer location to the west of Béal Na Bláth has been assessed by Pell Frischmann. The haul route for the transportation of turbine components between the R585 west of Béal Na Bláth to the Site entrance has been assessed by Jennings O'Donovan & Partners Limited. The assessments have been carried out using AutoTRACK software to determine the swept path of abnormal load vehicles delivering turbine components. Details of the assessment are included in **Appendix 14.3**.

Traffic counts were undertaken by Jennings O' Donovan during a site visit on 20th November 2024 to record traffic volumes and turning movements of vehicles at the R585/L4607 junction, R584/L4607 junction and at the L4607/L4608 junction. The traffic counts were carried out to determine baseline traffic volumes in the area and formed the basis of the traffic and transport Assessment in **Appendix 14.1**. The locations of the traffic counts were chosen as the selected junctions are located on the construction and turbine delivery haul routes and will be used by all wind farm traffic to access the Site. The classified traffic counts were supplemented by information from TII automatic traffic counters on the public road network. The automatic count data is freely available on the TII website.

Cork County Council were consulted as part of the proposed Development design scoping process. Cork County Council comments are listed in **Table 14.3**.

14.2.6 Receiving Environment

The location of the Site entrance to the Proposed Development is shown on **Figure 14.1**. The Site entrance to the Proposed Development is located on the L8544 local road (**Plate 14.1**). The L8544 is a 3.0 m wide single carriageway with grass verges. The L8544 runs between the R585 regional road and the L8542 local road and has an 80km/h speed limit classification. The L8544 combined with the L8542, L8540, L4608 and the L4607 will be the primary access roads to the site from the R584 and the R585 regional roads during the construction, operation and decommissioning of the Proposed Development. Existing traffic volumes on the L8544 were obtained from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the Site entrance. Using the methodology from TII publication PE-PAG-02039 to calculate annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the L8544 is calculated from the recorded traffic counts as follows: The L8544 local road has an AADT of 40 vehicles at the proposed Development entrance which equates to a two-way traffic flow of approximately 2 vehicles during peak hour traffic periods with less than 1% HGV traffic.



Plate 14.1 – L8544 Local Road

The L8542 local road (**Plate 14.2**) is a 3.0 m wide single carriageway with grass verges and has an 80 km/h speed limit classification. The L8542 runs between the L8544 and the L8540. The L8542 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development. Existing traffic volumes on the L8542 is calculated as the average from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the at the entrance to the Proposed Development and at the L4608 / I4607 junction. Using the methodology from TII publication PE-PAG-02039 to calculate annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the L8542 is calculated from the recorded traffic counts as follows: The L8542 local road has an AADT of 255 vehicles at the Proposed Development entrance which equates to a two-way traffic flow of approximately 22 vehicles during peak hour traffic periods with less than 1% HGV traffic.



Plate 14.2 – L8542 Local Road

The L8540 local road (**Plate 14.3**) is a 3.0m wide single carriageway with grass verges and an 80km/h speed limit classification. The L8540 runs between the L8542 and the L4608. The L8540 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development. Existing traffic volumes on the L8542 is calculated as the average from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the at the entrance to the Proposed Development and at the L4608 / I4607 junction. Using the methodology from TII publication PE-PAG-02039 to calculate

annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the L8542 is calculated from the recorded traffic counts as follows: The L8542 local road has an AADT of 255 vehicles at the Proposed Development entrance which equates to a two-way traffic flow of approximately 22 vehicles during peak hour traffic periods with less than 1% HGV traffic.



Plate 14.3 – L8540 Local Road

The L4608 local road (**Plate 14.4**) is a 4.0 m wide single carriageway with grass verges and an 80 km/h speed limit classification. The L4608 runs between the L8540 and the L4607. The L4608 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development. Existing traffic volumes on the L4608 were obtained from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the L4608 / L4607 junction. Using the methodology from TII publication PE-PAG-02039 to calculate annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the L4608 is calculated from the recorded traffic counts as follows: The L4608 local road has an AADT of 470 vehicles at the Proposed Development entrance which equates to a two-way traffic flow of approximately 40 vehicles during peak hour traffic periods with less than 1% HGV traffic.



Plate 14.4 – L4608 Local Road

The L4607 local road (**Plate 14.5**) is a 5.0 m wide single carriageway with grass verges and an 80km/h speed limit classification. The L4607 runs between the R584 in the village of Inchigeelagh and the R585. The L4607 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development. Existing traffic volumes on the L4607 were obtained from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the R584 / L4607 junction. Using the methodology from TII publication PE-PAG-02039 to calculate annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the L4607 is calculated from the recorded traffic counts as follows: The L4607 local road has an AADT of 964 vehicles at the Proposed Development entrance which equates to a two-way traffic flow of approximately 85 vehicles during peak hour traffic periods with less than 1% HGV traffic.



Plate 14.5 – L4607 Local Road

The R584 regional road (**Plate 14.6**) runs in an east / west direction through the village of Inchigeelagh and links the development to the N22 national primary road to the south of Macroom. The R584 is a 6.0m wide single carriageway with two lanes, hard strips and grass verges. The R584 has an 80 km/h speed limit classification with regulatory and directional signs and road markings. Existing traffic volumes on the R584 were obtained from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the R584 / L4607 junction. Using the methodology from TII publication PE-PAG-02039 to calculate annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the R584 is calculated from the recorded traffic counts as follows: The R584 regional road has an AADT of 1125 vehicles at the Proposed Development entrance which equates to a two-way traffic flow of approximately 98 vehicles during peak hour traffic periods with 4% HGV traffic.



Plate 14.6 – R584 Regional Road

The R585 regional road (**Plate 14.7**) runs in an east / west direction from the R584 in the village of Kealkill to the N22 between Ballincollig and Macroom. The R585 has a 6.0 m wide single carriageway with two lanes, hard strips and grass verges. The R584 has an 80 km/h speed limit classification with regulatory and directional signs and road markings. The R585 has an 80 km/h speed limit classification with regulatory and directional signs and road markings. Existing traffic volumes on the R585 were obtained from the classified traffic counts carried out by JOD on Wednesday 20th November 2024 at the R585 / L4607 junction. Using the methodology from TII publication PE-PAG-02039 to calculate annual average daily traffic (AADT) from short period traffic counts, the resulting AADT on the R585 is calculated from the recorded traffic counts as follows: The R585 regional road has an AADT of 1607 vehicles at the R585 / L4607 junction which equates to a two-way traffic flow of approximately 140 vehicles during peak hour traffic periods with 3% HGV traffic.



Plate 14.7 – R585 Regional Road

The Site entrance to the Proposed Development is located on the L8544 local road (**Plate 14.8**) at an existing field entrance. The existing entrance will be upgraded as part of the Proposed Development. Full details of the upgraded site entrance are given in **Section 14.3** of this report.



Plate 14.8 – L8544 Site Entrance

The existing junction between the L4608 and the L4607 local roads (**Plate 14.9**) is a simple T-junction with priority for L4607 traffic. The junction is located to the south of Inchigeelagh village in a 50 km/h speed limit zone. The junction is lit by public lighting. Observations during the traffic counts and traffic analysis carried out at the junction using the recorded traffic volumes show that there are no capacity problems at the junction under current traffic conditions. The junction is currently operating at free flow conditions with a level of service of A. Road network and junction capacity is measured in terms of level of service (LOS) thresholds which are based on the queuing delay on each arm of the junction. The transportation LOS system uses the letters A through F as described in **Section 14.2.19** of this report. The results of the analysis are included in the TTA, **Appendix 14.1**.



Plate 14.9 – L4607 / L4608 Priority Junction

The existing junction between the L4607 and the R584 / L3403 (**Plate 14.10**) is a staggered crossroads junction with priority for R584 traffic. The junction is located in the village of Inchigeelagh within a 50 km/h speed limit zone. The junction is lit by public lighting. Observations during the traffic counts and traffic analysis carried out at the junction using the recorded traffic volumes show that there are no capacity problems at the junction under current traffic conditions. The junction is currently operating at free flow conditions with a

level of service of A. Road network and junction capacity is measured in terms of level of service (LOS) thresholds which are based on the queuing delay on each arm of the junction. The transportation LOS system uses the letters A through F as described in **Section 14.2.19** of this report. The results of the analysis are included in the TTA, **Appendix 14.1**.



Plate 14.10 – L4607 / R584 Junction

The existing junction between the L4607 and the R585 (**Plate 14.11**) is a simple T-junction with priority for R585 traffic. The junction is located within an 80km/h speed limit zone with regulatory and directional signage. The junction is not lit by public lighting. Observations during the traffic counts and traffic analysis carried out at the junction using the recorded traffic volumes show that there are no capacity problems at the junction under current traffic conditions. The junction is currently operating at free flow conditions with a level of service of A. Road network and junction capacity is measured in terms of level of service (LOS) thresholds which are based on the queuing delay on each arm of the junction. The transportation LOS system uses the letters A through F as described in **Section 14.2.19** of this report. The results of the analysis are included in the TTA, **Appendix 14.1**.



Plate 14.11 – L4607 / R585 Junction

14.2.7 Proposed Development Entrance Works

The location of the Proposed Development entrance is shown on **Figure 14.1**. A detailed description of the Proposed Development entrance and Site entrance works on the public

road network is given in Section 3 of the Traffic Management Plan in **Appendix 14.2** of this report. The works will include:

- Upgrading of existing site entrance on the L8544.
- Trimming of vegetation for visibility at existing entrance.

14.2.8 Grid Connection Works

The location of the Proposed Development is shown on **Figure 14.2**. A detailed description of the grid connection works on the public road network is given in Section 4 and Appendix A of the Traffic Management Plan included in **Appendix 14.2** of this report. the works will include:

Dunmanway 110 kV Substation Option A

- L8544 Cable Trench in Public Road
- L8542 Cable Trench in Public Road
- R585 Cable Trench in Public Road
- L8551 Cable Trench in Public Road
- L85514 Cable Trench in Public Road
- L8552 Cable Trench in Public Road
- R587 Cable Trench in Public Road
- L4621 Cable Trench in Public Road
- R586 Cable Trench in Public Road

Carrigdangan 110 kV Substation Option B

- L8544 Cable Trench in Public Road
- L8542 Cable Trench in Public Road
- L8540 Cable Trench in Public Road
- L8536 Cable Trench in Public Road
- L8537 Cable Trench in Public Road
- L4607 Cable Trench in Public Road
- L8535 Cable Trench in Public Road

14.2.9 Turbine Delivery Route and Enabling Works

The turbine components for the proposed Development will be shipped to the Port of Cork. The turbine components will be transported on the public road network using abnormal load vehicles between the Port of Cork and the Site. The proposed Turbine Delivery Route is shown on **Figure 14.3** and **Figure 14.4**. Delivery vehicles will use the following road network to access the Site:

- N28 – Cork County Council / Transport Infrastructure Ireland
- N40 – Cork County Council / Transport Infrastructure Ireland
- N22 – Cork County Council / Transport Infrastructure Ireland
- R585 - Cork County Council
- L4607 - Cork County Council
- L4608 - Cork County Council
- L8540 - Cork County Council
- L8542 - Cork County Council
- L8544 - Cork County Council

A detailed description of the Proposed Development is given in Chapter 2 – Project Description. A summary of the turbine delivery route and enabling works (subject to a separate planning application) on the public road network is given in Section 4 and Appendix B of the Traffic Management Plan included in **Appendix 14.2** of this report. The works will include:

- R585 – Construction of 3 No. temporary blade transfer areas, trimming of existing vegetation, load oversail in third party lands, alterations to signs, street furniture and poles.
- R585 / L4607 Junction - Road widening to withstand wheel loading from abnormal load vehicles at junction.
- L4607 - Road widening to withstand wheel loading, trimming of existing vegetation, Load oversail in third party lands, Alterations to signs, street furniture and poles.
- L4608 - Road widening to withstand wheel loading, trimming of existing vegetation, Load oversail in third party lands, Alterations to signs, street furniture and poles.
- L8540 - Trimming of existing vegetation, Load oversail in third party lands, Alterations to signs, street furniture and poles.
- L8542 - Road widening to withstand wheel loading, trimming of existing vegetation, Load oversail in third party lands, Alterations to signs, street furniture and poles.
- L8544 - Road widening to withstand wheel loading, trimming of existing vegetation, Load oversail in third party lands, Alterations to signs, street furniture and poles.

14.2.10 Construction Haul Route for General HGV and LGV Traffic

All HGV traffic associated with the construction of the wind farm infrastructure will use the site entrance junction on the L8544. Access to the Proposed Development will be from the R584 and the R585 via the L4067 / L4068 junction. Construction Haul Routes for wind farm construction traffic are shown in **Figure 14.4**. Workers employed on the Site will follow the Construction Haul Route shown in **Figure 14.4** to access the works.

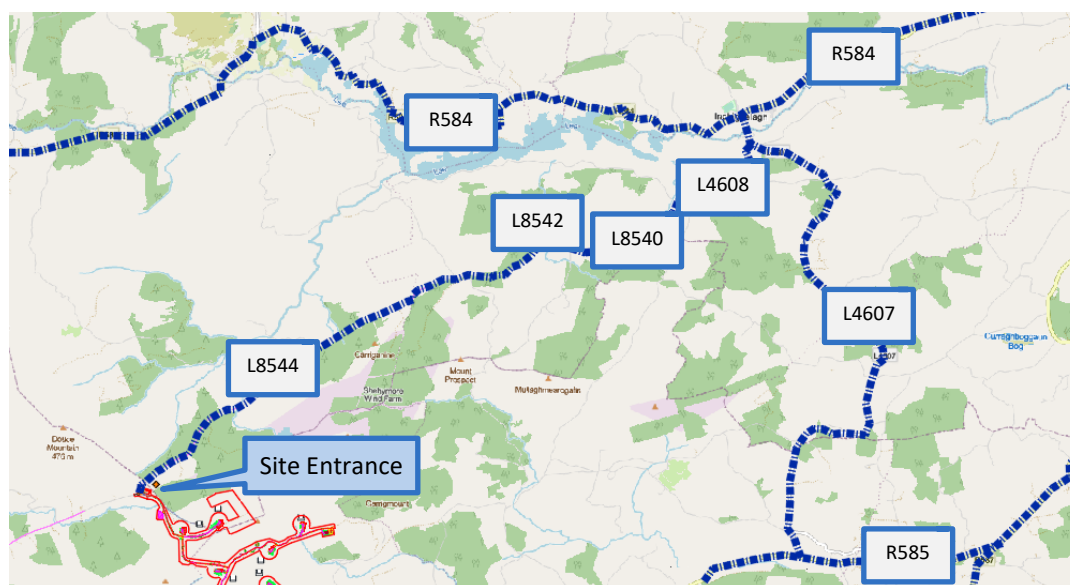


Figure 14.4 – Construction Haul Route

14.2.11 Haul Routes for Grid Connection HGV Traffic

All HGV traffic associated with the construction of Grid Connection between the Onsite Substation and Control Building and the 110 kV substation at Dunmanway or the Carrigdangan 110 kV substation will follow the selected Grid Connection Route and associated diversions to access the works. Construction vehicles will be prohibited from using local roads which are not part of the Grid Connection works or local diversions. The Grid Connection Routes are shown in **Figure 14.2**. Workers employed on the Grid Connection Route works will follow the selected Grid Connection Route shown in **Figure 14.2** to access the works. Details of traffic diversions during the construction of the Grid Connection Route are shown in Appendix B of the Traffic Management Plan in **Appendix 14.2**.

14.2.12 Haul Routes for Material Suppliers

The construction of the Proposed Development will require specific grades of granular material to be delivered to the Site for the structural layers of wind farm access roads, fill under Turbine Foundations and Turbine Hardstands / crane platforms. The construction of Turbine Foundations will require imported ready mix concrete and reinforcing steel. The construction of the Onsite Substation and Control Building will require delivery of general building materials such as concrete blocks. Precast concrete products will be required for onsite grid connections. The construction of the Grid Connection will require selected granular materials to backfill trenches and asphalt surfacing materials. The materials will be sourced from local quarries in the area such as those show on **Figure 14.5**.

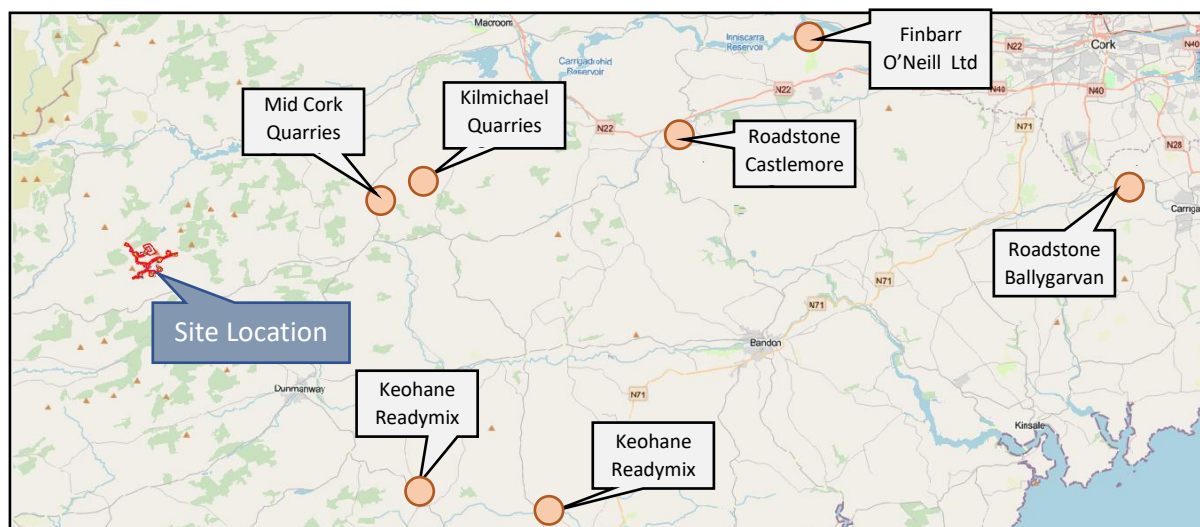


Figure 14.5 – Ready Mix Concrete and Granular Material Supplier

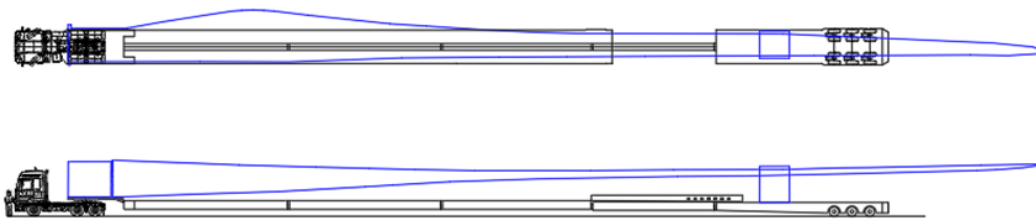
14.2.13 Haul Routes for the Removal of Material from Site

Topsoil and unsuitable subsoil material resulting from Site clearance will be processed / graded on Site and incorporated into non-structural elements of the design and used for site landscaping, suitable subsoil material resulting from site excavations will be incorporated into structural elements of the works. Surplus topsoil and subsoil will be deposited in the onsite borrow pit shown in **Figure 14.1**. Volumes of excavated material are detailed in the Proposed Development spoil management plan. The construction of the grid connection on the public road network will result in waste granular and asphalt material which will be transported from site for recycling / disposal at a licenced waste facility.

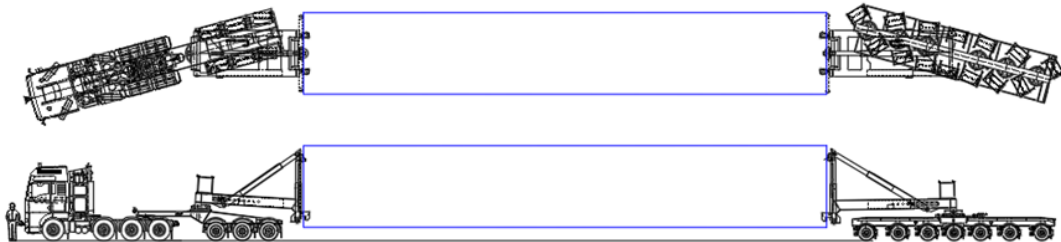
14.2.14 Delivery Vehicle Specification

Delivery of road construction materials, concrete for Turbine Foundations, building materials, drainage, ducting and cables will be carried out using standard heavy goods vehicles (HGV). Delivery of turbine components will be carried out using specialist abnormal load vehicles. Turbine blades will be delivered on an extendable semi-trailer, one per trailer. The turbine blades will be 73.9 m long, approximately 14 m of the blade will overhang the rear of the trailer. Following delivery to the Site, the trailer will be retracted for the return trip. Each turbine tower will be delivered to site in sections using tower clamps and extendable semi-trailers, the tower sections range in length from 33.0 m to 17.5 m with a maximum width of 4.45 m. All material deliveries will have a maximum axle load of 12 tonnes per axle, and a maximum gross vehicle weight of 139 tonnes. The main crane for turbine erection will have a maximum axle loading of 12 tonnes per axle and a maximum total weight of 100

tonnes. Vehicles delivering counterweights for the crane will have a maximum axle loading of up to 12 tonnes per axle. Abnormal load vehicles used for the transportation of turbine components are shown below. The transport vehicles used for transportation of components may differ from those shown below depending on the haulage contractor's preferences.



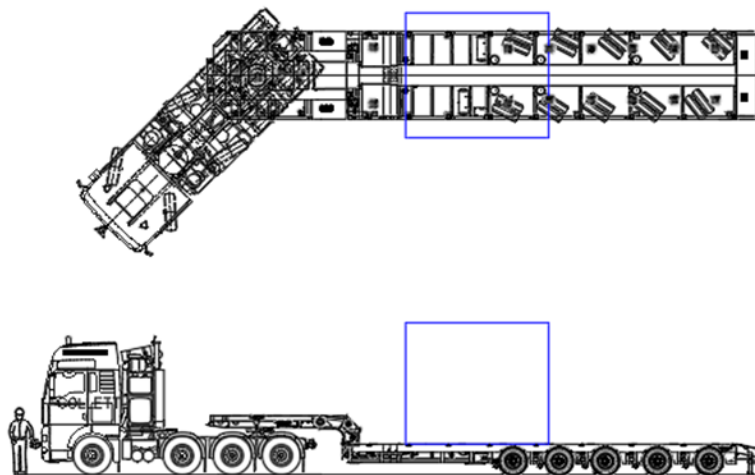
Typical Turbine Blade Transport Vehicle



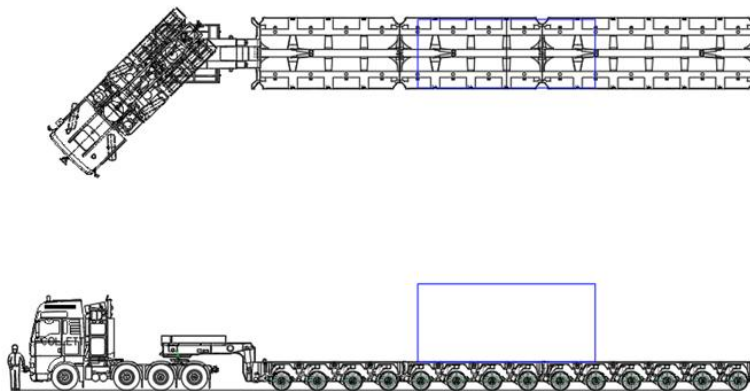
Typical Turbine Tower Transport Vehicle



Typical Nacelle Transport Vehicle



Typical Hub Transport Vehicle



Typical Drivetrain Transport Vehicle

14.2.15 Evaluation of Potential Effects

The baseline environment is described in **Section 14.2.6** of this report and in the Traffic and Transport assessment in **Appendix 14.1**. Baseline traffic volumes have been recorded during a site visit on Wednesday 20th November 2024 to record traffic volumes and turning movements of vehicles at the R584 / L4607 junction, R585 / L4607 junction and at the L4607 / L4608 junction. The traffic counts were carried out between 7.30 am and 9.30 am in the morning to capture peak traffic flows during the morning period.

A traffic analysis was carried out at the R584 / L4607 junction, R585 / L4607 junction and at the L4607 / L4608 junction using the 2024 Existing traffic flows to determine if capacity problems exist at the primary junctions in the vicinity of the Proposed Development.

Future year traffic assessments with TII factors for forecast traffic growth on the public road network were then carried out at the R584 / L4607 junction, R585 / L4607 junction and at the L4607 / L4608 junction using the following scenarios to determine if capacity problems would arise at the junctions with and without the development in place.

Do Nothing scenarios, Likely Evolution of the Baseline

- 2025 Projected traffic flows without the proposed Development (Planning Approval)
- 2035 Projected traffic flows without the proposed Development (Planning Period / Windfarm Construction)
- 2075 Projected traffic flows without the proposed Development (Operations Period)

Do something scenarios

- 2035 Projected traffic flows with the proposed Development (Wind Farm Construction Traffic)
- 2075 Projected traffic flows with the proposed Development (Wind Farm Operations Traffic)
- 2075 Projected traffic flows with the proposed Development (Wind Farm Decommissioning Traffic)

Traffic Infrastructure Ireland (TII) forecasts for future traffic growth on the public road network are published in PE-PAG-02017 "Travel Demand Projections". The growth factors are applied to the 2024 baseline traffic flows to approximate the traffic flows on the public road network in the future assuming the Proposed Development is granted planning permission in 2025, 10-year planning grant and construction in 2035 and a 40-year operational period and Decommissioning in 2075. The growth factors for the relevant assessment years using the central-growth scenario for County Cork are shown in **Table 14.4**.

Table 14.4: Traffic Growth Factors for Public Roads

Year	LGV Growth Factor	HGV Growth Factor
2024	1.000	1.000
2025	1.018	1.037
2035	1.168	1.351

Year	LGV Growth Factor	HGV Growth Factor
2075	1.600	2.938

A traffic assessment was carried out with the Proposed Development under construction in 2035 with additional traffic from unrelated planned and consented developments to determine if capacity problems would arise at the junctions due to combined traffic volumes in the vicinity of the Proposed Development.

Temporary traffic lights will be required for short periods on the L4607 and the R585 for traffic management during the construction of the Proposed Development. A traffic analysis has been carried out to assess the impact of the temporary traffic lights on the L4607 and the R585.

The data from the Traffic and Transport assessment in **Appendix 14.1** was then used to identify and categorise potential effects likely to affect the road network resulting from the construction, operation and Decommissioning of the Proposed Development.

14.2.16 Accident Statistics

Mapped statistics for accident data in the area were not available from the RSA website in November 2024.

14.2.17 Description of Effects

The description of effects arising from traffic associated with the Proposed Development are given in Table 3.4 of the EPA Guidelines 2022 and are categorised as follows in **Table 14.5**.

Table 14.5: Description of Effects

Table 3.4 Descriptions of Effects	
Quality of Effects It is important to inform the nonspecialist reader whether an effect is positive, negative or neutral.	Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/Adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
	Imperceptible

Describing the Significance of Effects 'Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Determining Significance).	An effect capable of measurement but without significant consequences.
	Not Significant An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
	Very Significant An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics.
Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	Extent Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
	Context Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur so that the CA can take a view of the balance of risk over advantage when making a decision.	Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Momentary Effects Effects lasting from seconds to minutes.
	Brief Effects Effects lasting less than a day.
	Temporary Effects Effects lasting less than a year.
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.
	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years.
	Reversible Effects Effects that can be undone, for example through remediation or restoration.
	Frequency of Effects Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Describing the Types of Effects	Indirect Effects (a.k.a. Secondary or Off-site Effects)

	Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative Effects The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.
	'Do-nothing Effects' The environment as it would be in the future should the subject project not be carried out.
	'Worst-case' Effects The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable Effects When the full consequences of a change in the environment cannot be described.
	Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
	Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents (e.g. combination of SO _x and NO _x to produce smog).

14.2.18 Assessing Receptor Sensitivity

The sensitivity of the transport infrastructure has been identified utilising the criteria outlined in the Traffic Management Guidelines published by the Department of Transport and TII publication DN-GEO-03031, Rural Road Link Design. These criteria are outlined in **Table 14.6** below.

Table 14.6: Receptor Sensitivity

Importance/Sensitivity of Receptor	Resource	Receptor
High	Local Tertiary and Local Secondary rural roads Local urban Collector and Access roads Where the road is a minor rural road, not constructed to accommodate frequent use by heavy goods vehicle (HGVs). Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	Where a location is a large rural settlement containing a high number of community and public services and facilities. Urban roads for local journeys and provide links to major routes. Many such roads will have residential and commercial access/frontage and there will be significant movements of pedestrians and cyclists
Medium	Local Primary rural, Regional roads and National Secondary Roads District Primary urban roads Roads capable of regular use by HGV traffic.	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services. These roads provide links between local districts within urban areas. They

Importance/Sensitivity of Receptor	Resource	Receptor
	Includes roads where there is some traffic calming or traffic management measures.	can have significant movements of buses and cyclists along them (segregated or on-road) and pedestrians crossing them where there are schools, shops, offices and businesses.
Low	National Primary Roads Where the road is constructed to accommodate general and HGV traffic moving between primary destinations. Includes roads with little or no traffic calming or traffic management measures.	Where a location is a small rural settlement, few community or public facilities or services.
Very Low	Motorways and Dual carriageways Where roads have no adjacent settlements.	Where a location includes individual dwellings or scattered settlements with no facilities or residents/workers travelling by foot or by vehicle.

14.2.19 Assessing Magnitude of Change

The magnitude of potential impacts has been defined in accordance with the criteria provided in TII Publication PE-PDV-02045, Traffic and Transport Assessment Guidelines and traffic management guidelines published by the Department of Transport. PE-PDV-02045 requires a traffic and transport assessment to be carried out for developments which will generate the following vehicle movements:

- 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.

The traffic management guidelines require a traffic assessment for the following criteria:

- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road
- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive

The assessment of priority road junction and road network capacity is carried out using industry standard TRL traffic modelling software PICADY to model isolated priority junctions as recommended in PE-PDV-02045 section 2.5.2.

Road network and junction capacity is measured in terms of level of service (LOS) thresholds which are based on the queuing delay on each arm of the junction. The transportation LOS system uses the letters A through F, with the following definitions:

- A = Free flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced or breakdown flow

The magnitude of change based on increased traffic volumes on the public road network is measured in terms of LOS on the network arm as follows.

- High – considerable deterioration – Network arm has exceeded LOS = D (Approaching Unstable Flow) due to increased traffic volumes.
- Medium – readily apparent change in conditions - Network arm has entered LOS = D (Approaching unstable flow) due to increased traffic volumes.
- Low – perceptible change in conditions - Network arm has entered LOS = C (Stable Flow) due to increased traffic volumes.
- Negligible — no discernible change in conditions - Network arm has a LOS = A (Free Flow) / B (Reasonably free flow)

14.2.20 Assessing Significance of Effects

To determine the overall significance of the effects, the results from the receptor sensitivity and impacts magnitude assessment are correlated and classified using **Figure 3.4** of the EPA Guidelines, May 2022 as shown in **Figure 14.6** below.

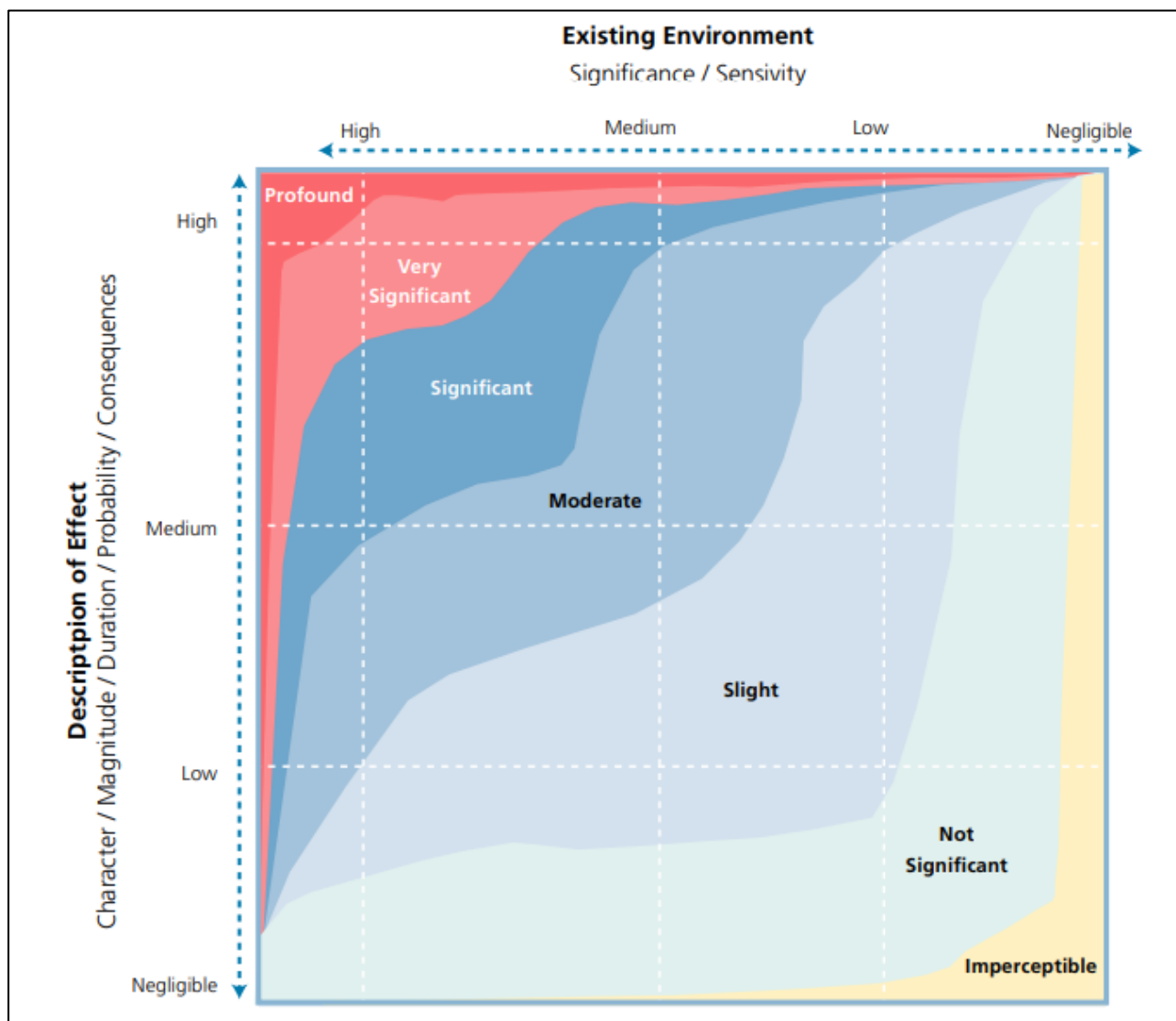


Figure 14.6 – EPA Guidelines 2022, Significance of Effects

14.2.21 Sensitive Receptors – Construction Period

The following sensitive receptors will be impacted by the additional traffic generated by the construction of the Proposed Development and by works carried on and adjacent to the public road network as part of the Proposed Development. Detailed descriptions of the works locations and traffic management measures are included in the Traffic Management Plan in **Appendix 14.2**.

Table 14.7: Sensitive Receptors - Construction

Receptor	Sensitivity	Reason for inclusion
Inchigeelagh Village	High	Increased traffic Volumes due to construction and turbine delivery traffic.
L8544	High	Increased traffic Volumes due to construction and turbine delivery traffic.

Receptor	Sensitivity	Reason for inclusion
		Construction of wind farm site entrance Construction of Grid Connection
L8542	High	Increased traffic Volumes due to construction and turbine delivery traffic. Road widening for TDR Grid Connection works
L8540	High	Increased traffic Volumes due to construction and turbine delivery traffic. Road widening for TDR Grid Connection works (Carridangan Option)
L4608	High	Increased traffic Volumes due to construction and TDR traffic. Road widening for TDR
L4607	Medium	Increased traffic Volumes due to construction and TDR traffic. Enabling works for TDR
R584	Medium	Increased traffic Volumes due to construction traffic.
R585	Medium	Increased traffic Volumes due to construction and turbine delivery traffic. Enabling works for TDR Grid Connection works (Dunmanway Option A)
N22	Low	Increased traffic Volumes due to construction and TDR traffic.
N40	Low	Increased traffic Volumes due to construction and TDR traffic.
N28	Low	Increased traffic Volumes due to construction and TDR traffic.
L8542	High	Grid connection works (Dunmanway Option A)
L8551	High	Grid connection works (Dunmanway Option A)
L85514	High	Grid connection works (Dunmanway Option A)
L8552	High	Grid connection works (Dunmanway Option A)
R587	Medium	Grid connection works (Dunmanway Option A)
L4621	High	Grid connection works (Dunmanway Option A)
R586	Medium	Grid connection works (Dunmanway Option A)
L8536	High	Grid connection works (Carridangan Option B)
L8537	High	Grid connection works (Carridangan Option B)
L4607	High	Grid connection works (Carridangan Option B)
L8535	High	Grid connection works (Carridangan Option B)

14.2.22 Sensitive Receptors – Operations Period

The following sensitive receptors will be impacted by the additional traffic generated by the operation of the Proposed Development.

Table 14.8: Sensitive Receptors - Operation

Receptor	Sensitivity	Reason for inclusion
Inchigeelagh Village	High	Increased traffic Volumes due to operations traffic.
L8544	High	Increased traffic Volumes due to operations traffic.
L8542	High	Increased traffic Volumes due to operations traffic.
L8540	High	Increased traffic Volumes due to operations traffic.
L4608	High	Increased traffic Volumes due to operations traffic.
L4607	Medium	Increased traffic Volumes due to operations traffic.
R584	Medium	Increased traffic Volumes due to operations traffic.
R585	Medium	Increased traffic Volumes due to operations traffic.

14.2.23 Sensitive Receptors – Decommissioning Period

The following sensitive receptors will be impacted by the additional traffic generated by the Decommissioning of the Proposed Development and by works carried on and adjacent to the public road network as part of the Proposed Development.

Table 14.9: Sensitive Receptors - Decommissioning

Receptor	Sensitivity	Reason for inclusion
Inchigeelagh Village	High	Increased traffic Volumes due to Decommissioning and turbine removal traffic.
L8544	High	Increased traffic Volumes due to Decommissioning and turbine removal traffic. Removal of wind farm site entrances Removal of Grid Connection cable
L8542	High	Increased traffic Volumes due to Decommissioning and turbine removal traffic. Removal of wind farm site entrances Removal of Grid Connection cable
L8540	High	Increased traffic Volumes due to Decommissioning and turbine removal traffic. Removal of wind farm site entrances Removal of Grid Connection cable
L4608	High	Increased traffic Volumes due to Decommissioning and turbine removal traffic. Removal of wind farm site entrances
L4607	Medium	Increased traffic Volumes due to Decommissioning and turbine removal traffic. Removal of wind farm site entrances

Receptor	Sensitivity	Reason for inclusion
R584	Medium	Increased traffic Volumes due to Decommissioning traffic.
R585	Medium	Increased traffic Volumes due to Decommissioning and turbine removal traffic. Removal of Grid Connection cable
N22	Low	Increased traffic Volumes due to Decommissioning and turbine removal traffic.
N40	Low	Increased traffic Volumes due to Decommissioning and turbine removal traffic.
N28	Low	Increased traffic Volumes due to Decommissioning and turbine removal traffic.
L8542	High	Cable removal (Dunmanway Option A)
L8551	High	Cable removal (Dunmanway Option A)
L85514	High	Cable removal (Dunmanway Option A)
L8552	High	Cable removal (Dunmanway Option A)
R587	Medium	Cable removal (Dunmanway Option A)
L4621	High	Cable removal (Dunmanway Option A)
R586	Medium	Cable removal (Dunmanway Option A)
L8536	High	Cable removal (Carridangan Option B)
L8537	High	Cable removal (Carridangan Option B)
L4607	High	Cable removal (Carridangan Option B)
L8535	High	Cable removal (Carridangan Option B)

14.3 ASSESSMENT OF POTENTIAL EFFECTS

14.3.1 Wind Farm Traffic Generation

The estimated timescale for the completion of the construction phase is 16 to 18 months, inclusive of all works to access tracks, access routes, Onsite Substation and Control Building and erection and commissioning of turbines and Grid Connection works.

The estimated HGV and abnormal load deliveries of materials and turbine components required to construct the Proposed Development, and the Grid Connection are given in **Table 14.10**. It is estimated that during the wind farm construction, an approximate total of 8,017 loads of material and building supplies will be delivered and removed from the Site. The majority of HGV movements to and from Site will occur during the first ten months of the construction period and will be associated with site road construction, turbine hardstand construction and turbine foundation construction.

The number of staff on site will vary according to the phase of the construction, peaking at approximately 92 at the height of the construction period. It is expected that the majority of workers will arrive on site in mini-buses and crew vehicles which are used to transport teams of workers from different construction disciplines. Labour vehicle sharing will be actively encouraged to reduce vehicular movements.

It is estimated that 55-60 staff light goods vehicles (LGV) will visit the site daily during the peak construction period. Parking for staff will be provided within the Temporary Construction Compound and within the works area during grid connection and TDR enabling works. No parking will be allowed for construction workers on the public road network in the vicinity of the Site. A small number of additional unscheduled visits may be required throughout the construction period for site inspections and unforeseen circumstances.

Table 14.10: HGV and Abnormal Load Deliveries

Materials	Quantity	No. Of Deliveries	Timeframe (Months)	Maximum Loads / Day	Vehicle Type
Site Establishment & Fencing	-	10	1	5	OGV2
Temporary Construction Compound	1,845m ³	185	1	10	OGV2
Site Drainage	-	10	1-2	1	OGV2
Construction of Internal Access Road	14,300m ³	1,430	2-8	10	OGV2
Construction of Turbine Hardstands	15,800m ³	1,580	2-8	10	OGV2
Local Road Widening - 2.2km Excavation = 2,000m ³ Strengthening = 2,000m ³	4,000m ³	400	4-10	10	OGV2
Construction of Turbine Foundations (950m ³ Per Base)	7,600m ³	960	6-10	120	OGV2
Substation Construction		20	4-8	2	OGV2
Substation Electrical Works		20	14-16	2	OGV1
Substation Commissioning		5	16	2	OGV1
Internal Cabling Installation		50	8-10	5	OGV2
Turbine Delivery and Erection	8 Turbines	136	10-14	3	OGV2
Grid Connection (Dunmanway) Excavated material 16,680m ³ Imported Backfill 16,680m ³ Reinstatement 2,500m ³	27,800m 35,860m ³	3,586	4-14	15	OGV2
Energisation		5	14-16	2	OGV1
Turbine Commissioning		5	14-16	2	OGV1
Site Restoration		15	15-16	5	OGV1 / OGV2
Total		8,017			

A schedule of maximum predicted daily traffic movements to site over the 16 – 18 month construction period is shown in **Table 14.11**.

Table 14.11: HGV and Abnormal Load Deliveries to Site During Construction

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Establishment & Fencing	5																	
Temporary Construction Compound	10																	
Site Drainage	1	1																
Construction of Internal Access Road		10	10	10	10	10	10	10										
Construction of Turbine Hardstands		10	10	10	10	10	10	10										
Local Road Widening				10	10	10	10	10										
Construction of Turbine Foundations						120	120	120	120	120								
Substation Construction				2	2	2	2	2										
Substation Electrical Works														2	2			
Substation Commissioning																2		
Internal Cabling Installation								5	5	5								
Turbine Delivery and Erection										3	3	3	3					
Grid Connection (Option A / Option B)				15	15	15	15	15	15	15	15	15	15	15				
Energisation														2	2	2		
Turbine Commissioning														2	2	2		
Site Restoration															5	5		
Total	16	21	20	47	47	167	167	172	140	143	18	18	18	21	11	11	0	0

The first month of the wind farm construction period will involve deliveries of materials for site access works, Temporary Construction Compound, site offices and site security. This period will include deliveries of fencing materials for site boundaries and compounds, temporary fencing to protect trees, hedges and ecological buffer zones, road construction materials for Temporary Construction Compound and site entrance, and delivery of temporary site office units. It is anticipated that a maximum of 16 HGV vehicles (32 HGV movements) will visit the Site on a daily basis during the first month of the contract.

Months 2 to 10 will involve deliveries of materials for Turbine Hardstands, Turbine Foundations, site access tracks, Onsite Substation and Control Building and Wind Farm Internal Cabling, this period will include deliveries of road construction materials for access tracks and Turbine Hardstands, ready mix concrete and steel reinforcement for Turbine Foundations. It is anticipated that a maximum of 172 HGV vehicles (344 HGV movements) will visit the Site on a daily basis during the period. The peak traffic will occur on 8 days during the 5 month period between months 6 to 10 when Turbine Foundations are poured. Concrete pours for individual Turbine Foundations will generate 120 HGV arrivals (240 HGV movements).

Months 10 to 16 will involve HGV movements for works associated with turbine delivery, turbine erection, turbine commissioning, electrical works, Grid Connection works, road reinstatement, road surfacing, site landscaping and the removal of temporary works materials such as offices and fencing from site. It is anticipated that a maximum of 21 HGV vehicles (42 HGV movements) will visit the site on a daily basis during this period.

Based on the indicative timetable outlined above the peak times for HGV deliveries to Site will be during months 6 to 10 (42 daily HGV deliveries + 120 additional deliveries during concrete pours which will take place on eight separate days during this period). Project traffic will be distributed throughout the day with morning, afternoon and evening peaks. The distribution of Project traffic is shown in **Table 14.12** during the construction of Turbine Foundations.

Table 14.12: Development Traffic Profile

Time	Arrivals		Departures	
	HGV	LGV	HGV	LGV
06.00 – 07.00		35		
07.00 – 08.00	20	20	20	
08.00 – 09.00	15	5	15	2
09.00 – 10.00	15		15	
10.00 – 11.00	15		15	
11.00 – 12.00	20		20	
12.00 – 13.00	15		15	
13.00 – 14.00	10	5	10	5
14.00 – 15.00	15		15	

Time	Arrivals		Departures	
	HGV	LGV	HGV	LGV
15.00 – 16.00	15		15	
16.00 – 17.00	10		10	
17.00 – 18.00	7	2	7	5
18.00 – 19.00	5		5	20
19.00 – 20.00				35

14.3.2 Magnitude and Significance of Effects

The magnitude and significance of effects and their impact on public road users at works locations on the public road network is analysed in **Table 14.13**. The impact of the effects is based on the Traffic and Transport Assessment in **Appendix 14.2** which gives details of traffic analysis at junctions in the vicinity of the Site and the Traffic Management Plan in **Appendix 14.3** which gives details of works duration, traffic management, road closures and diversions.

Table 14.13: Magnitude and Significance of Impacts

Receptor	Sensitivity	Magnitude	Significance of Effect	Duration of Effect
Construction Period				
Inchigeelagh Village	High	Medium	Moderate / Significant	Temporary / Short Term
L8544	High	Medium	Moderate / Significant	Temporary / Short Term
L8542	High	Medium	Moderate / Significant	Temporary / Short Term
L8540	High	Medium	Moderate / Significant	Temporary / Short Term
L4608	High	Medium	Moderate / Significant	Temporary / Short Term
L4607	Medium	Medium	Moderate	Temporary / Short Term
R584	Medium	Medium	Moderate	Temporary / Short Term
R585	Medium	Medium	Moderate	Temporary / Short Term
N22	Low	Low	Not Significant	Temporary
N40	Low	Low	Not Significant	Temporary
N28	Low	Low	Not Significant	Temporary
L8542	High	Medium	Moderate / Significant	Temporary
L8551	High	Medium	Moderate / Significant	Temporary
L85514	High	Medium	Moderate / Significant	Temporary
L8552	High	Medium	Moderate / Significant	Temporary
R587	Medium	Medium	Moderate / Significant	Temporary
L4621	High	Medium	Moderate / Significant	Temporary

Receptor	Sensitivity	Magnitude	Significance of Effect	Duration of Effect
R586	Medium	Medium	Moderate	Temporary
L8536	High	Medium	Moderate / Significant	Temporary
L8537	High	Medium	Moderate / Significant	Temporary
L4607	High	Medium	Moderate / Significant	Temporary
L8535	High	Medium	Moderate / Significant	Temporary
Operations Period				
Receptor	Sensitivity	Magnitude	Significance of Effect	Duration of Effect
Inchigeelagh Village	High	Negligible	Not Significant	Long Term
L8544	High	Negligible	Not Significant	Long Term
L8542	High	Negligible	Not Significant	Long Term
L8540	High	Negligible	Not Significant	Long Term
L4608	High	Negligible	Not Significant	Long Term
L4607	Medium	Negligible	Not Significant	Long Term
R584	Medium	Negligible	Not Significant	Long Term
R585	Medium	Negligible	Not Significant	Long Term
Decommissioning Period				
Receptor	Sensitivity	Magnitude	Significance of Effect	Duration of Effect
Inchigeelagh Village	High	Medium	Moderate / Significant	Temporary / Short Term
L8544	High	Medium	Moderate / Significant	Temporary / Short Term
L8542	High	Medium	Moderate / Significant	Temporary / Short Term
L8540	High	Medium	Moderate / Significant	Temporary / Short Term
L4608	High	Medium	Moderate / Significant	Temporary / Short Term
L4607	Medium	Medium	Moderate	Temporary / Short Term
R584	Medium	Medium	Moderate	Temporary / Short Term
R585	Medium	Medium	Moderate	Temporary / Short Term
N22	Low	Low	Slight / Not Significant	Temporary / Short Term
N40	Low	Low	Slight / Not Significant	Temporary / Short Term
N28	Low	Low	Slight / Not Significant	Temporary / Short Term
L8542	High	Low	Slight / Moderate	Temporary
L8551	High	Low	Slight / Moderate	Temporary
L85514	High	Low	Slight / Moderate	Temporary
L8552	High	Low	Slight / Moderate	Temporary
R587	Medium	Low	Slight	Temporary
L4621	High	Low	Slight / Moderate	Temporary
R586	Medium	Low	Slight	Temporary
L8536	High	Low	Slight / Moderate	Temporary

Receptor	Sensitivity	Magnitude	Significance of Effect	Duration of Effect
L8537	High	Low	Slight / Moderate	Temporary
L4607	High	Low	Slight / Moderate	Temporary
L8535	High	Low	Slight / Moderate	Temporary

14.3.3 Air Quality

Construction HGV's, LGV's and private vehicles are subject to government HCV, LCV, ADR and NCT emissions tests. A full air quality assessment is included in **Chapter 15** of the EIA.

14.3.4 Noise and Vibration

There is likely to be some noise and vibration due to the predicted short-term increase in HGV movements along the Construction Haul Routes to the Proposed Development. The increased traffic volumes may cause disturbance to residents living along the local road network on the Project Construction Haul Route, Turbine Delivery Route and Grid Connection route. Due to the relatively low number of trips generated per day in relation to existing traffic volumes on the national and regional road network, the restrictions on working hours and the short-term nature of the construction and Decommissioning phases, the effects of noise and vibration are not predicted to be significant. Construction HGV's, LGV's and private vehicles are subject to government HCV, LCV and NCT noise and suspension tests. A full noise and vibration assessment is included in **Chapter 10** of the EIAR.

14.3.5 Pedestrians and Vulnerable Road Users

Pedestrian and other vulnerable road users may be affected by the works at the Proposed Development entrance, Construction Haul Routes, Turbine Delivery Route enabling works, Grid Connection works and increased vehicle movements during construction and delivery of turbine components. The construction of the Site entrance and modifications to the public road network at various locations along the Turbine Delivery Route will be carried out under a road opening licence and traffic management plan which will accommodate pedestrians at the works locations. The effect of the works on pedestrian safety is therefore assessed to be medium sensitivity for a short-term duration. Pedestrian facilities may be altered for short periods during the transportation of turbine components. During these periods alternative arrangements will be put in place for pedestrians.

14.3.6 Driver Delay

The traffic analysis carried out in the Traffic and Transport Assessment in **Appendix 14.1** at the L4607 / L4608 junction shows that drivers will experience short delays due to increased traffic volumes during the wind farm construction and Decommissioning periods. In 2035, vehicles joining the L4607 from the L4608 will experience a delay of 7 seconds without development construction traffic and a delay of 11 seconds with the additional traffic generated by wind farm construction. In 2075, vehicles joining the L4607 from the L4608 will experience a delay of 7 seconds without development decommissioning traffic and a delay of 12 seconds with the additional traffic generated by wind farm decommissioning. The effects of the additional traffic volumes are assessed as slight and temporary with a duration of 16 months.

Enabling works on the public road network will be carried out using traffic management and temporary traffic signals at locations where it is not possible to maintain two way traffic. Analysis carried out in the Traffic and Transport Assessment in **Appendix 14.1** shows that vehicles will experience delays of approximately 75 seconds when the lights are in place on the L4607 and the R585. The effects of the additional traffic volumes are assessed as slight and short term. The location and duration of works requiring temporary traffic lights is detailed in the traffic management Plan in **Appendix 14.2**.

The delivery of turbine components will take place outside peak traffic periods to avoid disruption on the public road network. The TDR for the transportation of turbine components consisting of dual carriageway will have unrestricted passing opportunities and no delays to public road users are expected. There is potential for momentary delay to public road users in the urban areas surrounding the Port of Cork at the R585 transshipment areas, R585 / L4607 junction, L4607 / L4608 junction and on the local road network leading to the Site entrance. Following assessment, it is concluded that delays to traffic due to turbine delivery will be imperceptible and momentary in duration.

The construction of Grid Connection works on public roads will require road closures on local roads where the road width is too narrow to support traffic flows. The road closures will result in delays to public road users and increased journey times. Following assessment, it is concluded that these effects will be slight / moderate and short term.

14.4 MITIGATION MEASURES

14.4.1 Construction Phase

Although no long-term significant effects have been predicted, the proposed mitigation measures have been incorporated into the design to maintain the highest standard of road safety, minimise delay and disruption to all public road users, and to comply with statutory regulations:

- Prior to delivery of abnormal loads i.e. turbine components, the Applicant or their representatives, will consult with An Garda Síochána, TII, PPP operators and all relevant Local Authorities to obtain all necessary abnormal load permits and discuss the requirement for a Garda escort. The Applicant will also outline the intended timescale for deliveries and efforts can be made to avoid peak times such as school drop off times, church services, peak traffic times where it is considered this may lead to unnecessary disruption, and abnormal loads may travel at night and outside the normal construction times as may be required by An Garda Síochána. Local residents at sensitive locations along the affected route will be notified of the timescale for abnormal load deliveries.
- Prior to delivery of abnormal loads, the Applicant or their representatives, will consult with TII, PPP operators and all Local Authorities through which the abnormal loads will pass and agree the specification for any enabling works to be carried out on the Turbine Delivery Route.
- Prior to the delivery of turbine components, a survey of the Turbine Delivery Route will be undertaken to identify if any overhead lines or height restrictions at toll booths will need to be lifted along the route to allow abnormal loads such as tower sections and nacelles to be delivered.
- Prior to the delivery of turbine components, a trial run shall be carried out between the Port of Cork and the Proposed Development entrance using an abnormal load vehicle with a retractable load gauge to determine that abnormal load vehicles can transverse the route without undue delay and disruption to public road users.
- During the construction and Decommissioning phases, road works signs in accordance with the requirements of Chapter 8 of the Traffic Signs Manual will be erected at all the Proposed Development entrance and at all locations on the Grid Connection route and Turbine Delivery Route which are being modified to facilitate turbine delivery. Details of signage are given in the Traffic management plan in Appendix 14.2.
- Wheel cleaning equipment will be used at all site entrance with the public road to prevent any mud and/or stones being transferred from Site to the public road network. All drivers will be required to see that their vehicle is free from dirt and stones prior to departure from the Site.

- To reduce dust emissions, vehicle containers/loads will be covered during both entrance and egress to the Site where required.
- All dust generating activities will be minimised where practical during windy conditions, and drivers will adopt driving practices to minimise the creation of dust. Where conditions exist for dust to become friable, techniques such as damping down of the potentially affected areas may be employed.
- Access to the construction site will be controlled by on Site personnel and all visitors will be asked to sign in and out of the Site by security/Site personnel on entering and exiting the site.
- All Site visitors will undergo a Site induction covering Health and Safety issues at the Contractor's temporary compound and will be required to wear appropriate Personal Protective Equipment (PPE) while onsite.
- A condition survey of the road network in the vicinity of the site entrances will be carried out and agreed with Cork County Council prior to any works being carried out on site.
- All works on the public road network will be carried out using an approved road opening licence and traffic management plan.
- All wind farm vehicles shall have roof mounted flashing beacons when working on the public road network or will use their hazard lights within the Site.
- A speed limit of 25 km/h shall apply to all vehicles within the Site.

14.5 CUMULATIVE EFFECTS

14.5.1 Unrelated Proposed and Consented Developments

The Cork County Council planning portal provides details of planned developments in County Cork. A search of the portal in November 2024 shows that there are no planned developments in the vicinity of the Project which will generate a significant number of new trips on the public road network. The Project is located close to the regional road network with links to the N22. National primary road. The results of the traffic analysis in **Appendix 14.1** show that the road and junction network will continue to operate with reserve capacity during construction, operation and Decommissioning of the Proposed Development. An additional analysis was carried out to test the capacity of the junctions with the forecast growth on the public road network increased by an additional 10% to test the capacity of the L4067 / L4068 junction with additional development traffic which may arise in the future. The results of the analysis show that the road network will continue to operate with reserve capacity with additional development traffic during construction in 2035 and decommissioning in 2075. The results of the traffic analysis are included in **Appendix 14.1**.

14.6 RESIDUAL EFFECTS OF THE DEVELOPMENT

14.6.1 Construction Phase Residual Effects

The results of the traffic analysis in **Appendix 14.1** have shown that the existing public road network can accommodate the increased traffic volumes generated by the Project. Works on the public road network will be carried out using an approved traffic management plan and site entrances will be signposted in accordance with chapter 8 of the Traffic Signs Manual. Visibility at site entrance will be maintained in accordance with the Cork County Council Development Plan. There is likely to be a slight residual effect on the condition of road surfaces at the site entrance due to vehicles turning and on the Grid Connection route prior to final road reinstatement. Following final road reinstatement, there will be no residual effects associated with the construction of the Project.

14.6.2 Operational Phase Residual Effects

There will be no residual effects on the public road network during the operational phase of the Proposed Development. The results of the traffic analysis in **Appendix 14.1** have shown that the existing public road network can accommodate the operational traffic generated by the Proposed Development when combined with predicted public traffic growth beyond 2075. The interface between the Proposed Development and the public road network has been designed to eliminate residual risk with visibility splays, signs and road markings and dwell areas to allow vehicles to pull off the road when entering the Site.

14.6.3 Final Decommissioning Phase Residual effects

The results of the traffic analysis in **Appendix 14.1** have shown that the existing public road network can accommodate the increased traffic volumes generated by the Proposed Development during Decommissioning. There is likely to be a slight residual effect on the condition of road surfaces at the site entrance due to vehicles turning. The Decommissioning will be subject to a separate traffic management plan as the destination for recycled turbine parts may differ from the port of origin.

14.7 SUMMARY OF SIGNIFICANT EFFECTS

This section has assessed the significance of potential effects of the Project on traffic and transport.

Following assessment of the Quality of effects on the public road network, it has been concluded that the Quality of effects will be neutral with increased traffic flows during the construction and Decommissioning of the Proposed Development with no permanent changes to the geometry of the public road network and its associated junctions. Grid

Connection works on the local road network requiring road closures have been assessed as negative due to the short-term disruption to public road users resulting from road closures and driver delay resulting from temporary traffic lights and traffic diversions.

Following assessment, it has been concluded that the significance of the effects on the public road network where traffic management / two-way traffic flows can be maintained during works has been assessed as slight. The significance of the effects has been assessed as moderate / significant on local roads where road closures will be required to carry out the grid connection works.

Following assessment, it has been concluded that the duration of effects relating to increased HGV traffic flows in the vicinity of the Site have been assessed as temporary and may last up to 10 months during the construction and Decommissioning of the Proposed Development, the maximum effects from increased HGV traffic flows will occur on 8 days during the 16-18 month construction period during the construction of Turbine Foundations.

Following assessment, it has been concluded that the duration of effects relating to Grid Connection works, enabling works on the Turbine Delivery Route and delivery of turbine components have been assessed as temporary lasting less than one year.

14.8 STATEMENT OF SIGNIFICANCE

This assessment has identified that the potential effects of the Proposed Development on traffic and transport during the construction and decommissioning periods are considered to be, **Not Significant to Moderate** on the national and regional road network and **Moderate to Significant** on the local road network. The significant effects of construction works and increased traffic volumes at sensitive locations such as Inchigeelagh village and the local road network in the vicinity of the Proposed Development will occur for a short period of time during the construction and decommissioning periods. During the construction and decommissioning periods, general and specific mitigation measures will be put in place to minimise disruption. The potential effects of the Proposed Development on traffic and transport during the operation of the Proposed Development are considered to be **Not Significant** on the public road network.