15. MATERIAL ASSETS

Material Assets are defined in the '*Guidelines on the Information to be contained in Environmental Impact Assessment Reports*' (EPA, 2022) as '*built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure*'. They may be either of human or natural origin. The cultural assets of Archaeology and Cultural Heritage are addressed in Chapter 13 of this Environmental Impact Assessment Report (EIAR). Economic assets of natural heritage include non-renewable resources such as minerals or soils, and renewable resources such as wind and water. These assets are addressed in Chapter 8 (Land, Soils & Geology), Chapter 9 (Hydrology & Hydrogeology), Chapter 10 (Air Quality), and Chapter 11 (Climate). Tourism and amenity resources, which are also considered material assets, are addressed in Chapter 5 (Population & Human Health) and in Appendix 5-3 Tourism Impact Assessment. The Population and Human Health chapter also addresses existing land-uses (economic assets), including forestry and agriculture.

This chapter of the EIAR addresses the likely significant effects of the Proposed Development on transportation infrastructure (Section 15.1 Traffic and Transport), on Telecommunications and Aviation (Section 15.2) and Other Material Assets (Section 15.3), which are economic assets of human origin. Waste Management is also considered within EPA, 2022 as part of Material Assets. EPA Waste Management pertaining to the construction, operation and decommissioning of the Proposed Development is summarised in Section 4.4.1 of Chapter 4 (Description of the Proposed Development) of the EIAR. Traffic volumes generated by the removal of waste from the Proposed Development to fully authorised waste facilities, is considered in Section 15.1 below.

This chapter of the EIAR has been prepared in accordance with the requirements of the EIA legislation and guidance outlined in Chapter 1 (Introduction).

As detailed in Section 1.1.1 in Chapter 1 (Introduction), for the purposes of this EIAR, the various project components are described and assessed using the following references: 'Proposed Development', 'proposed turbines', the 'Site', the ' 2020 Application' and the 'Kealkill Wind Farm'. Please see Section 1.1.1 of this EIAR for further details. A detailed description of the Proposed Development is provided in Chapter 4 (Description of the Proposed Development) of this EIAR.

15.1 Traffic and Transport

15.1.1 Introduction

15.1.1.1 Background and Objectives

The purpose of this section is to assess the effects on roads and traffic of the additional traffic movements that will be generated during the construction, operational and decommissioning phases of the Proposed Development.

For developments of this nature, the construction phase is the critical period with respect to the traffic effects experienced on the surrounding road network in terms of both the additional traffic volumes that will be generated on the road network, and the geometric requirements of the abnormally large loads associated with the wind turbine plant. The requirements of the additional traffic and abnormal sized loads generated during the construction stage were assessed on both the external highway network and at the proposed junction that will provide access to the Site.

It should be noted that abnormal weight loads are not a feature of the turbine delivery vehicles, they are abnormal in size only. All construction and delivery vehicles for the Proposed Development will be subject to the standard axle weight requirements set out under Road Traffic Regulations and therefore the loadings from construction traffic will not exceed the relevant standards. Notwithstanding the need

to use some specialist vehicles to facilitate turbine delivery, it should be noted that the number of load-bearing axles for any specialist vehicles carrying large loads are designed to ensure that the load on any one axle does not exceed acceptable load bearing statutory limits.

The magnitude of the increase in traffic volumes experienced on the surrounding network is identified during the various construction stages of the Proposed Development. Preliminary traffic management measures are also provided in Sections 15.1.7 and 15.1.10.5 aimed at minimising the traffic impact on the local highway network.

15.1.1.2 Statement of Authority

This section of the EIAR has been prepared by Alan Lipscombe of Alan Lipscombe Traffic and Transport Consultants Ltd. Alan is a competent expert in traffic and transport assessments. In 2007 Alan set up a traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the University of Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic, including many wind farm developments including the following; Ardderroo, Derrinlough, Knocknamork, Shehy More, Cloncreen, Derrykillew, Ballyhorgan, Lettergull, Barnadivane, Cleanrath, Knockalough, Sheskin South and Borrisbeg.

Alan has a BEng (hons) Degree in Transportation Engineering (Napier University, Edinburgh, 1989), is a member of Engineers Ireland and of the Institute of Highways and Transportation and is a TII accredited Road Safety Audit Team Member.

Traffic counts were undertaken by Traffinomics Ltd, which is an Irish traffic survey company with a comprehensive knowledge of traffic data collection methods. The company, established in 2014, is headed by Simon Wheeler, who has been in the traffic survey data collection business for 35 years. Previously Simon worked with Count On Us Ltd., followed by Abacus Transportation Surveys Ltd., Ireland's first lens based traffic data collection business. Clients of Traffinomics Ltd. include TII, Local Authorities and many leading retailers.

15.1.1.3 Guidance and Legislation

This section of the EIAR has been completed in accordance with the EIA guidance set out in Section 1.2.1 of Chapter 1 (Introduction). The assessment uses standard terminology to describe the likely significant effects associated with the Proposed Development. Further information on the classification of effects used in this assessment is presented in Section 1.7.2 of Chapter 1 (Introduction) of this EIAR.

15.1.1.4 Scoping and Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties as outlined in Section 2.8 of Chapter 2 (Background of the Proposed Development) of the EIAR and summarised below.

Transport Infrastructure Ireland

Transport Infrastructure Ireland (TII) responded to scoping via an email dated 19th of February 2025, in which it provided a list of recommendations to be followed when preparing the EIAR. All relevant TII

guidelines and policies have been adopted in the preparation of this assessment, including the following;

- PE-PDV-02045, Transport Assessment Guidelines, Transport Infrastructure Ireland, May 2014
- PE-PAG-02017, Project Appraisal Guidelines, Unit 5.3, Travel Demand Projections, Transport Infrastructure Ireland, October 2021
- DN-GEO-03060, Geometric Design of junctions, Transport Infrastructure Ireland, May 2023.

Specific issues raised by TII include the following as set out in Table 15-1a;

Table 15-1a Issues raised by TII in relation to the Proposed Development and Responses

ID	Comment/Recommendation	Response
1	Consultations should be had with relevant Local Authority / National Roads Design Offices with regards to locations of existing and future national roads schemes.	Consultation has been undertaken with Cork County Cork as set out in Section 15.1.1.4 below.
2	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 the proximity of the proposed development, including the potential haul route and potential grid connections.	The impacts of the Proposed Development on the construction material and turbine component delivery routes in terms of link flows are set out in Sections 15.1.4.2 and 15.1.6.2 of the EIAR, while an assessment of the capacity of the R584 / Site access junction is set out in Section 15.1.6.5.2. The swept path analysis undertaken for the abnormally large loads on the Turbine Delivery Route is set out in Section 15.1.8 of the EIAR. The assessment sets out the temporary local measures that will be required on the national, regional and local road networks during the construction of the Proposed Development.
3	The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required, including haul routes, temporary arrangements and grid connections	A Road Safety Audit has not been undertaken at this stage as there are no permanent new junctions or alteration proposed on the regional or national road network. A Stage 1 Road Safety Audit will be undertaken for the proposed construction and operational access on the R584 prior to construction.
4	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 be carried out in accordance with relevant guidelines, noting traffic volumes attending the Site and traffic	It is confirmed that the assessment presented in this section of the EIAR is undertaken in accordance with Traffic and Transport Assessment Guidelines, TII (2014).

ID	Comment/Recommendation	Response
	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, the Authority'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 promoters are advised to have regard to Section 2.2 of the NRA/TII TTA Guidelines which addresses requirements for sub-threshold TTA. Any improvements required to facilitate development should be identified. It will be the 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.	
5	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.	It is noted that only minor temporary works, including temporary overruns and the temporary removal of street furniture, are proposed on the national road network during the abnormal load delivery phase. All construction works on the local road network will be undertaken in accordance with current guidelines including the "*Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works*" (DoT now DoTT&S) and "*Guidance for the Control and Management of Traffic at Roadworks*" (DoTT&S).
6	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 proposed haul routes are identified in this Section 15.1.8 below. While the construction phase of the Proposed Development will involve abnormally large loads, the axle loadings will not exceed accepted limits, as set out in Section 15.1.1.1. A program of pre-delivery condition and structural assessment of the route is however proposed, as set out in the Traffic Management Measures, included set out in Section 15.1.10.5.
7	In addition, the haul route should be assessed to confirm capacity to accommodate abnormal 'length' loads and any temporary works required.	A swept path analysis of the proposed Turbine Delivery Route has been undertaken, as set out in Section 15.1.8.

ID	Comment/Recommendation	Response
8	The applicant/developer should also consult with all PPP Companies, Motorway Maintenance and Renewals Contractors (MMaRC) and road authorities over which the haul route traverses to ascertain any operational requirements, including delivery timetabling, etc. to ensure that the strategic function of the national road network is safeguarded.	Consultation will be undertaken with these bodies prior to the delivery of abnormally large loads.
9	Where temporary works within any MMaRC Contract Boundary are required to facilitate the transport of turbine components to the Site, the applicant/developer shall contact thirdpartyworks@tii.ie in advance, as a works specific Deed of Indemnity will be needed by TII before the works can take place.	The applicant agrees with this condition.
10	Additionally, any damage caused to the pavement on the existing national road arising from any temporary works due to the turning movement of abnormal 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 onsite.	The applicant agrees with this condition, as set out in Section 15.1.10 of this EIAR.
11	Where grid connection and cable routing form part of any development proposal, proposals should be developed to safeguard road schemes, as TII 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 route options, use of existing crossings, depth of cable laying etc. and consultation with the County Council national road project team.	The Proposed Development includes the continued use of the existing onsite 38kV substation and associated underground cable and therefore will have no potential impacts on the national, regional or local road networks.
12	The developer, in preparing an EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works).	The design of the access junctions is in accordance with TII guidelines. The proposed design and visibility splays for the proposed access junction on the R584 are shown in Figures 15-44 and 15-45 of Appendix 15-2 Autotrack Assessment.

Department of Transport

A response to scoping was received from the Department of Transport (DoT) on the 19th February 2025. The Department stated that they had no comments to make at this stage and requested to be kept informed of further updates to the Proposed Development.

A scoping response was received from Cork County Councils Roads and Transportation Section on the 3rd April 2025, stating that they had no comment from an engineering perspective at this stage.

A separate response was received from the Area Engineer from Cork County Council on the 2nd April 2025 who raised comment in relation to the capacity of the haul route to accommodate the abnormal/oversized loads. It is noted in response that this was addressed in the 2020 Application and is addressed in Section 15.1.6 in terms of highway capacity, and Section 15.1.8 with respect to geometric capacity in this EIAR.

It was also indicated that an abnormal load licence will be required. In response this is acknowledged by the Applicant.

15.1.1.5 Methodology and Section Structure

The Traffic and Transport Assessment takes cognisance of guidance for such assessments set out by Transport Infrastructure Ireland (TII), in the document PE-PDV-02045 '*Traffic and Transport Assessment Guidelines*', (TII, 2014).

The Traffic and Transport Section of this chapter is set out as follows:

- A review of the existing and future transport infrastructure in the vicinity of the Proposed Development, including an assessment of available traffic counts and traffic forecasts during an assumed construction year of 2027 (Sections 15.1.2 - Receiving Environment and 15.1.3 – Existing Traffic Volumes).
- A description of the nature of the Proposed Development and the traffic volumes that it will generate during the different construction stages and when it is operational (Section 15.1.4 – Proposed Development Traffic Generation).
- A description of the abnormally sized large loads and vehicles that will require access to the Site (Section 15.1.5 – Construction Traffic Design Vehicles).
- A review of the effects of development generated traffic on links and junctions during construction and when the facility is operational (Section 15.1.6 –Traffic effects during construction and during operation).
- Identification of traffic management for large deliveries during construction (Section 15.1.7 – Traffic Management for Large Deliveries).
- A geometric assessment of the route and its capacity to accommodate the abnormal-sized loads associated with the development (Section 15.1.8 – Abnormal Route Assessment).
- An assessment of the provision for sustainable modes of travel (in this case primarily with respect to the transport of construction staff) (Section 15.1.9 – Provision for Sustainable Modes of Travel).
- The description of Likely Significant Effects and Associated Mitigation Measures is provided in Section 15.1.10.
- A description of the Residual Impacts is detailed in Section 15.1.11.
- A cumulative assessment of the Proposed Development with other plans and projects is carried out in Section 15.1.12

15.1.2 Receiving Environment

15.1.2.1 Site Location

The Proposed Development will be located in the townlands of Derreendonee, Curraglass, Cappaboy Beg and Inchi More in County Cork. The Site is situated on the west of the Regional R584 Road, approximately 6.8km northeast of Kealkill and 3.8km southwest of Ballingeary. The full development

description is detailed in Chapter 4 (Description of the Proposed Development). The Site location is shown in Figure 15-1.

Proposed Develivery Route foe Abnormal Size Loads. The proposed point of arrival for the wind farm plant is the port of Ringaskiddy in County Cork, with the full Turbine Delivery Route (TDR) shown in Figure 15-1. From the Port of Ringaskiddy the TDR exits the Port onto the N28 and travels west for approximately 5.km to the Shannonpark Roundabout. From this roundabout the route continues north on the N28 for a further 6.5km before heading west on the N40 and N22 for approximately 28.0km to the junction with the R585 which heads southwest to the village of Crookstown.

A detailed assessment of the proposed haul route for the abnormally sized loads was made from this point where the route turns off the N22 to the north of Crookstown in County Cork. The TDR is discussed in detail in Section 15.1.8.

The route assessment is confined to the haul route commencing with the left turn from the N22 onto the R585 to the northeast of Crookstown. The route then passes through the village of Crookstown and turns sharp left out of the village following the R585 in a southern direction. The route then heads west on the R585 for approximately 42km to the village of Kealkill, passing through the villages/settlements of Bealnablath, Cappeen, Gloun, Shanlaragh on the way. From Kealkill the route heads southwest on the R584 for approximately 5.5km, crossing Pearson's Bridge over the River Owvane to reach the coast at the village of Ballylickey. The abnormally large loads will undertake a reversing maneuver to the east of the village at the junction of the R584 and the N71, before heading back up in a northeastern direction on the R584 to Kealkill. At Kealkill the route then forks left travelling northeast on the R584 for approximately 11km crossing the bridge at Carriganass Castle towards the Site access on the R584. The abnormally sized loads will then continue on the R584 past the proposed access for approximately 2km, before making a reversing manoeuvre onto an existing track. The vehicles will then travel in a southwest direction back towards the Site entrance, where they will turn right into the Site. The locations of the potential pinch points on the haul route, together with the location of the proposed access junction, are discussed in Section 15.1.8, and shown in Figure 15-2a.

As noted in Chapter 4 (Description of the Proposed Development), the TDR option chosen for the delivery of turbine components will be determined by the specialist transport haulier that is chosen by the turbine manufacturer. All deliveries of turbine components to the Site will only be by way of the chosen transport route option. A detailed delivery assessment and program will be carried out by the turbine delivery company and a similar methodology will be adopted as set out in this EIAR to ensure the findings of this assessment remain valid for whatever model of turbine is selected.

15.1.2.2 Proposed Construction Traffic Haul Route

The delivery route for general HGV construction traffic may vary depending on the location of the suppliers of concrete and other general construction materials required to construct the Proposed Development.

Based on the cement and other suppliers in the vicinity of the Proposed Development it is estimated that the following proportion of concrete and general construction traffic will travel on the following links;

- R584 from the north – up to 100%,
- R584 from the south – up to 100%
- R585 from the east – up to 100%
- N22 – up to 100%

For the purpose of this assessment it is assumed that deliveries of smaller component parts for the wind turbines, will travel to the Site in standard HGVs via the N22 turning off at Lisacressig and travelling to the Site via Ballingeary, as shown in Figure 15-1, as this is the shortest and more direct route. In practice, the delivery route for these component parts could change but as the associated traffic

volumes are low, as established in Section 15.1.4 of this EIAR, the impacts will be minimal regardless of the route selected.

The assessment presented in this section of the EIAR is based on these precautionary criteria.

15.1.2.3 Site Entrance

The Site will be accessed from one access junction located on the western side of the R584 with the location shown in Figure 15-2a. The proposed junction is at the location of an existing forestry access and will provide for all traffic movements generated during the construction of the Proposed Development and for maintenance staff when operational. Improvement works will be required at this location in order to accommodate access and egress of turbine vehicles and general construction traffic, with the proposed layout discussed in Section 15.1.8.

15.1.3 Existing Traffic Volumes

It should be noted that traffic volumes are discussed in terms of vehicles and passenger car units, or PCUs, where each vehicle is expressed in terms of its demand on the network relative to the equivalent number of cars. For example, an articulated HGV was given a factor of 2.4 passenger car units (PCUs) (as per TII Project Appraisal Guidelines for National Roads Unit 5.2), while one of the extended loaders required to transport the wind turbine equipment was assigned a value of 10.

15.1.3.1 Background Traffic Flows

The link count locations included in the assessment are shown in Figure 15-2b.

A total of 5 locations on the turbine delivery and general construction route are included, with the locations shown in Figure 15-2b. The source of the traffic data, including the year of collection (2022, 2024 and 2025), is set out in Table 15-2.

Base year traffic volumes for the 5 link locations shown in Figure 15-2b range from 15,458 vehicles per on the N22 (2024), to 4,766 vehicles per day on the R585 north of Cookstown (2022), to 5,614 vehicles on the R585 at Gloun (2025). A relatively low volume of 855 vehicles per day was observed on the R584 adjacent to the proposed access junction on the R584 (2025).

A full listing of the traffic counts data is included as Appendix 15-1.

Table 15-2 Count locations and data source

Link	Data source
1 – N22 at Castlemore	Automatic traffic counter (TII) – year 2024
2 – R585 north of Crookstown	Automatic traffic counter – year 2022
3 – R585 at Gloun	Automatic traffic counter (Traffinomics) – year 2025
4 – R584 south of site	Automatic traffic counter (Traffinomics) – year 2025
5 – R584 north of site	Automatic traffic counter (Traffinomics) – year 2025

Table 15-3 All day traffic flows by location, years 2022 / 2024 / 2025 (2-way vehicles)

Link	2022	2024	2025
1 – N22 at Castlemore	NA	15,458	NA
2 – R585 north of Crookstown	4,766	NA	NA
3 – R585 at Gloun	NA	NA	5,614
4 – R584 south of site	NA	NA	855

15.1.3.2 Background Traffic Volumes for the Assumed Construction Year 2027

This section describes the process adopted to produce background traffic forecasts for an assumed construction year of 2027.

Revised guidelines for forecasting annual growth in traffic volumes were produced by TII in October 2021, as set out by county in the '*Project Appraisal Guidelines for National Roads* (Unit 5.3)'. The annual growth rates for light vehicles for the County, and factors for the years relevant to this study, are shown in Table 15-4 and Table 15-5. Based on a medium growth scenario, traffic volumes are forecast to increase during the period from 2022 to 2024 by 9.8%, from 2024 to 2027 by 5.8%, and between the year 2025 and 2027 by 3.8%. All day traffic flows on the study area network are compared for the years 2022, 2024, 2025 and 2027 in Table 15-6.

It should be noted that while the assumed construction year of 2027 may vary slightly, this will not alter the forecast outcomes and effects presented in this section of the EIAR. This is due to the annual growth rate for background traffic being just 1.89% (as shown as 1.0189 in Table 15-4) and the traffic volumes generated by the Proposed Development will remain unchanged regardless of construction year, as presented subsequently in Section 15.1.4.

Table 15-4 TII traffic growth forecasts, growth per annum and cumulative, County Cork

Year	Lights – Annual Factor			Lights – Cumulative Factor		
	Low	Medium	High	Low	Medium	High
2022	1.0173	1.0189	1.0223	1.000	1.000	1.000
2023	1.0173	1.0189	1.0223	1.017	1.019	1.022
2024	1.0173	1.0189	1.0223	1.035	1.038	1.045
2025	1.0173	1.0189	1.0223	1.053	1.058	1.068
2026	1.0173	1.0189	1.0223	1.071	1.078	1.092
2027	1.0173	1.0189	1.0223	1.090	1.098	1.117
2028	1.0173	1.0189	1.0223	1.108	1.119	1.141
2029	1.0173	1.0189	1.0223	1.128	1.140	1.167

Table 15-5 TII traffic growth rates by growth scenario

Period	New Factors		
	Low	Medium	High
2022 – 2027	1.090	1.098	1.117
2024 – 2027	1.053	1.058	1.068
2025 – 2027	1.035	1.038	1.045

Table 15-6 All day traffic flows by location and year (2-way vehicles)

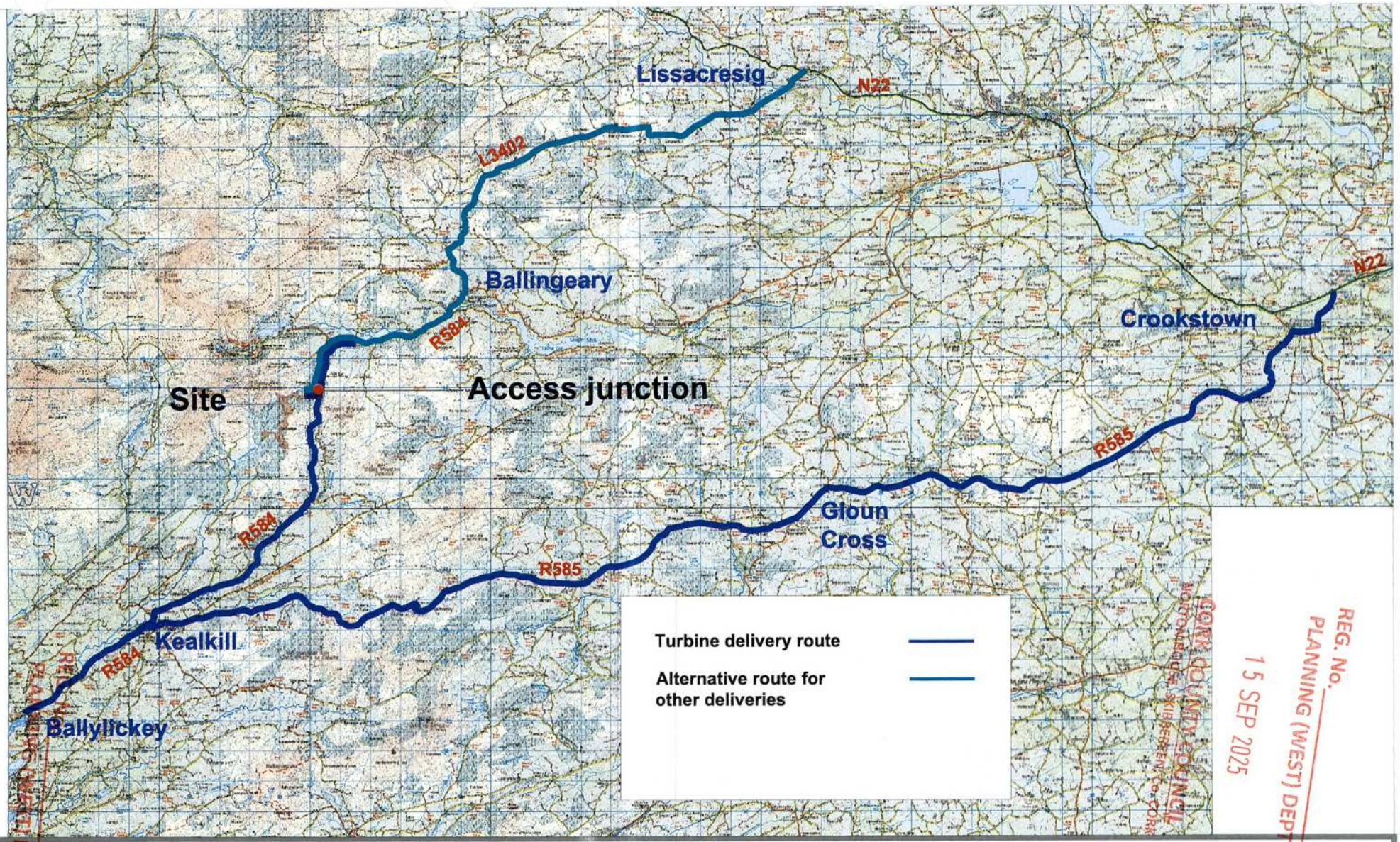
Link	Observed 2022	Observed 2024	Observed 2025	Forecast 2027
1 – N22 at Castlemore	NA	15,458	NA	16,355
2 – R585 north of Crookstown	4,766	NA	NA	5,233
3 – R585 at Gloun	NA	NA	5,614	5,827
4 – R584 south of site	NA	NA	855	887
5 – R584 north of site	NA	NA	855	887

The traffic count data recorded at each location was also used to determine the existing percentage of HGVs on the delivery routes, as set out in Table 15-7. The figures show that the % of HGVs varies from 4.5% on the N22 to 4.6% / 4.7% on the R585 at Crookstown and Gloun respectively, down to 3.0% on the R584 adjacent to the Proposed Development access junction.

The construction year 2027 traffic flows discussed up to this point in terms of vehicles are split into vehicle type (HGVs and Cars/lgvs) and also presented in terms of PCUs in Table 15-7.

Table 15-7 All day flows, percentage HGVs and flows by vehicle type, year 2027

Link	All day flow (vehs)	% HGV's	Vehicles		PCUs		
			HGVs	Cars / lgvs	HGVs	Cars / lgvs	Total
1 – N22 at Castlemore	16,355	4.5%	736	15,619	1,766	15,619	17,385
2 – R585 north of Crookstown	5,233	4.6%	241	4,992	578	4,992	5,570
3 – R585 at Gloun	5,827	4.7%	274	5,553	657	5,553	6,211
4 – R584 south of site	887	3.0%	27	861	64	861	925
5 – R584 north of site	887	3.0%	27	861	64	861	925



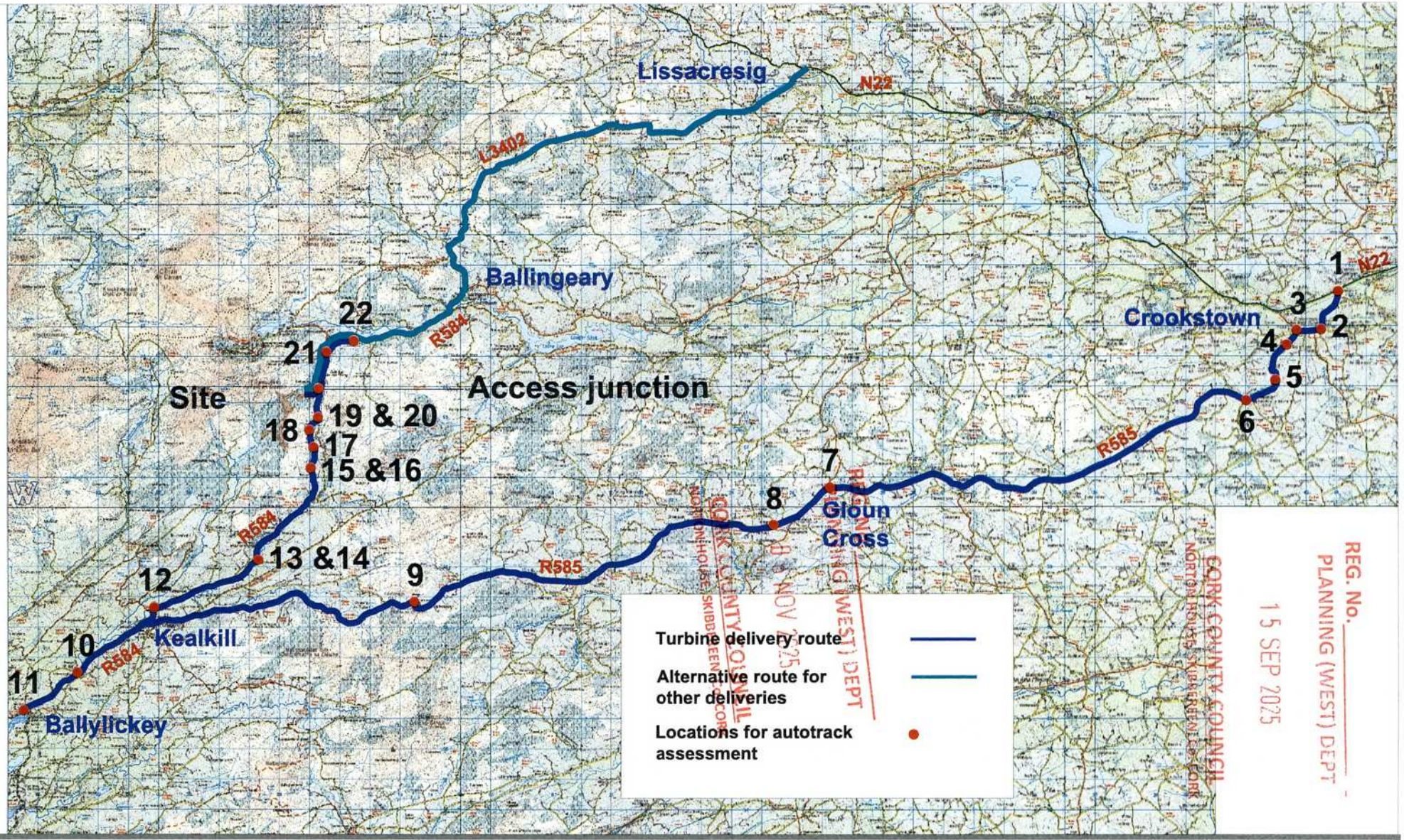
NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.1 Site location and turbine delivery route

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	NTS
PROJECT NO: 8010	DATE: 27.08.25	DRAWN BY:	AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS



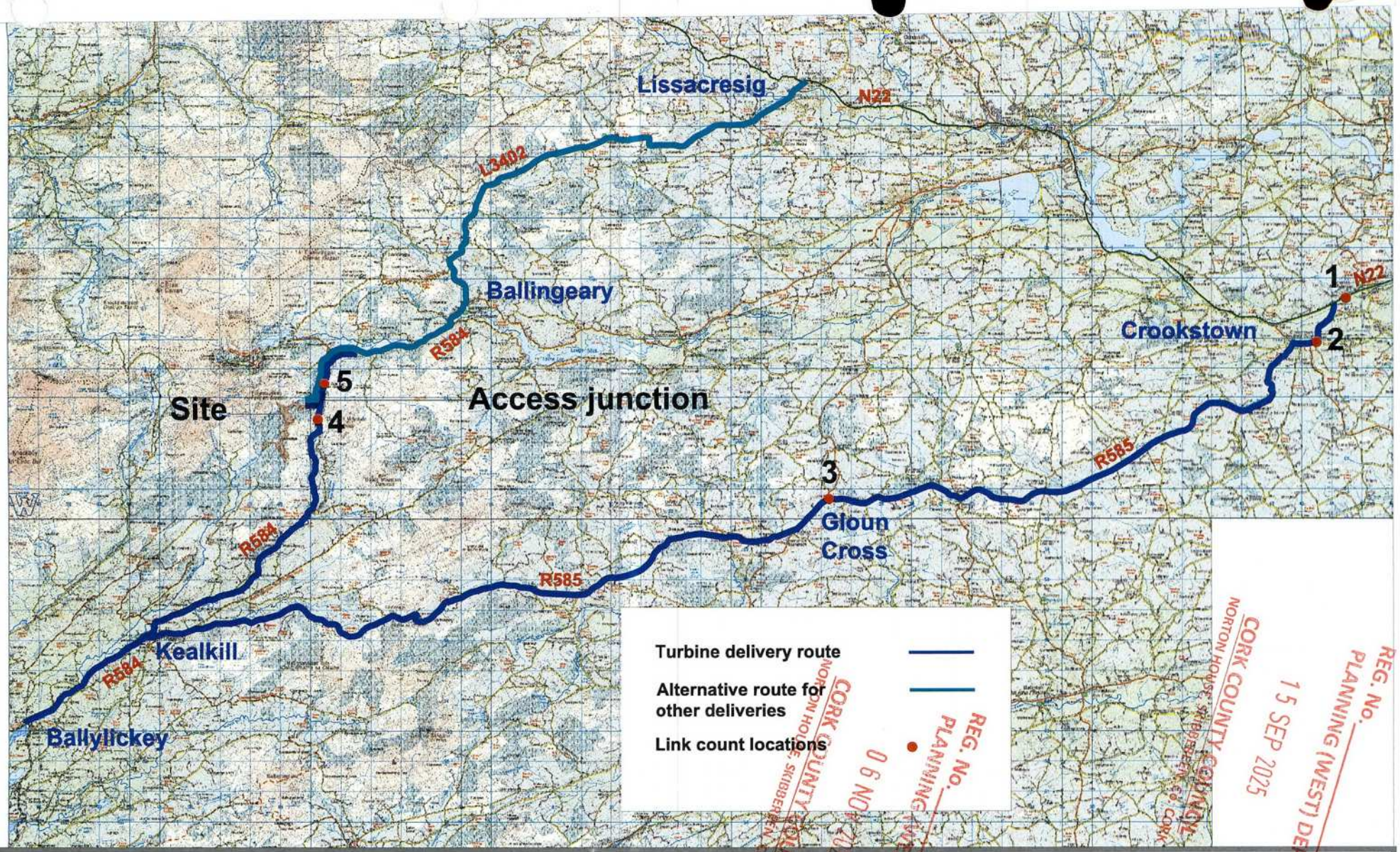
NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.2a Turbine delivery route autotrack assessment location plan

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	NTS
PR NO: 8010	DATE: 28.08.25	DRAWN BY	

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.2b Link count locations

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	NTS
PROJECT NO: 8010	DATE: 27.08.25	DRAWN BY:	AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

15.1.4 Proposed Development and Traffic Generation

15.1.4.1 Development Trip Generation – During Construction

The assessment of the effects of traffic generated during the construction of the Proposed Development is considered in two stages.

- Stage 1 – Site preparation and groundworks, and,
- Stage 2 – Turbine component delivery.

For the purpose of the traffic impact assessment, assumptions based on typical wind farm construction projects regarding the length of the construction phases and work periods etc. must be made to inform the assessment. These assumptions allow for a precautionary case scenario assessment but should not be inferred as prescriptive limitations to the construction phase. There are numerous variables which can affect a construction project programme such as weather for example. The construction phase of the Proposed Development will be carried out in accordance with the CEMP, which is submitted as Appendix 4-3 of this EIAR. The CEMP will be agreed with the Local Authority prior to construction commencing.

The total construction phase of the Proposed Development is expected to last 12 months, or 255 working days. Based on the construction programme it is estimated that all construction related deliveries to the Site will be made within 75%, or 192 days.

15.1.4.1.1 *Stage 1 – Site Preparation and Ground Works – 181 delivery days*

During Stage 1 of the construction phase, there will be two distinct types of days with respect to trip generation. A total of 3 days will be used to pour the 3 concrete wind turbine foundations. Foundations will likely be poured one per day, with an estimated 107 concrete loads required for each turbine foundation delivered to the Site over a 12-hour period. This will result in 9 HGV trips to and from the Site per hour.

On the remaining 178 working days for this stage, other general materials will be delivered to the Site.

During all of Stage 1, based on trip rates typical of wind farm projects, it is estimated that a total of 899 two-way trips will be made to the Site by trucks and large articulated HGVs, as set out in Table 15-8, with the daily effect on the local road network shown in Tables 15-13 and 15-14. The figures show that on the 3 days that concrete will be delivered to the Site an additional 514 two-way PCUs will travel on the network (comprising 107 two-way HGV trips or 214 movements, with 2.4 PCUs per movement), as shown in Table 15-9. Similarly, on the 178 days when other materials will be delivered to the Site, traffic volumes on the local network are forecast to increase by an average of 16 PCUs, as set out in Table 15-10.

Table 15-8 Trip generation - Stage 1 - Site preparation and groundworks – total loads

Material	Total no. Truck Loads	Truck type
Concrete	321	Concrete mixer
Delivery of plant	21	Large artic
Fencing & gates	2	Large artic
Compound setup	28	Large artic
Steel	8	Large artic

Ducting and cabling (internal)	72	Large artic
Tree felling	68	Large artic
Crane (to lift steel)	1	Large artic
Road construction	230	Truck
Cranes for turbines	12	Large artic
Refuelling for plant	62	Large artic
Site maintenance	45	Large artic
Miscellaneous	30	Large artic
Total	899	

Table 15-9 Trip generation - Stage 1 – Concrete foundation pouring – total movements and volumes per delivery day

Material	Total Truck Loads	Truck type	PCU Value	Total PCUs	PCU Movements /day*	2-way PCUs/day
Concrete	321	Trucks	2.4	770	256.0	513.6
* Estimation based on 3 concrete pouring days						

Table 15-10 Trip generation - Stage 1 – Site preparation and groundworks – total movements and volumes per delivery day

Material	Total Truck Loads	Truck type	PCU Value	Total PCUs	PCU Movements /day*	2-way PCUs/day
Delivery of plant	21	Large artic	2.4	50.4	0.28	0.57
Fencing & gates	2	Large artic	2.4	4.8	0.03	0.05
Compound setup	28	Large artic	2.4	67.2	0.38	0.76
Steel	8	Large artic	2.4	18.0	0.10	0.20
Ducting and cabling (internal)	72	Large artic	2.4	172.1	0.97	1.93

Material	Total Truck Loads	Truck type	PCU Value	Total PCUs	PCU Movements /day*	2-way PCUs/day
Tree felling	68	Large artic	2.4	163.2	0.92	1.83
Crane (to lift steel)	1	Large artic	2.4	2.4	0.01	0.03
Road construction	230	Truck	2.4	551.5	3.10	6.20
Cranes for turbines	12	Large artic	2.4	28.8	0.16	0.32
Refuelling for plant	62	Large artic	2.4	149.0	0.84	1.67
Site maintenance	45	Large artic	2.4	108.0	0.61	1.21
Miscellaneous	30	Large artic	2.4	72.0	0.40	0.81
Total	578			1,387.4	7.79	15.59
* Estimation based on groundwork period of 178 working days						

15.1.4.1.2 *Stage 2 – Turbine Construction – 11 delivery days*

During the turbine construction stage, including delivery and assembly, some deliveries to the Site will be made by abnormally large vehicles, referred to in this section as extended artics, transporting the component parts of the turbines (nacelles, blades and towers). There will also be deliveries made by normal large HGVs, transporting cables, tools and smaller component parts. The types of load and associated numbers of trips made to the Site during the turbine construction period are shown in Table 15-11, which summarises that a total of 24 trips will be made to and from the Site by extended artics, with a further 12 trips made by conventional large articulated HGVs.

Table 15-11 Trip generation - Stage 2 – Wind turbine plant – total loads

Material	Units	Quantity per Unit	Total Quantity	Quantity per Truck	Total Truck Loads	Truck type
Nacelle	3	1	3	1	3	Extended Artic
Blades	3	3	9	1	9	Extended Artic
Towers	3	4	12	1	12	Extended Artic
Sub total					***24***	
Transformer	3	1	3	1	3	Large Artic

Material	Units	Quantity per Unit	Total Quantity	Quantity per Truck	Total Truck Loads	Truck type
Drive train and blade hub	3	1	3	1	3	Large Artic
Base and other deliveries	3	2	6	1	6	Large Artic
Sub total					*12*	
Total					36	

For the purposes of this assessment an assumed delivery period is provided although this may be subject to change. It is assumed that the turbine delivery element will progress at the rate of 3 extended artic trips made by convoy to the Site on 5 days per week, resulting in this stage taking approximately 8 nights spread over a 4-week period. On a further two days per week, lasting for approximately 2 weeks, the remaining equipment required during this phase will be delivered to the Site. The additional traffic movements for these 2 types of days are summarised in Tables 15-12 and Table 15-13. In Table 15-12, a PCU equivalent value of 10 was allocated to each extended artic movement, resulting in an additional 60 PCUs on the study network on these days, while an additional 19 PCUs are forecast to be on the network on 3 additional days, as shown in Table 15-13, during the turbine construction phase.

Table 15-12 Trip generation - Stage 2 – Wind turbine plant, extended artics – total movements and volumes per delivery day

Material	Units	Truck Type	PCU Value	Total PCUs	2-way PCUs/ day
Nacelle	1	Extended Artic	10	10.0	20.0
Blades	3	Extended Artic	10	30.0	60.0
Towers	4	Extended Artic	10	40.0	80.0
Total per turbine	8			80.0	160.0
Total per delivery day	3			30.0	60.0
*Estimation based on 3 abnormal sized loads being delivered per day on 5 days per week (total 24 loads will take 8 nights spread over 2 weeks)					

Table 15-13 Trip generation - Stage 2 - Wind turbine plant, standard artic HGVs - total movements and volumes per delivery day

Material	Quantity per Unit	PCU Value	2-way PCUs / day
Transformer	1	2.4	4.8
Drive train and blade hub	1	2.4	4.8

Base & other deliveries	2	2.4	9.6
Total	4		19.2
*Estimation based on equipment for 2 turbines being moved per week spread over 2 weeks			

15.1.4.1.3 Construction Employee Traffic

It is estimated that a up to 40 staff members will be employed on the Site at any one time during the Site preparation and groundworks stage of construction, reducing to a maximum of 20 staff at any one time during the turbine construction stage. If a precautionary scenario of all staff travelling to / from the Site by car, at an average of 2 persons per car, then a total of 40 PCU movements (each trip is two way) will be added to the network during the groundworks stage of the development, reducing to 20 PCU trips during the turbine construction stage.

15.1.4.2 Development Trip Generation – During Operation

The Proposed Development will be unmanned once operational and will be remotely monitored. Traffic generation associated with the operational phase of the wind farm will be from the wind farm developer, ESB personnel visiting the substation, and maintenance personnel who will visit individual turbines.

It is estimated that the traffic volumes that will be generated by the development once it is operational will be minimal, with an estimated 1-2 staff employed on the Site at any time. The impact on the network of these trips during the operational stage is discussed in Section 15.1.6.

15.1.4.3 Development Trip Generation – During Decommissioning

Traffic generation to the Site during decommissioning will be similar but significantly less than the trip generation estimates presented for the construction phase presented above. This is because much of the materials brought into the Proposed Development during construction will be left in-situ during the decommissioning stage.

15.1.5 Construction Traffic Vehicles

The delivery of turbine components including blades, tower sections and nacelles is a specialist operation due to the oversized loads involved. The blades are the longest turbine component and in the case of the Proposed Development blades up to 64.4m long have been considered for the purpose of this assessment.

It is noted that at 2 locations on the TDR it will be required to raise the rear tip of the blade using a "scissors lifter" in order to avoid obstructions, this is discussed further in Section 15.1.8. The critical vehicles in terms of size and turning geometry requirements, and used in the detailed route assessment discussed in Section 15.1.8 are the blade transporter with the blade lifted at the tip and the tower transporter vehicles, with the geometry of each shown in Figures 15-3 and 15-4.

The key dimensions are as follows:

Transport of Blades – Super Wing Carrier with scissors lifter

Transport of Blades – Articulated HGV with blade tip lifted to 11m and 14m overhang at rear

Total length of vehicle	69.4 m
Length of blade	64.4 m (63.45m in plan when lifted to 11m at tip)
Inner radius	28.0 m

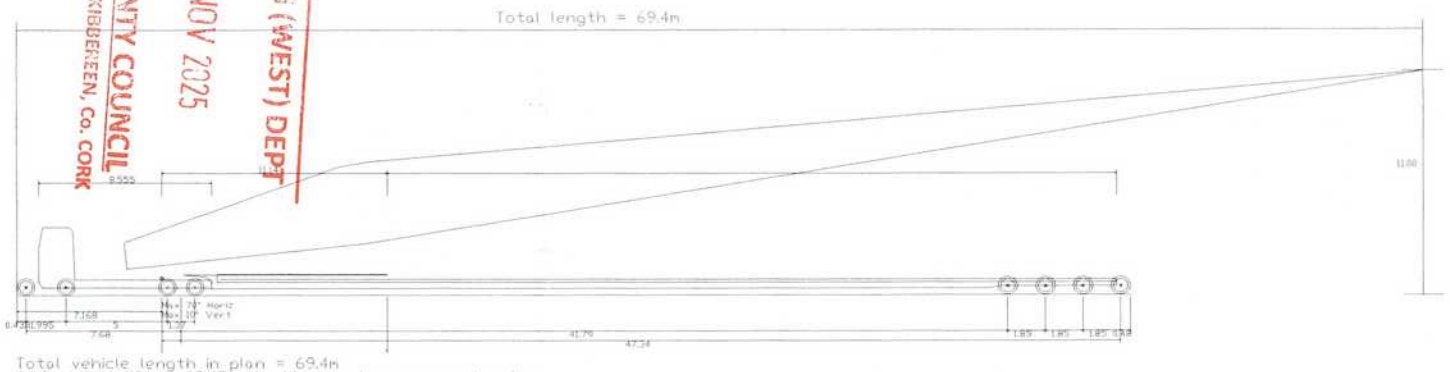
Transport of Tower – Using low-bed or drop deck trailers

Total length (with load)	47.73 m
Length of load	33.9 m
Inner radius	25.0 m

The critical vehicles in terms of size and turning geometry requirements used in the detailed route assessment discussed in Section 15.1.8, are the blade and tower transporters.

The vehicles used to transport the nacelles will be shorter in length compared to the blade and tower transporters.

All other vehicles requiring access to the Site will be standard HGVs and will be significantly smaller than the design test vehicles.



Total vehicle length in plan = 69.4m
64.4m blade lifted_63.45 with 14m overhang rear steering

Overall Length	54.987m
Overall Width	2.550m
Overall Body Height	4.800m
Min Body Ground Clearance	0.575m
Track Width	2.500m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	9.800m

NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.3 Design blade extended artic profile

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	NTS
PR NO: 8010	DATE: 27.08.25	DRAWN BY	

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

REG. No.
PLANNING (WEST) DEPT
0 6 SEP 2025
CORK COUNTY COUNCIL
NORTON HOUSE, SKIBBEREEN, Co. CORK

Final Tower section 33.9 full rear steer 4° degrees

Overall Length	47.726m
Overall Width	2.550m
Overall Body Height	4.900m
Min Body Ground Clearance	0.427m
Max Track Width	2.520m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	9.800m

NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15.4 Design tower extended artic profile

PROJECT:	Curraglass Wind Farm, Co Cork				
CLIENT:	Wingleaf Ltd			SCALE:	NTS
PROJECT NO: 8010		DATE:	05.09.25	DRAWN BY:	AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

15.1.6 Traffic Effects During Construction, Operation and Decommissioning of the Proposed Development

As detailed below, transportation of large turbine components will be carried out at night when traffic is at its lightest and in consultation with the relevant Roads Authority and An Garda Síochána with deliveries accompanied by Garda escort.

It should be noted that for the purpose of the assessment all vehicles travelling to and from the Site have been assumed to do so from the TDR and delivery routes shown in Figure 15-1 and discussed in Sections 15.1.8 of this EIAR.

15.1.6.1 Effect on Link Flows – During Construction

Background traffic volumes, as established previously and set out in Table 15-7, and development generated traffic volumes, are shown for the typical construction day scenarios discussed in Section 15.1.4 and are set out in Table 15-14 to 15-17, with the traffic effects summarised in Table 15-18 to 15-21. The actual figures presented in the tables will be subject to change, however they are considered to represent a robust estimation of the likely effects.

In terms of daily traffic flows the potential effects may be summarised as follows:

During Stage 1 - Site Preparation and Groundworks

On average an additional 56 PCUs will travel on the local highway network during these 178 days. This will result in a percentage increase in traffic volumes on the study network of between +0.3% on the N22, to +1.0% on the R585 in Crookstown and 0.9% through Gloun. An increase of +6.1% is forecast on the R584 adjacent to the Site access.

During Stage 1 – Concrete Pouring

For these 3 days an additional 554 PCUs will travel on the study network. On these days, the percentage increase in traffic volumes experienced on the study network will be between +3.2% on the N22, to +9.9% on the R585 in Crookstown and +8.9% through Gloun. An increase of +59.9% in traffic volumes is forecast on the R584 approaching the Site.

During Stage 2 - Turbine Construction Stage – Delivery of large equipment using extended articulated vehicles

The additional 80 PCUs (made up of cars and large extended artics) will travel on the study network for 8 nights. On the nights this impact occurs, volumes will increase by +0.5% on the N22, +1.4% on the R585 in Crookstown and 1.3% through Gloun, with a +8.7% forecast on the R584 adjacent to the Site access.

The provision of traffic management measures, including ensuring that these deliveries are made at night (as set out in Sections 15.1.7 and 15.1.10.6 and included in the CEMP), will be required to minimise the impact of development traffic on the study network on these days.

During Stage 2 - Turbine Construction Stage – Other deliveries using conventional articulated HGVs

For 3 days on the delivery route 39 additional PCUs (made up of cars and standard articulated HGV movements to the Site and back) will travel on the study network. On these days, the percentage increase on the study network will be +0.2% on the N22, +0.7% on the R585 in Crookstown and 0.6%

through Gloun. On these 3 days it is forecast that there will be +4.2% increase on the R584 adjacent to the proposed site access.

Table 15-14 Daily Traffic volumes during site preparation and groundworks – background, Proposed Development generated and total (PCUs), year 2027

Link	Background PCUs			Proposed Development PCUs			Total PCUs (Background + Proposed Development)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N22 at Castlemore	15,619	1,766	17,385	40	16	56	15,659	1,782	17,441
2 – R585 north of Crookstown	4,992	578	5,570	40	16	56	5,032	594	5,626
3 – R585 at Gloun	5,553	657	6,211	40	16	56	5,593	673	6,267
4 – R584 south of site	861	64	925	40	16	56	901	80	981
5 – R584 north of site	861	64	925	40	16	56	901	80	981

Table 15-15 Daily traffic volumes on during concrete pouring - background, Proposed Development generated and total (PCUs), year 2027

Link	Background PCUs			Proposed Development PCUs			Total PCUs (Background + Proposed Development)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N22 at Castlemore	15,619	1,766	17,385	40	514	554	15,659	2,280	17,939
2 – R585 north of Crookstown	4,992	578	5,570	40	514	554	5,032	1,092	6,124
3 – R585 at Gloun	5,553	657	6,211	40	514	554	5,593	1,171	6,765
4 – R584 south of site	861	64	925	40	514	554	901	578	1,479
5 – R584 north of site	861	64	925	40	514	554	901	578	1,479

Table 15-16 Daily traffic volumes during turbine construction, extended artics – background, Proposed Development generated and total (PCUs), year 2027

Link	Background PCUs			Proposed Development PCUs			Total PCUs (Background + Proposed Development)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total

Link	Background PCUs			Proposed Development PCUs			Total PCUs (Background + Proposed Development)		
1 – N22 at Castlemore	15,619	1,766	17,385	20	60	80	15,639	1,826	17,465
2 – R585 north of Crookstown	4,992	578	5,570	20	60	80	5,012	638	5,650
3 – R585 at Gloun	5,553	657	6,211	20	60	80	5,573	717	6,291
4 – R584 south of site	861	64	925	20	60	80	881	124	1,005
5 – R584 north of site	861	64	925	20	60	80	881	124	1,005

Table 15-17 Daily traffic volumes during turbine construction – standard artic HGVs, background, Proposed Development generated and total (PCUs), year 2027

Link	Background PCUs			Proposed Development PCUs			Total PCUs (Background + Proposed Development)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N22 at Castlemore	15,619	1,766	17,385	20	19	39	15,639	1,785	17,424
2 – R585 north of Crookstown	4,992	578	5,570	20	19	39	5,012	597	5,609
3 – R585 at Gloun	5,553	657	6,211	20	19	39	5,573	676	6,250
4 – R584 south of site	861	64	925	20	19	39	881	83	964
5 – R584 north of site	861	64	925	20	19	39	881	83	964

Table 15-18 Summary daily effect of Proposed Development traffic - site preparation and ground works - % increase and number of days, year 2027

Link	Background	Proposed Development	Total	% increase	Estimated No. of days
1 – N22 at Castlemore	17,385	56	17,441	0.3%	178
2 – R585 north of Crookstown	5,570	56	5,626	1.0%	178
3 – R585 at Gloun	6,211	56	6,267	0.9%	178

4 – R584 south of site	925	56	981	6.1%	178
5 – R584 north of site	925	56	981	6.1%	178

Table 15-19 Summary daily effects of Proposed Development traffic - concrete pouring - % increase and number of days, year 2027

Link	Background	Proposed Development	Total	% increase	Estimated No. of days
1 – N22 at Castlemore	17,385	554	17,939	3.2%	3
2 – R585 north of Crookstown	5,570	554	6,124	9.9%	3
3 – R585 at Gloun	6,211	554	6,765	8.9%	3
4 – R584 south of site	925	554	1,479	59.9%	3
5 – R584 north of site	925	554	1,479	59.9%	3

Table 15-20 Summary daily effect of Proposed Development traffic - turbine construction, extended artic – % increase and number of days, year 2027

Link	Background	Proposed Development	Total	% increase	Estimated No. of days
1 – N22 at Castlemore	17,385	80	17,465	0.5%	8
2 – R585 north of Crookstown	5,570	80	5,650	1.4%	8
3 – R585 at Gloun	6,211	80	6,291	1.3%	8
4 – R584 south of site	925	80	1,005	8.7%	8
5 – R584 north of site	925	80	1,005	8.7%	8

Table 15-21 Summary daily effects of Proposed Development traffic- turbine construction, standard artic HGVs – % increase and number of days, year 2027

Link	Background	Proposed Development	Total	% increase	Estimated No. of days
1 – N22 at Castlemore	17,385	39	17,424	0.2%	3

2 – R585 north of Crookstown	5,570	39	5,609	0.7%	3
3 – R585 at Gloun	6,211	39	6,250	0.6%	3
4 – R584 south of site	925	39	964	4.2%	3
5 – R584 north of site	925	39	964	4.2%	3

15.1.6.2 Link Capacity Assessment

An assessment of the impact on link capacities in the study area was undertaken for the various construction stages as set out in Table 15-22, Table 15-23 and Table 15-24. The capacity for each link in the study area is shown in Table 15-22. The capacities range from a daily flow of 11,600 vehicles on the N22 down to 5,000 on the R585 and R584 and are based on road widths and capacities set out in the TII Standards document DN-GEO-03031 Road Link Design, Table 6/1.

Capacities are based on road types and widths as set out in the TII Standards document DN-GEO-03031 Road Link Design, Table 6/1. It is noted that the link capacities adopted from the TII guidelines correspond to a Level of Service D, which the guidelines describe as being the level where;

"Speeds begin to decline slightly with a slight increase of flows and density begins to increase somewhat more quickly. Freedom to manoeuvre within the traffic streams is more noticeably limited, and the driver experiences reduced comfort levels".

Background, or do-nothing traffic flows, are compared to flows forecast for the various construction delivery stages in Table 15-23 with the percentage capacity reached for each link and stage shown in Table 15-24. Based on this assessment the following points are noted;

- On the external network the N22 is the busiest road with the link capacity forecast to operate over capacity at 150% for the do-nothing scenario, increasing to a maximum of 155% during the 3 days that the concrete foundations will be poured, reducing to a maximum of 151%, or +1% point, during the remainder of the construction period. It is noted that it is likely that concrete deliveries will be made from facilities closer to the Site, although the option of travelling from the N22 is included in the assessment.
- Similarly, both locations on the R585 are forecast to operate over capacity by the year 2027, with the section in Crookstown forecast to operate at 111% capacity and Gloun at 124% of capacity. For each location it is forecast that the % of capacity will increase by 12% points during the 3 days that the concrete foundations are poured, reducing to a + 2% increase for the remainder of the construction phase.
- It is forecast that the R584 will operate at 18% for the background traffic scenario, increasing to a maximum of 30% during the 3 days that the concrete foundations are poured. It is forecast that the R584 will operate at a maximum of 21% capacity (+ 3% points) for the remainder of the construction phase.

Based on this assessment, it is forecast that the delivery route in close proximity to the Proposed Development will operate well within link capacity, with the R584 approaching the Site forecast to operate at a maximum of 18% of capacity for the do-nothing scenario, increasing to a maximum of 30% during the construction period.

It is also noted that sections of the R585 on the delivery route are forecast to operate significantly over capacity for the do-nothing scenario, with the busiest forecast to operate at 150% of capacity for the do nothing scenario, increasing to a maximum of 155% during construction. For these locations it is important to consider the relative increase due to the Proposed Development and the duration of the impacts.

Table 15-22 Delivery route link type and link capacity (at Level of Service D)

Link	Link type	Link capacity (Level of Service D)
1 – N22 at Castlemore	Type 1 single	11,600
2 – R585 north of Crookstown	Type 3 single	5,000
3 – R585 at Gloun	Type 3 single	5,000
4 – R584 south of site	Type 3 single	5,000
5 – R584 north of site	Type 3 single	5,000

Table 15-23 Delivery route link capacity and summary of link flows by construction delivery stage, year 2027

Link	Link capacity (Level of Service D)	Construction delivery stage				
		Background traffic	Concrete pour	Other site works	Turbine plant	Turbine equipment
1 – N22 at Castlemore	11,600	17,385	17,939	17,441	17,465	17,424
2 – R585 north of Crookstown	5,000	5,570	6,124	5,626	5,650	5,609
3 – R585 at Gloun	5,000	6,211	6,765	6,267	6,291	6,250
4 – R584 south of site	5,000	925	1,479	981	1,005	964
5 – R584 north of site	5,000	925	1,479	981	1,005	964

Table 15-24 Delivery route link capacity and % of link capacity by construction delivery stage, year 2027

Link	Link capacity (Level of Service D)	Construction delivery stage				
		Background traffic	Concrete pour	Other site works	Turbine plant	Turbine equipment

Link	Link capacity (Level of Service D)	Construction delivery stage				
1 – N22 at Castlemore	11,600	150%	155%	150%	151%	150%
2 – R585 north of Crookstown	5,000	111%	122%	113%	113%	112%
3 – R585 at Gloun	5,000	124%	135%	125%	126%	125%
4 – R584 south of site	5,000	18%	30%	20%	20%	19%
5 – R584 north of site	5,000	18%	30%	20%	20%	19%

15.1.6.3 Existing Onsite 38kV Substation Construction

As part of the Proposed Development it is intended to continue the use of the existing onsite 38kV substation and as such, there are no traffic movements arising from substation construction as part of the Proposed Development.

15.1.6.4 Effect on Link Flows – During Operation

Once the Proposed Development is operational, it is estimated that there will be approximately two maintenance staff will access the Site at any particular time, to carry out operational maintenance, with a similar number of vehicle trips. It is considered that the traffic impact during this phase will be imperceptible.

15.1.6.5 Effect on Junctions – During Construction

The capacity of the proposed access junction on the R584 was assessed using the industry standard junction simulation software PICADY, which permits the capacity of any junction to be assessed with respect to existing or forecast traffic movements and volumes for a given period. The capacity for each movement possible at the junction being assessed is determined from geometric data input into the program with the output used in the assessment as follows:

- Queue – This is the average queue forecast for each movement and is useful to ensure that queues will not interfere with adjacent junctions.
- Degree of Saturation or Ratio of Flow to Capacity (% Sat or RFC) – As suggested, this offers a measure of the amount of available capacity being utilised for each movement. Ideally each movement should operate at a level of no greater than 85% of capacity.
- Delay – Output in minutes, this gives an indication of the forecast average delay during the time period modelled for each movement.

15.1.6.5.1 Scenarios Modelled

While other junctions and links on the network will experience an increase in traffic volumes passing through them, as discussed previously, the worst-case effect will be experienced during peak hours when, during peak construction periods, up to 40 workers (20 cars) will pass through it. It is noted that deliveries of materials to the Site will take place during the day after the workers have arrived on site, and before they leave at the end of the day and will therefore not occur at the same time.

15.1.6.5.2 R584 access junction Capacity Test Results

The AM and PM peak hour traffic flows through the R584 access junction are shown for the survey year 2025 in Figure 15-5a and factored to the proposed construction year in Figure 15-5b. Traffic flows generated by the Proposed Development during the AM and PM peak hours are set out in Figure 15-5c while Year 2027 traffic flows with development generated traffic are shown in Figure 15-5d.

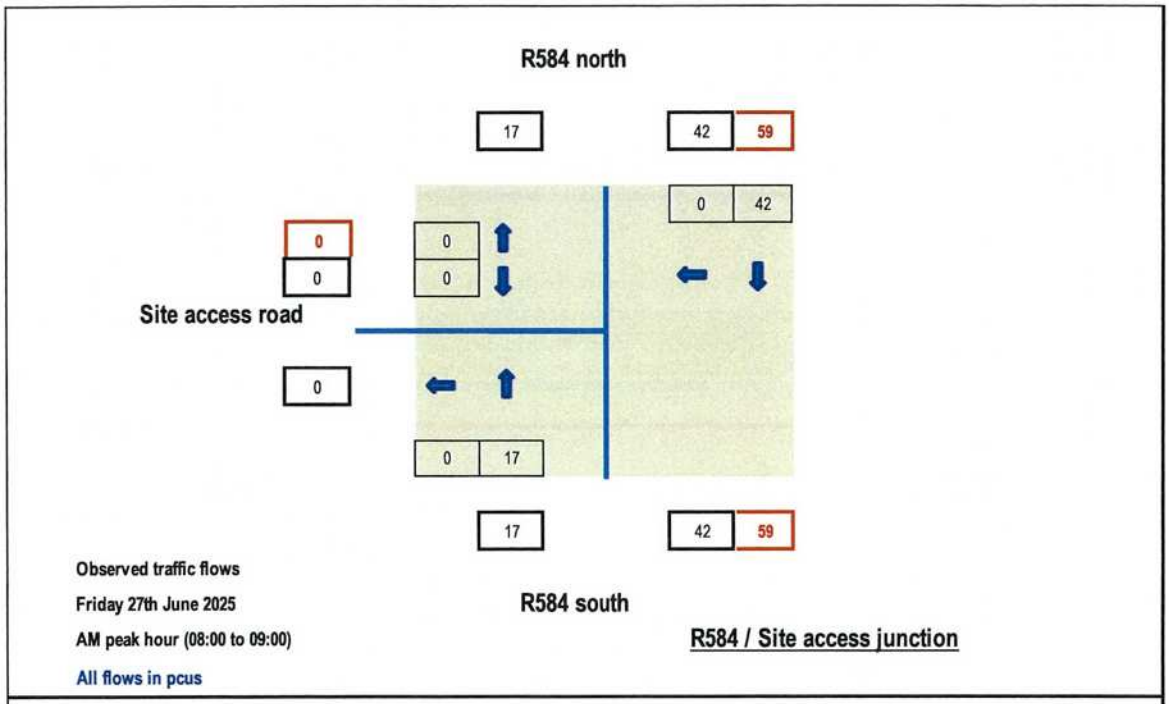
The results of the capacity assessment, as set out in Table 15-25, show that additional construction traffic passing through the junction will have a slight effect on existing traffic at this location, with a maximum ratio of flow to capacity (RFC) at the junction forecast to be 5.2% for traffic turning into the Site during the AM peak hour, and 7.6% during the PM peak hour for traffic exiting the Site. These are within the acceptable limit of 85%.

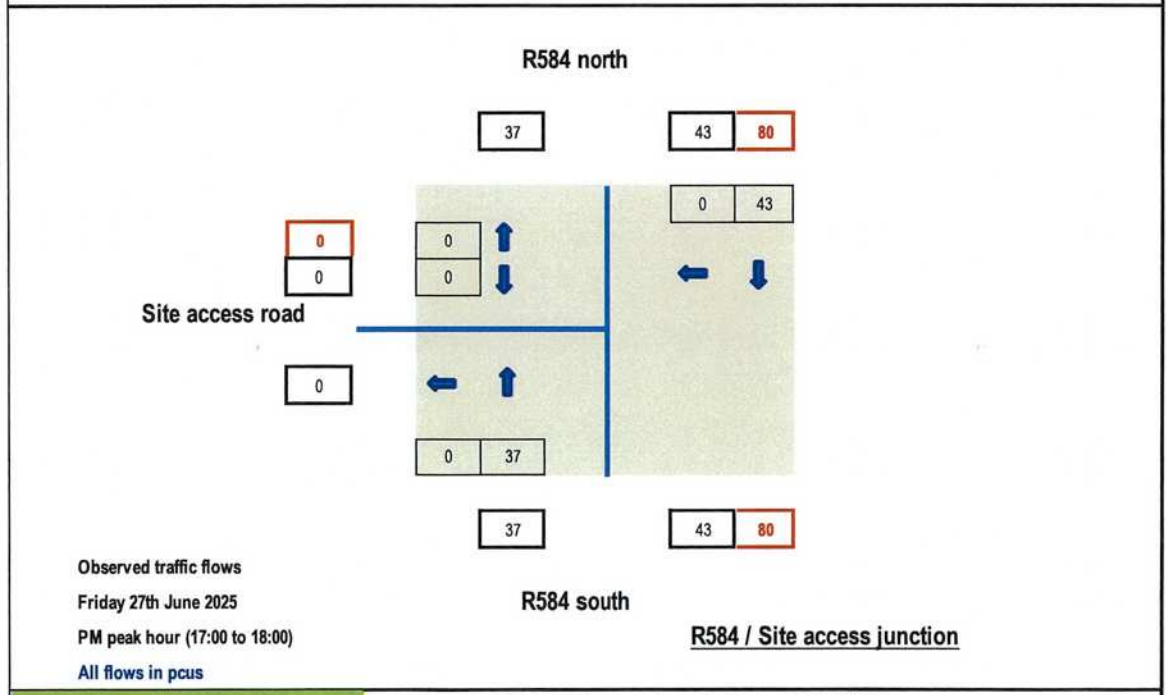
Table 15-25 Junction capacity test results, R584 / site access junction, AM and PM peak hours, with construction traffic, by time period, year 2027

Development scenario	Movement	AM peak hour			PM peak hour		
With Development		RFC	Queue (vehicles)	Delay (minutes)	RFC	Queue (vehicles)	Delay (minutes)
	From Wind Farm Access	0.0%	0.00	0.00	7.6%	0.08	0.13
	Right turn from R584	5.2%	0.06	0.11	0.0%	0.00	0.00

15.1.6.5.3 Effect on Junctions – During Operation

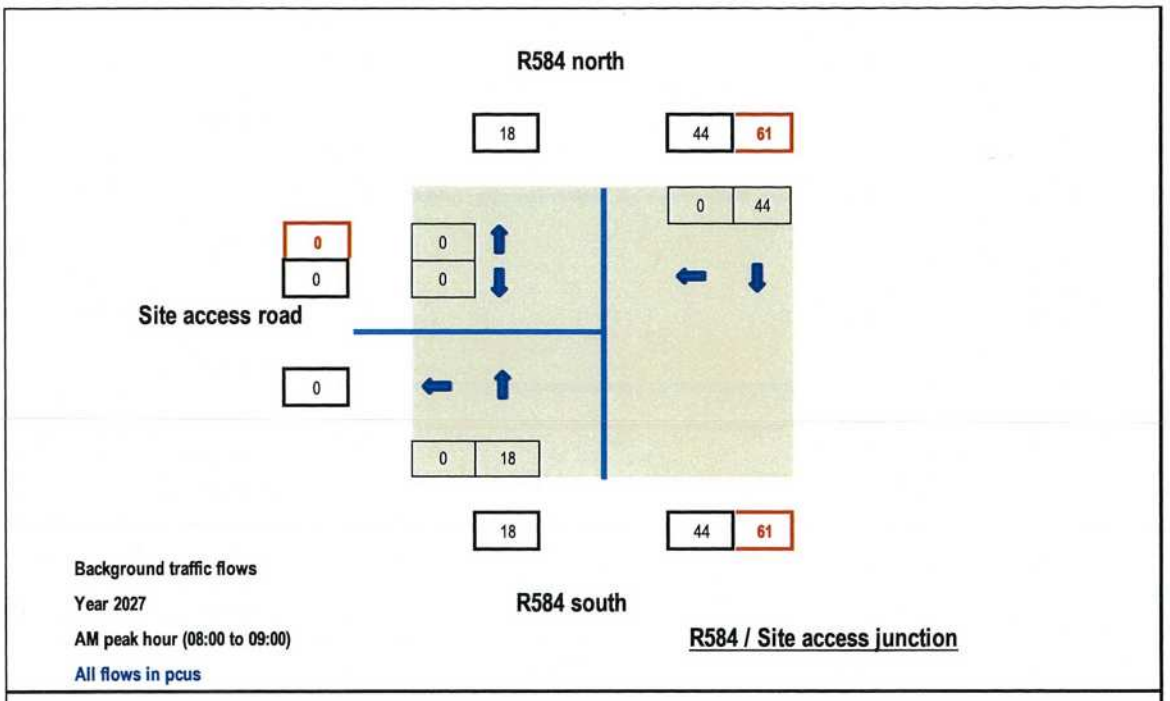
As discussed in Section 15.1.6 it is forecast that once operational, the Proposed Development will generate approximately 1-2 trips per day for maintenance purposes. It is therefore concluded that the Proposed Development will not have a significant effect on the local network once constructed.

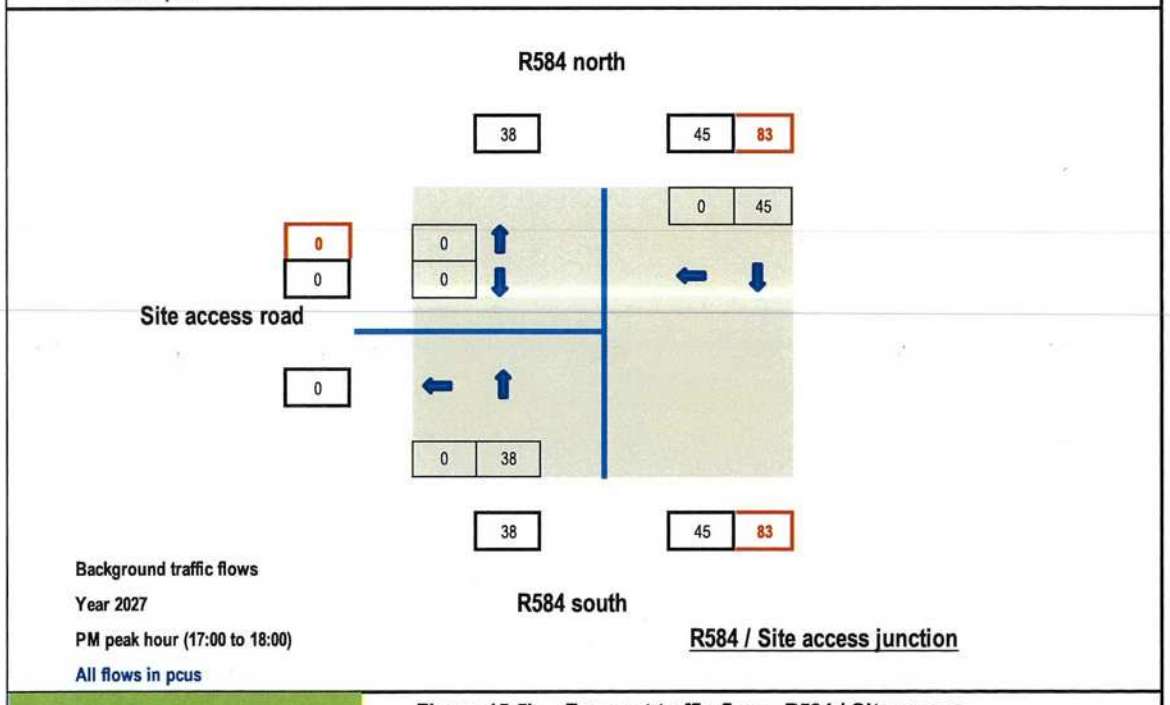




ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

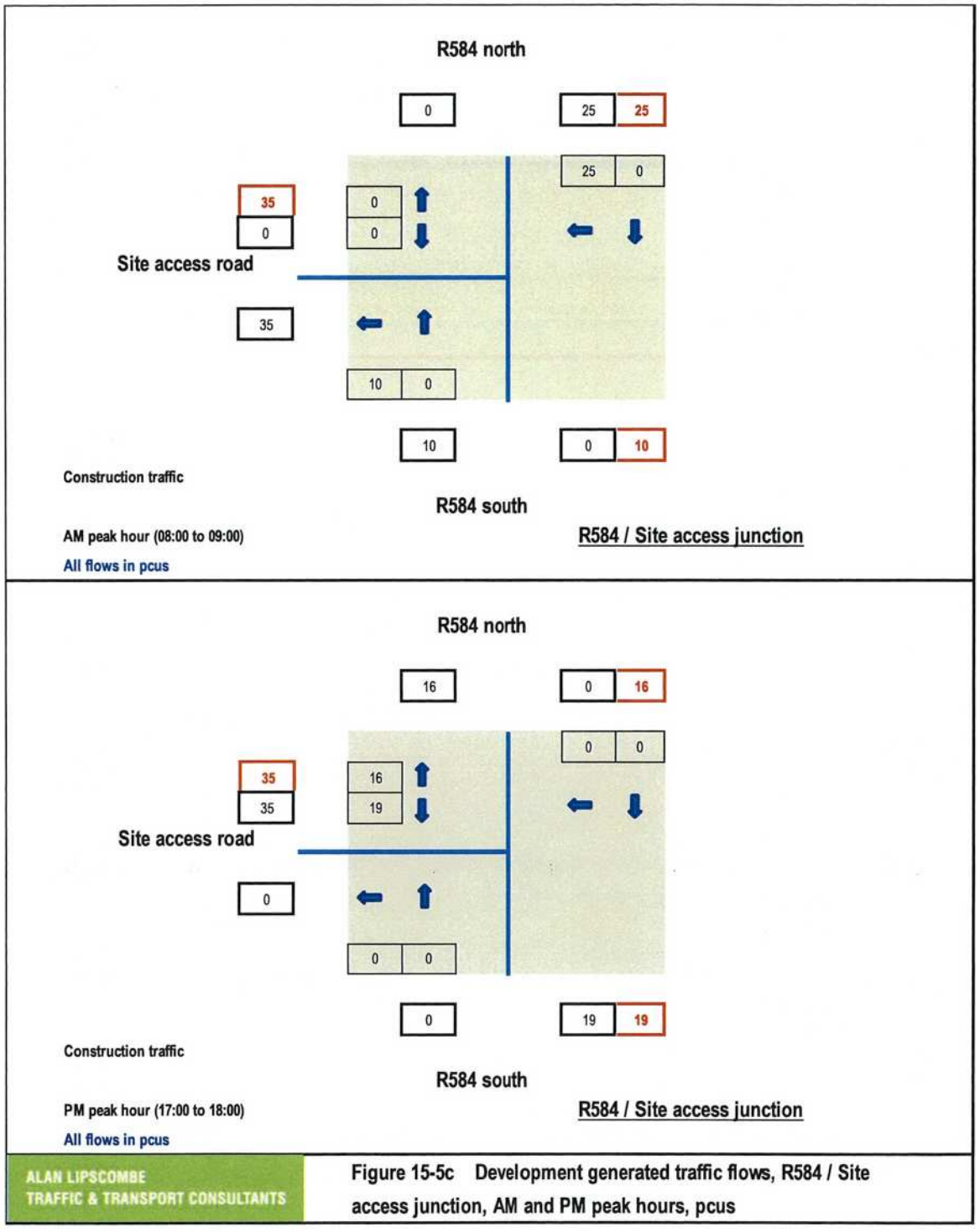
Figure 15-5a Observed traffic flows, R584 / Site access junction AM and PM peak hours, year 2025, pcus





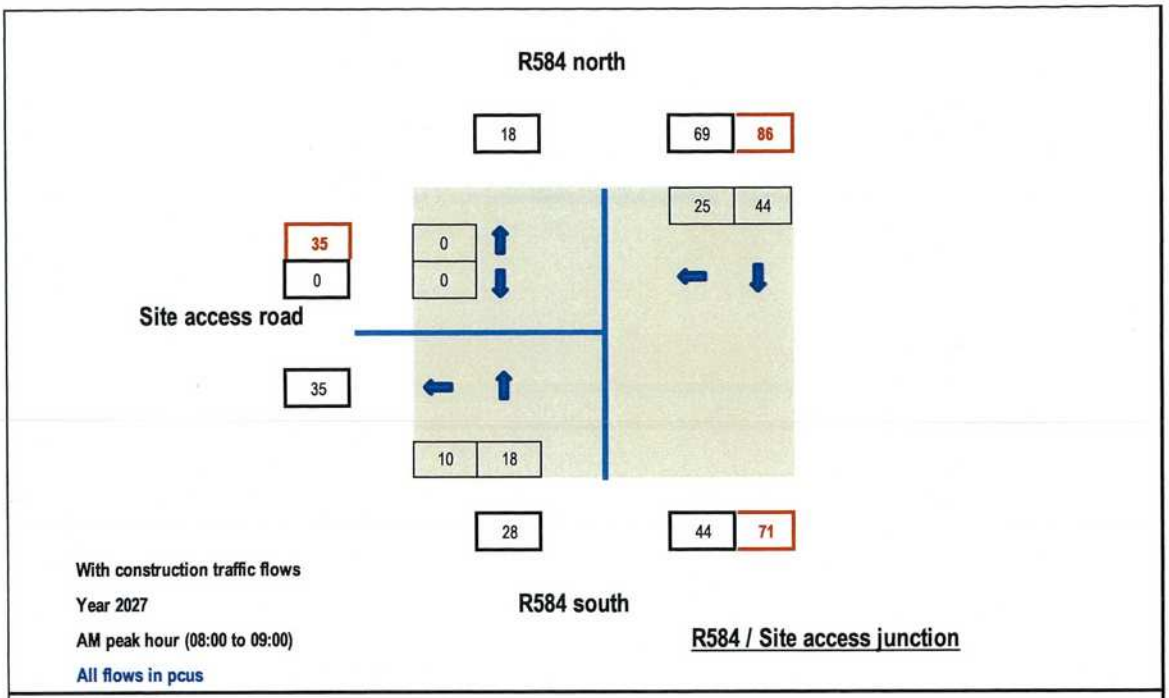
ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

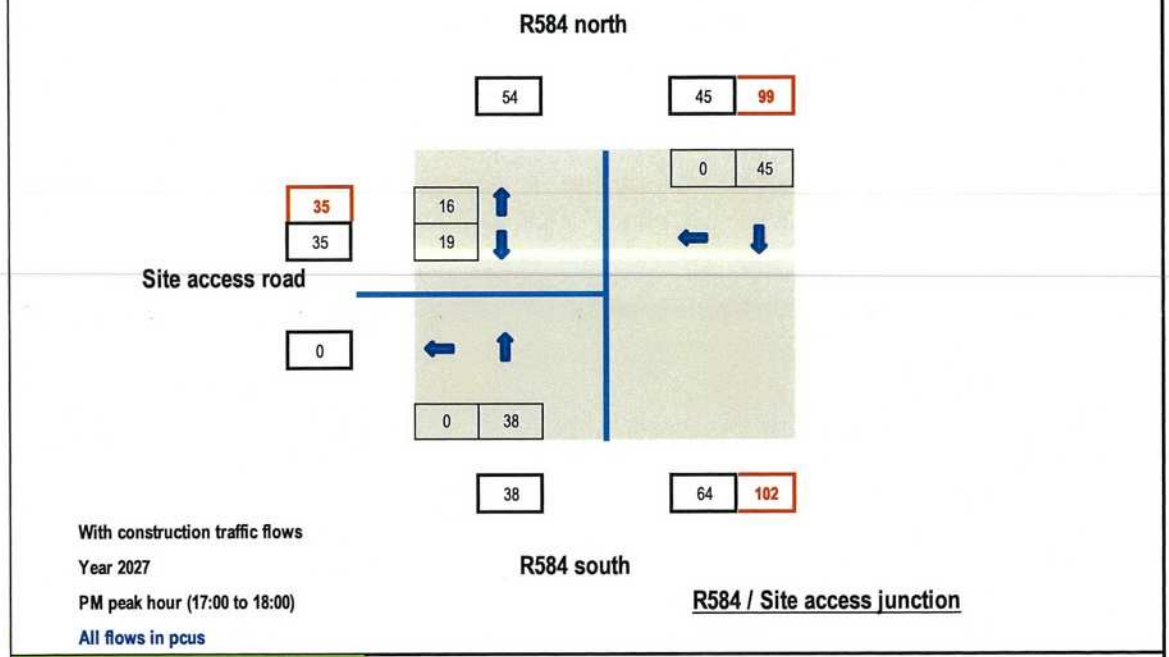
Figure 15-5b Forecast traffic flows, R584 / Site access junction AM and PM peak hours, year 2027, pcus



ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

Figure 15-5c Development generated traffic flows, R584 / Site access junction, AM and PM peak hours, pcus





ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

Figure 15-5d With development traffic flows, R584 / Site access junction AM and PM peak hours, year 2027, pcus

15.1.7 Traffic Management of Large Deliveries

Traffic management measures for the delivery of the abnormally sized loads are included in Section 15.1.10.5 and include the following:

- Identification of a delivery schedule,
- Details of the alterations required to the infrastructure identified in Section 15.1.8 of this report and any other minor alteration identified (hedge rows etc),
- A dry run of the route using vehicles with similar dimensions.

The transport of large components is challenging and can only be done following extensive route selection, route proofing and consultation with An Garda Síochána and the various local authorities. Turbine components are often transported at night, as is proposed, when traffic is lightest and this is done in consultation with the roads authorities / An Garda Síochána and special permits are generally required.

In some cases, temporary accommodation works are required along the TDR such as hedge or tree cutting, temporary relocation of powerlines/poles, lampposts, signage and minor road verge works. Any updates to the road will be carried out in advance of turbine deliveries and following consultation and agreement with the appropriate local authorities.

15.1.8 Abnormal Load Route Assessment

The proposed point of arrival for the wind farm plant is the port of Ringaskiddy in County Cork, with the full TDR shown in Figure 15-1.

As set out in Section 15.1.2.2, a detailed route assessment was undertaken covering the proposed delivery route for the abnormal loads, from the turn off from the N22 onto the R585 at Castlemore, with the route and assessment locations shown in Figure 15-2a. For these locations, preliminary road and junction alignments, based on OS mapping, were supplied by the project team. A preliminary swept path analysis was then undertaken using Autotrack in order to establish the locations where the wind turbine transport vehicles will be accommodated, and the locations where some form of remedial measure may be required. In line with best practice, it is recommended to carry out a dry-run assessment prior to construction.

It is noted again that the autotrack assessment for the turbine blade transporters are based on the use of a blade scissors lifter with the blade tip raised to 11m above ground level.

The assessment also presents the preliminary design of the proposed site access junction off the R584 and the associated autotrack assessment.

The locations discussed are as follows;

- Location 1 – N22 / R585 junction at Castlemore
- Location 2 – Right turn on R585 at Crookstown
- Location 3 – Left turn at R585 / R590 junction at Crookstown
- Location 4 – Bend on R585
- Location 5 – Series of bend on R585
- Location 6 – R585 through Bealnablath
- Location 7 – Bend on R585 at Gloun Cross
- Location 8 – Bend on R585 at Shanlaragh
- Location 9 – Bend on R585 at Cousane Gap
- Location 10 – Bend on R584 at Pearson's Bridge
- Location 11 – Turn on R584 at Ballylickey Bridge
- Location 12 – Bridge on R584 at Carriganass Castle

- Locations 13, 14, 15, 16, 17, 18, 19, 20 and 21 – bends on R584
- Location 22 – Reverse turn on R584
- Location 23 – Access Junction on R584

Location 1 - N22 / R585 junction

See Figures 15-6 and 15-7 in Appendix 15-2: Autotrack Assessment

The swept path analysis undertaken for this location indicates that the large turbine vehicles will be able to negotiate this junction.

Location 2 – Right turn R585 in Crookstown

See Figures 15-8 and 15-9 in Appendix 15-2: Autotrack Assessment

The swept path analysis undertaken for this location shows that the blade tail will need to over-sail the field to the northeast of the junction in order for the blade transporter to negotiate the bend.

Location 3 – Left turn at R585 / R590 junction at Crookstown

See Figures 15-10 and 15-11 in Appendix 15-2: Autotrack Assessment

The figures show that a section of the Site on the south-eastern corner of the junction will be required for overhang of the blade for the blade transport vehicle to make this turn. An over-sail of the blade tip on the northern side of the road will also be required.

Location 4 – Bend on R585

See Figures 15-12 and 15-13 in Appendix 15-2: Autotrack Assessment

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend.

Location 5 – Series of bends on R585

See Figures 15-14a, 15-14b, 15-15a and 15-15b in Appendix 15-2: Autotrack Assessment

The analyses shown in these figures indicate that temporary local road widening will be required at this series of bends in order to accommodate the wind turbine vehicles. It is noted that local road works and tree felling along the verge had been undertaken for the purpose of the delivery of similar sized turbine component for a wind farm previously constructed.

Location 6 – R585 through Bealnablath

See Figures 15-16 and 15-17 in Appendix 15-2: Autotrack Assessment

The figures show that significant over-sail of the blade will be required into the field on the southern side of the R585.

Location 7 – Bend on R585 at Gloun Cross

See Figures 15-18 and 15-19 in Appendix 15-2: Autotrack Assessment

The figures show that over-sail of the blade will be required into the field on the northern side of the R585.

Location 8 – Bend on R585 at Shanlaragh

See Figures 15-20 and 15-21 in Appendix 15-2: Autotrack Assessment

The figures show that over-sail of the blade will be required into the field on the northern side of the R585 and overhang of the body of the blade will be required on the southern side of the road.

Location 9 – Bends on R585 at Cousane Gap

See Figures 15-22a, 15-22b, 15-23a and 15-23b in Appendix 15-2: Autotrack Assessment

The analysis shown in these figures indicates that temporary local road margin strengthening will likely be required at this series of bends in order to accommodate the wind turbine vehicles. Significant oversail of the blade tip and overhang of the body of the blade will also be required.

Location 10 – Bends on R585 at Pearson's Bridge

See Figures 15-24a, 15-24b, 15-25a and 15-25b in Appendix 15-2: Autotrack Assessment

On-site observations together with the swept path analysis suggest that the geometry of the bridge will accommodate the wind farm turbine vehicles although it is very tight and a detailed assessment and dry run will be required prior to construction. Temporary traffic management measures will be required in order to ensure that parked cars do not cause an obstruction. An autotrack assessment is included for the southbound direction on-route to Ballylickey Bridge and for the northbound direction heading back up towards the Site.

Location 11 – Turn on R584 / N71 junction at Ballylickey Bridge

See Figures 15-26 and 15-27 in Appendix 15-2: Autotrack Assessment

It is proposed that the extended turbine artics will make a 3-point turn at this location in order to head back up the R584 in a northeastern direction. In order to do this the escorted convoy will travel southwest on the R584 and travel straight through the junction to head southwest on the N71. The vehicles will then reverse onto the N71 Ballylickey Bridge before driving forward and right back onto the R584.

It is noted that the blade tip is required to overhang the north and south sides of the bridge on the N71 when making the 3-point turn, and the body of the blade is required to overhang the northeast corner of the bridge as the vehicle turns right from the N71 onto the R584. The swept path assessment shows that the proposed manoeuvres should be possible although the geometry is very tight and a detailed assessment and dry run will be required prior to the construction stage.

Location 12 – Bridge on R584 at Carriganass Castle

See Figures 15-28a, 15-28b, 15-29a and 15-29b in Appendix 15-2: Autotrack Assessment

The swept path assessment undertaken illustrates that the space available for the vehicle tracks to negotiate the bridge is constrained, but a proposed manoeuvre should be possible at this location, subject to the completion of the dry-run assessment. Alternative methods that could be explored will include blade adapters (to lift blades at an angle) and temporary modifications to the bridge / road network. As noted on Chapter 14 (Archaeological, Architectural & Cultural Heritage), impacts on

Carriganass Castle Bawn wall will be avoided during the delivery of the turbines to the Proposed Development and where there is a requirement, a blade adapter can be used to lift the blade so it avoids structures within the surrounding area. As occurred during the Kealkill Wind Farm, bridge walls were removed and rebuilt. If walls need to be temporarily removed during the turbine delivery phase, this will be discussed with Cork County Council prior to turbine delivery.

Location 13 – Bend on R584

See Figures 15-30 and 15-31 in Appendix 15-2: Autotrack Assessment

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend although oversail of the blade tip and overhang of the body of the blade will be required.

Location 14 – Bend on R584

See Figures 15-32 and 15-33 in Appendix 15-2: Autotrack Assessment

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend although oversail of the blade tip will be required on the western side of the R584.

Location 15 – Bend on R584

See Figures 15-34 and 15-35 in Appendix 15-2: Autotrack Assessment

As above, the preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend although oversail of the blade tip will be required on the western side of the R584.

Locations 16, 17 and 18 – Bends on R584

See Figures 15-36, 15-37, 15-38, 15-39. 15-40 and 15-41 in Appendix 15-2: Autotrack Assessment

The analysis shown in these figures indicate that temporary accommodation works will be required at this series of bends in order to accommodate the wind turbine vehicles.

Location 19 – Bend on R584

See Figures 15-42 and 15-43 in Appendix 15-2: Autotrack Assessment

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend with oversail of the blade required to the south of the R584.

Location 20 – Bends on R584

See Figures 15-44 and 15-45 in Appendix 15-2: Autotrack Assessment

The analysis shown in these figures indicate that temporary local road widening will be required at this series of bends in order to accommodate the wind turbine vehicles.

Location 21 – Bend on R584

See Figures 15-46 and 15-47 in Appendix 15-2: Autotrack Assessment

On-site observations together with the swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend with over-sail of the blade required to the west and the south. It is noted that the autotrack assessment shown is for the northbound direction, when the vehicles are travelling towards the turning point on the R584, and the conclusions are the same for the southbound direction when the vehicles have turned and are travelling southbound back towards the Site access.

Location 22 – Reverse turn on R584 and local access

See Figures 15-48 and 15-49 in Appendix 15-2: Autotrack Assessment

It is proposed that the extended turbine transporters will travel east along the R584, before reversing back into an existing access road. The vehicles will then turn left onto the R584 travelling in a southwest direction towards the access junction. The figures show the extent of local widening required at the existing access in order to accommodate the abnormally sized turbine vehicles.

15.1.8.2 Site access junction off the R584

See Figures 15-50 to 15-54

The proposed junction layout, including the temporary run-over areas required for the delivery of the abnormally sized turbine vehicles, is shown in Figure 15-50. The proposed junction design is based on the HGV access guidance set out by TII and includes 13m junction radii. Visibility splays of 3m x 160m appropriate for the 80 km/h speed limit are shown in Figure 15-51. These visibility splays must be kept clear of all obstruction above 1.05m during both the construction and operation of the Proposed Development. The swept path analysis set out in Figures 15-52 to 15-54 shows that the proposed layout will accommodate all vehicles requiring access to the Site.

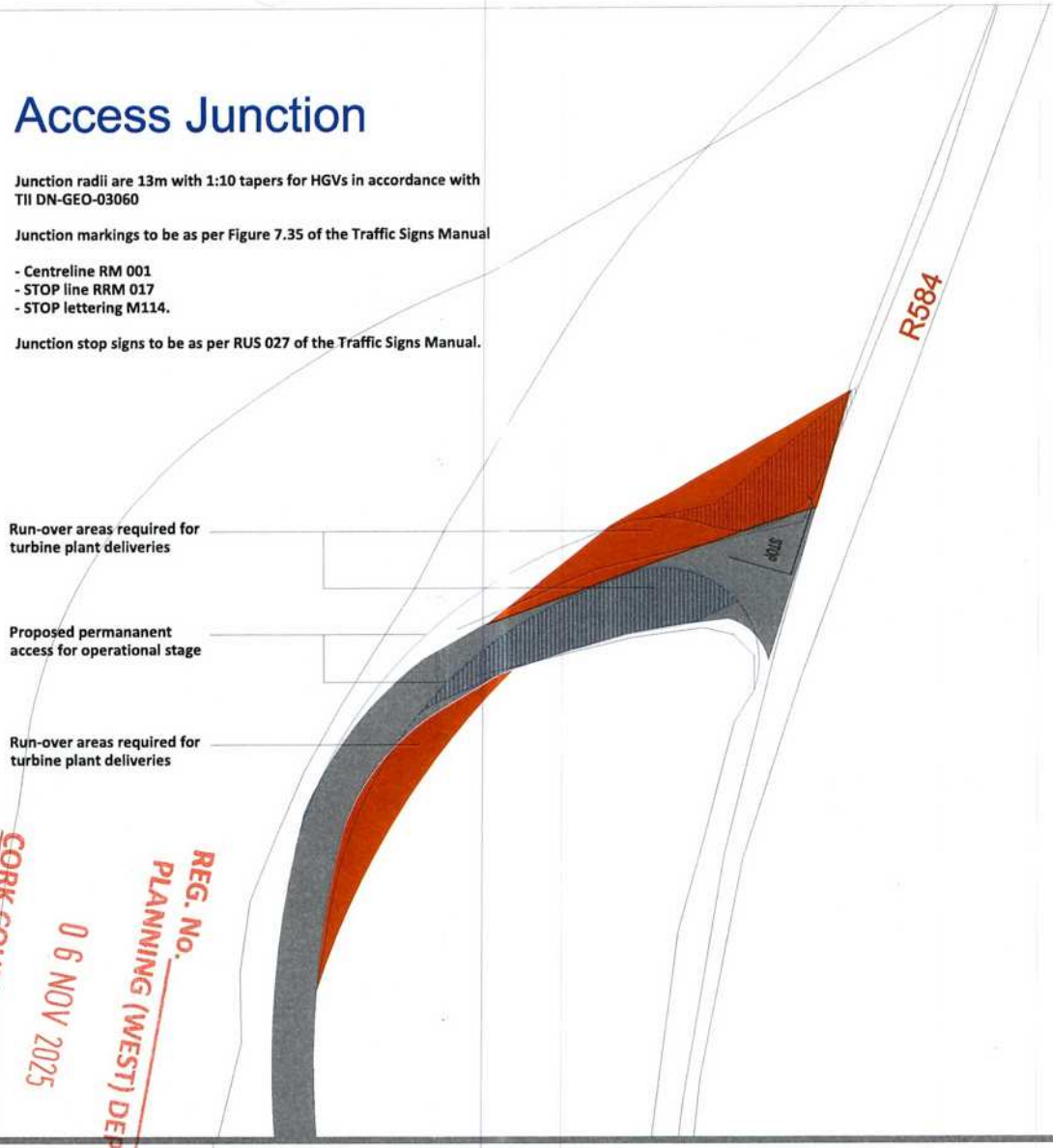
Access Junction

Junction radii are 13m with 1:10 tapers for HGVs in accordance with TII DN-GEO-03060

Junction markings to be as per Figure 7.35 of the Traffic Signs Manual

- **Centreline RM 001**
- **STOP line RRM 017**
- **STOP lettering M114.**

Junction stop signs to be as per RUS 027 of the Traffic Signs Manual.



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15.50 Access Junction on R584, proposed layout

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	1:1000
PROJECT NO: 8010	DATE: 27.08.25	DRAWN BY:	AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

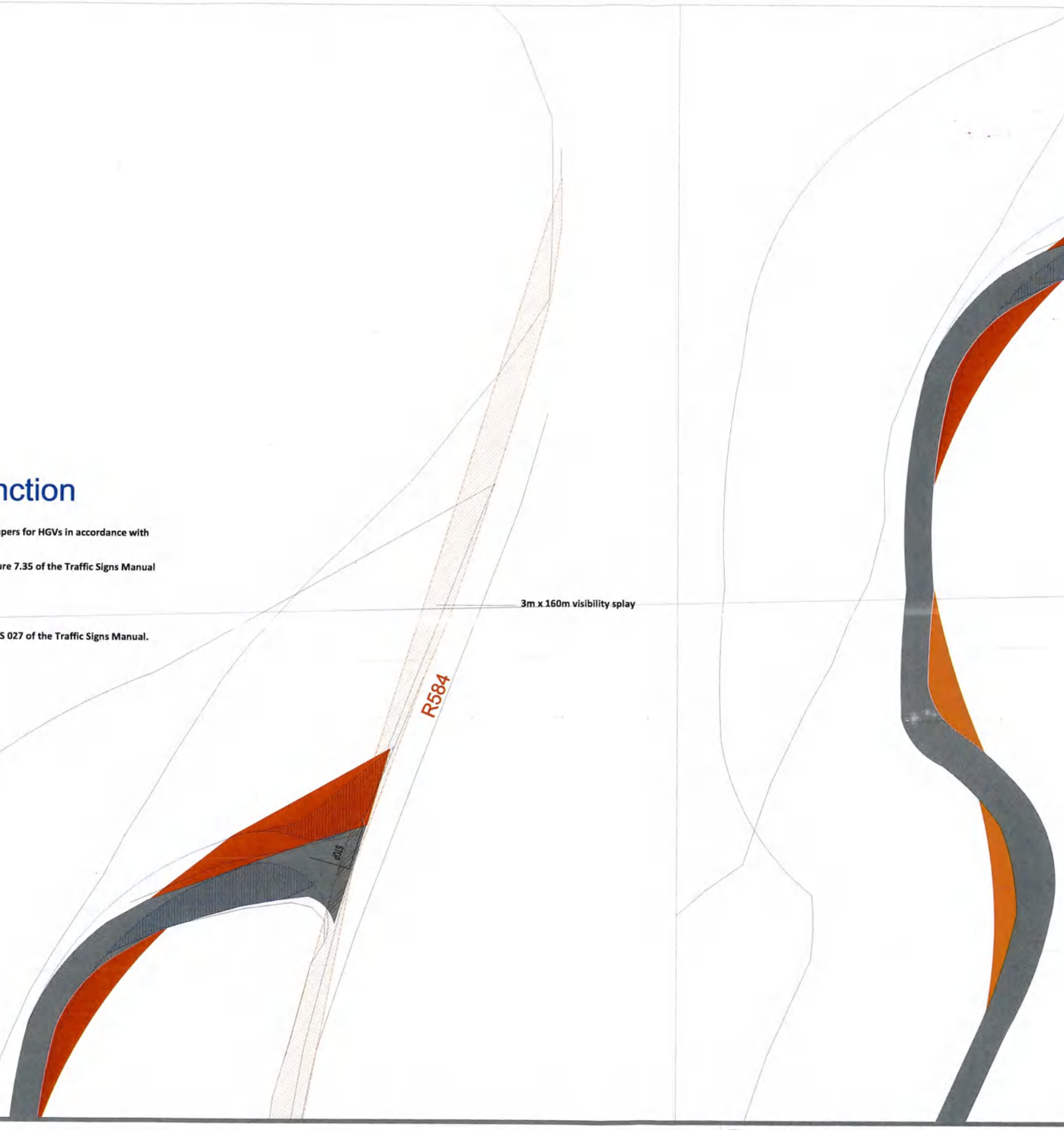
Access Junction

Junction radii are 13m with 1:10 tapers for HGVs in accordance with TII DN-GEO-03060

Junction markings to be as per Figure 7.35 of the Traffic Signs Manual

- Centreline RM 001
- STOP line RRM 017
- STOP lettering M114.

Junction stop signs to be as per RUS 027 of the Traffic Signs Manual.



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15.51 Access Junction on R584, proposed layout and visibility splays

PROJECT:	Curraglass Wind Farm, Co. Cork				
CLIENT:	Wingleaf Ltd			SCALE:	1:1000
PROJECT NO: 8010		DATE:	27.05.25	DRAWN BY:	AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

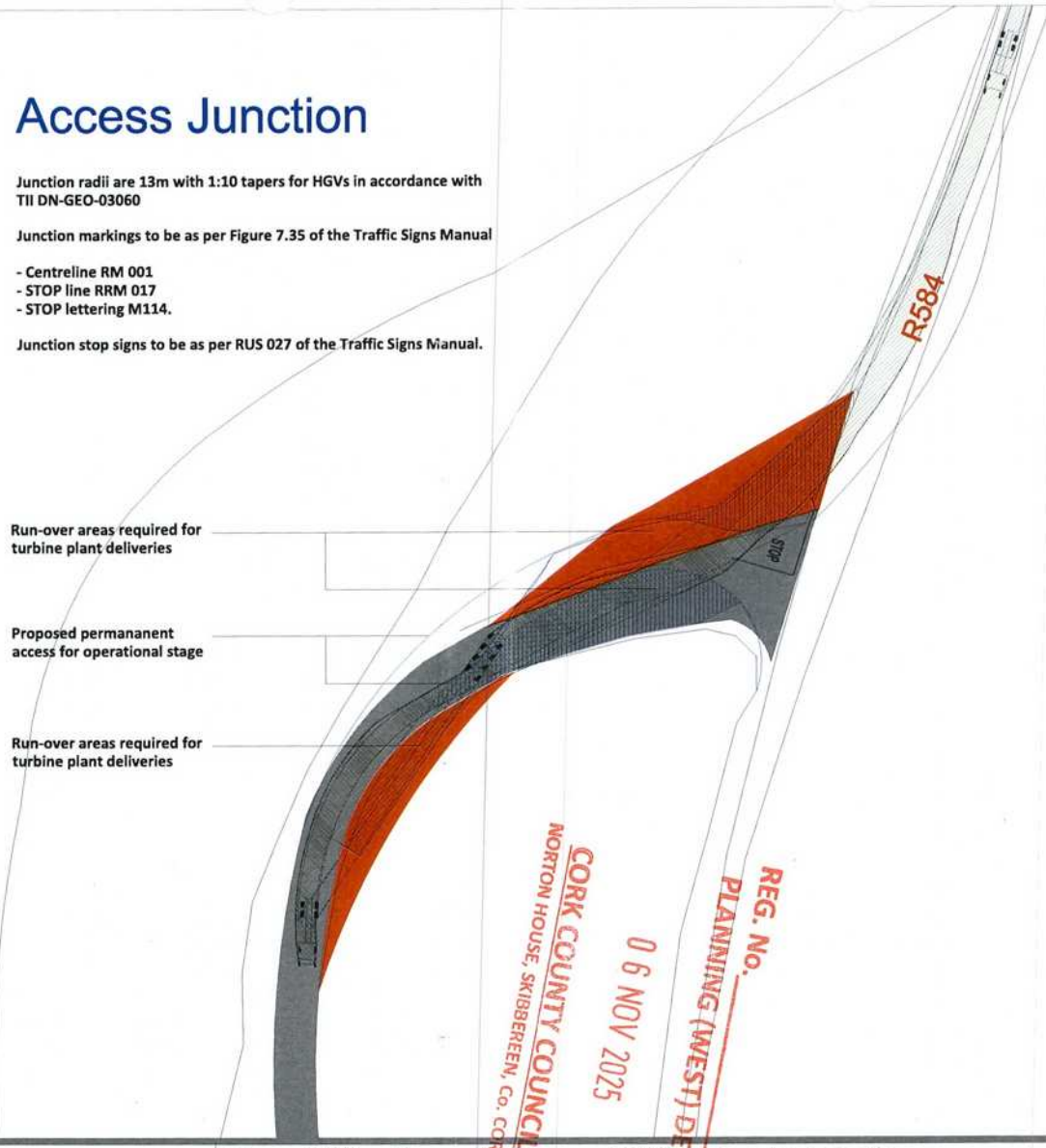
Access Junction

Junction radii are 13m with 1:10 tapers for HGVs in accordance with TII DN-GEO-03060

Junction markings to be as per Figure 7.35 of the Traffic Signs Manual

- **Centreline RM 001**
- **STOP line RRM 017**
- **STOP lettering M114.**

Junction stop signs to be as per RUS 027 of the Traffic Signs Manual.



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15.52 Access Junction on R584, blade extended artic

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd		SCALE: 1:1000
PROJECT NO: 8010	DATE: 27.08.25		DRAWN BY: AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

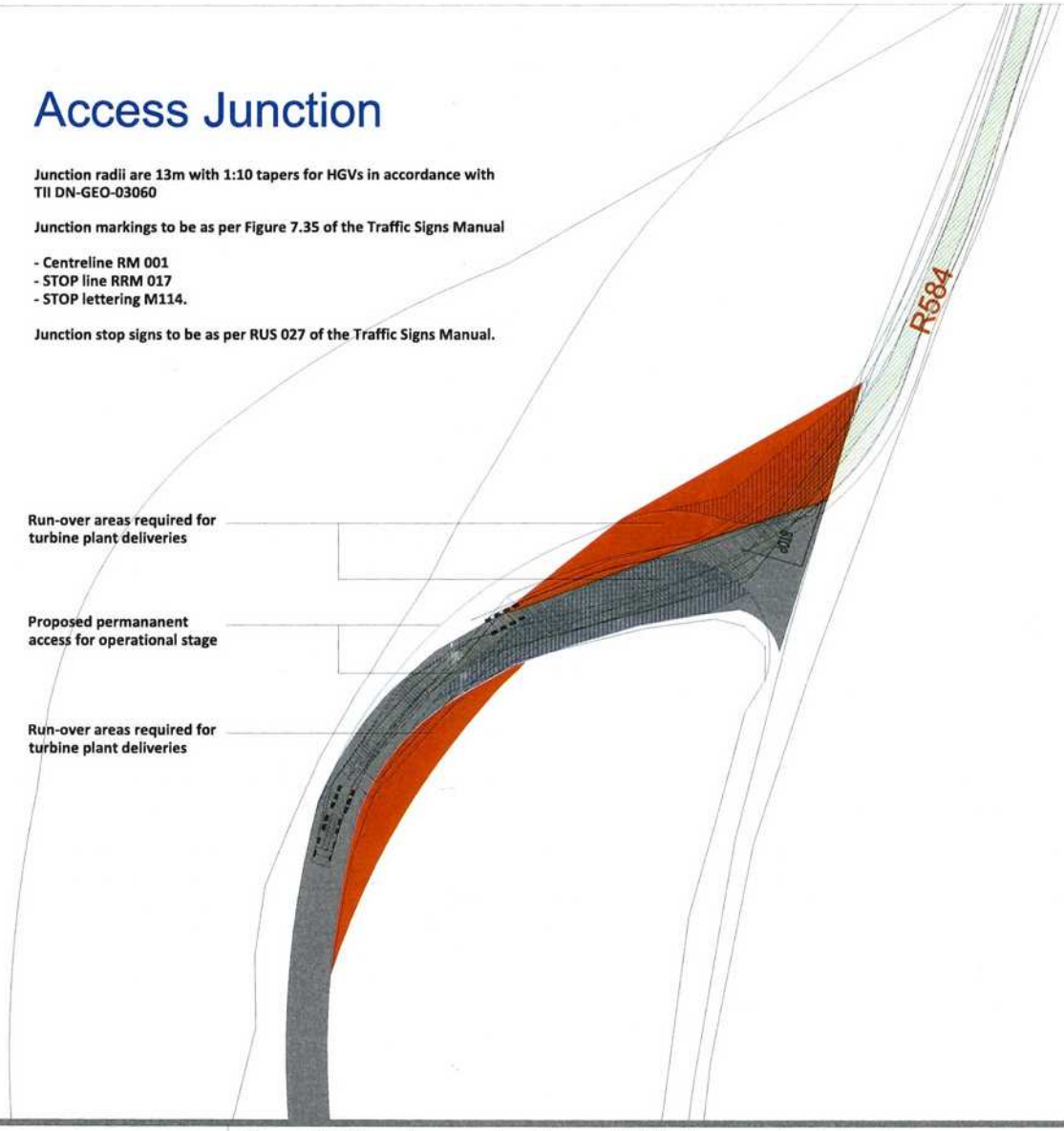
Access Junction

Junction radii are 13m with 1:10 tapers for HGVs in accordance with TII DN-GEO-03060

Junction markings to be as per Figure 7.35 of the Traffic Signs Manual

- **Centreline RM 001**
- **STOP line RRM 017**
- **STOP lettering M114.**

Junction stop signs to be as per RUS 027 of the Traffic Signs Manual.



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15.53 Access Junction on R584, tower extended artic

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	1:1000
PR	NO: 8010	DATE: 27.08.25	DRAWN BY

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

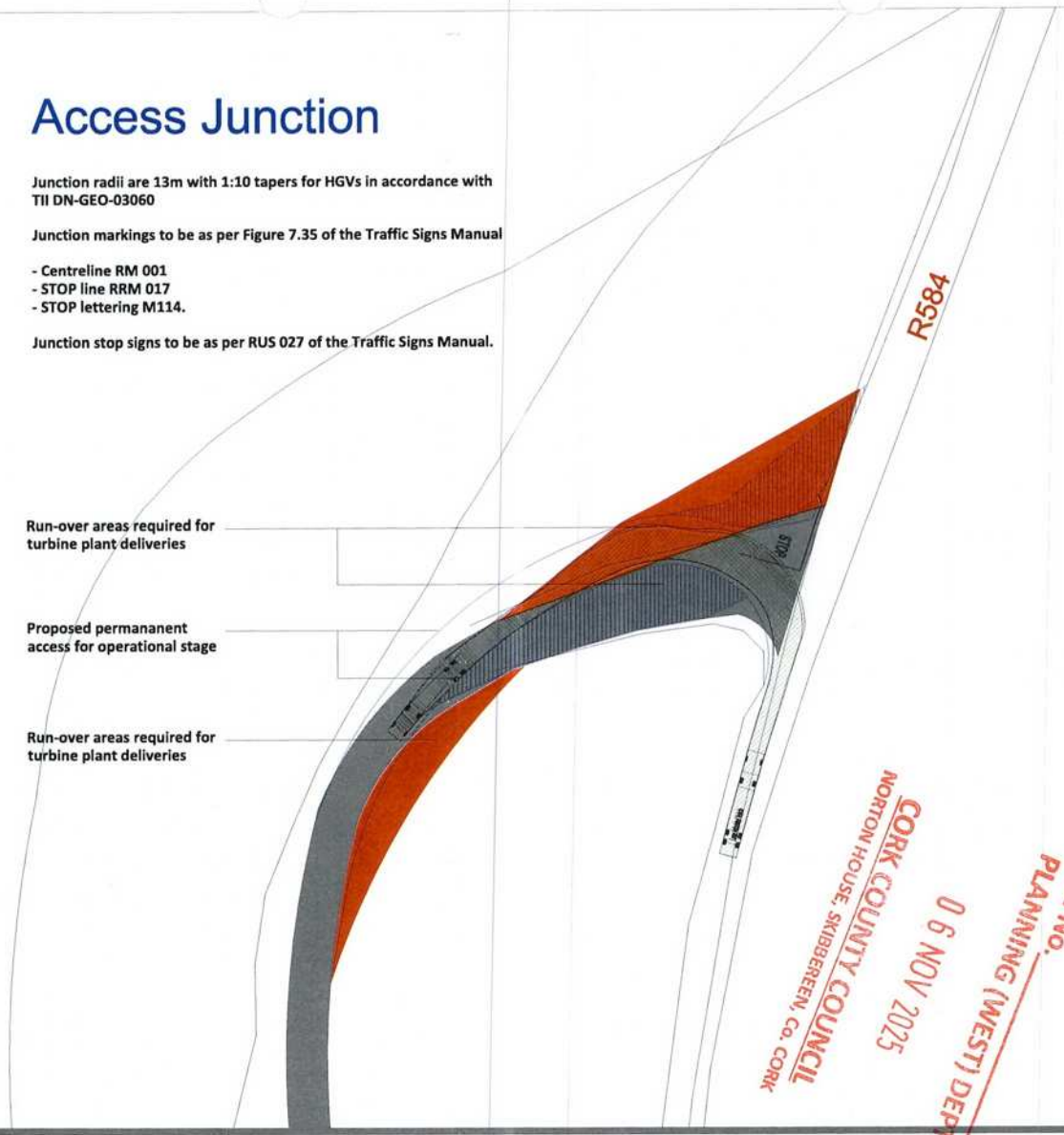
Access Junction

Junction radii are 13m with 1:10 tapers for HGVs in accordance with TII DN-GEO-03060

Junction markings to be as per Figure 7.35 of the Traffic Signs Manual

- **Centreline RM 001**
- **STOP line RRM 017**
- **STOP lettering M114.**

Junction stop signs to be as per RUS 027 of the Traffic Signs Manual.



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15.54 Access Junction on R584, large artic HGV

PROJECT:	Curraglass Wind Farm, Co. Cork		
CLIENT:	Wingleaf Ltd	SCALE:	1:1000
PROJECT NO: 8010	DATE: 27.08.25	DRAWN BY:	AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

15.1.9 Provision for Sustainable Modes of Travel

15.1.9.1 Walking and Cycling

The provision for these modes is not relevant during the construction stage of the development and travel distances will likely exclude any employees walking or cycling to work.

15.1.9.2 Public Transport

There are no public transport services that currently pass the Site although minibuses may be considered for transporting construction staff to and from the Site in order to minimise traffic generation and parking demand on site.

15.1.10 Likely and Significant Effects and Associated Mitigation Measures

15.1.10.1 "Do Nothing" Scenario

If the Proposed Development were not to proceed, there would no additional traffic generated or accommodation works carried out on the local road network and therefore no direct or indirect effects on roads and traffic.

The opportunity to capture part of Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. An alternative land use option to developing a renewable energy project at the Site would be to leave the Site as it is, with no changes made to the current land use compromises of commercial forestry, agricultural land and unutilised existing wind farm infrastructure that remains at the Site from the Kealkill Wind Farm. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

15.1.10.2 Construction Phase

On 178 days required for the Site preparation and ground works when deliveries to the Site will take place, the effect on the surrounding road network will be negative, resulting in an increase in traffic levels ranging from +0.3% on the N22 to an increase of +1.0% on the R585 in Crookstown and 0.9% through Gloun, and +6.1% on the R584 leading to the Site. On these days, the direct effect will be temporary and will be slight and not significant

During the 3 days when the concrete foundations are poured the effect on the surrounding road network will be negative, resulting in an increase in traffic levels ranging from +3.2% on the N22 to an increase of +9.9% on the R585 in Crookstown and +8.9% through Gloun, and +59.9% on the R584 leading to the Site. The direct effect will be temporary and will be slight and not significant.

During the 8 nights when the large component parts of the wind turbine plant are delivered to the Site using extended articulated HGVs, the effect of the additional traffic on these days will be moderate due to the size of vehicles involved, resulting in increased traffic volumes of between 0.5% on the N22, +1.4% on the R585 in Crookstown and 1.3% through Gloun, to +8.7% on the R584 leading to the Site. The direct effects will be temporary, not significant and will be reduced in terms of severity to slight if the delivery of the large plant is done at night, as is proposed.

During the 3 days of the turbine construction stage when general materials are delivered to the Site, the delivery of construction materials will result in a negative impact on the surrounding road network, increasing traffic levels, ranging from +0.2% on the N22, +0.7% on the R585 in Crookstown and 0.6% through Gloun, and an increase of +4.2% on the R584 leading to the Site. The direct effect during this period will be temporary and will be slight and not significant.

It is forecast that there will be ***No Traffic Related Significant Impacts*** during the construction of the Proposed Development

15.1.10.3 Operational Phase

During the operational phase the direct effect on the surrounding local highway network will be neutral and long term, not significant, given that there will be approximately two maintenance staff travelling to site at any one time, resulting in typically 1-2 visits to the Site on any one day made by a car or light goods vehicle.

15.1.10.4 Decommissioning Phase

The design life of the wind farm is 35 operational years. If the Site is decommissioned, cranes will disassemble each turbine tower and all equipment. All turbine infrastructure including turbine components will be separated and removed off-site for re-use, recycling and waste disposal. Turbine foundations would remain in place underground and would be covered with earth and reseeded as appropriate. The existing onsite 38kV substation will be removed. It is proposed to leave the access roads and hardstanding areas in situ at the decommissioning stage. Leaving the turbine foundations, access tracks and hardstanding areas in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in significant environment nuisances such as noise, dust and/or vibration. Any impact and consequential effect that occurs during the decommissioning phase are similar to that which occur during the construction phase, be it of less impact. The mitigation measures prescribed for the construction phase of the Proposed Development will be implemented during the decommissioning phase thereby minimising any potential impacts.

15.1.10.5 Mitigation Measures

This section summarises the mitigation measures to minimise the effects of the Proposed Development during both the construction and operational stages.

Mitigation by Design

Mitigation by design measures includes the following;

- Selection of the most appropriate delivery route to transport the wind turbine components, requiring the minimum remedial works to accommodate the vehicles as set out in Section 15.1.8.
- Construction of temporary improvements to the local highway network at locations identified in Section 15.1.8.
- Use of on-site borrow pits to produce materials to minimise deliveries to site during construction,
- Use of existing onsite 38kV substation and associated underground cable that connects to the existing 38kV overhead line to alleviate requirement for construction works along regional road.

Mitigation Measures During the Construction Stage

The successful completion of this development will require significant coordination and planning, and it is therefore recommended that the following comprehensive set of mitigation measures will be put in

place before and during the construction stage of the development in order to minimise the effects of the additional traffic generated by the Proposed Development

Delivery of abnormal sized loads

The following are the main points to note for these deliveries which will take place after peak evening traffic:

- The delivery of turbine components is a specialist transport operation with the transportation of components carried out at night when traffic is at its lightest and the impact minimised.
- The deliveries will be made in consultation with the Local Authority and An Garda Síochána.
- It is estimated that 24 abnormal sized loads will be delivered to the Site, comprising 8 convoys of 3, undertaken over 8 separate nights.
- These nights will be spread out over an approximate period of 2 weeks and will be agreed in advance with the relevant authorities
- In order to manage each of the travelling convoys, for each convoy there will be two police escort vehicles that will stop traffic at the front and rear of the convoy of 3 vehicles.
- There will also be two escort vehicles provided by the haulage company for each convoy.

Other traffic management measures

A detailed **Traffic Management Plan (TMP)** will be provided specifying details relating to traffic management and included in the CEMP prior to the commencement of the construction phase of the Proposed Development. The TMP will be agreed with the local authority and An Garda Síochána prior to construction works commencing on Site. The detailed TMP will include the following:

- **Traffic Management Coordinator** – a competent Traffic Management Co-ordinator will be appointed for the duration of the development and this person will be the main point of contact for all matters relating to traffic management.
- **Delivery Programme** – a programme of deliveries will be submitted to the County Council in advance of deliveries of turbine components to site. Liaison with the relevant local authorities and Transport Infrastructure Ireland (TII) will be carried out where required regarding requirements such as delivery timetabling. The programme will ensure that deliveries are scheduled in order to minimise the demand on the local network and minimise the pressure on the access to the Site.
- **Information to locals** – Locals in the area will be informed of any upcoming traffic related matters e.g. temporary lane/road closures (where required) or delivery of turbine components at night, via letter drops and posters in public places. Information will include the contact details of the Project Co-ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided.
- **A Pre and Post Construction Condition Survey** – Where required by the local authority, a pre-condition survey of roads associated with the Proposed Development can be carried out immediately prior to construction commencement to record an accurate condition of the road at the time. A post construction survey will be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. Where required the timing of these surveys will be agreed with the local authority. All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.
- **Liaison with the relevant local authority** - Liaison with Cork County Council and An Garda Síochána will be carried out during the delivery phase of the large turbine vehicles, when an escort for all convoys will be required. Once the surveys have been

carried out and "prior to commencement" status of the relevant roads established, (in compliance with the provisions of the CEMP), the Roads section will be informed of the relevant names and contact numbers for the Project Developer/Contractor Site Manager as well as the Site Environmental Manager.

- **Implementation of temporary alterations to road network at critical junctions** – at locations highlighted in section 15.1.8. In addition, in order to minimise the impact on the existing environment during turbine component deliveries the option of blade adaptor trailers will also be used where deemed practicable.
- **Identification of delivery routes** – These routes will be agreed with the County Council and adhered to by all contractors.
- **Delivery times of large turbine components** - The management plan will include the option to deliver the large wind turbine plant components at night in order to minimise disruption to general traffic during the construction stage.
- **Travel plan for construction workers –** While the assessment above has assumed the worst case in that construction workers will drive to the Site, the construction company will be required to provide a travel plan for construction staff, which will include the identification of routes to / from the Site and identification of an area for parking.
- **Additional measures** - Various additional measures will be put in place in order to minimise the effects of the development traffic on the surrounding road network including wheel washing facilities on site and sweeping / cleaning of local roads as required. These are set out in the CEMP which is contained in Appendix 4-3.
- **Re-instatement works** - All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.

Mitigation Measures During Operational Stage

Due to the very low volumes of traffic forecast to be generated during this stage no mitigation measures are required.

Mitigation Measures During Decommissioning Stage

In the event that the Proposed Development is decommissioned after the 35 years of operation, a decommissioning plan, including material recycling / disposal and traffic management plan will be prepared for agreement with the local authority. This plan will contain similar mitigation measures to those implemented during the construction phase.

15.1.11 Residual Impacts

15.1.11.1.1 *Construction Stage*

During the 12-month construction stage of the Proposed Development, it is forecast that the additional traffic that will travel on the delivery route indicated in Figure 15-1 will have a slight, negative, and temporary impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan and is not significant.

15.1.11.1.2 *Operational Stage*

As the traffic impact of the optimised development will be imperceptible during the operational stage, there will be no residual impacts during this stage.

15.1.11.1.3 *Decommissioning Stage*

As stated above, in the event that the wind farm is decommissioned a decommissioning plan will be prepared and implemented in order to minimise the residual impacts during this stage. The residual impact will be not significant.

15.1.12 Cumulative Effects

The developments considered as part of the cumulative effect assessment are described in Section 2.9 of this EIAR. In this regard in order to assess overall cumulative effects on traffic the Proposed Development is considered in the context of other developments as detailed below:

- Other Wind Farms,
- Other Development Planning Applications in Planning System,
- Forestry and replanting, and,
- Existing wind farm infrastructure.

The development or activities that were considered to have potential cumulative impacts with the Proposed Development in terms of traffic impacts are summarised in Tables 15-26 and 15-27 below.

15.1.12.1 Other Wind Farms

A detailed list of all developments at varying stages in the development process (from, pre-planning to operational), is set out in Appendix 2-3 of this EIAR. The potential for cumulative traffic effects between each of these developments with the Proposed Development are assessed based on the following criteria;

- Project status (pre-planning to operational)
- Degree of overlap with the Proposed Development delivery highway network (low to high)
- Traffic volumes (low to high).

From a review of all existing and approved wind farms set out in Appendix 2-3 it has been determined that the potential for cumulative impacts will only occur with other wind farms that are permitted and have yet to be constructed, as the traffic generation for existing operational wind farms is very low. There are several other applications in the pre-application stage that have not been considered as their applications have not been submitted to the relevant authorities and no traffic related information is available. In addition, any single/domestic turbines have not been considered in the cumulative assessment as the scale of construction traffic associated with these would be considered insignificant and therefore would not have a cumulative impact when associated with the Proposed Development.

Table 15-26 Summary of other wind farms considered in cumulative assessment and potential for cumulative traffic effects with Proposed Development

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects
1 – Ballybane Wind Farm (21 Turbines) – Cork County Council Planning Reference No 05/9586, ABP Reference Nos PL04.216875, PL88.235028	Existing	NA	NA	None, included in background traffic flows
2 – Barnadivane Wind Farm (6 Turbines) – Cork County Council Planning Reference	Proposed	Medium	Medium	Medim

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects
14/676, ABP Reference Nos PL04.248153, PL04.308210				
3 – Caherdowney Hill Wind Farm (4 Turbines) – Cork County Council Planning References 03/3079, 08/9494, 11/4310	Existing	NA	NA	None, included in background traffic flows
4 – Carrigarierk Wind Farm – County Cork (5 Turbines) – ABP Reference No PL04.246353	Existing	NA	NA	None, included in background traffic flows
5 – Carrigarierk Wind Farm Extension – County Cork (3 Turbines) – ABP Reference No PL04.313261	Permitted	Low	Medium	Low
6 – Cleanrath Wind Farm – County Cork (9 Turbines) – ABP Reference Nos PL04.246742, SU04.307939	Existing	NA	NA	None, included in background traffic flows
7 – Clydraghroe Wind Farm (5 Turbines) – Kerry County Council Planning References 04/3152, 06/1680, 07/306	Existing	NA	NA	None, included in background traffic flows
8 – Coomacheo Wind Farm (15 Turbines) – Cork County Council Planning References 03/1997, 06/10251	Existing	NA	NA	None, included in background traffic flows
9 – Coomatallin Wind Farm (4 Turbines) – Cork County Council Planning References 06/380, 06/960	Existing	NA	NA	None, included in background traffic flows
10 – Cummeenabuddoge Wind Farm – County Cork and County Kerry (17 Turbines) – APB Planning Reference PA08.321029	Proposed	Low	Medium	Low
11 – Currabwee Wind Farm (7 Turbines) – Cork County	Existing	NA	NA	None, included in

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects
Council Planning Reference 98680				background traffic flows
12 – Curragh Wind Farm (8 Turbines) – Cork County Council Planning Reference 07/10105	Existing	NA	NA	None, included in background traffic flows
13 – Derragh Wind Farm – County Cork (6 Turbines) – APB Planning Reference PA04.245082	Existing	NA	NA	None, included in background traffic flows
14 – Dreenacreenig/ Derreenacrinnig Wind Farm (3 Turbines) – Cork County[1] Council Planning References 25/6052	Proposed	Low	Medium	Low
15 – Dromleena Wind Farm (11 Turbines) – Cork County Council Planning References 09/63, 19/384	Permitted	Low	Medium	Low
16- Gneeves Wind Farm (11 Turbines) -Planning Reference 99/616, 03/6585, 04/188, 246475	Existing	N/A	N/A	None, included in background traffic flows
17 – Gortloughra Wind Farm (8 Turbines) – Cork County Council Planning Reference 25/142	Proposed	High	Medium	High
18 – Gortyrahilly Wind Farm – County Cork (13 Turbines) – ABP Reference No PL04.314602	Permitted	High	Medium	High
19 – Grousemount Wind Farm – County Kerry (38 Turbines) – ABP Reference No PL08.PA0044	Existing	NA	NA	None, included in background traffic flows
20 – Inchamore Wind Farm (4 Turbines) – Cork County	Permitted	Low	Low	Low

[1] *It should be noted that the site of the proposed 3 no. turbine wind farm (Cork CC Ref. 25/6052) is subject to a previous planning application for 7 no. wind turbines – Dereenacreenig / Dreenacreenig West (Cork CC Ref. 10857, 22153, ABP Ref. PL88.239767). Please refer to Table 2-5 in Chapter 2 (Background to the Proposed Development) for further details.*

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects
Council Planning Reference 23/5145, Kerry County Council Planning Reference 23/646, ABP Planning References PL08.317889, PL04.319216				
21 – Kilgarvan II Wind Farm (Kerry) (6 Turbines) – Kerry County Council Planning References 07/1605, 07/4364	Existing	NA	NA	None, included in background traffic flows
22 – Kilgarvan II Wind Farm (Cork) (7 Turbines) – Cork County Council Planning References 03/2508, 07/4515, 07/4701 ABP Planning Reference PL08.209629	Existing	NA	NA	None, included in background traffic flows
23 – Kilgarvan Repower – County Kerry (11 Turbines) – ABP Planning Reference PL08.319741	Permitted	Low	Medium	Low
24 – Kilgarvan Wind Farm (15 Turbines) – Kerry County Council Planning References 03/2176, 03/2306 12/4102	Existing	Low	NA	None, included in background traffic flows
25 – Killaveenogue Wind Farm (Cork) (10 Turbines) – Cork County Council Planning Reference 11/50, 03/635 ABP Planning Reference PL88.242998	Existing	NA	NA	None, included in background traffic flows
26 – Kilvinane Wind Farm – (3 Turbines) – Cork County Council Planning Reference 01/980 ABP Planning Reference PL04.127137	Existing	NA	NA	None, included in background traffic flows
27 – Knocknamork Wind Farm (7 Turbines) – Cork County Council Planning References 19/4972, 23/4455	Permitted	Low	Medium	Low
28 – Lahanaght Hill Wind Farm (5 Turbines) – Cork County	Existing	NA	NA	None, included in

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects
Council Planning Reference 08/05				background traffic flows
29 – Maughanaclea Wind Farm – County Cork (14 Turbines) – ABP Planning Reference PC04.321826	Pre-Application	Medium	Medium	Medium
30 – Midas Wind Farm (23 Turbines) – Kerry County Council Planning References 01/3571, 03/2609, 03/2610	Existing	NA	NA	None, included in background traffic flows
31 – Milane Hill Wind Farm – County Cork (9 Turbines) – ABP Planning Reference PC04.108950	Existing	NA	NA	None, included in background traffic flows
32 – Shehy More Wind Farm – County Cork (11 Turbines) – ABP Planning Reference PC04.243486	Existing	NA	NA	None, included in background traffic flows
33 – Sillahertane /Coomagearlagh II Wind Farm (10 Turbines) – Kerry County Council Planning Reference 03/91359	Existing	NA	NA	None, included in background traffic flows

As set out in Table 15-26 there are 33 wind farm development of which 23 are existing and will therefore have an a low to no potential for cumulative impacts with the Proposed Development.

Of the remaining 10, a total of 6 Wind Farm developments are considered to have a low potential for cumulative impacts with the Proposed Development, due to the limited overlap of delivery routes.

A further 2 Wind Farms are determined to have a medium potential for cumulative impacts with the Proposed Development (Barnadivane Wind Farm and Maughanaclea Wind Farm) as the TDRs share a section of the N22 and the R585. Two wind farms determined to have a high potential for cumulative impacts (Gortloughra Wind Farm and Gortyrahilly Wind Farm) as the TDRs share the N22, R585 and the R584.

It is therefore proposed that the construction phase of the Proposed Development will be scheduled, where possible, to avoid the construction phases of these 4 windfarms projects in order to ensure that the potential for cumulative effects is minimised. In the event that the construction phases for any of these windfarm developments take place at the same time as the Proposed Development, the cumulative impacts will be negative, short term and will be slight in terms of impact. There will be no significant traffic related cumulative impacts.

Other development applications in the planning system

A planning search was undertaken by MKO of the EIA planning register for all development planning applications within 25km of the Site, as set out in Appendix 2-3. The same 25km radius was applied for

the purpose of assessing the potential cumulative impacts in relation to traffic and transport. Of the developments included in the list it was considered that the 1 development listed in Table 15-27 should be considered, based on the location and scale of these developments. It is considered that the potential risk of cumulative impacts between the Proposed Development and the 1 development is low with the resulting cumulative impacts being negative, short term and slight and not significant

Table 15-27 Summary of other development applications considered in cumulative assessment and potential for cumulative traffic effects with Proposed Development

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects
1 – Underground Electric Cable – Cork County Council Planning Reference 16/256	Permitted	Low	Low	Low

15.1.12.1.1 Forestry and Replanting

The Site is used for commercial forestry. Regular felling operations will continue in conjunction with the Proposed Development. It is noted that traffic movements relating to this activity did possibly contribute to background traffic levels, but there may be cumulative traffic effects between forestry operations locally and the Proposed Development during time periods that tree felling takes place. If it is assumed that tree felling takes place in coups of 20 hectares at a time, generating approximately 200 HGV movements over 10 working days (or 20 HGV movements daily) the cumulative impact on these days is forecast to be slight even if it occurs during the construction phase of the Proposed Development.

During the operational phase, which is when most of the forestry operations will be occurring i.e. over the 35-year life of the development, the effects will be imperceptible and not significant as the Proposed Development generates very low traffic numbers for the majority of its lifetime.

15.1.12.1.2 Existing 38kV overhead line

The current grid system operator may from time to time require access to the Site to perform maintenance works to the existing 38KV overhead line and electrical infrastructure where relevant.

Maintenance works for the overhead line would generate approximately two additional staff on Site. In combination with the Proposed Development, the additional volume of traffic generated will be low and the overall cumulative impact will be temporary and slight.

As determined above, the effects during the construction, operation or decommissioning phases of the Proposed Development will be not significant. Therefore, no significant cumulative effects with other permitted or proposed developments are foreseen.

15.1.13 Summary

An assessment of the traffic related effects of the Proposed N/ Wind Farm, Co. Cork, consisting of up to 3 no. turbines and associated infrastructure, located off the R584 in County Cork, was undertaken for

the construction, operational and decommissioning stages of the Proposed Development. The assessment considered the impact that the traffic generated by the Proposed Development would have on the local highway network, and also an assessment of the route geometry with respect to being able to accommodate the abnormally large vehicles required to deliver the turbine plant to the Site.

Traffic Route & Study Area

An assessment of the TDR was undertaken with a swept path analysis undertaken at all potential pinch points. From the port the route exits onto the N28 and travels west and north on the N28 before heading west on the N40 and N22 to the junction with the R585. The route then travels southwest passing through the villages of Crookstown, Bealnablath, Cappeen, Gloun, Shanlaragh on the way to Kealkill. The route then heads southwest on the R584 to undertake a 3-point turning manoeuvre near Ballylickey village. The Site is approached heading north on the R584 past Kealkill village. The route passes the Site entrance on the R584 in order to undertake a further 3-point turn, before travelling south on the R584 to turn right into the Site access junction.

Vehicle types and network geometry

The types of vehicles that will be required to negotiate the local network will be up to 69.4 metres long with a blade length of 64.4 metres.

Traffic impact on local network

In terms of daily traffic flows it is estimated that the impact of the development traffic on the preferred delivery route will be as follows will be as follows:

- During the 3 days when the concrete foundations are poured the effect on the surrounding road network will be negative, resulting in an increase in traffic levels ranging from +3.2% on the N22 to an increase of +9.9% on the R585, and +59.9% on the R584 leading to the Site. The direct effect will be temporary, and will be slight.
- During the remaining 178 days for the site preparation and ground works when deliveries to the Site will take place, the effect on the surrounding road network will be negative, resulting in an increase in traffic levels ranging from +0.3% on the N22 to an increase of +1.0% on the R585, and +6.1% on the R584 leading to the Site. On these days, the direct effect will be temporary and will be slight.
- During the 3 days of the turbine construction stage when smaller turbine component are delivered to the Site, the delivery of construction materials will result in a negative impact on the surrounding road network, increasing traffic levels ranging from +0.2% on the N22 to an increase of +0.7% on the R585, and +4.2% on the R584 leading to the Site. The direct effect during this period will be temporary and will be slight.
- On the 8 days when the various component parts of the wind turbine plant are delivered to the Site using extended articulated HGVs, the effect of the additional traffic on these days will be slight , resulting in increased traffic volumes of between 0.5% on the N22, 1.4% on the R585 to 8.7% on the R584 leading to the Site, but will be temporary.

Once the facility is operational the traffic impact created by the 2 permanent employees will be negligible. There will be no significant traffic related impacts during the construction, operational and decommissioning phases of the Proposed Development.

15.2 Telecommunications and Aviation

15.2.1 Introduction

This section of the EIAR assesses the likely significant effects of the Proposed Development on material assets such as telecommunications and aviation assets.

The full description of the Proposed Development, including proposed turbine locations and elevations, is provided in Chapter 4 (Description of the Proposed Development) of this EIAR.

Section 15.2.3 describes the way in which wind turbines can potentially interfere with telecommunications signals or aviation activities. Section 15.2.4 presents details on how such effects will be avoided, with the likely significant effects assessed (and mitigation measures proposed) in Section 15.2.5.

15.2.1.1 Statement of Authority

This section of the EIAR, has been prepared by Natasha Morley and Ellen Costello, and reviewed by Sean Creedon of MKO.

Natasha is an Environmental Scientist with MKO and holds a PgDip. in Environmental Sustainability Implementation from UCD. Natasha's key strengths and areas of expertise are in project management, environmental impact assessment, GIS mapping and modelling, and environmental surveying. Since joining MKO, Natasha has experience in report writing including feasibility studies, EIA screening reports and EIAR chapters for large-scale renewable energy developments.

Ellen Costello is a Senior Environmental Scientist with MKO with over 5 years' experience in private consultancy. Ellen holds a BSc (Hons) in Earth Science, and a MSc (Hons) in Climate Change: Integrated Environmental and Social Science Aspects where she focused her studies on renewable energy development in Europe and its implications on environment and society. Ellen's key strengths and expertise are Environmental Protection and Management, Environmental Impact Statements, Project Management, and GIS Mapping and Modelling. Since joining MKO, Ellen has been involved in a range of renewable energy infrastructure projects. In her role as a project manager, Ellen works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs. Ellen is a Practitioner Member of the Institute of Environmental Management & Assessment. Ellen has completed numerous Material Assets (Other Material Assets) sections of EIARs for wind farm developments.

Sean is an Associate Director in the Environment Team at MKO. He oversees a team of highly skilled environmental professionals working on EIAR for large-and medium scale Renewable Energy infrastructure. Sean has directed and overseen multiple renewable energy projects across wind, solar, battery and hydrogen as well as a range of thermal and other energy related developments. He is a member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting continuous employee professional development. Sean has over 23 years' experience in program and project development, holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

15.2.2 Methodology and Guidance

This section of the assessment focuses particularly on the scoping and consultation exercise conducted with telecommunications operators and aviation authorities. Telecommunications operators and

aviation authorities were contacted in October 2024 in order to determine the presence of telecommunications links either traversing or in close proximity to the Site. Scoping was carried out in line with EPA, 2022, and the '*Best Practice Guidelines for the Irish Wind Energy Industry*' (Irish Wind Energy Association, 2012), which provides a recommended list of telecommunications operators for consultation. In addition to this, consultation was also carried out with Commission for Communications Regulation (ComReg) in order to identify any other additional licensed operators in the vicinity of the Site to be contacted, who may not have been on the list of main operators.

A full description of the scoping and consultation exercise is provided in Section 2.8 of Chapter 2 (Background to the Proposed Development) of this EIAR. Consultation with the telecommunications operators and aviation bodies was initially carried out as part of 2020 Application. This was further built upon through re-consultation of historic and new telecommunications operators and aviation bodies in the area. Consultation of existing and new operators and aviation bodies informed the constraints mapping process, as described in Chapter 3 (Site Selection & Reasonable Alternatives), Section 3.2.5 of the EIAR.

The assessment of likely significant effects on material assets uses the standard methodology and classification of impacts as presented in Section 1.7.2 of Chapter 1 (Introduction) of this EIAR.

15.2.2.1 Legislation, Policy and Guidance

This section has been carried out in accordance with the 'EIA Directive' as amended by Directive 2014/52/EU and having regard, where relevant, to guidance and policy documents listed below:

- Cork County Development Plan 2022-2028
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022)
- Draft Air Corps Wind Farm/Tall Structures Position Paper (August 2014)
- Department of Environment, Heritage and Local Government (2006) Wind Energy Development Guidelines for Planning Authorities.
- Department of the Environment, Heritage and Local Government (2019) Draft Revised Wind Energy Development Guidelines for Planning Authorities.
- Irish Wind Energy Association (2012) Best Practice Guidelines for the Irish Wind Energy Industry
- ESB Networks (2019) Code of Practice for Avoiding Danger from Overhead Electricity Lines.
- ESB (2017) EMF & You: Information about Electric & Magnetic Fields and the electricity network in Ireland
- Irish Rail (2018) CCE Department Technical Guidance Document CCE-TMS-310 Guidance on Third Party Works
- Irish Rail (2009) CCE Departmental and Multidisciplinary Standard I-DEP-0121 Third Party Works: Additional Details of Railway Safety Requirements.

15.2.3 Background

15.2.3.1 Broadcast Communications

Wind turbines, like all large structures, have the potential to interfere with broadcast signals, by acting as a physical barrier or causing a degree of scattering to microwave links. The most significant effect at a domestic level relates to a possible flicker effect caused by the moving rotor, affecting, for example, radio signals. The most significant potential effect occurs where there are proposed wind turbines directly in line with the transmitter radio path.

15.2.3.2 Domestic Receivers

Depending on local topography, a domestic receiver may receive broadcast signals from more than one location. The strength of the signals varies with distance from the transmitter, and the receiver's antenna is generally always directed towards the most local, and usually strongest, broadcasting station.

There are two types of potential electromagnetic interference to domestic receivers depending on the location of the receiver in relation to a wind farm. 'Shadowed' houses are located directly behind a wind farm, relative to the location from where the signal is being received. In this case, the main signal passes through the wind farm and the rotating blades can create a degree of signal scattering. In the case of viewers located beside the wind farm (relative to the broadcast signal direction), the effects are likely to be due to periodic reflections from the blade, giving rise to a delayed signal.

In both cases, i.e., shadowed houses located behind the wind farm and those located to the side of it, the effects of electromagnetic interference may depend to some degree on the wind direction, since the plane of rotation of the rotor will affect both the line-of-sight blockage to viewers located behind the wind farm and the degree of reflection to receivers located to the side.

15.2.3.3 Other Signal Types

Wind turbines have the potential to affect other signal types used for communication and navigational systems, for example tower-to-tower microwave communication links, and airborne and ground radar systems. Interference with radar systems occurs when wind turbines are located close to an airport or directly in line with the instrument landing approach. The nearest operational airport is Kerry Airport located approx. 43km west of the Site and the nearest operational airfield is Bantry Aerodome which is located approx. 17.5km southwest of the Site. The closest large international airport is Cork Airport which is again located over 55km east of the Site.

All airports listed above are outside the range at which such issues would be expected, and as detailed in Table 15-1 below, the Irish Aviation Authority noted no issues with the Proposed Development however they issued observations as discussed in Section 15.2.4.3.

15.2.3.4 Preventing Electromagnetic Interference

Both the adopted '*Wind Energy Development Guidelines for Planning Authorities*' produced by the Department of the Environment, Heritage and Local Government in 2006 (hereafter referred to as the 'Guidelines' (DoEHLG, 2006)) and the *Draft Wind Energy Development Guidelines* (December 2019) (hereafter referred to as the 'Draft Guidelines' (DoHPLG, 2019)) state that interference with broadcast communications can be overcome by the installation of deflectors or repeaters where required.

Developers are advised to contact individual local and national broadcasters and mobile phone operators to inform them of proposals to develop wind farms. This consultation has been carried out by MKO as part of the assessment of the Proposed Development as summarised below in Table 15-1; full details are provided in Section 2.8 in Chapter 2 (Background to the Proposed Development) of this EIAR.

15.2.3.4.1 *ESB (2017) EMF & You: Information about Electric & Magnetic Fields and the electricity network in Ireland'*

Electric and Magnetic Fields occur both naturally and from man-made sources. All electricity, both natural and man-made, produces two types of fields: electric fields and magnetic fields which are referred to as EMF. Two types of technology can be used to transmit electricity, alternating current (AC) and direct current (DC). Both AC and DC power lines produce electric and magnetic fields. AC lines produce AC electric and magnetic fields and DC lines produce static electric and magnetic fields. ESB Networks transmission and distribution networks are AC systems. Please see Figure 15-1

reproduced from the 2017 ESB information booklet which demonstrates the alternating magnetic field of AC overhead lines and underground cables. As can be seen in Figure 15-1 below, EMF from 110kV overhead lines and underground cables diminishes quickly with distance from the potential impacted receptor, with EMF from underground 110kV cables, diminishing from 4μT to 0.5μT at 10m away from the cable, reducing to almost 0μT at 20m. The grid connection infrastructure present on the Site and in the surrounding area constitutes 38kV underground and overhead cables, and so the EMF from this kV infrastructure will be of an even lower magnitude.

Figure 15-1 Illustrates the magnetic field from overhead AC lines operating in Ireland

THE EFFECT OF DISTANCE ON MAGNETIC FIELDS

Both AC and DC technologies produce magnetic fields and both decrease with distance as you move away from the line or cable. See graph below:

AC LINES AND CABLES

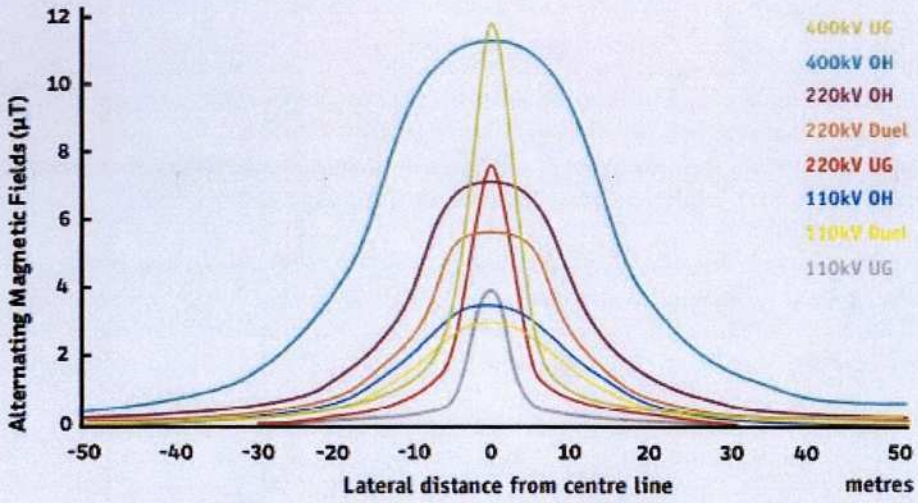


Figure C Illustrates the magnetic field from overhead AC lines operating in Ireland. The field strength decreases with distance. The fields from these AC lines are far below the 1998 ICNIRP Guidelines for exposure to AC magnetic fields (100μT). In 2010 ICNIRP updated its ELF-EMF guidelines, which included the recommendation for a 200μT reference level for exposure for the general public, but these have not yet been adopted by the European Union.

15.2.3.5 Aviation

The Draft Guidelines (DoHPLG, 2019) note that wind turbines or any structure exceeding 90 metres (m) in height are considered obstacles to aerial navigation and need to be shown on aviation charts. Contact with the Irish Aviation Authority (IAA) is advised at the pre-planning stage of consultation to ensure that a proposed wind farm will not cause difficulties with air navigation safety, including airports, radar and aircraft guidance systems.

In addition, the Irish Air Corps (IAC) drafted the '*Air Corps Wind Farm/Tall Structures Position Paper*' in 2014 (hereafter referred to as the IAC Position Paper), with the intent of ensuring IAC operations and training may be accomplished in a safe and economical manner, relevant aerodromes remain viable for air traffic, the ability to train military flying skills is protected and vital navigation routes are protected to safeguard the ability of the IAC to fulfil its role.

In line with the above, the IAC notes they are opposed to any wind farms or tall structures in the following areas:

- Lands underlying military airspace used for flying activity, including designated Military Operation Areas (MOA)
- Areas wherein military flying occurs at low levels
- Critical low level routes in support of IAC operational requirements

The IAC Position Paper also notes that in all locations where wind farms or masts are permitted, they should be illuminated by high intensity strobe lights, be identifiable hazards relative to additional lighting in the vicinity and remain visible to night vision equipment.

Following the guidance above, consultation with the IAA and the Department of Defence (DoD) has been carried out by MKO as part of the assessment of the Proposed Development as summarised below in Table 15-1; full details are provided in Section 2.8 in Chapter 2 (Background to the Proposed Development) of this EIAR.

15.2.4 Scoping and Consultation

As part of the EIAR scoping and consultation exercise, MKO contacted the relevant national and regional broadcasters, fixed and mobile telephone operators, aviation authorities and other relevant consultees in were contacted up to three times between October 2024 and February 2025. Consultation was also carried out with ComReg in order to identify any other additional licensed operators in the vicinity of the Site to be contacted.

The responses received from the telecommunications and aviation consultees are summarised below in Table 15-1.

Table 15-2 Telecommunications and Aviation Scoping Responses

Consultee	Response	Potential for Interference Following Consultation Exercise
2rn/Eir	Received 3rd December 2024	See Section 15.2.4.1 below
Broadcasting Authority of Ireland	Received 15th October 2024	No
Cellnex	No response received	N/A

Consultee	Response	Potential for Interference Following Consultation Exercise
Ajisko Ltd.	No response received	N/A
Air Nav Ireland	No response received	N/A
AP Wireless	Received 29th February 2025	No
Coimisúin na Meáin	Received 14th February	No
Cork County Council	Received 22nd October	No
ComReg (Commission for Communications Regulation)	Received 19th February 2024	N/A – Provided list of Telecommunications Operators in vicinity of the Proposed Development
Beat 102103	No response received	N/A
Broadcasting Authority Ireland	Received 15th October	No
BT Communications Ireland	Received 3rd December 2024	No
Digital Forge	No response received	N/A
Dense air	No response received	N/A
Eircom Ltd	Received 16th October 2024	No
Electricity Supply Board (ESB)	Received 18th February 2025	See Section 15.2.4.2 below
ENET	Received 3rd December 2024	Yes, 1 no. Link in area, however there is no overlap
EOBO Ltd	No response received	N/A
FastCom Broadband Limited	No response received	N/A
Hibernian Towers	No response received	No
Imagine Network Services	Received 15th October 2024	N/A
Irish Defence Force (Air Corpse)	Received 16th October 2024	Yes, 1 no. Link in area, however no overlap
Irish Water	Received 14th November 2024	No
Irish Rail	No response received	N/A
Irish Aviation Authority (IAA)	Received 14th February 2025	No
Ivertec Ltd	Received 15th October 2024	No

Consultee	Response	Potential for Interference Following Consultation Exercise
JFK Communications Ltd	No response received	N/A
JS Whizzy Internet Limited	Received 15th October 2024	N/A
Lackabeha Services Ltd T/A Airwaves Internet	Received 18th February	N/A
Meteor Mobile Communications Ltd	Received 20th February 2025	No
NBI Infrastructure Ltd	Received 20th February 2025	No
Pure Telecom	No Response Received	N/A
Radio County Sound Ltd	No response received	N/A
TETRA Ireland	No response received	No
Three Ireland Ltd	Received 15th October 2024	No
Towercom	Received 15th October 2024	N/A
Viatel	Received 18th February	N/A
Virgin Media	Received 8th April 2025	No
Vodafone Ireland	Received 15th October 2024	Yes, 1 no. link in area, however there is no overlap
Western Broadband Network	No response	N/A

The scoping responses from the telecommunications and aviation consultees are described below. Relevant copies of scoping responses are provided in Appendix 2-2. The locations of identified telecoms links and setbacks requested by providers is shown in Figure 15-2 below.

15.2.4.1 Broadcasters

There are two broadcasters operating in Ireland, RTÉ Transmission Network (operating as 2rn) and Virgin Media.

RTE/2rn

RTÉ Transmission Network, replied on the 3rd December 2024 to a scoping request from MKO stating that three off air links pass over the Site and provided exclusion zones for the links. On the 10th February 2025, on providing RTE with a proposed turbine layout, RTE stated that the operation of the Proposed Development will not have any impact on RTÉ fixed linking services. In their scoping response, the operator also stated that *'There is however a risk of interference to broadcast coverage to viewers in the area. We would therefore ask that a protocol be signed between the developer and 2rn should the site go ahead".*

Therefore, a standard Protocol Document has been prepared by 2rn for the Proposed Developmentwhich has been signed by Wingleaf Ltd (the Applicant). A copy of the Protocol Document is presented in Appendix 15-3 of this EIAR. The Protocol Document ensures that in the event of any interference occurring to RTÉ television or radio reception due to operation of a wind farm, the required measures as set out in the Protocol Document, will be carried out by the developer to rectify this. The Protocol Document ensures that the appropriate mitigation is carried out in the event of any unanticipated broadcast interference arising to RTÉ television or radio reception as a result of the Proposed Development.

Virgin Media

Virgin Media, replied on the 8th April 2025 to a scoping request from MKO stating that the operation of the Site will not have any impact on Virgin Media fixed linking services.

15.2.4.2 Other Consultees

Of the scoping responses received from telephone, broadband and other telecommunications operators, those who highlighted an initial potential interference risk are addressed below. The remaining consultees who responded to scoping, operate links either outside the Proposed Development, and therefore are not subject to any interference risk, or do not operate any links in the area.

Enet

Enet responded to a scoping request from MKO on the 3rd December 2024, noting that they had one link in the area, however there was no overlap with proposed turbine locations and therefore no interference with their links is anticipated.

Defence Force (Air Corpse)

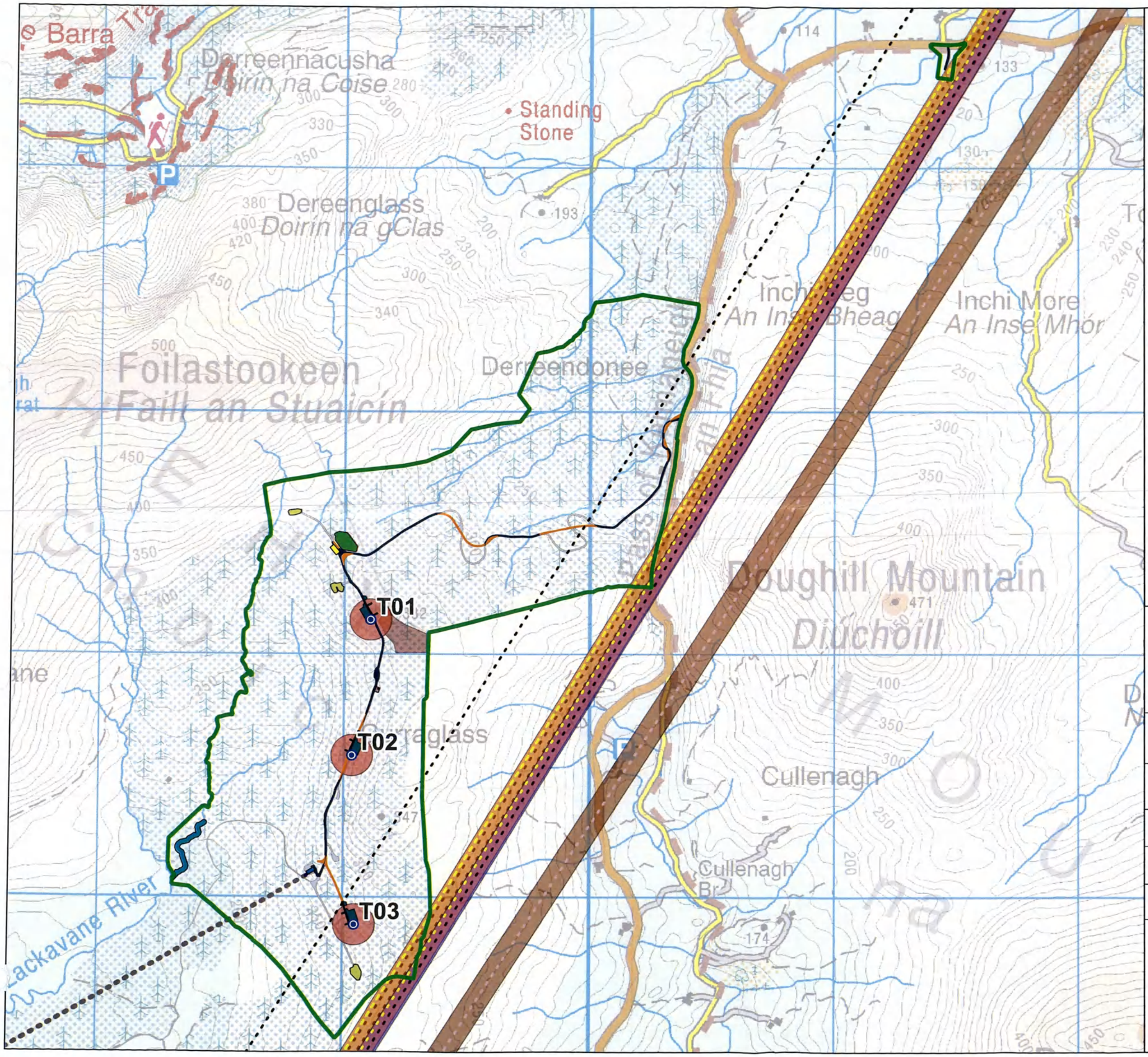
The Irish Defence Force (Air Corpse) responded to a scoping request from MKO on the 16th October 2024, noting that they had one link in the area, however there was no overlap with proposed turbine locations and therefore no interference with their links is anticipated.

Electricity Supply Board (ESB)

ESB responded to a scoping request from MKO on the 18th February 2025, noting that they had three links in the area. MKO engaged with ESB to acquire information on the GHz information for the three links in order to create buffers that could determine impact zones. ESB failed to respond to this engagement and as a result T3 was slightly relocated as a means to resolving any impact the Proposed Development may have on the ESB links.

Vodafone

Vodafone responded to a scoping request from MKO on the 14th of October 2024, noting that they had one link in the area, however there was no overlap with proposed turbine locations and therefore no interference with their links is anticipated.



Map Legend

- EIAR Site Boundary
- Proposed Turbines
- Proposed Hardstands
- Proposed Met Mast
- Proposed Met Mast Hardstand
- Proposed Borrow Pit
- Existing Roads to Upgrade
- Proposed New Roads
- Existing Wind Farm Infrastructure
- Temporary Construction Compound
- Proposed Peat & Spoil Management Areas
- Eco Enhacement - Peatland Enhancement
- Eco Enhancement - Kerry Slug Enhancement
- Eco Enhancement - Riparian Planting
- Existing 38kV Onsite Substation
- Existing 38kV Overhead Line
- Existing 38kV Underground Cabling

Telecoms Links

- ESB Links
- 2rn Links
- Vodafone Link
- Vodafone Buffer
- Defense Force Link
- Defense Force Buffer
- Enet Link
- Enet Buffer

N

Drawing Title
Telecoms Links

Project Title
Curraglass Wind Farm, Co. Cork

Drawn By	Checked By
EM	EC
Project No. 240614	Drawing No. Figure 15-2
Scale 1:15,000	Date 2025-09-10

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: www.mkoireland.ie

15.2.4.3 Aviation

As noted in above, scoping responses were received from the following aviation consultees:

- Irish Aviation Authority (IAA)
- Department of Defence (DoD)

Pertinent information has been summarised below, however the scoping response in Appendix 2-2 should be referenced to for further detail.

Irish Aviation Authority

As outlined above in Section 15.2.4.3, MKO contacted the IAA as part of consultation with relevant national and regional broadcasters, fixed and mobile telephone operators, aviation authorities and other relevant consultees in October 2024. There was no reply from the IAA to the scoping request.

As part of MKO consultation process as shown in Section 2.8 of Chapter 2 (Background to the Proposed Development) of the EIAR, a Scoping Document was prepared and circulated to relevant consultees in February 2025, which included the IAA.

The IAA responded to the Scoping Document on 14th February 2025, noting should a formal planning application be submitted, the IAA will likely offer the following general observations:

"In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to:

1. *agree an aeronautical obstacle warning light scheme for the wind turbine development,*
2. *provide as-constructed coordinates in WGS84 format together with ground and tip height elevations at each wind turbine location and*
3. *notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection."*

Department of Defence

The Draft Air Corps Wind Farm/Tall Structures Position Paper (August 2014) sets out the Air Corps position on the appropriate siting and management of wind farms and tall structures. The Position Paper details Air Corps assets within which tall structures such as wind farms are not recommended and/or require early engagement with the Department of Defence (DoD).

The DoD was contacted by MKO in February 2025, a scoping response was received from the DoD on the 28th of February which provided the following observation:

> *"All turbines should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or, if LED or other types are used, of a type visible to Night Vision equipment. Obstacle lighting used must emit light at the near InfraRed (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light"*

15.2.5 Likely Significant Effects and Associated Mitigation Measures

15.2.5.1 'Do-Nothing' Scenario

If the Proposed Development were not to proceed, there would be no change to existing telecommunications and aviation operations in the area.

The opportunity to capture part of Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. An alternative land use option to developing a renewable energy project at the Site would be to leave the Site as it is, with no changes made to the current land use compromises of commercial forestry, agricultural land and unutilised existing wind farm infrastructure that remains at the Site from the Kealkill Wind Farm. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

15.2.5.2 Construction Phase

The potential for electromagnetic interference from proposed turbines may only occur during the operational phase of the Proposed Development. There are no electromagnetic interference impacts for telecommunications and aviation assets or operations associated with the construction phase of the Proposed Development, and therefore no mitigation required. Potential impacts during turbine erection and commissioning are assessed in the operational phase impact assessment (Section 15.2.5.3 below).

15.2.5.3 Operational Phase

15.2.5.3.1 *Telecommunications*

Pre-Mitigation Impact

Proposed Development

Consultation regarding the potential for electromagnetic interference from the Proposed Development was carried out with the relevant national and regional broadcasters, fixed line and mobile telephone operators and other operators, which confirmed that no turbines are proposed within the areas requested to be left clear of turbines.

Mitigation Measures

In the event of interference occurring to telecommunications, the Guidelines (DoEHLG, 2006) acknowledge that *'electromagnetic interference can be overcome'* by the use of divertor relay links out of line with a wind farm.

A signed protocol agreement between 2rn and the Applicant can be found in Appendix 15-3. The Protocol Document ensures that in the event of any interference occurring to television or radio reception due to operation of the Proposed Development, the required measures, as set out in the Protocol Document, will be carried out by the Applicant to rectify this. The Protocol Document ensures that the appropriate mitigation is carried out in the event of unanticipated broadcast interference arising to television or radio reception as a result of the Proposed Development.

Following scoping with ESB, T3 was relocated 70m south as a means to resolving any impact the Proposed Development may have on the ESB links passing through the Site. The Proposed Development will have an imperceptible impact on telecommunications, which is not significant.

Residual Effect

The Proposed Development will have an imperceptible impact on the telecommunications signals of any operator, due to distance from, or absence, of any links in the area. In addition, a Protocol Document, ensuring no impacts on broadcast signals, has been signed between 2rn and the Applicant, please see Appendix 15-3.

Significance of Effect

There will be no significant effect on telecommunications as a result of the Proposed Development.

15.2.5.3.2 ***Aviation***

Pre-Mitigation Impact

Proposed Development

There are no IAA or DoD assets within the Site or surrounds that may be impacted by the proposed turbines.

Mitigation Measures

None Proposed.

As no impacts were identified by the IAA or DoD, no mitigation measures are required. However, the following IAA and DoD requests will be complied with should the Proposed Development be consented:

Irish Aviation Authority

1. *Agree an aeronautical obstacle warning light scheme for the wind farm development*
2. *Provide as-constructed coordinates in WGS84 format together with ground and blade tip height elevations at each wind turbine location and*
3. *Notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection.*

Department of Defence

1. *All turbines should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or, if LED or other types are used, of a type visible to Night Vision equipment. Obstacle lighting used must emit light at the near InfraRed (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light.*

Residual Effect

The Proposed Development will have an imperceptible residual effect on aviation, which is not significant, as all lighting requirements will be met by the Applicant.

Significance of Effects

There will be no significant effects on aviation operations as a result the Proposed Development.

15.2.5.4 Decommissioning Phase

As stated in Section 15.2.5.3 above, the potential for electromagnetic interference from proposed turbines may only occur during the operational phase of the Proposed Development. There are no electromagnetic interference impacts associated with the construction or decommissioning phases of the Proposed Development, and therefore no mitigation required.

15.2.5.5 Cumulative Effect

Chapter 2 (Background to the Proposed Development), Section 2.8 of this EIAR describes the methodology used in compiling the list of permitted, existing or proposed developments and plans in the area, (wind energy or otherwise) considered in the assessment of cumulative effects, and provides a description of each project, including current status. During the development of any large project that holds the potential to effect telecoms or aviation, the developer is responsible for engaging with all relevant telecom operators and the relevant aviation authorities to ensure that the proposal will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the developer for each individual project is responsible for ensuring that the necessary mitigatory measures are in place. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact cannot arise.

As outlined above in Section 15.2.5.3, the Proposed Development will have no residual effect on aviation as all lighting requirements will be met by the Applicant.

Therefore, there will be no cumulative effects relating to the Proposed Development and surrounding projects in relation to telecommunications or aviation.

15.3 Other Material Assets

This section of the Material Assets chapter considers other utilities or built services in the area such as electricity supply and transmission, water, gas, railways and underground telecommunications. This section also considers waste management during the construction, operational and decommissioning phases of the Proposed Development.

15.3.1 Scoping and Consultation

In order to assess the potential for significant effects on built services and waste management in the vicinity of the Proposed Development, scoping requests were made to EirGrid, Uisce Éireann, Irish Rail and numerous sections of Cork County Council, including the Roads Department and Environment Department. Please refer to Section 2.8 of Chapter 2 (Background to the Proposed Development) of this EIAR for details in relation to the EIA scoping exercise.

No scoping response was received from EirGrid or the Water department of the local authority. A scoping response was received from Uisce Éireann and Waterways Ireland identifying that there is no relevant infrastructure within the Site. A scoping and consultation exercise was conducted with utilities operators, as outlined in Section 15.3.1.1 below. A full description of the scoping and consultation

exercise is provided in Section 2.8 of Chapter 2 (Background to the Proposed Development) of this EIAR.

15.3.1.1 Utilities

Uisce Eireann

A scoping request was sent to Uisce Eireann on the 14th February 2025. A response was received on the 21st of March 2025 stating that they do not have communications links traversing the Proposed Development. It should be noted that the Proposed Development does not intend to connect into Uisce Eireann assets. The scoping response provided details in relation to water abstraction operations in the vicinity of the proposed development, with the closest abstraction point being the Bunsheelin river intake point approx. 5km north of the Site. An abstraction point is also present at Inchigeelagh at Eastern end of Lough Allua.

Waterways Ireland

A scoping request was sent to Waterways Ireland on the 15th February 2025 and a response was received on the 21st February 2025 stating that the Proposed Development is not located within a zone of influence of any waterways and therefore they have no comment to make on the proposal.

Department of the Environment, Climate and Communications

A scoping request was sent to the Department of the Environment, Climate and Communications the 14th of February 2025. No direct response from the Department of the Environment, Climate and Communications has been received to date, however, a submission on behalf of Geological Survey Ireland, a division of the Department of the Environment, Climate and Communications, was received on the 25th of February 2025 recommending the use of their various data sets when conducting the EIAR, SEA, planning and scoping processes for developments, plans and policies.

Gas Networks Ireland (GNI)

GNI supply MKO their latest infrastructure data quarterly. The latest data share illustrating all GNI infrastructure was provided to MKO in July 2025. The data indicates that there is no GNI infrastructure is located within or adjacent to the Site with the nearest infrastructure being approximately 50km to the northeast of the Proposed Development.

15.3.2 Baseline Environment

15.3.2.1 Existing and Built Services and Utilities

Please note, the Proposed Development has been designed to avoid identified services and utilities where possible. Prior to commencement of construction detailed site investigations will be carried out to confirm design assumptions and undertake additional surveys to identify any new services and utilities and ensure they will not be impacted by the Proposed Development.

15.3.2.1.1 *Electricity*

Grid Infrastructure

It is intended to connect the proposed turbines to the national grid via the existing onsite 38kV substation located within the Site. The existing onsite 38kV substation connects to an existing 38kV overhead line

There are also existing underground electrical and communication cabling present within the Site from the Kealkill Wind Farm.

The turbine delivery route passes under 5 no. overhead electricity lines, however, the delivery of large turbine components along the route will not interfere with the operation of these overhead lines.

15.3.2.1.2 Gas

A data request was sent to Gas Networks Ireland in 2025. The data returned in April 2025 concluded there are no gas pipelines within or near the Site.

15.3.2.1.3 Water

There are no known water mains within the Site. The scoping response from Uisce Éireann provided details in relation to two water abstraction operations in the vicinity of the proposed development. The Bunsheelin River intake is located approximately 5km to the north of the Site. No element of the Proposed Development is located within the Bunsheelin River catchment. An abstraction point is also present at Inchigeelagh at eastern (downstream) end of Lough Allua. Only the northern section of the Site (entrance and access road) and the turbine component turning area drains into Lough Allua. Further detail on impact assessment and proposed mitigation measures of these water resources is provided in Section 9.4.2.10 of Chapter 9 (Hydrology and Hydrogeology).

15.3.2.1.4 Motorways

The Proposed Development will not interfere or traverse any motorways within or surrounding the Site.

15.3.2.1.5 Railways

The Proposed Development will not cross any existing or known railway lines within or surrounding the Site.

15.1.1.1 Waste Management Services

There are no EPA-licensed or local authority-authorised waste facilities or activities located within the Site. The closest, authorised municipal waste facility is located approx. 23km northeast of the Site at Macroom, Co. Cork.

A Waste Management Plan (WMP) has been prepared and forms part of the Construction and Environmental Management Plan (CEMP) in Appendix 4-3 of the EIAR.

The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Development. Disposal of waste will be a last resort.

All waste generated onsite during the construction phase will be contained in a waste skip at a waste storage area onsite. This waste storage area will be kept tidy with a skip clearly labelled to indicate the allowable material to be disposed of therein. The expected waste volumes generated onsite are unlikely to be large enough to warrant source segregation at the Proposed Development. Therefore, all waste streams generated onsite will be deposited into a single waste skip. The waste material will be transferred to a Materials Recovery Facility (MRF) by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

Site personnel will be instructed at induction that under no circumstances can waste be brought onsite for disposal in the onsite waste skip. It will also be made clear that the burning of waste material onsite is forbidden.

Further details on waste management are presented in the CEMP which is included as Appendix 4-3.

It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Development as only a small number of operational and maintenance personnel will be present within the Proposed Development at certain times. Any waste generated due to the operation and maintenance of the Proposed Development will be disposed of in a covered skip. The waste material will be transferred to a MRF by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

15.3.3 Likely Significant Effects and Associated Mitigation Measures

15.3.3.1 'Do-Nothing' Scenario

If the Proposed Development were not to proceed, the potential to impact on other material assets would not arise.

The opportunity to capture part of Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. An alternative land use option to developing a renewable energy project at the Site would be to leave the Site as it is, with no changes made to the current land use compromises of commercial forestry, agricultural land and unutilised existing wind farm infrastructure that remains at the Site from the Kealkill Wind Farm. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

15.3.3.2 Construction Phase

Pre-Mitigation Impact

Proposed Development

The construction of the Proposed Development will be unlikely to have an impact on above ground or underground built services or waste management. The Proposed Development infrastructure has been designed to avoid existing underground electricity cables and other services and can be described as mitigation by design, therefore there is no potential to give rise to effects on electrical and other services.

Mitigation Measures

Notwithstanding the above, specific measures are incorporated into the CEMP, included as Appendix 4-3 of this EIAR, to ensure that the construction of the Proposed Development will not have effect on underground electrical cables and built services at the Site. The mitigation measures include the following:

- Any area where excavations are planned will be surveyed and all existing services will be identified prior to commencement of any works.
- Liaison will be had with the relevant sections of the Local Authority including all the relevant area engineers to ensure all services are identified.
- Excavation permits will be completed, and all plant operators and general operatives will be inducted and informed as to the location of any services.

- The contractor must comply with and standard construction codes of practice in relation to working around electricity, gas, water, sewage and telecommunications networks.

Residual Effect

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual effect, which is not significant, during the construction phase of the Proposed Development.

Significance of Effects

Based on the assessment above there will be not significant effects on other material assets as a result of the Proposed Development.

15.3.3.3 Operational Phase

It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Development as only a small number of operational and maintenance personnel will be present within the Site at certain times. Any waste generated due to the operation and maintenance of the Proposed Development will be disposed of in a covered skip. The waste material will be transferred to a MRF by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

There will be no operational phase impacts or associated effects on built services and waste management associated with the Proposed Development.

15.3.3.4 Decommissioning Phase

The proposed turbines as part of the Proposed Development are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the wind turbines may be replaced with a new set of turbines, subject to planning permission being obtained, or the Proposed Development will be decommissioned fully as described in Section 4.11 of Chapter 4 (Description of the Proposed Development) and the accompanying decommissioning plan in Appendix 4-6.

The works required during the decommissioning phase are described in Section 4.11 in Chapter 4 (Description of the Proposed Development) of this EIAR. Any impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent. Based on the assessment outlined above in Section 15.2.5.2, there will be no significant effects on existing and built services, or waste management as part of the decommissioning phase.

15.3.3.5 Cumulative Impact Assessment

The potential cumulative impact of the Proposed Development and other relevant developments has been carried out with the purpose of identifying what influence the Proposed Development will have on the surrounding environment when considered cumulatively and in combination with relevant existing permitted or proposed developments and plans in the area, in the vicinity of the Site, as set out in Section 2.9 in Chapter 2 (Background to the Proposed Development) of this EIAR.

On the basis of the assessment above, the Proposed Development will have no impact on built services and waste management. It is on this basis that it can be concluded that there would be a short-term imperceptible cumulative impact on built services and waste management from the Proposed Development during the construction phase and permitted or proposed developments and plans in the

area, as set out in Section 2.9 in Chapter 2 (Background to the Proposed Development) of this EIAR. There are no cumulative effects associated with the construction, operational and decommissioning phases of the Proposed Development.