

Environmental Impact Assessment Report (EIAR)

Cunlaghfadda Green
Energy Project, Co. Mayo

Chapter 15 – Material Assets



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*’. The cultural assets of Archaeology, Architectural and Cultural Heritage are addressed in Chapter 14 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 and Geology, Chapter 9 Water, Chapter 10 Air Quality, and Chapter 11 Climate. Tourism and amenity resources, which are also considered material assets, are addressed in Chapter 5 Population and Human Health. 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 Project 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 Project is summarised in Section 4.5.6 of Chapter 4 Description of the Proposed Project of the EIAR. A Waste Management Plan (WMP) is included in the Construction and Environmental Management Plan which is included as Appendix 4-5 of this EIAR. Traffic volumes generated by the removal of waste from the Site 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 detailed in Chapter 1 Introduction.

For the purposes of this EIAR:

- › Where the ‘Proposed Wind Farm’ is referred to, this refers to turbines and associated foundations and hardstanding areas, including access tracks, underground cabling, permanent meteorological mast, temporary construction compound, peat and spoil management, biodiversity enhancement, tree felling, site drainage, operational stage signage, turbine delivery route and junction accommodation works and all ancillary works and apparatus. The Proposed Wind Farm is described in detail in Chapter 4, Section 4.4.1 of this EIAR.
- › Where the ‘Proposed Grid Connection’ is referred to, this refers to the proposed 110kV onsite substation, underground 110kV cabling and end masts connecting the proposed 110kV substation to the 110kV Castlebar to Cloon overhead line, access tracks and all ancillary works and apparatus. The Proposed Grid Connection Route is described in detail in Chapter 4, Section 4.4.2 of this EIAR.
- › Where the ‘Proposed Project’ is referred to, this encompasses the entirety of the project (Proposed Wind Farm and Proposed Grid Connection) for the purposes of this EIA in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4 of this EIAR.
- › Where ‘the Site’ is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-2 of the EIAR and encompasses an area of approximately 165 hectares.

A detailed description of the Proposed Project is provided in Chapter 4 Description of the Proposed Project of this EIAR.

15.1

Traffic and Transport

15.1.1 Introduction

15.1.1.1 Background and Objectives

This section of the EIAR assesses the effects on roads, traffic and transport of the traffic movements that will be generated during the construction, operational and decommissioning phases of the Proposed Project.

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 components. The requirements of the additional traffic and abnormal sized loads generated during the construction phase were assessed for the external highway network and at the proposed junctions that will provide access to the Site.

It should be noted that abnormal weight loads are not a feature of the turbine component delivery vehicles, they are abnormal in size only. All construction and delivery vehicles for the Proposed Project 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. In the event that a vehicle type and load with excessive axle loads is proposed for the delivery of materials / components to the site, an assessment of the delivery route proposed will be prepared and submitted to the relevant authorities.

The magnitude of the increase in traffic volumes experienced on the surrounding network is identified during the various stages of the Proposed Project. A Traffic Management Plan is also provided in Appendix 15-2 of this EIAR and summarised in Section 15.1.8 below, 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 on Assessment of Effects

This section of the EIAR has been completed in accordance with the EIA guidance set out in Section 1.2 of Chapter 1 Introduction. The assessment uses standard terminology to describe the likely significant effects associated with the Proposed Project. Further information on the classification of effects used in this assessment is presented in Section 1.7.2 Chapter 1 of this EIAR.

15.1.1.4 Scoping and Consultation

Transport Infrastructure Ireland

Transport Infrastructure Ireland (TII) responded to two rounds of scoping via emails dated 14th June 2023 and 16th February 2026, 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 15-1 below.

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

ID	Comment/Recommendation	Response
1	Consultations should be had with relevant Local Authority / National Roads Design Office, with regards to the locations of existing and future national roads schemes.	Consultation has been undertaken with Mayo County Council as set out 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.	The impacts of the Proposed Project on the construction material and turbine component delivery routes in terms of link flows are set out in Sections 15.1.6.1 of the EIAR, while an assessment of the capacity of the R331 / L1506 junction is set out in Section 15.1.6.4 The swept path analysis undertaken for the abnormally large loads on the Turbine Delivery Route is set out in Section 15.1.9 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 Project.

ID	Comment/Recommendation	Response
4	The developer should assess visual impacts from existing national roads.	The visual impacts of the Proposed Project are set out in Chapter 13 Landscape and Visual of this EIAR.
4	The developer should have regard to any EIAR/EIS and all conditions and/or modifications imposed by An Coimisiún Pleanála regarding road schemes in the area. The developer should, in particular, have regard to any potential cumulative impacts.	It is confirmed that all conditions attached to any grant of planning permission for the Proposed Project will be adhered to. The cumulative, traffic related impacts are assessed in Section 15.1.12.7.
5	The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works).	While there are no junctions or alterations proposed on the National Road network, all proposed junctions on the local road network are designed in accordance with TII guidelines.
6	The developer, in preparing EIAR, should have regard to TII's Environmental Assessment and Construction Guidelines, including the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority (NRA), 2014).	It is confirmed that the potential effects of the Proposed Project with regards air quality is set out in Chapter 10 Air Quality of this EIAR.
9	The EIAR should consider the European Communities (Environmental Noise) Regulations, 2018, (S.I. no. 549 of 2018), and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes ((NRA), 2014).	It is confirmed that the potential effects of the Proposed Project with regards noise are set out in Chapter 12 Noise and Vibration of this EIAR.
9	It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site, with reference to impacts on the National Road Network and junctions of lower category roads, with national roads.	It is confirmed that the assessment presented in Chapter 15 Material Assets of the EIAR is undertaken in accordance with Traffic and Transport Assessment Guidelines, TII (2014).
12	The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required.	A swept path analysis of the proposed turbine delivery route has been undertaken, as set out in Section 15.1.9.

ID	Comment/Recommendation	Response
13	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.	All construction 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).
14	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 a feature of the development, whether wind turbine components or substation components, separate structure approvals/permits and other licences may be required in connection with the proposed haul route. All national road 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. Any requirements for ‘Exceptional Abnormal Loads’ should also be addressed in accordance with TII Publications.	The proposed haul routes are identified in this Chapter 15 Material Assets of the EIAR. While it is proposed that the delivery stage of the Proposed Project will involve abnormally large loads, the axle loadings will not exceed accepted limits. 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 15.1.8 and Appendix 15-2.
15	The haul route should be assessed to confirm capacity to accommodate abnormal ‘length’ loads and any temporary works required are identified.	It is confirmed that a geometric assessment was undertaken, as set out in Section 15.1.9 of this EIAR.
16	The National Road Network is managed by a combination of PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) and local road authorities, in association with TII. The applicant/developer should also consult with all PPP Companies, MMaRC Contractors and road authorities over which the haul route traverses, to ascertain any operational requirements, including delivery timetabling, etc., to ensure that the strategic function of the national road network is safeguarded. Where temporary works within any MMaRC Contract Boundary are required, to facilitate the transport of turbine or substation components to 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.

ID	Comment/Recommendation	Response
	Where grid connection and cable routing form part of any development proposal, proposals should be developed to safeguard proposed 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 routing options, use of existing crossings, depth of cable laying, etc. Consultation should be undertaken with Mayo County Council to ascertain any relevant national road schemes in the area. Having regard to the foregoing, in TII's opinion, grid connection routing, where it is proposed to utilise the road network must, therefore, demonstrate that the route proposed represents the 'optimal solution'.	The Applicant agrees with this condition. Alternative grid connection routes have been considered in Chapter 3 Consideration of Reasonable Alternatives of this EIAR. The chosen grid connection route is identified as the 'optimal solution' when compared to the other considered routes.
	Cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII. Any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the National Road Network. All crossings in the vicinity of the national road should be by HDD and avoid all national road structures, including bridges, culverts, etc.	The Proposed Grid Connection underground cabling route alignment will avoid any potential impacts on traffic counters, weather stations, etc. The Proposed Grid Connection will not interact with any section of the National Road Network.

Department of Transport

A response to each of the two rounds of scoping were received from the Department of Transport (DoT) on 29th June 2023 and 5th March 2026. The response refers to issues relating to the construction of the Proposed Project, in particular the Proposed Grid Connection, and works within the public road network. The issues raised and the Applicant's responses are provided in Table 15-2 as follows:

Table 15-2 Issues raised by DoT in relation to the Proposed Project and Responses

ID	Comment/Recommendation	Response
1	Their presence within the public road will likely significantly restrict the Road Authority in carrying out its function to construct and maintain the public road and will likely add to the costs of those works post construction.	The Proposed Grid Connection is entirely in agricultural lands and will therefore not interact with the public road network. The Proposed Grid Connection proposes to connect the Proposed Wind Farm to the national grid via a combination of an underground cable route and overground connection into the existing

ID	Comment/Recommendation	Response
		overhead 110kV Cloon-Castlebar transmission line.
2	Their installation within the lands associated with the public road may affect the stability of the road. In particular where the road is a “legacy road” (where there is no designed road structure and the subgrade may be poor or poorly drained) or bog rampart the design needs to take account of all the variable ground conditions and not be based on a sample of the general soil conditions. This should include a constructability assessment to a 950mm minimum cover depth to the HV Cable on legacy roads, roads over peat/bog ramparts.	As set out in Section 4.4.2.5 in Chapter 4 Description of the Proposed Project of the EIAR, the Proposed Grid Connection route is located within private agricultural land and therefore will not interact with any public road.
3	The possible effect on the remaining available road space (noting that there may be need to accommodate other utilities within the road cross-section in the future or additional drainage for climate adaptation) on potential future development.	As set out in Section 4.4.2.5 in Chapter 4 Description of the Proposed Project of the EIAR, the Proposed Grid Connection route is located within private agricultural land and therefore will not interact with any public road.
4	The necessity to have the power in the cables switched off (particularly where structural failures occur due to extreme weather events) where the Road Authority considers this necessary in order to carry out its function to construct and maintain the public road and a complete operation and maintenance manual should be agreed with the Local Authority.	As set out in Section 4.4.2.5 in Chapter 4 Description of the Proposed Project of the EIAR, the Proposed Grid Connection route is located within private agricultural land and therefore will not interact with any public road.
5	Examination of all available technologies including both Overhead Line (OHL) and Underground Cable (UGC) options (or combinations of both) and route options other than the routing of cables along the public road to ensure the best performing route and technology option is selected, (ensuring compliance with CAP24). The public road should only be considered following a robust MCA determining the optimal solution including examining the most linear solutions.	As set out in Chapter 3 Consideration of Reasonable Alternatives, the chosen route is compared against alternative grid connection routes.
6	Examination of options for connection to the national grid network at a point closer to the wind farm in order to reduce the adverse impact on public roads.	Refer to Chapter 3 Consideration of Reasonable Alternatives. As stated in Section 4.4.2.5 of Chapter 4 Description of the Proposed Project, the Proposed Grid Connection route is 982m in length, located within private agricultural land and therefore will not interact with any public road.

It is confirmed that the above points raised by the DoT have been considered in the route selection and design of the Proposed Grid Connection as set out in Chapter 3 Consideration of Reasonable Alternatives of this EIAR.

The DoT scoping response considers the following should be considered when applying conditions to any approval:

- › Prior to commencement of development, engagement with the planning authority should discuss and agree the route for the HV Cable(s) to identify/agree the routing ‘optimal solution’ along with the associated requirements for traffic management, road opening licencing, times of work, reinstatement, positioning of chambers/joint bays etc.
- › A condition requiring the developer to, at a minimum, comply with all appropriate standards and, inter alia the Guidelines for Managing Openings in Public Roads, 2017 in order to ensure orderly development.
- › Electricity cabling shall be laid off carriageway where feasible.
- › Wherever possible, joint bay structures are best located off the carriageway in verges, open spaces, or adjacent sites; and where they must be under carriageway, joint bay structures will be to accepted design standards.
- › High/medium voltage transmission underground cables should not be sited on or attached to existing roads structures, masonry bridges/ culverts and the like.
- › A condition requiring that the location of the cables would be recorded as exactly as possible, using BIM type technology, so as to facilitate the further use of road space for utilities and the maintenance/construction of the public road by the Roads authority. This record should include as constructed surveys of all infrastructure altered, added, removed or relocated and exact detail of the road construction including any drains or other features encountered. The record should be lodged with the local authority and with the ESB Networks for retention on their records.
- › A condition requiring the replacement of culverts that have been excavated during the cable duct placement operation. The replacement culverts should be designed appropriately and include an allowance for the effects of climate change.
- › A condition requiring the developer to notify the Roads Authority of the owner of the cables (Owner) and the controller (Power Controller) of the power transmitted along the cables. In addition, the condition should require Owner and Power Controller to notify the Roads Authority of any change in ownership of the cables or change of Power Controller transmitting power along the cables. In all instances the Owner and Power Controller should be required to maintain an agreed contacts list with the Roads Authority.

15.1.1.5 Pre-planning Meetings

Mayo County Council

The Applicant engaged with Mayo County Council (MCC) during the 2 no. pre-planning meetings – held on 16th January 2024 and 2nd March 2026. MKO presented the details of the Proposed Project to MCC, including the proposed turbine delivery route and Proposed Grid Connection route. In the second pre-planning meeting, MCC made queried if there were requirements for turbine delivery accommodation areas and the requirement for letters of consent regarding the upgrade to the L15053 Local Road and in third-party lands.

An Coimisiún Pleanála

The Applicant engaged with An Bord Pleanála (now An Coimisiún Pleanála (ACP)) in a pre-app consultation meeting held on 9th May 2024 regarding the Proposed Grid Connection. No feedback or queries were raised by ACP in relation to traffic and transport.

15.1.1.6 Methodology and Section Structure

The report adopts the guidance for such assessments set out by Transport Infrastructure Ireland, or TII, in the document number PE-PDV-02045 *'Traffic and Transport Assessment Guidelines, May 2014'*. The geometric requirements of the transporter vehicles were assessed using AutoCAD and Autotrack.

The Traffic and Transport Section of the EIAR is set out as follows:

- › A review of the existing and future transport infrastructure in the vicinity of the Proposed Project, including the proposed turbine delivery route, an assessment of base 2024 traffic flows and traffic forecasts during an assumed construction year of 2030 (Section 15.1.2 Receiving Environment and 15.1.3 – Existing Traffic Volumes),
- › A description of the nature of the Proposed Project and the traffic volumes that it will generate during the different construction stages and when it is operational (Section 15.1.4 – Proposed Project and Traffic Generation),
- › A description of the abnormally large loads and vehicles that will require access to the Site (Section 15.1.5 Construction Traffic Vehicles),
- › A review of the effects during Proposed Project-generated traffic on links and junctions during construction phase (i.e. 18 months with a precautionary 12 months adopted for the traffic assessment) and when the wind farm is operational (Section 15.1.6 –Traffic Effects During Construction and Operation and Decommissioning of the Proposed Project),
- › An assessment of the effects during the Proposed Grid Connection works (Section 15.1.7 – Effect on Network of the Proposed Grid Connection),
- › Traffic management of large deliveries and a geometric assessment of the routes and their capacity to accommodate the abnormal loads associated with the Proposed Project (Section 15.1.8 – Traffic Management of Large Deliveries and Section 15.1.9– Abnormal Load Route Assessment),
- › A review of the Proposed Wind Farm access junction off the L15053 (Section 15.1.10 –Proposed Wind Farm Access Junction)
- › An assessment of the provision for sustainable modes of travel (in this case primarily with respect to the transport of construction staff) (Section 15.1.11 – Provision for Sustainable Modes of Travel),
- › A description of potential effects of the Proposed Project on Roads and Traffic (Section 15.1.12 – Likely Effects and Associated Mitigation Measures).

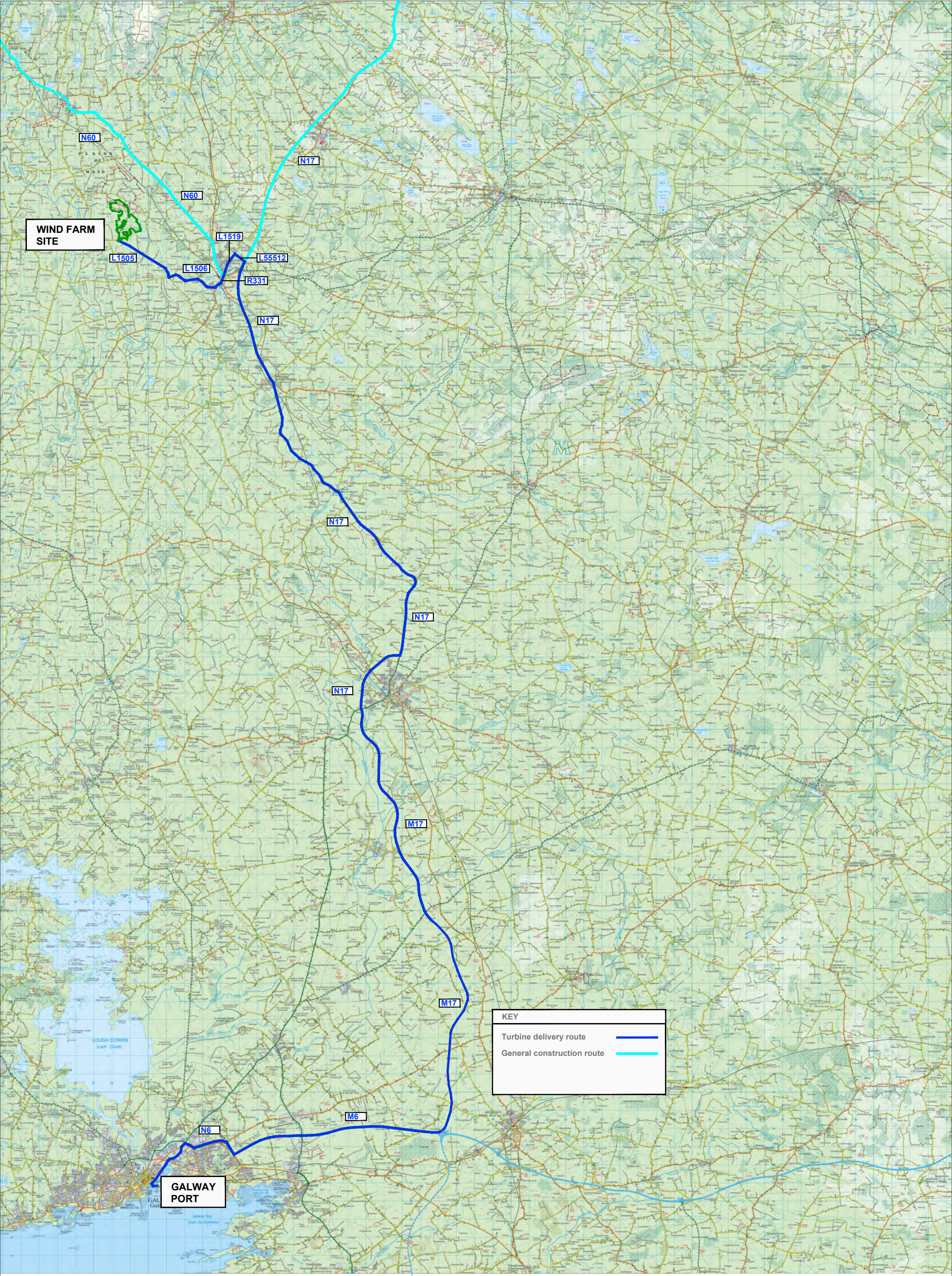
15.1.2 Receiving Environment

15.1.2.1 Site Location

The Proposed Project is located in County Mayo in the townlands listed in Table 1-1 of Chapter 1 of this EIAR and is shown in Figure 15-1a.

The Site is located within a rural setting in south Co. Mayo, approximately 5.8km northwest of the town of Claremorris. The town of Castlebar is located approximately 16km north-west of the Site. The N60 National Road runs north-south approximately 2km to the east. The R331 Regional Road runs northeast-southwest, approximately 5km from the southern boundary of the site. Existing access is via the L1505 and L15053 local roads to the south and the L5536 to the north.

The Proposed Grid Connection consists of c.982m of 110kV underground electrical cabling which will run in a north-eastward direction from the proposed onsite 110kV substation through agricultural land to the existing overhead 110kV Cloon-Castlebar transmission line. The existing overhead line will be broken by 2 no. end masts (lattice type towers) to facilitate the connection to the Proposed Wind Farm. The entirety of the Proposed Grid Connection is in the townland of Cloonbaul.



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 15-1a Site location, turbine delivery route, general construction traffic routes

PROJECT: Cunlaghfadda Green Energy Project		
CLIENT: Cunlaghfadda Green Energy Ltd		SCALE: NTS
PROJECT NO: 11100	DATE: 12.05.26	DRAWN BY: AL

15.1.2.2 Proposed Turbine Delivery Route

The proposed point of arrival for the wind farm plant is the port of Galway in Galway city. The turbine delivery route is as follows;

- › The Turbine Delivery Route (TDR) will travel northeast through Galway City along the L5056 and L5048 Local Roads, followed by the R339 Regional Road. It will then travel along the L5034 before reaching the R336.
- › The TDR route will then enter the N6 National Road at the Bothar na dTreabh/Tuam Road junction (c.3.3 km).
- › The delivery vehicles transporting the abnormally sized loads will continue east along the N6/M6 Motorway for approximately 15km, before merging onto the M17 at the M6/M17/M18 intersection.
- › From here, the delivery vehicles will continue north on the M17 and N17 Tuam bypass and the N17 for approximately 55 km before turning west off the N17 to the north of Claremorris onto the L55512.
- › The route then travels northwest on the L55512 for approximately 0.7 km to the junction with the L1519 when the route then travels south on the L1519 and the R331 for approximately 2.2km
- › At this point the route heads west on the L1506 for approximately 2.8 km before continuing northwest on the L1505 for approximately 3.6 km.
- › At this point the route turns right into the Site via the temporary construction site entrance and on to the L15053 and continues northeast for approximately 0.2 km before turning left onto the L15053.

The total length of the turbine delivery route is approximately 83km.

A detailed assessment of the proposed haul route for the abnormally sized loads was made from Port of Galway to the proposed temporary construction and turbine component entrance in Knockroe. The TDR is discussed in detail in Section 15.1.8 with the locations included in the detailed autotrack assessment shown in Figure 15-1b.



NOTES: PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES	Figure 15-1b Locations on turbine delivery route for included in autotrack assessment		
	PROJECT: Cunlaghfadda Green Energy Project		ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS
	CLIENT: Cunlaghfadda Green Energy Ltd	SCALE: NTS	
	PROJECT NO: 11100	DATE: 12.05.26	

15.1.2.3 Proposed Construction Traffic Haul Route

All concrete required for each turbine foundation will be delivered to the Site in one day per foundation for a total of 7 days. The concrete (and some crushed stone) required for the turbine foundations will be sourced from the proposed onsite borrow pit as described in Section 4.4.1.6 of Chapter 4. It is intended to obtain materials (approx. 16,000m³) for the construction of the Proposed Project from the proposed on-site borrow pit (with the remaining 61,200m³ to come from local licenced quarries).

As outlined in Section 4.4.4.4 in Chapter 4 Description of the Proposed Project, approximately 54,000m³ of material will be required for the Proposed Wind Farm footprint, and approximately 23,200m³ of material is required for the Proposed Grid Connection footprint, taking account that approximately 16,000m³ will be sourced from the on-site borrow pit, approximately 61,200m³ will be required to be imported to the Site which is to come from local licenced quarries within 20km of the Site.

All concrete and stone deliveries provided by local quarries will access the Site via the temporary site entrance off the L1505, as shown in Figure 15-6.

A review of the location of the local quarries indicates that in addition to the TDR which approaches Claremorris on the N17 from the south, deliveries from quarries may also be made via the N17 from the northeast in the direction of Knock, and via the N60 from the direction of Castlebar to the northwest. These additional routes are also therefore included in the traffic assessment included in this Chapter of the EIAR.

15.1.2.4 Proposed Grid Connection

The Proposed Grid Connection includes a 110kV underground cabling connecting the proposed 110kV onsite substation to the existing overhead 110kV Cloon-Castlebar transmission line, via a 'loop-in/loop-out' located in the townland of Cloonbaul. The Proposed Grid Connection measures approximately 982m and is located primarily within private agricultural land. The Proposed Grid Connection and associated traffic related impacts are discussed in Section 15.1.7.

15.1.3 Existing Traffic Volumes

Traffic volumes are discussed in terms of either vehicle numbers, or Passenger Car equivalent Units (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 Heavy Goods Vehicle (HGV) was given a factor of 2.4 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

A total of 7 no. locations on the TDR and general construction routes are included in the link flow assessment, with the locations shown in Figure 15-2. The source of the traffic data is set out in Table 15-3.

Base year traffic volumes as observed in the year 2024 for the 7 no. link locations shown in Figure 15-2, range from a maximum of 10,719 vehicles per day on the N17 south of Claremorris, down to a minimum of 370 vehicles per day observed on the L1505 travelling towards the Site, as set out in Table 15-4.

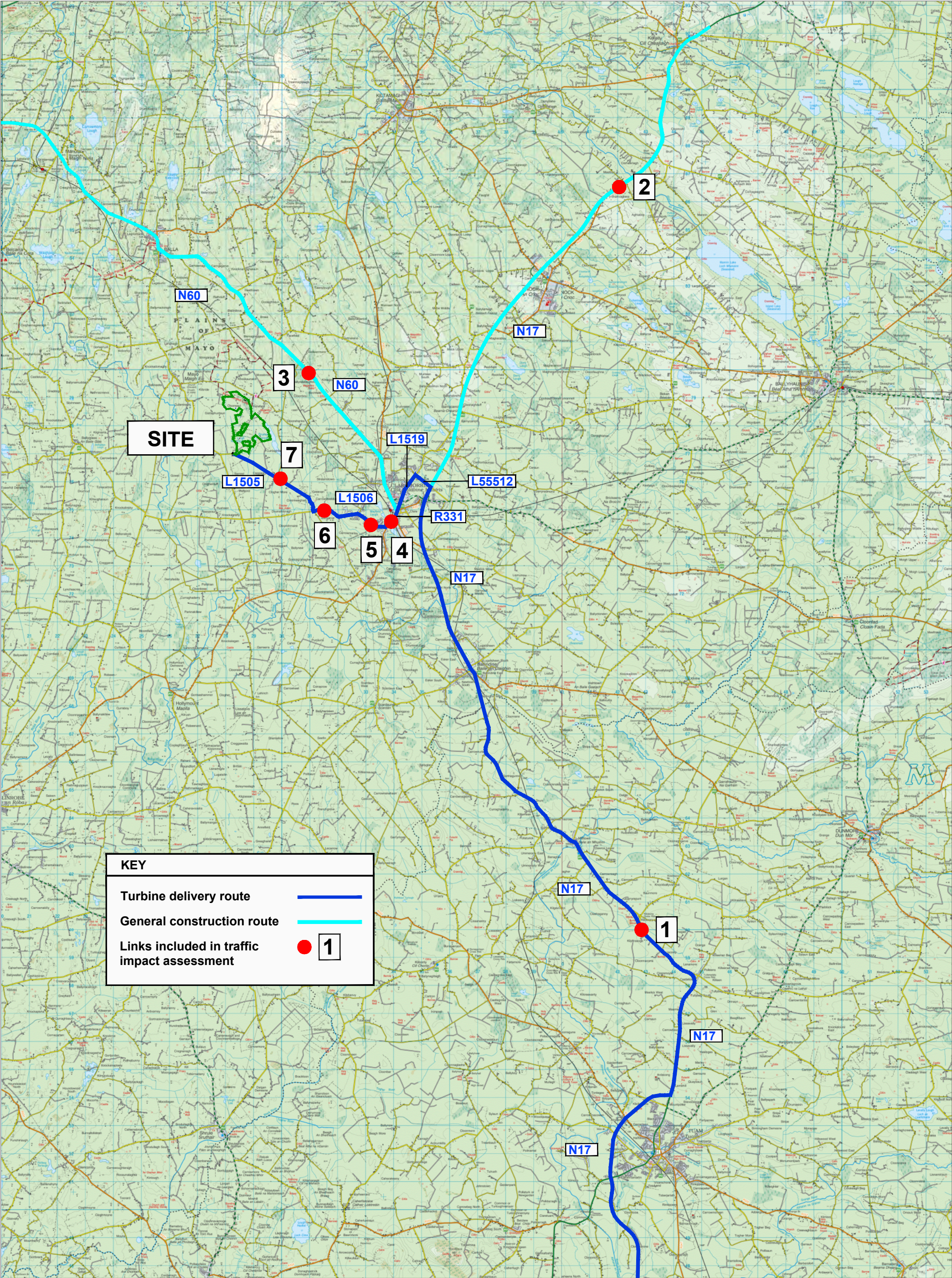
A full listing of the traffic counts data is included as Appendix 15-1.

Table 15-3 Count locations and data source

Link	Data source
1 – N17 – South of Claremorris	Automatic traffic count (TII) – year 2024
2 – N17 – Northeast of Claremorris	Automatic traffic count (TII) – year 2024
3 – N60 – Northwest of Claremorris	Automatic traffic count (TII) – year 2024
4 – R331 – Claremorris	Classified turning count - (Traffinomics) – year 2024
5 – L1506 – East	Classified turning count - (Traffinomics) – year 2024
6 – L1506 – West	Classified turning count - (Traffinomics) – year 2024
7 – L1505	Classified turning count - (Traffinomics) – year 2024

Table 15-4 All day traffic flows by location, years 2024 (2-way vehicles)

Link	2024
1 – N17 – South of Claremorris	10,719
2 – N17 – Northeast of Claremorris	6,783
3 – N60 – Northwest of Claremorris	6,199
4 – R331 – Claremorris	7,587
5 – L1506 – East	2,480
6 – L1506 – West	1,249
7 – L1505	370



15.1.3.2 Background Traffic Volumes for the Assumed Construction Year 2030

This section describes the process adopted to produce background traffic forecasts for an assumed construction year of 2030.

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 15-5 and Table 15-6. Based on a medium growth scenario, traffic volumes are forecast to increase during the period from 2024 to 2030 by 6.8%. All day traffic flows on the study area network are compared for the years 2024 and 2030 in Table 15-7.

It should be noted that while the assumed construction year of 2030 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 0.28% (as shown as 1.0028 in Table 15-5) and the traffic volumes generated by the Proposed Project will remain unchanged regardless of construction year, as presented subsequently in Section 15.1.4.

Table 15-5 TII traffic growth forecasts, growth per annum and cumulative, County Mayo

Year	Light Vehicles – Annual Factor			Light Vehicles – Cumulative Factor		
	Low	Medium	High	Low	Medium	High
2024	1.0111	1.0127	1.0161	1.000	1.000	1.000
2025	1.0111	1.0127	1.0161	1.011	1.013	1.016
2026	1.0111	1.0127	1.0161	1.022	1.026	1.032
2027	1.0111	1.0127	1.0161	1.034	1.039	1.049
2028	1.0111	1.0127	1.0161	1.045	1.052	1.066
2029	1.0111	1.0127	1.0161	1.057	1.065	1.083
2030	1.0009	1.0028	1.0063	1.058	1.068	1.090
2031	1.0009	1.0028	1.0063	1.059	1.071	1.097
2032	1.0009	1.0028	1.0063	1.060	1.074	1.104

Table 15-6 TII traffic growth rates by growth scenario

Period	New Factors		
	Low	Medium	High
2024 – 2030	1.058	1.068	1.090

Table 15-7 All day traffic flows by location and year (2-way vehicles)

Link	Observed 2024	Forecast 2030
1 – N17 – South of Claremorris	10,719	11,448

2 – N17 – Northeast of Claremorris	6,783	7,244
3 – N60 – Northwest of Claremorris	6,199	6,621
4 – R331 – Claremorris	7,587	8,103
5 – L1506 – East	2,480	2,649
6 – L1506 – West	1,249	1,334
7 – L1505	370	395

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 15-8. The figures show that the percentage of HGVs varies from a minimum of 2.2% observed on the L1505 approaching the site to a maximum of 5.8% observed on the N17 to the northeast of Claremorris.

The construction year 2030 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 15-8.

Table 15-8 All day flows, percentage HGVs and flows by vehicle type, year 2030.

Link	All day flow (vehs)	% HGV's	Vehicles		PCUs		
			HGVs	Cars / lgvs	HGVs	Cars / lgvs	Total
1 – N17 – South of Claremorris	11,448	4.8%	549	10,898	1,319	10,898	12,217
2 – N17 – Northeast of Claremorris	7,244	5.8%	420	6,824	1,008	6,824	7,832
3 – N60 – Northwest of Claremorris	6,621	3.0%	199	6,422	477	6,422	6,899
4 – R331 – Claremorris	8,103	5.2%	421	7,682	1,011	7,682	8,693
5 – L1506 – East	2,649	3.0%	79	2,569	191	2,569	2,760
6 – L1506 – West	1,334	3.8%	51	1,283	122	1,283	1,405
7 – L1505	395	2.2%	9	386	21	386	407

15.1.4 Proposed Project and Traffic Generation

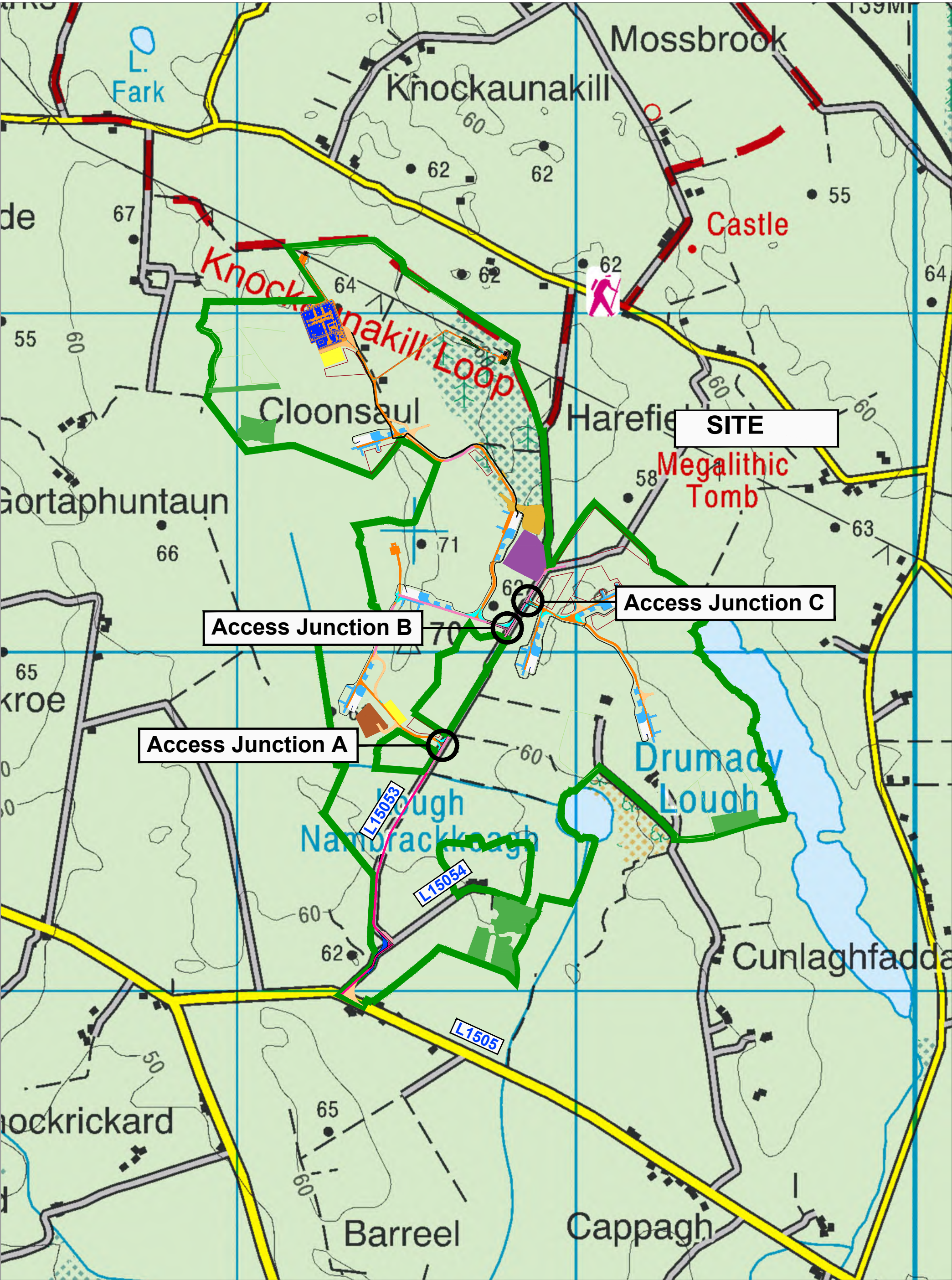
15.1.4.1 Proposed Access Junction

While the design of the junctions that will provide access to the Proposed Project is discussed in Section 15.1.9, a summary of the proposed access junctions are provided below. The location of the proposed access junctions that will provide access to the Proposed Project are shown in Figure 15-3.

Proposed Wind Farm Access Junctions

The location of the 3 site access junctions are shown in Figure 15-3. While these are discussed further in Section 15.1.9, they are summarised as follows;

- › **Access Junction A** – This Junction is located off the north side of an existing track which is a continuation of the L15053 approximately 650m north of the existing junction between the L15053 and the L15054. This junction will provide for all construction traffic and operational traffic for all 7 turbines.
- › **Access Junction B** – This junction is located off the northside of the existing track, approximately 400m north of Access Junction A. This junction will provide for construction traffic and operational traffic for 3 turbines.
- › **Access Junction C** – This junction is located off the southern side of the access track approximately 100m to the east of Access Junction C. This junction will also provide for construction traffic and operational traffic for 3 turbines.



NOTES: PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES	Figure 15-3 Location of access junctions		
	PROJECT: Cunlaghfadda Green Energy Project		ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS
	CLIENT: Cunlaghfadda Green Energy Ltd		
	PROJECT NO: 11100	DATE: 12.05.26	

15.1.4.2 Development Trip Generation – During Construction

For the purpose of assessing the effects of traffic generated during the construction of the Proposed Project, the construction phase is in the following stages.

- › Stage 1 – Proposed Project construction: groundworks, construction of temporary construction compounds, turbine foundations, met mast foundations, proposed 110kV onsite substation, internal electrical cabling and construction of the Proposed Grid Connection.
- › Stage 2 – Proposed turbine component delivery and construction.

For the purpose of the traffic impact assessment, projections based on trip generation data collected from other wind farm construction projects regarding the numbers of trips per quantum of material, the number of turbine component parts based on 7 no. turbines, the length of the construction phase and work periods etc. were made to inform the assessment. These projections allow for assessment using the precautionary principle but should not be inferred as prescriptive limitations to the construction phase. There are numerous variables which can affect a construction project programme, including weather. The construction phase of the Proposed Project will be carried out in accordance with the Construction Environment Management Plan (CEMP), included as Appendix 4-5 of this EIAR, which will be agreed, where required, with the relevant Local Authority.

While the construction period is estimated to be between 12-18, the shortest potential construction phase duration of 12 months was assumed for the construction of the Proposed Project in order to test a precautionary scenario. The shortest construction period will give rise to higher volumes of construction traffic using the public road network at any one time. The traffic generation estimates set out in the following paragraphs are based on a total construction period of 12 months or 255 working days.

15.1.4.2.1 Stage 1 – Site Preparation and Groundworks (general construction = 222 days, concrete foundation pours = 7 days)

For assessment purposes, this stage of the Proposed Project construction, which includes the site preparation and ground works, construction of temporary construction compounds, turbine foundations, met mast foundations, and internal electrical cabling is assumed to last for 229 days, during which a total of 9,540 deliveries will be made to the Site, as shown in Table 15-9. During this construction phase, there will be two distinct types of days with respect to trip generation.

A total of 7 working days will be used to pour the 7 concrete wind turbine foundations. Foundations will likely be poured one per day, with an estimated 70 concrete loads required for each turbine delivered to the Site over a 12-hour period, resulting in 6 HGV trips to and from the Site per hour. On the remaining 222 working days for this stage other general materials will be delivered to the Site.

The estimated additional daily traffic generated on the road network during these days are shown in Tables 15-10 and 15-11. The figures show that on the 7 working days that concrete will be delivered to the Site, an additional 336 two-way PCUs will travel on the network (comprising 70 two-way HGV trips with 2.4 PCUs per movement), as shown in Table 15-10. Similarly, on the 222 working days when other materials will be delivered to the Site, traffic volumes on the local network will increase by an average of 196 PCUs, as set out in Table 15-11.

Table 15-9 Trip generation - Stage 1 - Site preparation and groundworks – total loads – Proposed Project

Material	Total no. Truck Loads	Truck type
Concrete	490	Trucks
Delivery of plant	31	Large artic

Material	Total no. Truck Loads	Truck type
Fencing & gates	3	Large artic
Compound setup	28	Large artic
Steel	19	Large artic
Sand / binding / stone / pile foundation	153	Trucks
Ducting and cabling (internal)	206	Large artic
Crane (to lift steel)	2	Large artic
Cranes for proposed turbines	11	Large artic
Refuelling for plant	165	Large artic
Stone for Proposed Wind Farm	7344	Truck
Tree felling	7	Truck
Stone for proposed onsite substation	650	Truck
Stone for temporary construction compound	115	Truck
Site maintenance	120	Large artic
Miscellaneous	46	Large artic
Material for grid connection	150	Large artic
Total	9,540	

Table 15-10 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	490	Trucks	2.4	1,176	168.0	336.0
* Estimation based on 7 concrete pouring days						

Table 15-11 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	31	Large artic	2.4	74.4	0.34	0.67
Fencing & gates	3	Large artic	2.4	7.2	0.03	0.06
Compound setup	28	Large artic	2.4	67.2	0.30	0.61
Steel	19	Large artic	2.4	45.6	0.21	0.41
Sand / binding / stone / foundation	153	Trucks	2.4	367.2	1.65	3.31
Ducting and cabling (internal)	206	Large artic	2.4	494.4	2.23	4.45
Crane (to lift steel)	2	Large artic	2.4	4.8	0.02	0.04
Cranes for proposed turbines	11	Large artic	2.4	26.4	0.12	0.24
Refuelling for plant	165	Large artic	2.4	396.0	1.78	3.57
Stone for Proposed Wind Farm	7344	Truck	2.4	17625.6	79.39	158.79
Tree felling	7	Truck	2.4	16.8	0.08	0.15
Stone for proposed onsite substation	650	Truck	2.4	1560.0	7.03	14.05
Stone for temporary construction compound	115	Truck	2.4	276.0	1.24	2.49
Site maintenance	120	Large artic	2.4	288.0	1.30	2.59
Miscellaneous	46	Large artic	2.4	110.4	0.50	0.99

Material	Total Truck Loads	Truck type	PCU Value	Total PCUs	PCU Movements /day*	2-way PCUs/day
Material for grid connection	150	Large artic	2.4	360.0	1.62	3.24
Total	9,050			21,720.0	97.8	195.7

15.1.4.2.2 **Stage 2 – Turbine Construction (abnormal loads = 19 nights, smaller components = 7 days)**

During the turbine construction stage, including delivery and assembly, there will be deliveries to the Site 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 standard 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 15-12, which summarises that a total of 56 trips will be made to and from the Site by extended artics, with a further 28 trips made by standard large articulated HGVs.

Table 15-12 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	7	1	7	1	7	Extended Artic
Blades	7	3	21	1	21	Extended Artic
Towers	7	4	28	1	28	Extended Artic
Sub total					56	
Transformer	7	1	7	1	7	Large Artic
Drive train and blade hub	7	1	7	1	7	Large Artic
Base and other deliveries	7	2	14	1	14	Large Artic
Sub total					28	
Total					84	

For the purposes of this assessment, it is estimated 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, which is a common delivery frequency for large turbine components from the port of entry to the Site. This will result in this stage taking 19 days spread over an 4-week period, with all deliveries made during the night. The actual trip number will be determined following consultations with An Garda Síochána. On a further two working days per week, lasting for approximately 7 weeks, the remaining equipment required during this phase will be delivered to the Site. The additional traffic movements for these two types of days are summarised in Tables 15-13 and 15-14. In Table 15-13 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 19 days, while an additional 19 PCUs are forecast to be on the network on 7 other days, as shown in Table 15-14, during the turbine construction phase.

Table 15-13 Trip generation - Stage 2 – Wind turbine plant, extended artic – 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 56 loads will take 19 nights spread over 4 weeks)					

Table 15-14 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 days for 7 weeks			

Summary of construction days and trip generation by delivery route

A summary of the 2-way delivery trips in terms of PCUs that will be generated on the 4 typical delivery days, together with the duration in days, is shown in Table 15-15.

Table 15-15 Summary of trip generation by delivery day and delivery route

Delivery day	Days	2-way HGV PCUs	2-way car PCUs	2-way total PCUs	Delivery route
Concrete foundation delivery days	7	336	70	406	General construction materials delivery routes

Delivery day	Days	2-way HGV PCUs	2-way car PCUs	2-way total PCUs	Delivery route
General construction	222	196	70	266	General construction materials delivery routes
Turbine delivery (abnormally sized loads)	19	60	45	105	TDR
Turbine delivery (standard HGVs)	7	19	45	64	TDR

Construction Employee Traffic

During the construction of the Proposed Project, it is estimated that up to 100 jobs will be created. Of this total, it is estimated that up to 70 staff members will be employed at any one time during the site preparation and groundworks stage of construction, reducing to 45 staff members during the turbine construction stage. If a precautionary scenario is assumed that all staff will travel to / from the Site by car, at an average of 2 persons per car, then a total of 70 PCU movements (each trip is two way) will be added to the network during the groundworks stage of the Proposed Project, reducing to 45 PCU trips during the turbine construction stage.

15.1.4.3 Development Trip Generation – During Operation

There will be no staff permanently present on the Site once the Proposed Project is operational as it will be remotely monitored. The only traffic associated with the operational phase of the Proposed Wind Farm will be from maintenance personnel that will gain access to the Site via the proposed access junctions off the L15053.

While there will be no scheduled trips required for the Proposed Grid Connection, maintenance may be required, although this will occur rarely generating a modest number of trips.

It is estimated that the traffic volumes that will be generated by the Proposed Wind Farm once it is operational will be minimal, with an estimated 1-2 trips per day. The impact on the network of these trips during the operational stage is discussed in Section 15.1.11.3 below.

15.1.4.4 Development Trip Generation – During Decommissioning

Traffic generation to the Proposed Wind Farm during decommissioning will be similar but significantly less than the trip generation estimates presented for the construction phase presented in Section 15.1.4.2 above. This is because much of the materials brought into the Proposed Wind Farm during construction will be left in-situ during the decommissioning stage. Please see Appendix 4-6 Decommissioning Plan for further detail.

During this phase, there will be no traffic generation as a result of the Proposed Grid Connection or relating to the proposed 110kV onsite substation as these elements of the Proposed Project will not be decommissioned.

15.1.5

Construction Traffic Vehicles – Abnormally Sized Loads

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 Project blades up to 66.8m long have been considered for the purpose of this assessment.

For the purpose of delivering the blades to the Site it is proposed that there will be 2 methods of delivery adopted. For the southern section of the TDR from the Port of Galway to the turnoff from the N17 east of Claremorris, the blades will be transported in the horizontal position using a standard Superwing carrier.

From the turn off from the N17 onto the L55512 east of Claremorris, through Claremorris and west through the local road network to the Site, it is proposed that the blades will be transported using a blade adapter, with the blades lifted to 60°. This is proposed in order to significantly shorten the envelope of the transport vehicle in plan in order to negotiate the more constrained road network.

The critical vehicles in terms of size and turning geometry requirements, and used in the detailed route assessment discussed in Section 15.1.9, include the blade transporter vehicles as described above, and the tower transporter vehicles. The geometry of the various transport vehicles tested are shown in Drawing Nos 383371-A – 383371-G of Appendix 15-3. The geometry of the key design vehicles are summarised as follows;

Transport of Blades – Standard method of transportation using Superwing Carrier with blade in horizontal position

Transport of Blades – Articulated HGV with 10m overhang at rear

Total length of vehicle 70.94m

Length of blade 66.77m

Transport of Blades – with blade adaptor and blade raised to either 0° or 60°

Raised to 60°

Total length of vehicle in plan 51.28m

Length of blade 66.77m

Transport of Blades – with blade adaptor and blade raised to either 0° or 60°

Lowered to 0°

Total length of vehicle 84.51

Length of blade 66.77 m

Transport of Tower (Lower Section)– Using low-bed or drop deck trailers (Longest tower vehicle)

Total length (with load) 47.25 m

Length of load 20.76 m

The critical vehicles in terms of size and turning geometry requirements used in the detailed route assessment discussed in Section 15.1.9, 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.

The detailed route assessment was undertaken by Collett & Sons Ltd and is included as Appendix 15-3 of this EIAR.

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

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 Authorities 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 delivery routes shown in Figure 15-1a and discussed in Sections 15.1.2.

15.1.6.1 Effect on Link Flows – During Construction

Background traffic volumes and Proposed Project generated traffic volumes are shown for the five typical construction stage scenarios, discussed below and shown in Tables 15-16 to 15-19, with the forecast effects, in terms of the percentage increase in traffic flows in PCUs and the number of days affected, set out in Tables 15-20 to 15-23. As stated previously in this section the actual figures presented in the tables will be subject to change, however, they are considered a robust estimation of likely traffic volumes and effects.

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

Concrete foundation pouring days (7 days)

For 7 days when concrete is delivered to the Site for the construction of the turbine foundations via the identified construction delivery routes, on average an additional 406 PCUs will travel on the local road network. This will result in a +3.3 % increase in traffic volumes on the N17 south of Claremorris (Link 1), or when approaching from the N17 from the north (Link 2) a +5.2% increase, or via the N60 in the northwest (Link 3), a +5.9% increase. From Claremorris as the delivery route travels south on the R331 (Link 4) traffic volumes will increase by + 4.7% on these 7 days, and then by +14.7% as the route turns west onto the L1506 (Link 5). As the route heads west on the L1506 (Link 6, +28.9%) and then north on the L1505 (Link 7, +99.7%), and background traffic flows reduce significantly, the associate percentage increases incurred on these links rises.

General construction + Proposed Grid Connection construction (222 days)

For 222 days when materials are delivered for general construction and the construction of the grid connection via the identified construction delivery routes, on average an additional 266 PCUs will travel on the local road network. When accessing the site via the TDR this will result in a +2.2 % increase in traffic volumes on the N17 south of Claremorris (Link 1), or when approaching from the N17 from the north (Link 2) a +3.4% increase, or via the N60 in the northwest (Link 3), a +3.9% increase. From

Claremorris as the delivery route travels south on the R331 (Link 4) traffic volumes will increase by +3.1% on these 222 days, and then by +9.6% as the route turns west onto the L1506 (Link 5). As the route heads west on the L1506 (Link 6) traffic volumes will increase by +18.9%, and on the L1505 (Link 7), by +65.3%.

Turbine delivery (abnormally sized loads (38 days))

On the 19 nights that the abnormal loads carrying the large turbine components travel to the Site via the TDR, an additional 105 PCUs will travel to/from the Site. This will result in a +0.9% increase in traffic volumes on the N17 south of Claremorris (Link 1), a +1.2% increase on the R331 travelling south from Claremorris (Link 4) and a +3.8% increase as the route turns west onto the L1506 (Link 5). As the route continues west on the L1506 (Link 6) traffic volumes will increase by +7.5%, and on the L1505 (Link 7), by +25.8%.

Turbine delivery (standard HGVs) (7 days)

For 7 days when the delivery of smaller turbine components are made to the Site by standard HGVs, it is forecast that an additional 64 PCUs will travel to/from the Proposed Wind Farm via the TDR.

During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +0.5% on the N17 south of Claremorris (Link 1), a +0.7% increase on the R331 travelling south from Claremorris (Link 4) and a +2.3% increase as the route turns west onto the L1506 (Link 5). As the route continues west on the L1506 (Link 6) traffic volumes will increase by +4.6%, and on the L1505 (Link 7), by +15.7%.

Table 15-16 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – concrete foundation delivery (PCUs)

Link	Background PCUs			Proposed Project PCUs			Total PCUs (Background + Proposed Project)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N17 – South of Claremorris	10,898	1,319	12,217	70	336	406	10,968	1,655	12,623
2 – N17 – Northeast of Claremorris	6,824	1,008	7,832	70	336	406	6,894	1,344	8,238
3 – N60 – Northwest of Claremorris	6,422	477	6,899	70	336	406	6,492	813	7,305
4 – R331 – Claremorris	7,682	1,011	8,693	70	336	406	7,752	1,347	9,099
5 – L1506 – East	2,569	191	2,760	70	336	406	2,639	527	3,166
6 – L1506 – West	1,283	122	1,405	70	336	406	1,353	458	1,811
7 – L1505	386	21	407	70	336	406	456	357	813

Table 15-17 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – general construction delivery (PCUs)

Link	Background PCUs			Proposed Project PCUs			Total PCUs (Background + Proposed Project)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N17 – South of Claremorris	10,898	1,319	12,217	70	196	266	10,968	1,515	12,483
2 – N17 – Northeast of Claremorris	6,824	1,008	7,832	70	196	266	6,894	1,204	8,098
3 – N60 – Northwest of Claremorris	6,422	477	6,899	70	196	266	6,492	673	7,165
4 – R331 – Claremorris	7,682	1,011	8,693	70	196	266	7,752	1,207	8,959
5 – L1506 – East	2,569	191	2,760	70	196	266	2,639	387	3,026
6 – L1506 – West	1,283	122	1,405	70	196	266	1,353	318	1,671
7 – L1505	386	21	407	70	196	266	456	217	673

Table 15-18 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – turbine delivery – abnormal loads (PCUs)

Link	Background PCUs			Proposed Project PCUs			Total PCUs (Background + Proposed Project)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N17 – South of Claremorris	10,898	1,319	12,217	45	60	105	10,943	1,379	12,322
2 – N17 – Northeast of Claremorris	6,824	1,008	7,832	NA	NA	NA	NA	NA	NA
3 – N60 – Northwest of Claremorris	6,422	477	6,899	NA	NA	NA	NA	NA	NA
4 – R331 – Claremorris	7,682	1,011	8,693	45	60	105	7,727	1,071	8,798
5 – L1506 – East	2,569	191	2,760	45	60	105	2,614	251	2,865
6 – L1506 – West	1,283	122	1,405	45	60	105	1,328	182	1,510

Link	Background PCUs			Proposed Project PCUs			Total PCUs (Background + Proposed Project)		
7 – L1505	386	21	407	45	60	105	431	81	512

Table 15-19 Daily traffic volumes on delivery route – background, Proposed Project traffic, with Proposed Project traffic – turbine delivery – standard HGVs (PCUs)

Link	Background PCUs			Proposed Project PCUs			Total PCUs (Background + Proposed Project)		
	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1 – N17 – South of Claremorris	10,898	1,319	12,217	45	19	64	10,943	1,338	12,281
2 – N17 – Northeast of Claremorris	6,824	1,008	7,832	NA	NA	NA	NA	NA	NA
3 – N60 – Northwest of Claremorris	6,422	477	6,899	NA	NA	NA	NA	NA	NA
4 – R331 – Claremorris	7,682	1,011	8,693	45	19	64	7,727	1,030	8,757
5 – L1506 – East	2,569	191	2,760	45	19	64	2,614	210	2,824
6 – L1506 – West	1,283	122	1,405	45	19	64	1,328	141	1,469
7 – L1505	386	21	407	45	19	64	431	40	471

Table 15-20 Summary daily effects of Proposed Project traffic – concrete foundation delivery - % increase and number of days

Link	Background	Proposed Project	Total	% increase	Estimated No. of days
1 – N17 – South of Claremorris	12,217	406	12,623	3.3%	7
2 – N17 – Northeast of Claremorris	7,832	406	8,238	5.2%	7
3 – N60 – Northwest of Claremorris	6,899	406	7,305	5.9%	7
4 – R331 – Claremorris	8,693	406	9,099	4.7%	7
5 – L1506 – East	2,760	406	3,166	14.7%	7

Link	Background	Proposed Project	Total	% increase	Estimated No. of days
6 – L1506 – West	1,405	406	1,811	28.9%	7
7 – L1505	407	406	813	99.7%	7

Table 15-21 Summary daily effects of Proposed Project traffic – general construction delivery - % increase and number of days

Link	Background	Proposed Project	Total	% increase	Estimated No. of days
1 – N17 – South of Claremorris	12,217	266	12,483	2.2%	222
2 – N17 – Northeast of Claremorris	7,832	266	8,098	3.4%	222
3 – N60 – Northwest of Claremorris	6,899	266	7,165	3.9%	222
4 – R331 – Claremorris	8,693	266	8,959	3.1%	222
5 – L1506 – East	2,760	266	3,026	9.6%	222
6 – L1506 – West	1,405	266	1,671	18.9%	222
7 – L1505	407	266	673	65.3%	222

Table 15-22 Summary daily effects of Proposed Project traffic – turbine delivery (abnormal loads) - % increase and number of days

Link	Background	Proposed Project	Total	% increase	Estimated No. of days
1 – N17 – South of Claremorris	12,217	105	12,322	0.9%	19
2 – N17 – Northeast of Claremorris	7,832	NA	NA	NA	NA
3 – N60 – Northwest of Claremorris	6,899	NA	NA	NA	NA
4 – R331 – Claremorris	8,693	105	8,798	1.2%	19
5 – L1506 – East	2,760	105	2,865	3.8%	19
6 – L1506 – West	1,405	105	1,510	7.5%	19

Link	Background	Proposed Project	Total	% increase	Estimated No. of days
7 – L1505	407	105	512	25.8%	19

Table 15-23 Summary daily effects of Proposed Project traffic – turbine delivery (standard HGVs) - % increase and number of days

Link	Background	Proposed Project	Total	% increase	Estimated No. of days
1 – N17 – South of Claremorris	12,217	64	12,281	0.5%	7
2 – N17 – Northeast of Claremorris	7,832	NA	NA	NA	NA
3 – N60 – Northwest of Claremorris	6,899	NA	NA	NA	NA
4 – R331 – Claremorris	8,693	64	8,757	0.7%	7
5 – L1506 – East	2,760	64	2,824	2.3%	7
6 – L1506 – West	1,405	64	1,469	4.6%	7
7 – L1505	407	64	471	15.7%	7

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 15-24, Table 15-25 and Table 15-26. The capacity for each link in the study area is shown in Table 15-24. The capacities range from a daily flow of 11,600 vehicles on the N17 north and south of Claremorris down to 3,000 on the local L-1505, L15053 and L15054 roads on the delivery routes.

Note: While there is no existing guidance in Ireland with respect to the link capacity for such local roads reference is made to a UK Department for Transport Traffic Advisory Leaflet 2/041 where it is recommended that a maximum hourly capacity for a single lane road with passing opportunities is 300 vehicles per hour. Based on this, a conservative 24-hour capacity of 3,000 PCUs (10 peak hours) per day is adopted.

Link capacities and are based on road widths and capacities 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”.

¹ <https://tsrgd.co.uk/pdf/tal/2004/tal-2-04.pdf>

Background, or do-nothing traffic flows, are compared to flows forecast for the various construction delivery stages in Table 15-25 with the percentage capacity reached for each link and stage shown in Table 15-26. Based on this assessment the following points are noted;

- On the potential delivery routes the N60 (Link 3) is the busiest road with respect to capacity and is forecast to operate over capacity at 138% for the do-nothing scenario, increasing to a maximum of 146% if used during the 7 days that the concrete foundations will be poured, reducing to a maximum of 143%, during the remainder of the construction period.
- The N17 south of Claremorris (Link 1) is forecast to operate slightly over capacity at 105% by the year 2030, and is forecast to increase to a maximum of 109% on the 7 days the concrete foundations are poured, reducing to 108% during the general construction phase.
- Conditions are forecast to be similar on the R331 south of Claremorris (Link 4) which is forecast to operate at capacity of 101% by the year 2030, and is forecast to increase to a maximum of 106% on the 7 days the concrete foundations are poured, reducing to 104% during the general construction phase.
- All other links on the delivery routes are forecast to operate well within link capacity.

Based on this assessment sections of the delivery route are forecast to operate at or slightly over capacity for the do-nothing scenario, increasing marginally with the additional traffic generated during the construction of the Proposed Project. For these locations it is important to consider the relative increase due to the Proposed Project and the duration of the impacts.

Table 15-24 Delivery routes link type and link capacity (at Level of Service D)

Link	Link type	Link capacity (Level of Service D)
1 – N17 – South of Claremorris	Type 1 Single	11,600
2 – N17 – Northeast of Claremorris	Type 1 Single	11,600
3 – N60 – Northwest of Claremorris	Type 3 Single	5,000
4 – R331 – Claremorris	Type 2 Single	8,600
5 – L1506 – East	Type 3 Single	5,000
6 – L1506 – West	Type 3 Single	5,000
7 – L1505	Narrow Local Road	3,000

Table 15-25 Delivery route link capacity and summary of link flows by construction delivery day

Link	Link capacity (Level of Service D)	Construction delivery day				
		Background traffic	Concrete foundation construction	General construction	Turbine delivery (abnormal loads)	Turbine delivery (standard HGVs)
1 – N17 – South of Claremorris	11,600	12,217	12,623	12,483	12,322	12,281
2 – N17 – Northeast of Claremorris	11,600	7,832	8,238	8,098	NA	NA
3 – N60 – Northwest of Claremorris	5,000	6,899	7,305	7,165	NA	NA
4 – R331 – Claremorris	8,600	8,693	9,099	8,959	8,798	8,757
5 – L1506 – East	5,000	2,760	3,166	3,026	2,865	2,824
6 – L1506 – West	5,000	1,405	1,811	1,671	1,510	1,469
7 – L1505	3,000	407	813	673	512	471

Table 15-26 Delivery route link capacity and % of link capacity by construction delivery day

Link	Link capacity (Level of Service D)	Construction delivery day				
		Background traffic	Concrete foundation construction	General construction	Turbine delivery (abnormal loads)	Turbine delivery (standard HGVs)
1 – N17 – South of Claremorris	11,600	105%	109%	108%	106%	106%
2 – N17 – Northeast of Claremorris	11,600	68%	71%	70%	NA	NA
3 – N60 – Northwest of Claremorris	5,000	138%	146%	143%	NA	NA
4 – R331 – Claremorris	8,600	101%	106%	104%	102%	102%
5 – L1506 – East	5,000	55%	63%	61%	57%	56%
6 – L1506 – West	5,000	28%	36%	33%	30%	29%
7 – L1505	3,000	14%	27%	22%	17%	16%

15.1.6.3 Effect on Link Flows – During Operation

Once the Proposed Project is operational, it is estimated that there will be 1-2 trips per day. It is considered that the traffic effect during this phase will be neutral, imperceptible and not significant.

15.1.6.4 Effect on Junctions – During Construction

The junction most affected on the identified delivery routes will be the R331 / L1506 junction where traffic volumes on the L1506 arm of the junction are forecast to increase by 9.6% (See Table 15-21), which approaches TII threshold of 10%, which when exceeded requires a detailed junction capacity test to be undertaken. These tests are discussed in this section of the EIAR.

While the percentage increase at the L1506 / L1505 junction resulting from the Proposed Project is forecast to increase by over the 10% threshold, traffic volumes through this junction are relatively low, and it is considered that a similar level of assessment is not required.

Junction capacity tests were undertaken 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 time 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, in accordance with TII requirements.
- Delay – Output in minutes, this gives an indication of the forecast average delay during the time period modelled for each movement.

15.1.6.4.1 Scenarios Modelled

The greatest effect in terms of traffic will be experienced during peak hours when, during peak construction periods, approximately 70 workers (35 cars) will pass through it. It is assumed that deliveries of materials to the Site will take place during the day after the workers have arrived, and before they leave at the end of the day and will therefore not occur at the same time. In order to test a precautionary scenario however, the test is based on staff traffic travelling to and from the site during the AM and PM peak hours, with the maximum number of concrete deliveries occurring in one hour (6 HGVs to and from the site) also travelling in and out of the junction.

15.1.6.4.2 R331 / L1506 Junction Capacity Test Results

The AM and PM peak hour traffic flows for the base year 2024 and the proposed construction year of 2030 are shown in Figures 15-4a and 15-4b respectively. The additional traffic movements that are forecast to be generated by construction workers are shown in Figure 15-4c, and the traffic flows generated by concrete deliveries are shown in Figures 15-4d (HGVs) and 15-4e (PCUs). The year 2030 traffic flows forecast through the junction for the AM and PM peak hours with all potential construction traffic in place, and used for the junction capacity tests, are shown in Figure 15-4f.

The results of the junction capacity tests are shown in Table 15-27 for the without and with proposed construction traffic scenarios during the AM and PM peak hours in the year 2030. For the AM peak hour the results show the additional trips passing through the junction will result in the maximum RFC, which applies to the left turn onto the R331 from the L1506, to increase from 24.8% for the background

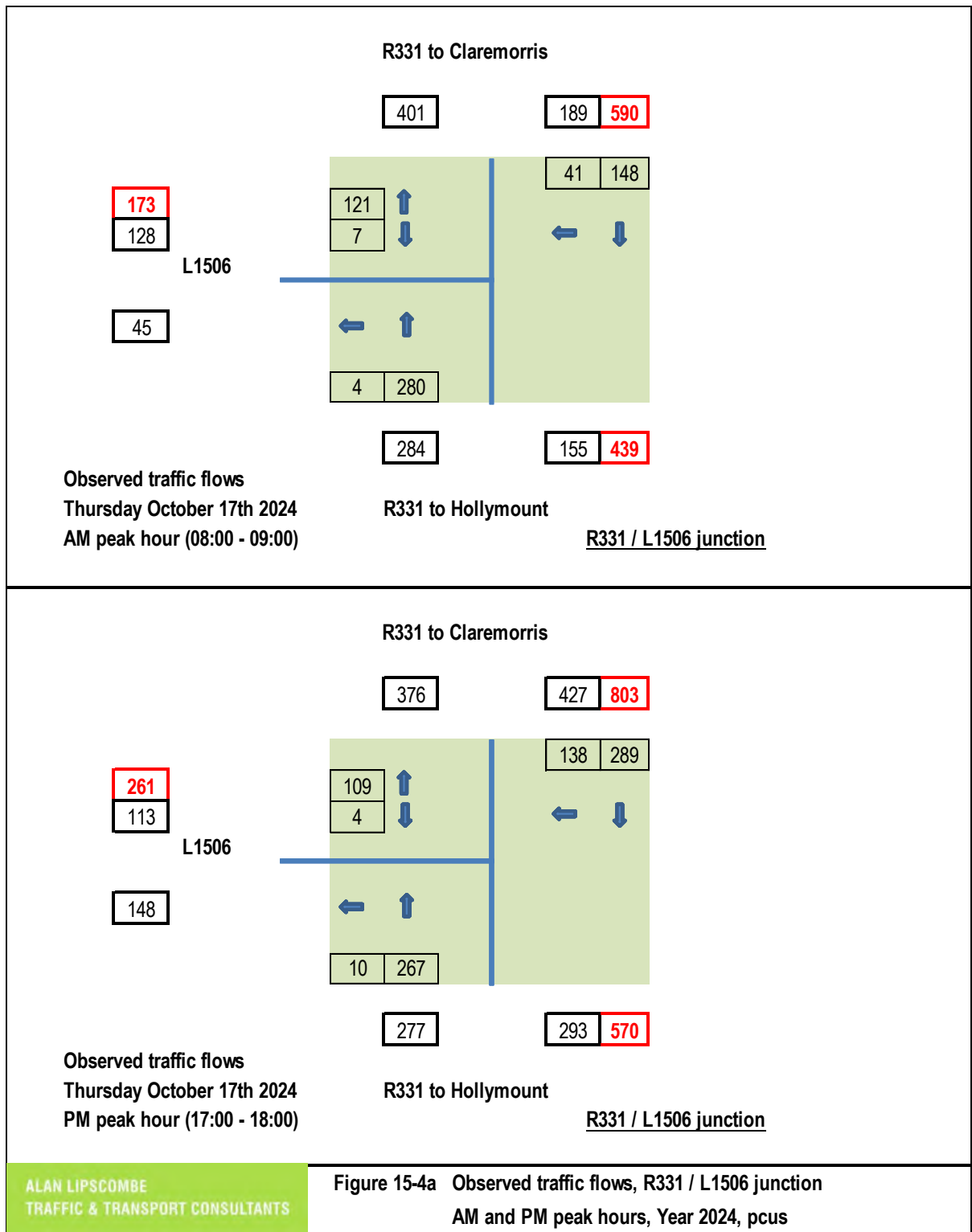
traffic scenario, to 27.8% with the additional construction traffic included. For the movement impacted most, which is the right turn from the R331 onto the L1505, it is forecast that the RFC will increase from 9.2% to 16.0%

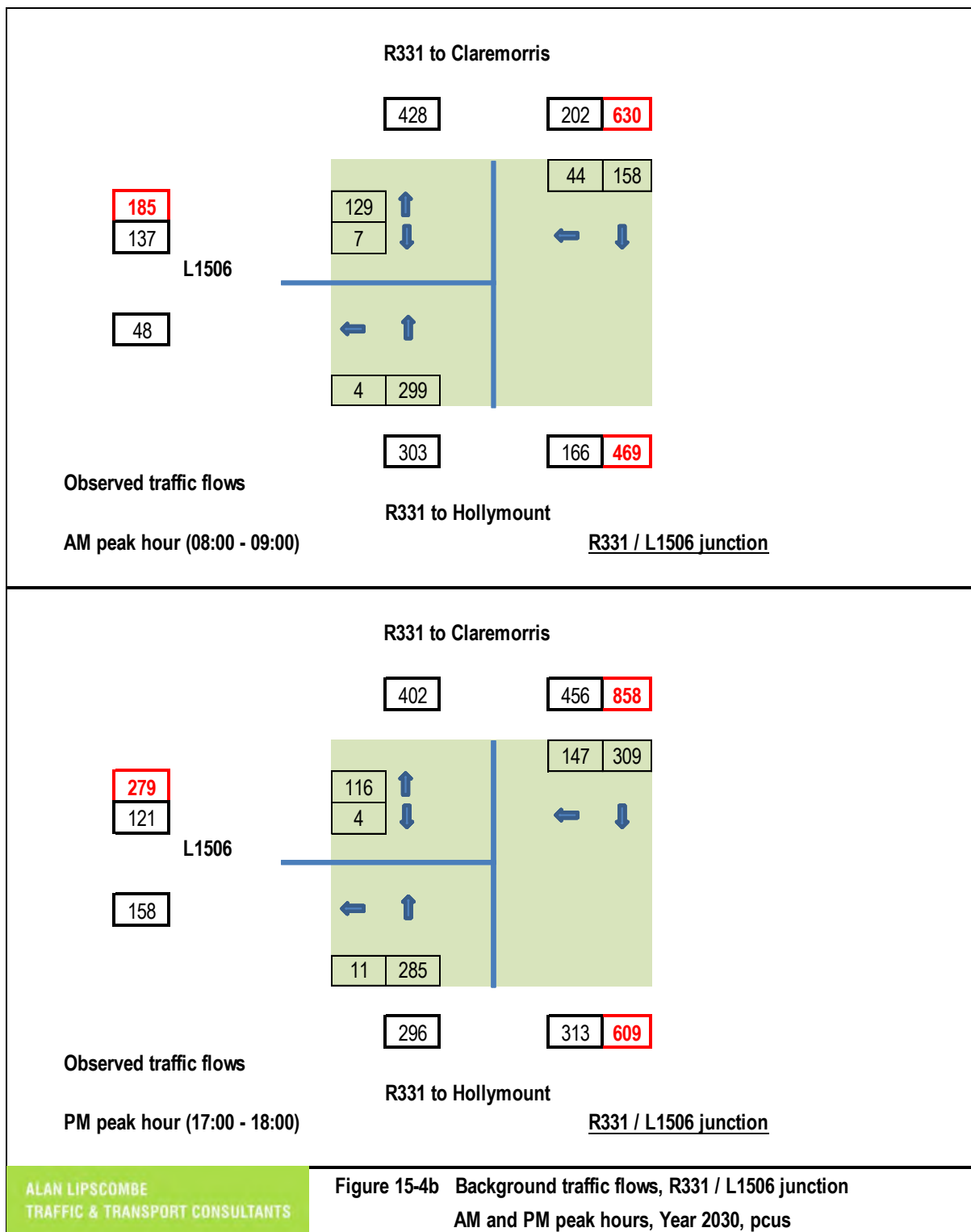
For the PM peak hour, the results show the additional trips passing through the junction will result in the maximum RFC, which in this case applies to right turn from the R331 onto the L1505, to increase from 22.2% to 28.9% with the additional construction traffic included. For the movement impacted most, which is the left turn onto the R331 from the L1506, it is forecast that the RFC will increase from 22.2% to 28.9%

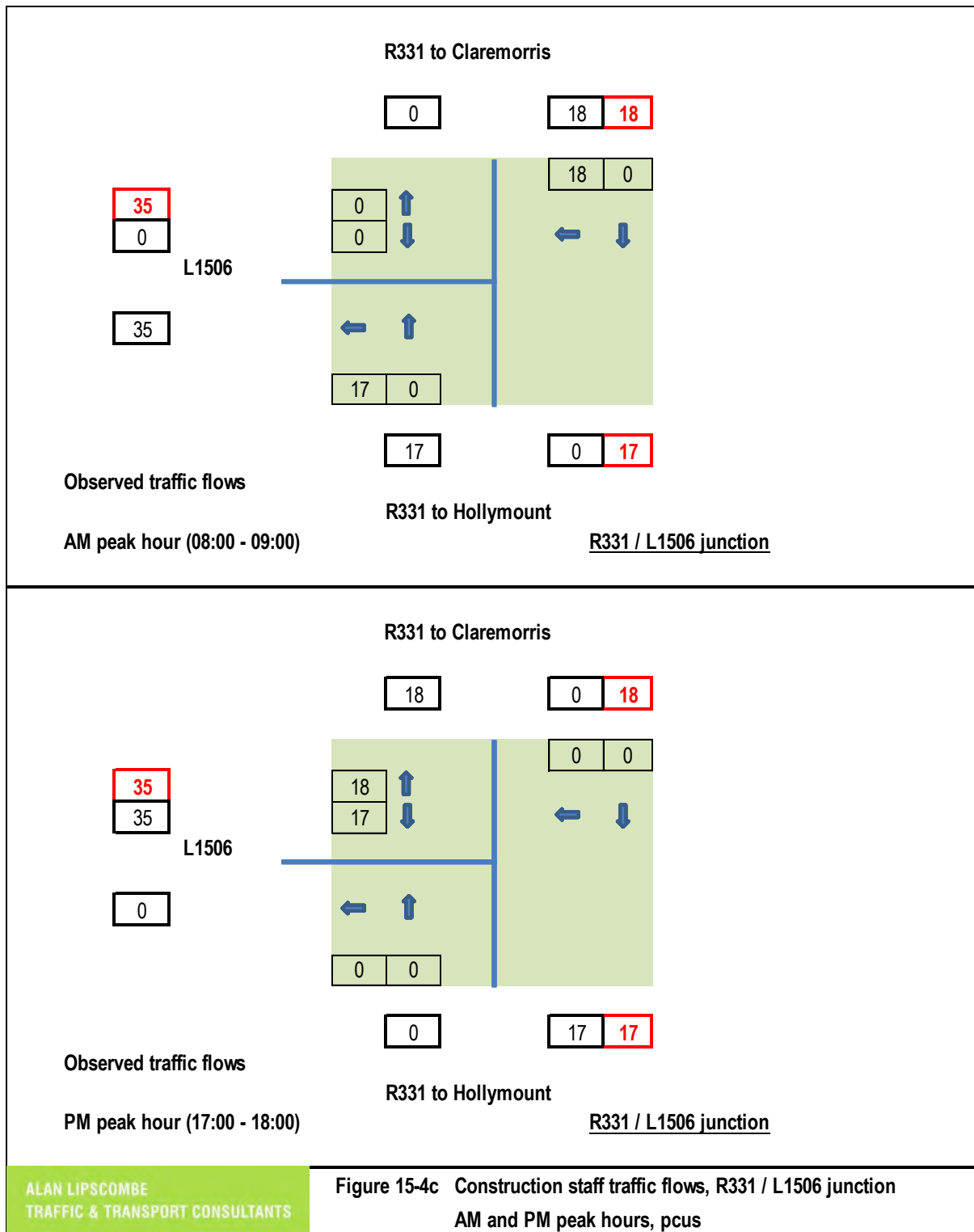
The assessment shows that the junction is forecast to operate well within the acceptable limit of 85% as specified by TII in the Traffic and Transport Assessment Guidelines, and that the traffic generated during the construction of the Proposed Project will have a negative, short-term and slight impact on the operation of this junction, which is not significant.

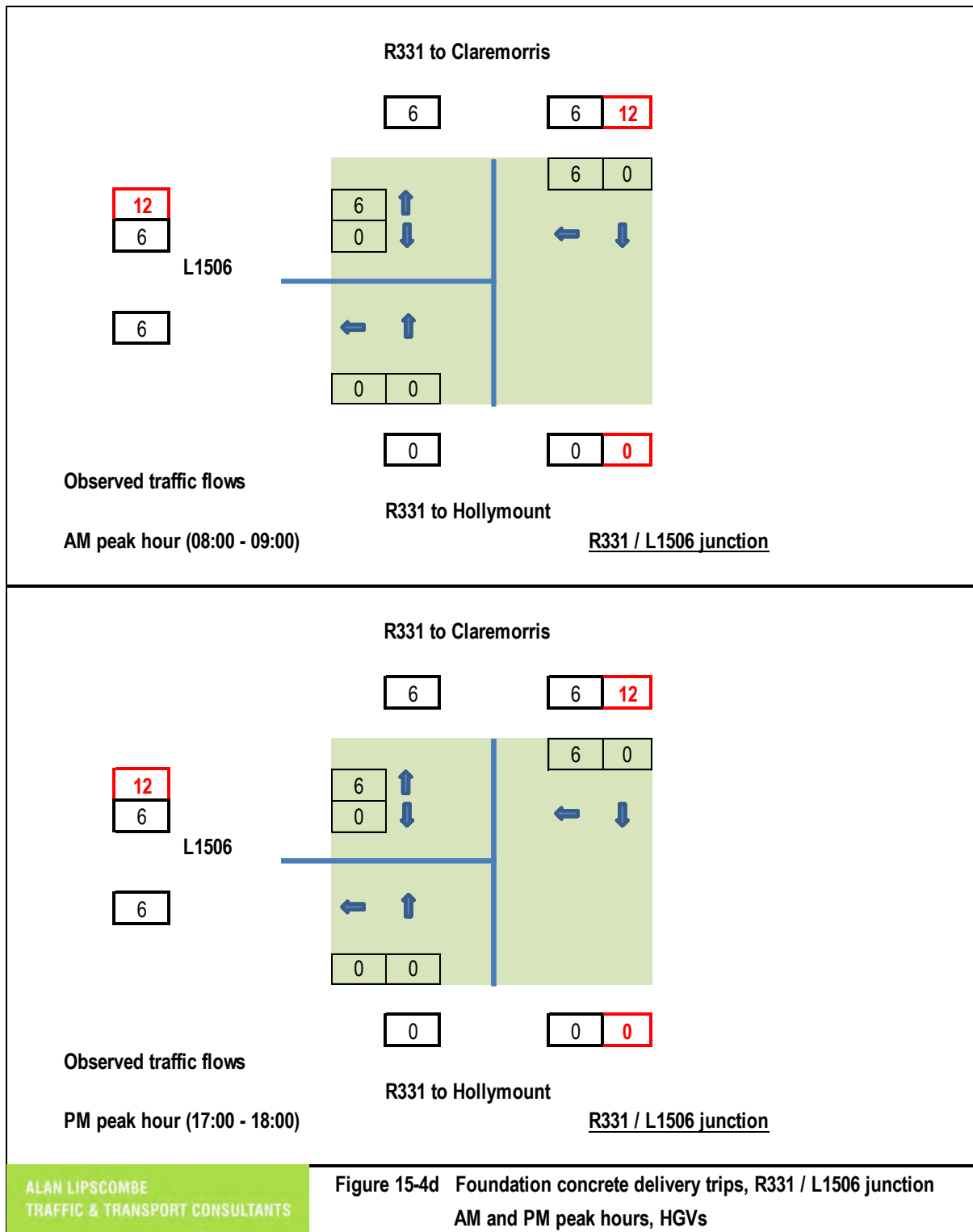
Table 15-27 Junction capacity test results, R331 / L1506 junction, AM and PM peak hours, with and without construction traffic, by time period, year 2030.

Period	Location	Without construction traffic			With construction traffic		
AM		RFC	Queue (vehicles)	Delay (minutes)	RFC	Queue (vehicles)	Delay (minutes)
	Right turn onto R331 from L1506	2.1%	0.02	0.17	2.2%	0.02	0.17
	Left turn onto R331 from L1506	24.8%	0.33	0.14	27.8%	0.38	0.15
	Right turn from R331 onto L1506	9.2%	0.10	0.13	16.0%	0.19	0.14
PM		RFC	Queue (vehicles)	Delay (minutes)	RFC	Queue (vehicles)	Delay (minutes)
	Right turn onto R331 from L1506	1.4%	0.01	0.19	7.5%	0.08	0.21
	Left turn onto R331 from L1506	22.2%	0.28	0.13	28.9%	0.40	0.15
	Right turn from R331 onto L1506	30.6%	0.44	0.16	33.7%	0.50	0.17













15.1.6.4.3

Effect on Junctions – During Operation

As discussed in Section 15.1.13.3, it is forecast that once operational, the Proposed Project is expected to generate 1 to 2 trips per day. It is therefore concluded that the Proposed Project will have an imperceptible, neutral effect on the local network once constructed, which is not considered to be significant.

15.1.7

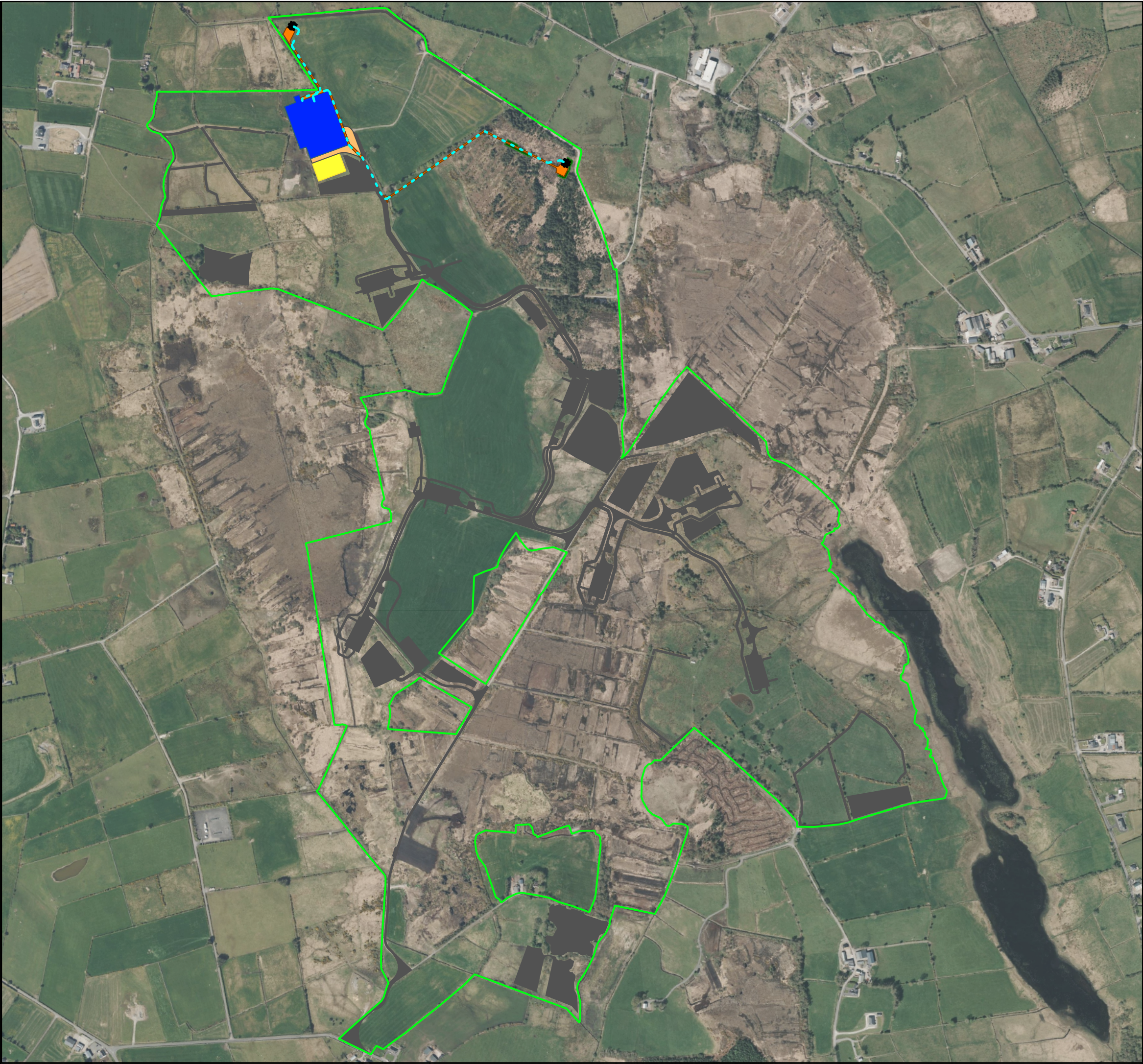
Effect on Network during Construction of the Proposed Grid Connection

A detailed description of the Proposed Grid Connection is provided in Section 4.4.2 of Chapter 4 Description of the Proposed Project of this EIAR. It is proposed to connect the proposed 110kV onsite substation to the existing Cloon - Castlebar 110kV overhead line – entirely in the townland of Cloonbaul, as illustrated in Figure 15-5. The Proposed Grid Connection is approximately c.982m in length and is located entirely within private agricultural lands.

All traffic for the Proposed Grid Connection will be delivered via the delivery (haul) routes as shown in Figure 15-1a.

The extent of the Proposed Grid Connection that will impact on the public road network is considered as part of the Proposed Project. The proposed on-site substation will be accessed via the proposed internal wind farm access tracks which are accessed from the L15053 Local Road to the south of the Site. Construction staff and materials will be delivered to the Proposed Grid Connection via the temporary site entrance. No traffic diversions will be required during construction of the Proposed Grid Connection due to the entirety of the proposed grid connection being within third-party agricultural lands.

A Traffic Management Plan (TMP), incorporating all the mitigation measures is included as Appendix 15-2 of this EIAR, confirmatory provisions in respect of traffic management will be agreed with relevant local authority, the road's authority and An Garda Síochána prior to construction works commencing on site.



Map Legend

EIAR Site Boundary

 Proposed 110kV Substation

Ordnance Survey Ireland Licence No. AR 0021820© Ordnance Survey Ireland/Government of Ireland.

Drawing Title

Proposed Grid Connection

Project Title

Proposed Cunlaghfadda Green Energy Project

Drawn By

NS

Checked By

RK

Project No.

220825

Drawing No.

Figure 15-5

Scale

1:8,000

Date

2026-05-02

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15.1.8 Traffic Management of Abnormally Sized Loads

Turbine components are transported at night when traffic is lightest and this is done in consultation with the local authority and its road section and roads authorities, An Garda Síochána Traffic Corp and special permits are generally required.

Minor accommodation works are required along the turbine delivery route such as hedge or tree cutting, temporary relocation of powerlines/poles, lampposts, signage, local road widening, and at one location, the provision of a temporary over-run area over a roundabout centre island. Any upgrades to the public road network will be carried out in advance of turbine deliveries and following consultation and agreement with the relevant authorities. It is not anticipated that any sections of the local road network will be closed during the delivery of the abnormally sized loads.

Traffic management measures include the following:

- › Identification of a delivery schedule to avoid peak times e.g. school drop off / pick up;
- › Details of the alterations required to the street furniture identified (As detailed in the TDR Report and Autotrack Assessment, included as Appendix 15-3) and any other minor alterations identified (hedgerow / treeline trimming etc)
- › The trial run using vehicles with similar dimensions will be carried out using appropriate permits in consultation with An Garda Síochána, local authority and all relevant road stakeholders.

Refer to Appendix 15-2 of this EIAR, for the Traffic Management Plan.

15.1.9 Abnormal Load Route Assessment

The proposed point of arrival for the wind farm plant is the Port of Galway in Galway city, with the TDR shown between Galway and the Site in Figure 15-1a.

As set out in Section 15.1.2.2, a detailed route assessment was undertaken covering the proposed delivery route for the abnormally sized loads, from the exit from the Port of Galway to the junction of the L15053 / L15054 as detailed in the TDR Report and Autotrack Assessment, included as Appendix 15-3. It is noted that the route from the Galway Port onto the N17 is an established TDR and is therefore not discussed further in this section of the EIAR. Nonetheless, autotrack assessments have been undertaken for the entire TDR from the Port of Galway, please see Appendix 15-3 for detail.

The assessment of all potential pinch points approaching the Site from the turn off from the N17 in the townland of Clare to the proposed temporary site entrance, is however discussed below, with the route and assessment locations shown in Figure 15-1b. For these locations, a 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 adaptor with the blade tip raised to 60°..

The assessment also presents the preliminary design of the proposed permanent site access junctions off the local access track which is a continuation of the L15053 road and the associated autotrack assessment.

The locations discussed are as follows:

- › Location 1 – N17 / L55512 junction at Clare

- > Location 2 – Left turn from L55512 onto the L1519 Clare Rd at Boherduff
- > Location 3 – R331 Claremorris
- > Location 4 – R331 / L1506 Junction
- > Location 5 – Right hand bend along L1506
- > Location 6 – Left hand bend along L1506
- > Location 7 – Right hand bend along L1506
- > Location 8 – Left hand bend along L1506
- > Location 9 – L1506 / L1505 Junction
- > Location 10 – Left hand bend on L1505
- > Location 11 – S-bend along L1505
- > Location 12 – Left hand bend after S-Bend on L1505
- > Location 13 – L1505/ L15053 Junction
- > Location 14 – L15053/ L15054 Junction

Location 1 – N17 / L55512 junction at Clare

Blade assessment shown in Drawing No 383371-90A1.1 of Appendix 15-3.

The swept path analysis undertaken for this location indicates that the large turbine vehicles will be able to negotiate this junction. The assessment for the blade adapter shows that the tip of the blade will require to oversail the eastern carriageway edge of the N17.

Location 2 – Left turn from the L55512 onto the L1519 Clare Rd at Boherduff

Blade assessment shown in Drawing No 383371-110A1.1 of Appendix 15-3.

The swept path analysis shows that temporary road widening and wall removal works will be required at this location. A 3-point turn is required to allow the loaded vehicles to navigate the junction. Blade oversail is required on the eastern side of the junction.

Location 3 – R331 Claremorris

Blade assessment shown in Drawing No 383371-120A1.1 of Appendix 15-3.

The swept path analysis undertaken for this location indicates that the large turbine vehicles will be able to negotiate this bend through the town of Claremorris. It is noted that overhead cables will require to be temporarily removed.

Location 4 – R331 / L1506 Junction

Blade assessment shown in Drawing No 383371-130A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this junction. An overhead line will require to be temporarily removed.

Location 5 – Right hand bend along L1506

Blade assessment shown in Drawing No 383371-140A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend. Various overhead lines will require to be temporarily removed.

Location 6 – Left hand bend along L1506

Blade assessment shown in Drawing No 383371-150A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend. An overhead cables will require to be temporarily removed.

Location 7 – Right hand bend along L1506

Blade assessment shown in Drawing No 383371-160A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that oversail is required on the southern side of the bend to allow the loaded vehicle to successfully navigate the bend. Tree pruning is also required. An overhead cables will also require to be temporarily removed.

Location 8 – Left hand bend along L1506

Blade assessment shown in Drawing No 383371-170A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that the wind farm turbine vehicles will be able to negotiate this bend. Some trees will require to be pruned and an overhead cable removed temporarily.

Location 9 – L1506 / L1505 Junction

Blade assessment shown in Drawing No 383371-180A1.1 of Appendix 15-3.

It is proposed that this location will be negotiated by means of a 3 point turn. The preliminary swept path analysis indicates that temporary road widening and extension of an existing culvert is required on the southwest corner of the junction and oversail of the blade tip will occur on the southern side of the L1506. As the vehicles travel north on the L1505 a fence will require to be removed on the western side, overhead cables will require to be removed and trees will require to be removed / pruned.

Location 10 – Left hand bend on L1505

Blade assessment shown in Drawing No 383371-190A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that temporary road widening, wall removal, oversail and tree pruning on the western side of the L1505 will be required in order for the vehicles to pass through the bend. Tree pruning is also required on the eastern portion of the road.

Location 11 – S-bend along L1505

Blade assessment shown in Drawing No 383371-200A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that oversail is required on a portion of the western and eastern side of the L1505. Removal of fencing and a wall is required on the offside of the road, and a gate is to be removed on the nearside of the road.

Location 12 – Left hand bend after S-Bend on L1505

Blade assessment shown in Drawing No 383371-210A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that oversail of the northern side of the L1505 will occur and overhead lines will require to be temporarily removed. The blade will require to be lowered at this location in order to pass under an existing high powered line.

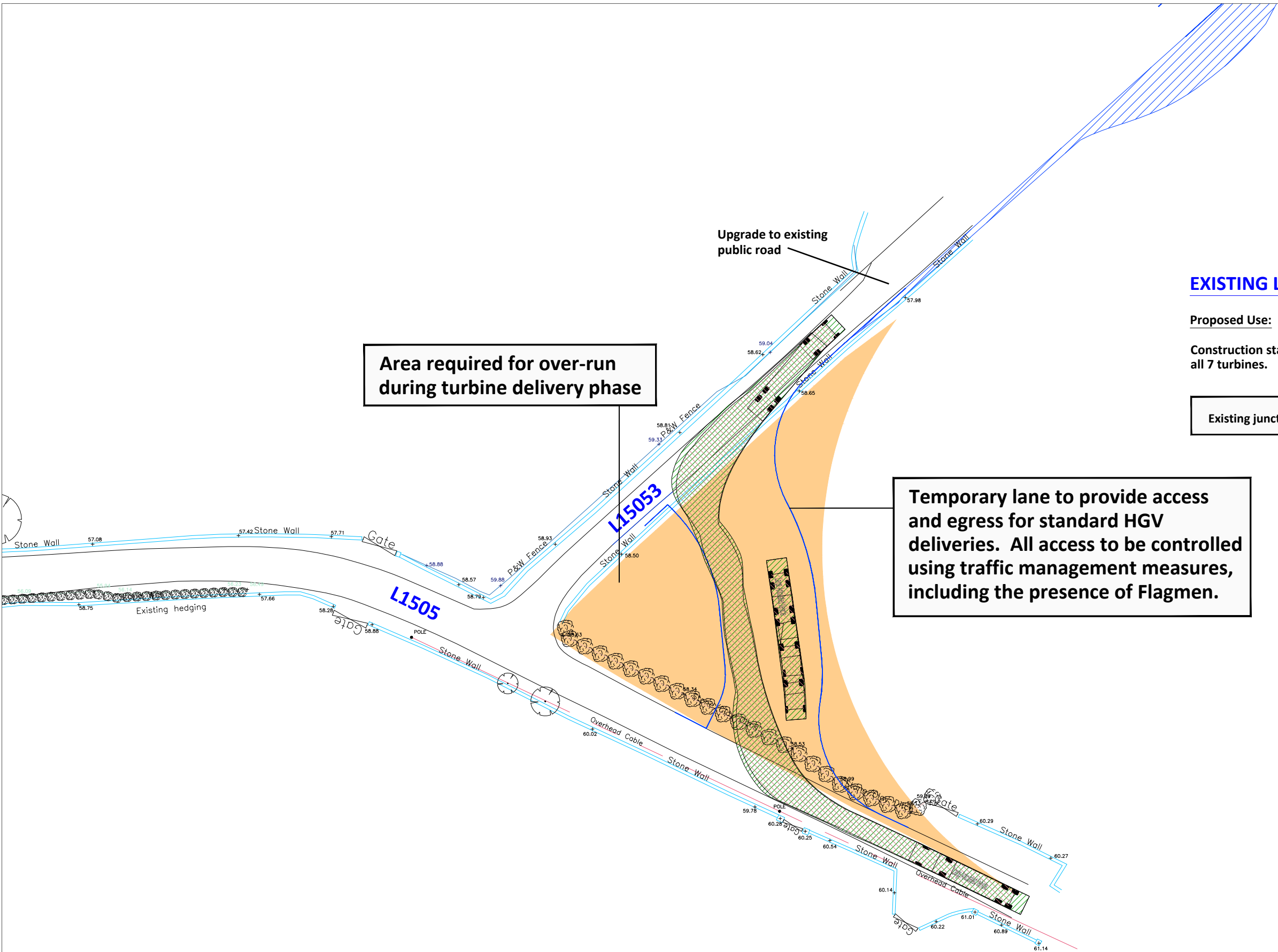
Location 13 –L1505 / L15053 Road Junction

Blade assessment shown in Drawing No 383371-220A1.1 of Appendix 15-3.

The preliminary swept path analysis indicates that third-party land is required on the northeast corner of the junction to facilitate the delivery of abnormal loads to the Site. All land take requirements have been secured by the Applicant. Temporary road widening and the removal of a wall, gate and hedge is required in order to accommodate the abnormally sized turbine loads. It is also proposed that standard HGV deliveries will be made via this temporary widened area, with a temporary controlled link between the L1505 and the L15053 providing access for standard HGVs during the construction phase.

The proposed temporary arrangements during the construction of the Proposed Project are shown in Figure 15-6 and include;

- › The proposed route for standard HGVs that by passes the existing L1505 / L15053 junction approximately 30m to the east and north respectively.
- › The access and egress to this temporary link will be controlled by site staff at all times it is in operation.
- › At all other times the access to this route will be closed by means of temporary fencing.
- › The exception to the above is nighttime abnormal load deliveries which will be completed under the supervision of the Contractor, controlled by site staff and accompanied by a Garda escort. .
- › This area will be opened only during the hours that the deliveries are made.



EXISTING L1505 / L15053 JUNCTION

Proposed Use:

Construction stage - TDR, standard HGV deliveries & construction staff for all 7 turbines.

Existing junction to remain as per existing layout

Temporary lane to provide access and egress for standard HGV deliveries. All access to be controlled using traffic management measures, including the presence of Flagmen.

NOTES:
PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES
Base mapping provided by MKO

Figure 15-6 Location 13 - L1505 / L15053 junction, proposed temporary HGV route

PROJECT: Cunlaghfadda Green Energy Project		
CLIENT: Cunlaghfadda Green Energy Ltd		SCALE: 1:500@A3
PROJECT NO: 11100	DATE: 12.05.26	DRAWN BY: AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

Location 14 L15053 / L15054 Junction

The preliminary swept path analysis indicates that third-party land is required on the southern side of the L15053 and at the northwestern corner of the L15053 / L15054 junction in order to accommodate the abnormally sized turbine loads, as shown in Figure 15-7. All land take requirements have been secured by the applicant. The proposed layout also includes an improved junction layout for all general construction deliveries and will also be left in place for the operational stage. The junction design includes a 13m junction radius on the western corner and a 1:10 taper in accordance with TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with HGV turning movements. STOP road markings and signs are as per Figure 7.35 of the Traffic Signs Manual.

Visibility splay requirements at junctions on local roads are set out in the Mayo County Development Plan 2022 – 2028, Volume 2 Development Management Standards Section 7.6, Table 4. The visibility splays are dependent on the observed 85th percentile speeds, ranging from 70m for 50 kph to 105m for 70m. While the alignment and condition of the existing L15053 and L15054 roads enforces low traffic speed at present, future speeds on the local road network may change once the road and junction improvements proposed as part of the Proposed Project are implemented. Visibility splays appropriate for the 60 kph, i.e., 3m x 90m are proposed to be kept clear, as shown in Figure 15-8. It is proposed that speed checks are undertaken on completion and appropriate signage implemented if required.

EXISTING L15053 / L15054 JUNCTION

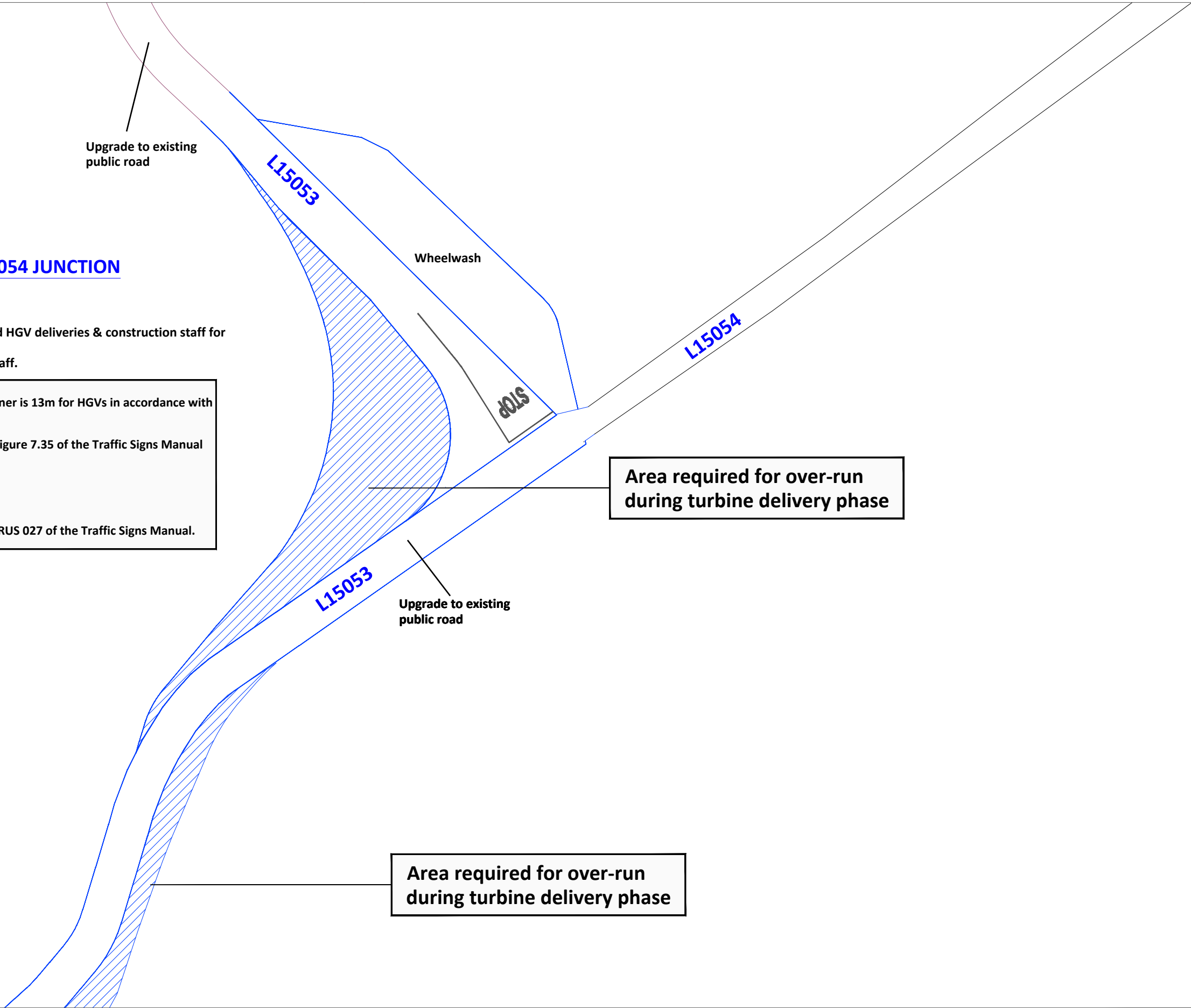
Proposed Use:

Construction stage - TDR, standard HGV deliveries & construction staff for all 7 turbines.
Operational stage - Maintenance staff.

- Junction radius for southern corner is 13m 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 15-7 Location 14 - L15053 / L15054 junction, junction layout

PROJECT: Cunlaghfadda Green Energy Project		
CLIENT: Cunlaghfadda Green Energy Ltd		SCALE: 1:500@A3
CLIENT:		
PROJECT NO: 11100	DATE: 12.05.26	DRAWN BY: AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

EXISTING L15053 / L15054 JUNCTION

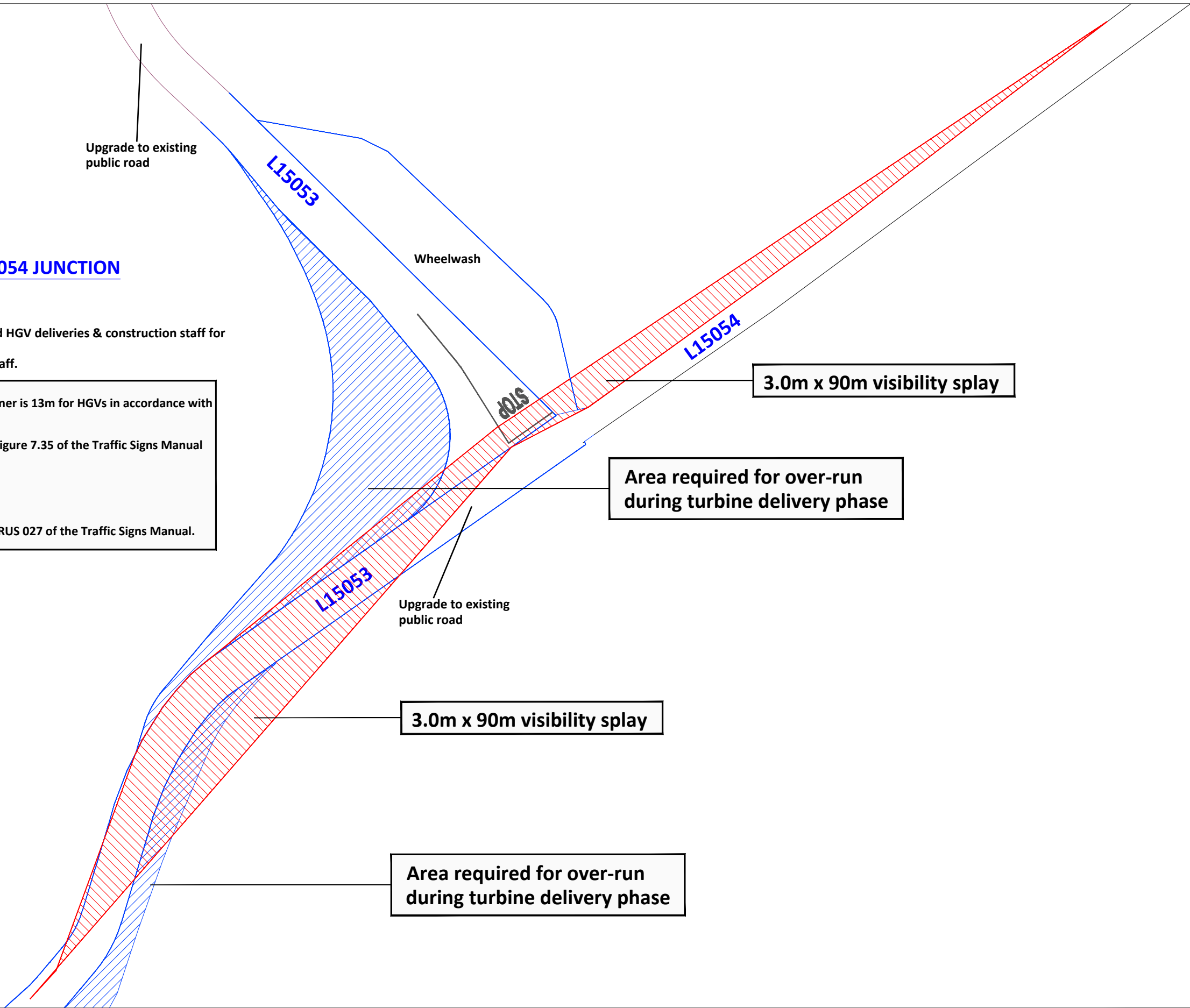
Proposed Use:

Construction stage - TDR, standard HGV deliveries & construction staff for all 7 turbines.
Operational stage - Maintenance staff.

- Junction radius for southern corner is 13m 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 15-8 Location 14 - L15053 / L15054 junction, junction layout and visibility splays

PROJECT: Cunlaghfadda Green Energy Project		
CLIENT: Cunlaghfadda Green Energy Ltd	SCALE: 1:500@A3	
PROJECT NO: 11100	DATE: 12.05.26	DRAWN BY: AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

15.1.10 Proposed Wind Farm Access Junctions

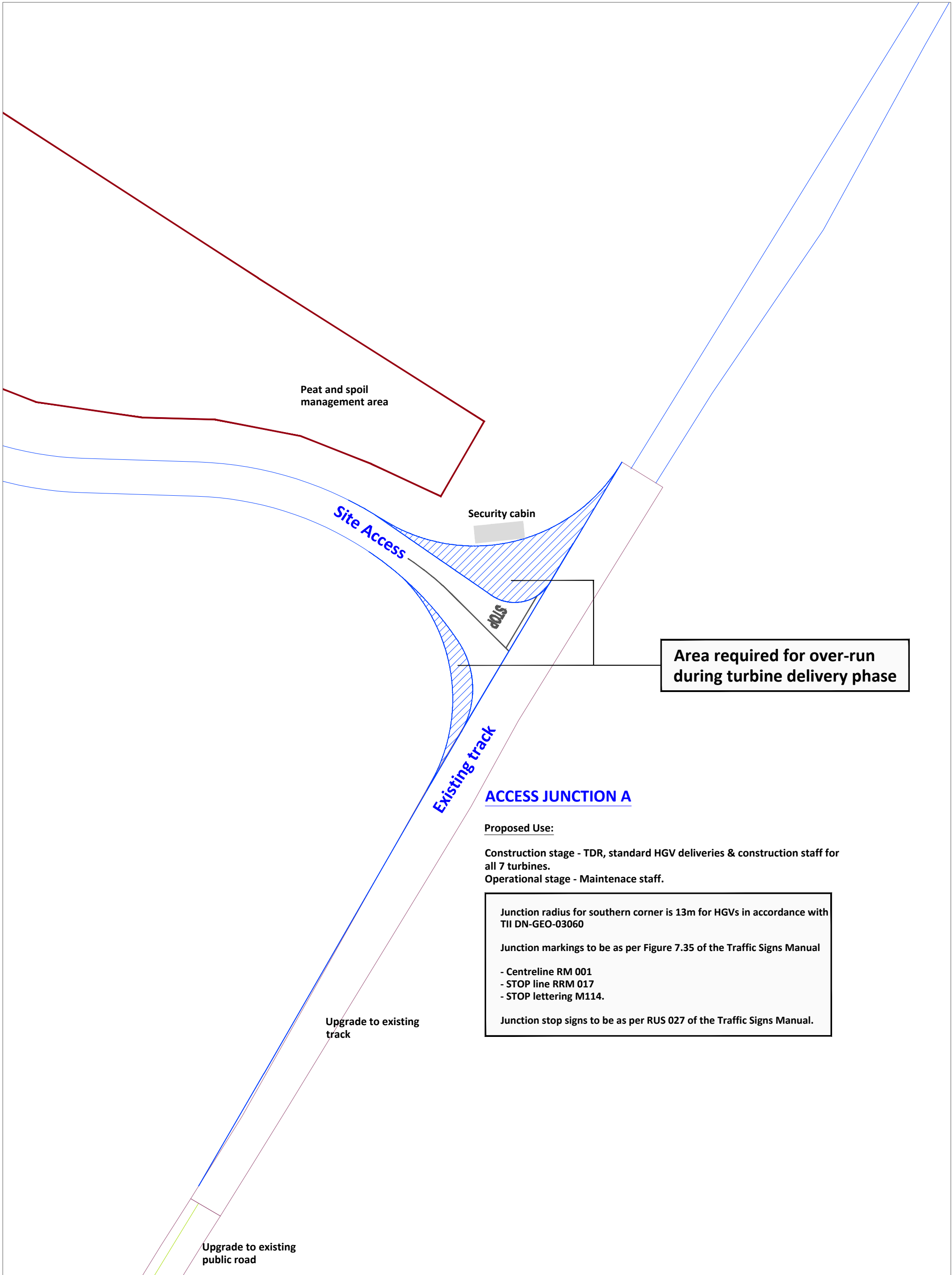
It is proposed that the Site will be accessed via 3 new access junctions off an existing track which is a continuation of the L15053, with the locations of the junctions shown in Figure 15-3.

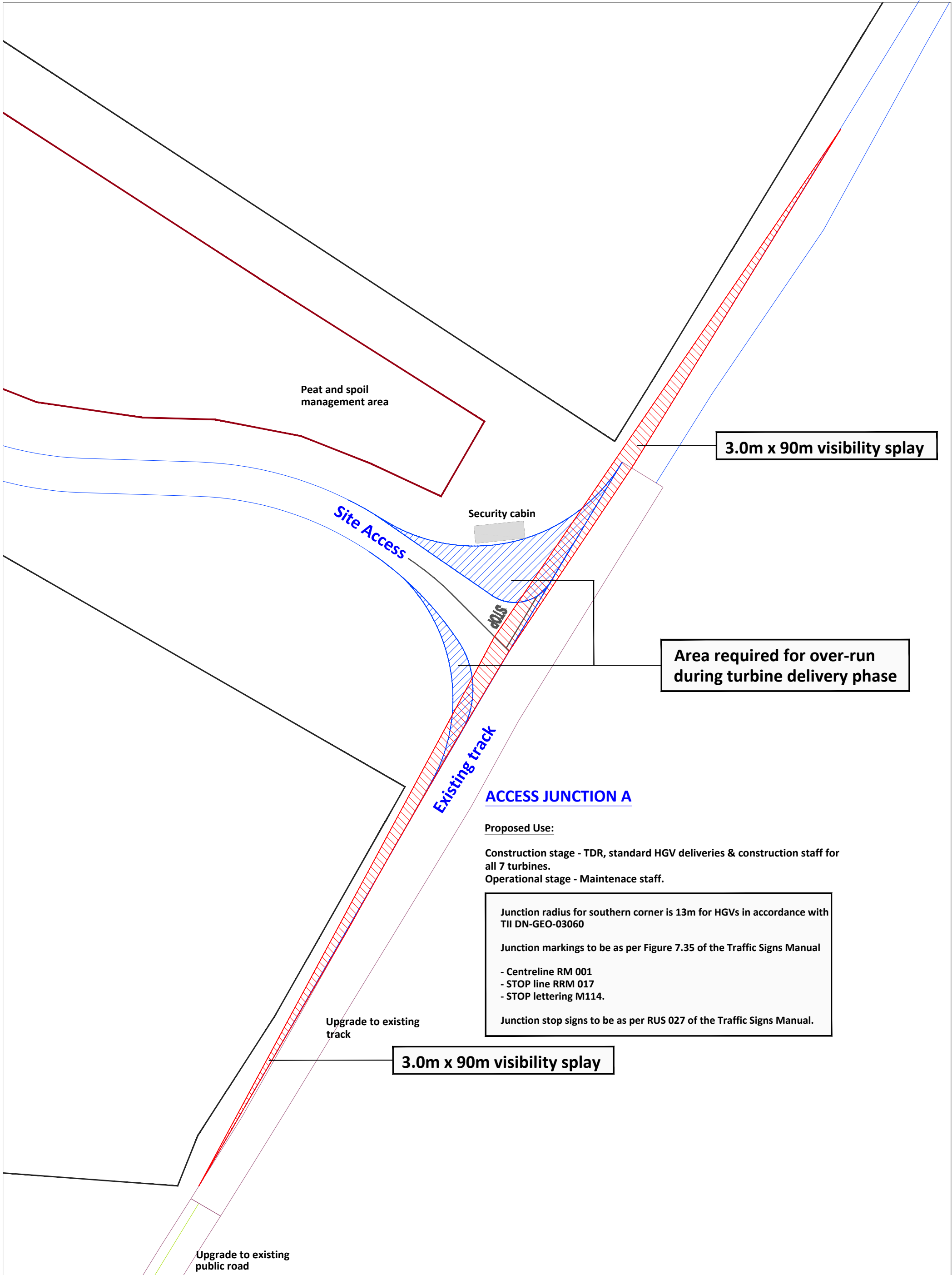
- › **Access Junction A** – This Junction is located off the north side of the existing track approximately 650m east of the junction the L15053 / L15054 junction. This junction will provide for all construction traffic and operational traffic for all 7 turbines.
- › **Access Junction B** – This junction is located off the northside of the existing track approximately 400m east of Access Junction A. This junction will provide for construction traffic and operational traffic for 3 turbines.
- › **Access Junction C** – This junction is located off the southern side of the existing track approximately 100m to the east of Access Junction C. This junction will also provide for construction traffic and operational traffic for 3 turbines.

The junction design includes 13m junction radii in accordance with TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with HGV turning movements. The junction design also includes temporary run-over and oversail areas required to accommodate the abnormally sized loads. STOP road markings and signs are as per Figure 7.35 of the Traffic Signs Manual. The proposed junction designs and the 3m x 90m visibility splays that will be kept clear are set out in Figures 15-9 To 15-14.

Comment on all junctions

The nature and extent of the proposed works at these locations are described in Chapter 4 Description of the Proposed Project.





NOTES:

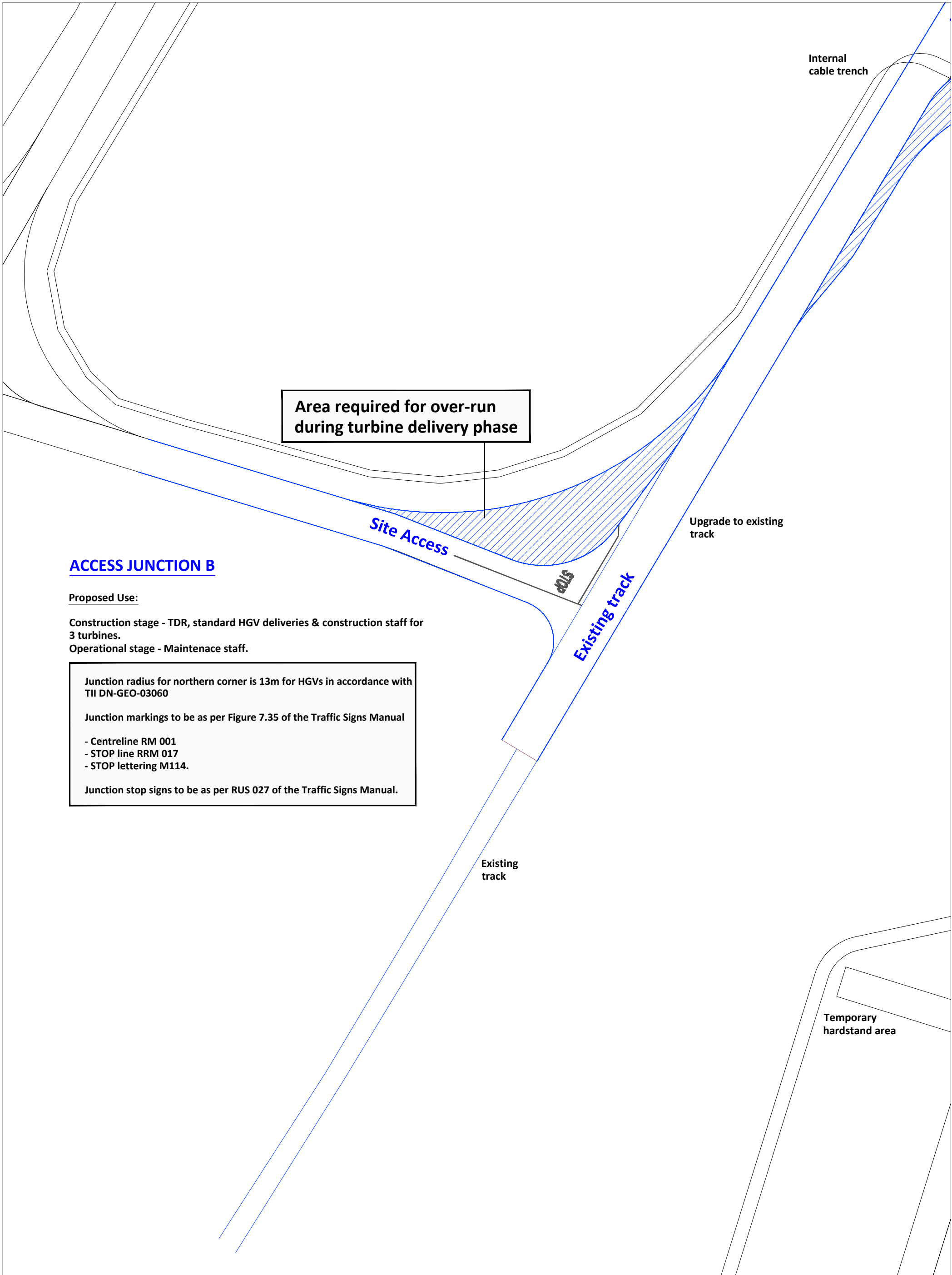
PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15-10 Access Junction A - Existing Track, junction layout with visibility splays

PROJECT: Cunlaghfadda Green Energy Project		
CLIENT: Cunlaghfadda Green Energy Ltd		SCALE: 1:500@A3
PROJECT NO: 11100	DATE: 12.05.26	DRAWN BY: AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS



ACCESS JUNCTION B

Proposed Use:

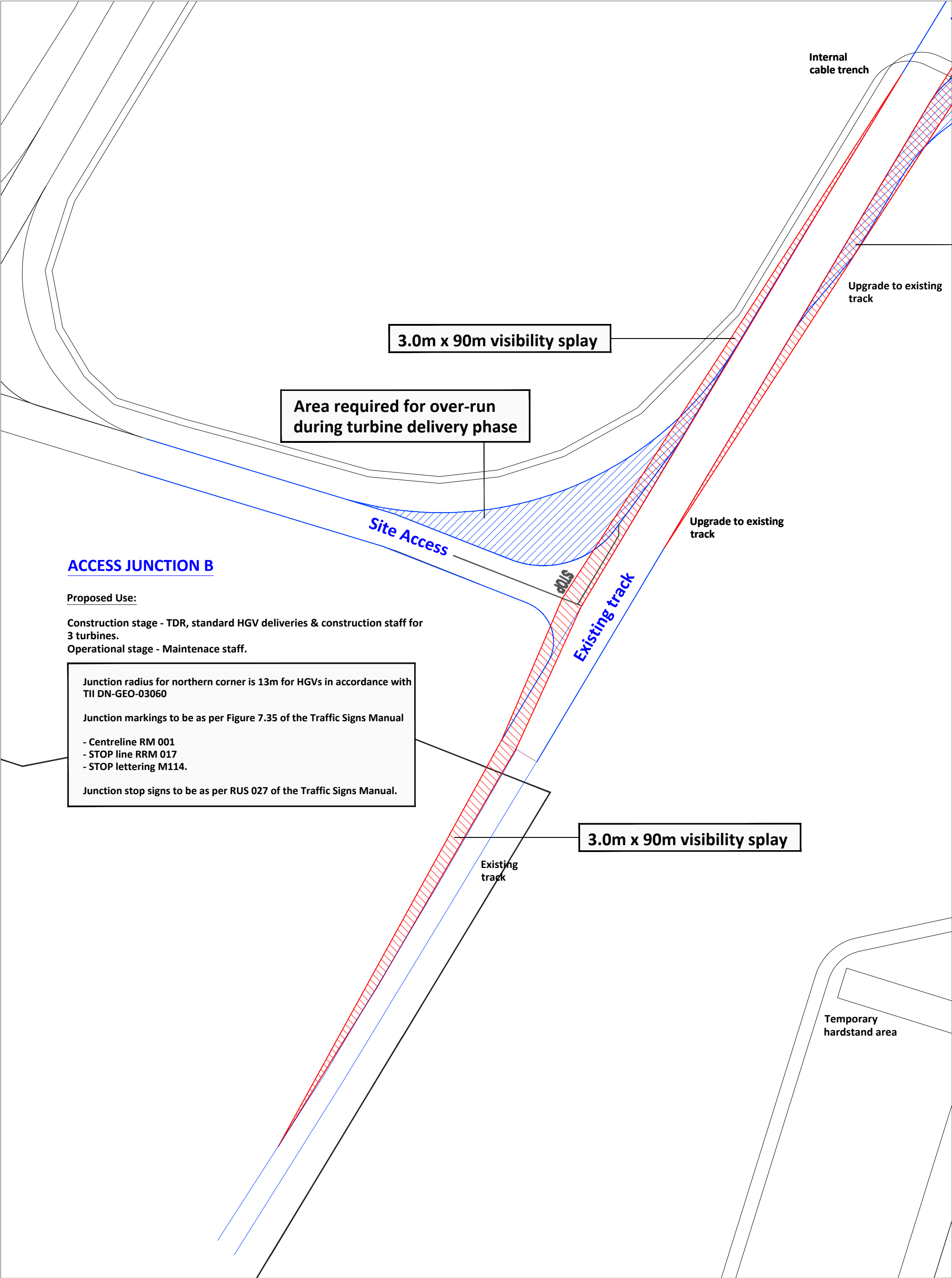
Construction stage - TDR, standard HGV deliveries & construction staff for 3 turbines.
Operational stage - Maintenance staff.

- Junction radius for northern corner is 13m 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 15-11			Access Junction B - Existing Track, junction layout		
	PROJECT: Cunlaghfadda Green Energy Project					ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS
	CLIENT: Cunlaghfadda Green Energy Ltd			SCALE: 1:500@A3		
	PROJECT NO: 11100		DATE: 12.05.26		DRAWN BY: AL	



ACCESS JUNCTION B

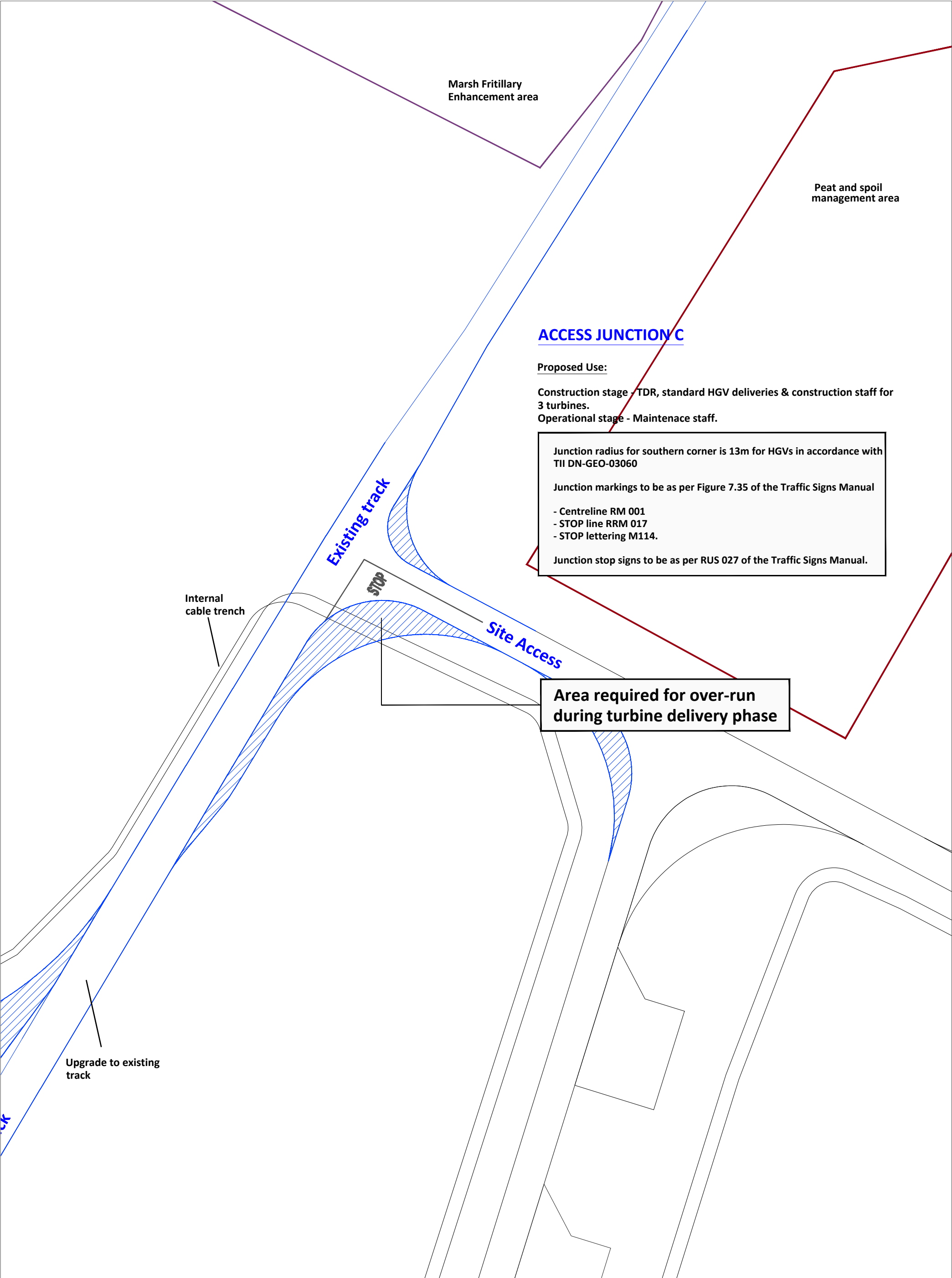
Proposed Use:
Construction stage - TDR, standard HGV deliveries & construction staff for 3 turbines.
Operational stage - Maintenance staff.

- Junction radius for northern corner is 13m for HGVs in accordance with TII DN-GEO-03060

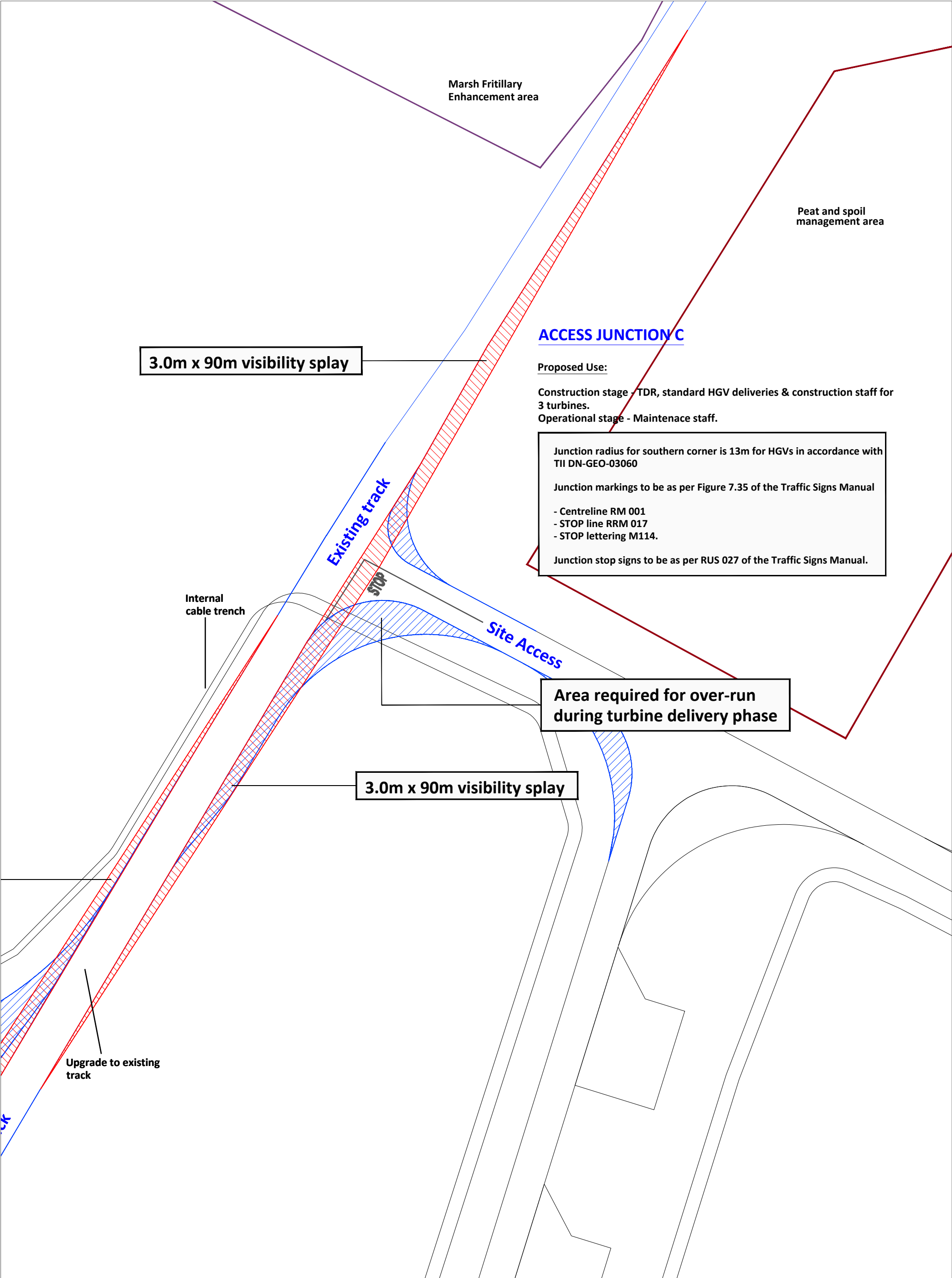
Junction markings to be as per Figure 7.35 of the Traffic Signs Manual

 - 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 15-13			Access Junction C - Existing Track, junction layout		
	PROJECT: Cunlaghfadda Green Energy Project					ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS
	CLIENT: Cunlaghfadda Green Energy Ltd			SCALE: 1:500@A3		
	PROJECT NO: 11100		DATE: 12.05.26		DRAWN BY: AL	



NOTES: PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES Base mapping provided by MKO	Figure 15-14 Access Junction C - Existing Track, junction layout with visibility splays		
	PROJECT: Cunlaghfadda Green Energy Project		ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS
	CLIENT: Cunlaghfadda Green Energy Ltd	SCALE: 1:500@A3	
	PROJECT NO: 11100	DATE: 12.05.26 DRAWN BY: AL	

15.1.11 Provision for Sustainable Modes of Travel

15.1.11.1 Walking and Cycling

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

15.1.11.2 Public Transport

While TFI local bus service No 431, which operates between Claremorris and Ballinrobe, travels along the R331 which is approximately 7 km from the site access, there are no services that operate on the local road network in closer proximity of the Site. Mini-buses may be considered for transporting construction staff to and from the site in order to minimise traffic generation and parking demand on site.

15.1.12 Likely and Significant Effects and Associated Mitigation Measures

15.1.12.1 'Do-Nothing' Scenario

If the Proposed Project does not proceed there will be no additional traffic generated or works carried out on the road network and therefore no effects with respect to traffic.

If the Proposed Project were not to proceed, the opportunity to capture part of County Mayo'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.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4) to be implemented during the development's operation, the opportunity to enhance the Site for biodiversity, at a local scale, would also be lost.

15.1.12.2 Construction Phase: Traffic and Transport

15.1.12.2.1 Proposed Wind Farm

Concrete foundation pouring days (7 days)

For 7 days when concrete is delivered to the Proposed Wind Farm for the construction of the turbine foundations via the identified construction delivery routes, on average an additional 406 PCUs will travel on the local road network. When accessing the site via the TDR this will result in a +3.3 % increase in traffic volumes on the N17 south of Claremorris (Link 1), or when approaching from the N17 from the north (Link 2) a +5.2% increase, or via the N60 in the northwest (Link 3), a +5.9% increase. From Claremorris as the delivery route travels south on the R331 (Link 4) traffic volumes will increase by + 4.7% on these 7 days, and then by +14.7% as the route turns west onto the L1506 (Link 5). As the route heads west on the L1506 (Link 6, +28.9%) and then north on the L1505 (Link 7, +99.7%), and background traffic flows reduce significantly, the associate percentage increases incurred on these links rises. ***This will have a temporary, slight and negative effect on the delivery routes which is not significant.***

General construction (222 days)

For 222 days when general construction materials are delivered to the Proposed Wind Farm via the identified construction delivery routes, on average an additional 266 PCUs will travel on the local highway network. When accessing the site via the TDR this will result in a +2.2 % increase in traffic volumes on the N17 south of Claremorris (Link 1), or when approaching from the N17 from the north (Link 2) a +3.4% increase, or via the N60 in the northwest (Link 3), a +3.9% increase. From Claremorris as the delivery route travels south on the R331 (Link 4) traffic volumes will increase by + 3.1% on these 222 days, and then by +9.6% as the route turns west onto the L1506 (Link 5). As the route heads west on the L1506 (Link 6) traffic volumes will increase by +18.9%, and on the L1505 (Link 7), by +65.3%. ***This will have a temporary, slight and negative effect on the delivery routes which is not significant.***

Turbine delivery (abnormally sized loads (38 days))

On the 19 nights that the abnormal loads carrying the large turbine components travel to the Site via the TDR an additional 105 PCUs will travel to/from the Site. This will result in a +0.9% increase in traffic volumes on the N17 south of Claremorris (Link 1), a +1.2% increase on the R331 travelling south from Claremorris (Link 4) and a +3.8% increase as the route turns west onto the L1506 (Link 5). As the route continues west on the L1506 (Link 6) traffic volumes will increase by +7.5%, and on the L1505 (Link 7), by +25.8%. ***This will have a temporary, slight and negative effect on the delivery routes, which is not significant.***

Turbine delivery (standard HGVs) (7 days)

For 7 days when the delivery of smaller turbine components are made to the Site by standard HGVs, it is forecast that an additional 64 PCUs will travel to/from the Proposed Wind Farm via the TDR.

During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +0.5% on the N17 south of Claremorris (Link 1), a +0.7% increase on the R331 travelling south from Claremorris (Link 4) and a +2.3% increase as the route turns west onto the L1506 (Link 5). As the route continues west on the L1506 (Link 6) traffic volumes will increase by +4.6%, and on the L1505 (Link 7), by +15.7%. ***This will have a temporary, slight and negative effect on the delivery routes.***

There will be no significant traffic related effects during the construction of the Proposed Wind Farm.

15.1.12.2 Proposed Grid Connection

With respect to the traffic volumes that will be generated during the construction of the Proposed Grid Connection, it is estimated that there will be approximately 14 daily return trips made by a truck transporting materials, and 8 return trips made by a car to transport construction staff, to and from the site. The construction staff and materials required for the construction of the Proposed Grid Connection will enter the Site through the temporary site entrance junction which is described in Section 15.1.10. Due to the Proposed Grid Connection route being located entirely off the public road network and within third-party agricultural lands, there will be no requirement for short term diversions during the construction phase of the Proposed Grid Connection.

This will have a temporary, slight and negative effect on the delivery routes.

There will be no significant traffic related effects during the construction of the Proposed Grid Connection.

15.1.12.3 Operational Phase: Traffic and Transport

The impacts on the surrounding local road network will be negligible given that there will only be an average of approximately 1 to 2 trips made to the Proposed Wind Farm by car or light goods vehicle per day, with no regular visits required for the Proposed Grid Connection. The effects of the

maintenance traffic on the surrounding road network will therefore be imperceptible, negative and long term, which is not significant.

15.1.12.4 Decommissioning Phase: Traffic and Transport

The proposed turbines are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the wind turbines may be replaced with new turbines, subject to planning permission being obtained, or the proposed turbines may be decommissioned fully.

Any impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during part of the construction phase when turbines were being erected. The impacts and associated effects will be materially less than during the construction phase as significant ground works are not required to decommission a wind farm.

Following decommissioning of the Proposed Wind Farm, turbine foundations will be rehabilitated, i.e. left in place, covered over with local soil/subsoil and allowed to re-vegetate naturally, if required. The internal site access tracks may be left in place, as they will serve as useful access to the agricultural and forestry land. It is considered that leaving these areas in-situ will cause less environmental damage than removing and recycling them.

While the actual number of loads that will be required to remove materials from the Site in the event that the Proposed Wind Farm is decommissioned has not been determined at this stage, the impact in terms of traffic volumes will be significantly less than during the construction stage.

The proposed 110kV onsite substation will remain in place as it will remain under the management and operation of Eirgrid/ ESBN. There are no impacts associated with this.

The works required during the decommissioning phase are described in Chapter 4 Description of the Proposed Project and the accompanying Decommissioning Plan included as Appendix 4-6 of this EIAR.

The effects of the decommissioning phase on the surrounding road network will therefore be slight, negative and short term, which is not significant.

15.1.12.5 Mitigation Measures

This section summarises the mitigation measures to minimise the effects of the Proposed Project during both the construction and operational stages (decommissioning will be same as construction where required).

15.1.12.5.1 Mitigation by Design

Mitigation by design measures include 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 15.1.2.2.
- › Selection of the off-road Proposed Grid Connection route, minimising the impacts on the existing road network and traffic.
- › Use of an on-site borrow pit to produce materials to minimise deliveries to site during construction.

15.1.12.5.2 Mitigation Measures During the Construction Phase

The successful completion of the Proposed Project 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 in order to minimise the effects of the additional traffic generated by the Proposed Project.

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 56 abnormal sized loads will be delivered to the Site, comprising 19 convoys of 3 vehicles, undertaken over 19 separate nights.
- These nights will be spread out over an approximate period of 4 weeks and will be agreed in advance with the relevant authorities
- In order to manage each of the travelling convoys, for each there will be two Garda escort vehicles that will stop traffic when required 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 **Traffic Management Plan (TMP)** see Appendix 15-2 is provided specifying details relating to traffic management prior to the commencement of the construction phase of the Proposed Project. The TMP will be updated and agreed with the local authority and An Garda Síochána prior to construction works commencing onsite. 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 Galway and Mayo County Council in advance of deliveries of turbine components to the Site. Liaison with the relevant local authorities, TII and MMarC and 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 Project will 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 Galway and Mayo 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 15.1.9. 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 Mayo County Council and adhered to by all contractors.
- › **Delivery times of large turbine components** - The TMP 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 4-5.
- › **Re-instatement works** - All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.

15.1.12.5.3 **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.

15.1.12.5.4 **Mitigation Measures During Decommissioning Stage**

In the event that the Proposed Wind Farm is decommissioned after the 35 years of operation, a decommissioning plan, will be prepared for agreement with the local authority, as described in Chapter 4 and Appendix 4-6 Decommissioning Plan. This plan will include a material recycling / disposal and traffic management plan will be prepared for agreement with the local authority prior to decommissioning, in accordance with Scottish Natural Heritage report (SNH) *Research and Guidance on Restoration and Decommissioning of Onshore Wind Farms* (SNH, 2013).

15.1.12.6 **Residual Effects**

15.1.12.6.1 **Construction Stage**

During the 12-18 month construction stage of the Proposed Project, it is forecasted that the additional traffic that will appear on the public road network serving the Site and during the construction of the Proposed Grid Connection which will have a slight, short-term negative effect on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed Traffic Management Plan (TMP) included as Appendix 15-2. There will be no significant impacts.

15.1.12.6.2 **Operational Stage**

The traffic impact of the Proposed Project will be imperceptible during the operational stage. The residual impacts will be imperceptible, long term and negative. There will be no significant impacts.

15.1.12.6.3 **Decommissioning Stage**

As stated above, in the event that the Proposed Wind Farm is decommissioned, a decommissioning plan is prepared and will be implemented in order to minimise the residual effects during this stage. The Decommissioning Plan will be reviewed in conjunction with Mayo County Council reflecting all current guidance at the time of decommissioning. The residual effect will be less than for the construction stage as set out above and will be an imperceptible to slight, negative, short-term effect. There will be no significant impacts.

For this scenario the proposed 110kV onsite substation and Proposed Grid Connection will remain in-situ and continue to operate as part of the national electricity grid network.

15.1.12.7 **Cumulative Effects**

The extent of the study area of the traffic and transport cumulative impact assessment is based on the guidance set out in the Traffic and Transport Assessment Guidelines, PE-PDV-02045, May 2014, TII, which states that the assessment should include “*developments granted planning permission, but which are yet to become operational as well as any planning applications that have been submitted but have yet to be determined*”.

The same guidelines are referenced to determine which of the developments that fit the above criteria have to potential for cumulative effects with the Proposed Project, which is a function of the level of increase on traffic volumes that may be experienced on a common road network.

An assessment of all existing, permitted, and proposed projects were assessed for the potential for cumulative traffic and transport effects with the Proposed Project based on the following criteria;

- › Project status (permitted, or proposed)
- › Degree of overlap on the highway network (low to high)
- › Traffic volumes (low to high).

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 developments included in the cumulative impact assessment are considered under the following groups;

- › Other wind farms,
- › Other applications in the Environmental Impact Assessment (EIA) process.
- › Strategic Infrastructure Development (SID) applications made to An Coimisiún Pleanála.

15.1.12.7.1 **Other Wind Farms**

The other permitted and proposed wind farm developments within a 25 km buffer zone around the proposed turbines that were considered to have potential traffic related cumulative impacts are set out below in Table 15-28. Developments consisting of single domestic turbines have not been considered further 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 Project.

As set out in Table 15-28 below, there are 9 wind farms within the cumulative study area that are currently proposed (1) or existing (8).

It is noted that the port of entry/exit for the 1 no. proposed wind farm (Shancloon WF) will likely be the Port of Galway, therefore, there is the potential that there could be cumulative impacts at the port and on the turbine delivery routes in close proximity to the port should the delivery of the turbines for one or more of these developments be done simultaneously. It is, however, the case that even if the port has the handling and storage capacity to provide for more than one of these developments at a time, typically the Garda would limit the delivery from the port to one convoy of 3 vehicles per night, so the cumulative impacts would not occur at this location.

Based on the criteria set out above (project status, overlap of delivery routes and traffic volumes) it is estimated that Shancloon WF has a medium potential for cumulative impacts to occur with the Proposed Project. Please see Table 15-28 below for further detail.

In the event that the construction of the Proposed Project coincides with the construction phase of Shancloon WF, it is forecast that the traffic related cumulative impacts would be negative, short-term and slight, based on the potential overlap of TDRs and associated traffic generation. It is therefore proposed that the construction phase of the Proposed Project will be scheduled, where possible, to avoid the overlap of the construction phases of this proposed wind farm development. This will ensure that the potential for cumulative effects is minimised.

Table 15-28 Summary of other wind farms considered in cumulative assessment and potential for cumulative traffic effects with Proposed Project

Project	Status	Degree of overlap of highway network (low / medium / high)	Traffic volumes (low / medium / high)	Potential cumulative traffic effects*
Shancloon Wind Farm (11 turbines)	Proposed	Medium	Medium	Medium

Other development applications in the Planning Process (with the local authorities and with ACP)

A planning search undertaken by MKO established a number of non-wind energy developments with the potential to give rise to cumulative effects in conjunction with the Proposed Project. All of these developments are set out in the cumulative assessment table included as Appendix 2-3. Of these developments, all applications relating to small developments including single dwellings were excluded from the assessment on the basis of scale. In addition, all of the larger scale developments identified in the search are not anticipated to have overlapping construction phases, with most developments either being operational, or expected to be operational when the Proposed Project begins construction.

15.2 Telecommunications and Aviation

15.2.1 Introduction

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

The full description of the Proposed Project, including proposed turbine locations and elevations, is provided in Chapter 4 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 scoping and consultation carried out to date with relevant consultees and how identified effects will be avoided, Section 15.2.5 provides details on a Telecommunications Impact Assessment undertaken by Ai Bridges, and the likely significant effects are assessed (and mitigation measures proposed) in Section 15.2.6.

15.2.1.1 Statement of Authority

This section of the EIAR has been prepared by Keelin Bourke and reviewed by Natalia Stolarska and Órla Murphy, all of MKO.

Keelin is an Environmental Scientist with MKO, with over 2 years' experience in private consultancy, having joined the company in September 2023. Keelin holds a BSc (Hons) in Environmental Science from University College Cork and an MSc (Dist) in Environmental Engineering from Trinity College Dublin. Keelin's current key strengths and areas of expertise are in environmental mapping, environmental surveying, and environmental report writing. Keelin has experience in conducting environmental impact assessments of a broad range of topics, including population and human health assessments, air quality assessments, assessments of built services and infrastructure and major accidents and natural disaster risk assessments for both onshore and offshore wind energy projects. Prior to taking up her position with MKO, Keelin worked as an Environmental Health and Safety Officer in an EPA licensed Waste Transfer Facility in Cork City. Since joining MKO, Keelin has become a member of the MKO Environmental Renewables Team and has been involved in preparing and managing Environmental Impact Assessments and in leading large multi-disciplinary teams in order to produce robust Environmental Impact Assessment Reports for large-scale onshore and offshore wind energy developments.

Natalia Stolarska is a Project Environmental Scientist within the environment renewables team in MKO with over 2 years' of professional experience as an environmental consultant. Natalia holds a BSc in Earth and Ocean Science and an MSc in Environmental Leadership. Natalia's key strengths and areas of expertise are in managing wind farm EIAR projects, drafting and reviewing of EIAR chapters, wind farm feasibility studies and QGIS mapping. Since joining MKO Natalia has also been involved in coordinating environmental site work for a wide range of developments, assisting in stakeholder engagement, scoping exercises, organising, attending and leading pre-application meetings with local authorities and An Coimisiún Pleanála. Natalia also holds a membership with the Institute of Sustainability and Environmental Professionals (ISEP).

Órla Murphy is a Senior Environmental Scientist with McCarthy O'Sullivan Ltd. with nearly 10 years of experience in private consultancy. Órla's key strengths and areas of expertise are in Environmental Protection and Management, EIA, Project Management, Renewable Energy and Peatland Management. Since joining MKO Órla has been involved on a range of renewable energy infrastructure projects. In her role as a project manager, Órla 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. Within MKO, Órla plays

a role in the management of and sharing of knowledge with junior members of staff and works as part of a large multi-disciplinary team to produce EIA Reports.

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 initially contacted in July 2022 and followed up with in November 2022 as part of early-stage feasibility in order to determine the presence of telecommunications links either traversing or in close proximity to the Site. A second round a follow scoping occurred between April and July 2023 as the Proposed Project further progressed. A final round of telecommunications and aviation scoping occurred in September 2025, due to the amount of time which has passed since the initial telecommunications and aviation scoping.

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 the 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.

Following the initial scoping and consultation exercise undertaken, Ai Bridges were engaged to carry out a Telecommunications Impact Assessment for the Proposed Project, which is included as Appendix 15-4, to evaluate the Irish Rail communications network and to assess the possible impacts that the proposed turbines could have on this network. Using the technical information obtained during the desktop survey assessments and consultation process, a telecommunications impact analysis was carried out utilising radio planning/modelling software. Further detail on the methodology for the Telecommunications Impact Assessment is included in Section 15.2.5 below and Appendix 15-4.

A full description of the scoping and consultation exercise is provided in Section 2.7 of Chapter 2 Background of the Proposed Project of this EIAR. Consultation with the telecommunications operators and aviation bodies informed the constraints mapping process, as described in Chapter 3 Consideration of Reasonable Alternatives,.

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 of this EIAR.

15.2.2.1 Legislation, Policy and Guidance

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

- > Mayo County Development Plan 2022-2028
- > EPA (2022) ‘*Guidelines on the Information to be contained in Environmental Impact Assessment Reports*’
- > Draft Air Corps Wind Farm/Tall Structures Position Paper (August 2014)
- > Wind Energy Development Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government, 2006), hereafter referred to as the Guidelines (DoEHLG, 2006),
- > Draft Revised Wind Energy Development Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government, 2019), hereafter referred to as the Draft Guidelines (DoHPLG, 2019),
- > 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.*
- > Eirgrid (2024) *Your guide to understanding electric and magnetic fields (EMFs) in the electricity transmission system*
- > Eirgid (2018) *Power Lines and Your Health*

15.2.3 Scoping and Consultation

As part of the EIAR scoping and consultation exercise, MKO initially contacted the relevant national and regional broadcasters, fixed and mobile telephone operators, aviation authorities and other relevant consultees in July 2022 as part of the telecommunications and aviation scoping consultation with follow ups in November 2022, between April and July 2023 and a final round of telecommunications and aviation scoping in September 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 scoping consultees are summarised below in Table 15-29. The table details the most recent response received by each consultee following the numerous rounds of telecommunication and aviation scoping that occurred in 2022, 2023 and 2025.

Scoping was also carried out with a number of the listed consultees as part of the general EIAR Scoping consultation. Any further information provided by telecommunications and aviation consultees in this general EIAR scoping exercise is detailed in Section 15.2.4.2 and Section 15.2.4.3 below. A full description of the full scoping and consultation exercise is provided in Section 2.7 of Chapter 2 of this EIAR.

Table 15-29 Telecommunications and Aviation Scoping Responses

Consultee	Response	Potential for Interference Following Consultation Exercise
2m/RTE	Received 30 th September 2025	See Section 15.2.4.1 below
AirNav	Followed up on 17 th November 2025. No response received	N/A
Airwave	Received 30 th September 2025	No
AP Wireless	Received 2 nd October 2026	No
Broadcasting Authority of Ireland	Received 30 th September 2025	No
BBNet	Followed up on 17 th November 2025. No response received	N/A
Cellnex	Received 17 th November 2025	No
ComReg (Commission for Communications Regulation)	Received 26 th September 2026	N/A – Provided list of Telecommunications Operators in vicinity of the Site.
Dense air	Received 20 th April 2023	No
Department of Defence	Received 30 th September 2025	See Section 15.2.4.3 below

Consultee	Response	Potential for Interference Following Consultation Exercise
Eir	Received 30 th September 2025	Yes, link nearby, however no overlap
Electricity Supply Board (ESB)	Received 30 th September 2025	No
ENET	Received 30 th September 2025	No
FastCom Broadband Limited	Followed up on 17 th November 2025. No response received	N/A
Hibernian Towers	Received 24 th April 2023	No
Imagine Network Services	Received 21 st April 2023	No
Irish Aviation Authority (IAA)	No response received in general telecommunications and aviation scoping. Response received to general EIAR Scoping exercise 12 th February 2026.	Yes – outlined general observations to be followed. Please see section below for further detail.
Irish Rail	Received 29 th May 2023, additional response 1 st October 2025	Please see Section 15.2.4.1 below for further detail.
Uisce Eireann	Received 1 st October 2025.	No
Ivertec Ltd	Followed up on 17 th November 2025. No response received	N/A
JFK Communications Ltd	Received 17 th April 2023.	No
JS Whizzy Internet Limited	Received 20 th July 2023.	No
NBI Infrastructure DAC	Received 7 th November 2025.	No
TETRA Ireland	Received 24 th April 2023	No
Three Ireland Ltd	Received 30 th September 2025	Yes, 2 no. links nearby, however there is no overlap with the Proposed Project infrastructure
Towercom	Received 2 nd October 2025	No
Viatel	Followed up on 17 th November 2025. No response received	N/A
Virgin Media	Received 28 th November 2022	No

Consultee	Response	Potential for Interference Following Consultation Exercise
Vodafone Ireland	Received 20 th July 2023	No
Western Broadband Network	Received 17 th April 2023	Yes, link nearby, however no overlap

The scoping responses from the telecommunications and aviation consultees are described below. Relevant copies of scoping responses are provided in Appendix 2-1. The locations of identified telecoms links and setbacks requested by providers is shown in Figure 15-15 below.

15.2.3.1 Aviation

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

- › Irish Aviation Authority (IAA)
- › Department of Defence (DoD)
- › Ireland West Airport

Pertinent information has been summarised below, however the scoping responses included in Appendix 2-1 should be referenced to for further detail

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 Department of Defence was also contacted by MKO on the 26th of May 2023 as part of the general EIAR Scoping exercise and a response was received on the 19th of June 2023 stating:

“any determination in relation to a planning consent is solely a matter for the planning authorities and/or ABP, as appropriate. Therefore, the following observations are made on a non-prejudicial basis, and are not intended to be used to rely on for a prospective planning application, nor are these observations to be relied on in the event of any commercial transaction pertaining to such lands and they are not to be relied on in the event of any contract exchange pertaining to same.

As a matter of practice, the Department of Defence does not provide observations or advice in the scoping process, except where the relevant parties have been directed by a planning authority to seek the Department's views. The following observations are based solely on the material provided by you and should be read in that context only. It should be noted that additional or supplemental observations may be made at the formal planning process.

Having consulted with the subject matter experts in the Irish Air Corps, the Department of Defence wishes to make the following observations:

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. If LED or other lighting types are used, should be a type visible to Night Vision equipment.*

2. *Obstacle lighting must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength.*
3. *Light intensity to be of similar value to that emitted in the visible spectrum of light.*
4. *In the event negative impacts on future military radar systems, the owner will engage with the Department of Defence and will provide suitable mitigations as soon as practical.*
5. *Based on the information provided, if this proposed development was to go to the planning stage, the Department of Defence would be obligated to raise the following concerns and advise the planning authorities accordingly that the proposed Cunlaghfadda Green Energy Project lays in proximity to the Irish Air Corps critical routes*
 - a. *i. N17 between Sligo and Knock.*
 - b. *ii. N84 from Castlebar to Galway.*
6. *Any Irish Air Corps (IAC) requirements are separate to Irish Aviation Authority (IAA) requirements”*

A follow-up telecommunications and aviation scoping request was issued to the Department of Defence on 30 September 2025, of which a similar reply was received.

Irish Aviation Authority (IAA)

While no response was received from the IAA to the telecommunications and aviation scoping exercise, a general EIAR Scoping request was also issued to the Irish Aviation Authority (IAA) on the 26th of May 2023 regarding potential for impacts from the Proposed Project. An email response was received on the 29th of May 2023 stating the below requirements.

IAA response 29th of May 2023:

“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 p height elevations at each wind turbine location and*
3. *notify the Authority of intention to commence crane operation with at least 30 days prior notification of their erection.”*

Follow up scoping requests were issued to the IAA on 11th of February 2026, following which the IAA requested the coordinates for each proposed turbine and the proposed ground elevation for each turbine. This additional information was shared with the IAA, following which the IAA recommended further engagement with Ireland West Airport and Air Nav Ireland. Ireland West Airport

Ireland West Airport were contacted as part of the general EIAR scoping request on the 26th of May 2023, however no response was received. Following the recommendation by the IAA, Ireland West Airport were contacted again on 12th of April 2026 and a response was received on the 17th of February 2026.

Ireland West Airport outlined that turbines 1, 2 and 7 breach the eTOD Area 2D, along with all other turbines exceeding 100m height Above Ground Level. Ireland West Airport outlined the following in their response:

“Considering that the proposed site is within and does penetrate the 2D surface area on the Asset International Model, all turbines exceeding 100m (160m referenced) would need to be declared as an Area 2d obstacle. The following assessments will be required as part of the planning submission to consider both the permanent turbine structures & temporary craneage requirements for the construction of same.

Aeronautical assessment on any effect on the Instrument flight and Instrument approach procedures

A technical Safeguarding assessment on potential effect/interference on Ireland West Airports Navigational aids

Obstacle Limitation Surface Assessments on safeguarding surrounding the airport. ”

Please see Appendix 2-1 of Chapter 2 for full detail of correspondence received. Following the recommendations and potential concerns raised by Ireland West Airport, Ai Bridges were engaged to carry out an Aviation Review of the Proposed Wind Farm. This is discussed in further detail in Section 15.2.4.2 below.

Air Nav Ireland Engineering

Following the recommendation of the IAA, Air Nav Ireland were contacted on 12th of April 2026 however no response was received.

15.2.4 Receiving Environment

15.2.4.1 Telecommunications

15.2.4.1.1 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 the wind farm is directly in line with the transmitter radio path.

15.2.4.1.2 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 rotating blades, 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.

15.2.4.1.3 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 Knock Airport

located approx. 24km northwest of the Site and the nearest operational airfield is Ballyvary Airfield which is located approx. 15km northwest of the Site. Other airports/airfields in the vicinity of the Proposed Project include Lough Conn Airstrip located over 33 km northwest of the Site, Galway Airport, located over 50km south of the Site and Connemara Airport located over 61km to the southwest of the Site.

All airports listed above are outside the range at which such issues would be expected, and as detailed in Table 15-29 below, the Irish Aviation Authority noted no issues with the Proposed Project however they issued observations as discussed in Section 15.2.4.3.

15.2.4.1.4 **Preventing Electromagnetic Interference**

National Guidelines

Both the Guidelines (DoEHLG, 2006) and 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 scoping process for the Proposed Project as summarised below in Table 15-29; full details are provided in Section 2.7 in Chapter 2 of this EIAR.

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 15-16 reproduced from the 2017 ESB information booklet which demonstrates the alternating magnetic field of AC overhead lines and underground cables. As shown in Figure 15-16 below, EMF from 110kV overhead lines and underground cables diminishes quickly with distance from the potential impacted receptor, with EMF from underground 110kV cables such as those proposed for the Proposed Grid Connection, diminishing from 4μT to 0.5μT at 10m away from the cable, reducing to almost 0μT at 20m.

It is intended to connect the Proposed Wind Farm to the national grid via a new onsite 'loop-in' 110kV substation connected to the existing Castlebar to Cloon 110kV overhead transmission line via approximately 982 metres (m) of underground cabling route which will run in a north-eastward direction from the proposed onsite 110kV substation through agricultural land to the existing overhead line. The existing overhead line will be broken by 2 no. end masts (lattice type towers) to facilitate the connection to the Proposed Wind Farm. Please see Figure 4-3 of Chapter 4 for detail.

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

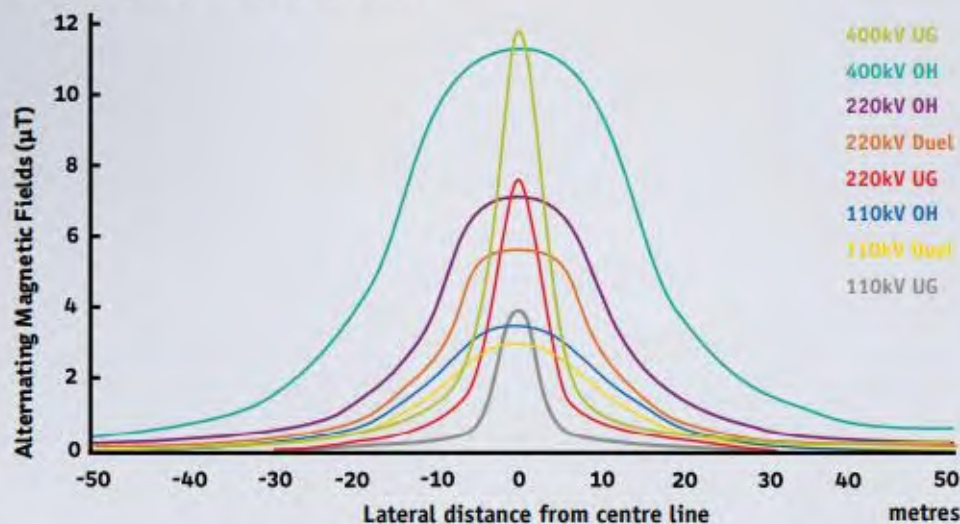


Figure C illustrates the magnetic field from overhead AC lines operating in Ireland. The field strength decreases with distance. The fields from these AC lines are far below the 1998 ICNIRP Guidelines for exposure to AC magnetic fields (100μT). In 2010 ICNIRP updated its ELF-EMF guidelines, which included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

Figure 15-16 illustrates the magnetic field from overhead AC lines operating in Ireland (ESB, 2017)

Broadcasters

RTÉ Transmission Network, replied on the 30th September 2025 to a telecommunications and aviation scoping request from MKO stating that the operation of the Site will not have any impact on RTÉ fixed linking services. In their scoping response, the operator stated that *'The proposed site poses no risk to our fixed linking. There is however a risk of interference to broadcast services to local viewers from our sites at Castlebar and Truskmore. We would therefore ask that a protocol be signed between the developer and 2rn should the site go ahead'*.

A standard Protocol Document has been prepared by 2rn for the Proposed Wind Farm, which has been signed by Cunlaghfadda Green Energy Ltd. (the Applicant). A copy of the Protocol Document is presented in Appendix 15-5 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 Applicant to rectify this. The Protocol Document ensures that the appropriate mitigation is carried out in the event of any unanticipated broadcast interference arising to RTE television or radio reception as a result of the Proposed Wind Farm.

Other Operators

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 Site, and therefore are not subject to any interference risk, or do not operate any links in the area. Please see Figure 15-15 below for detail.

Three Ireland

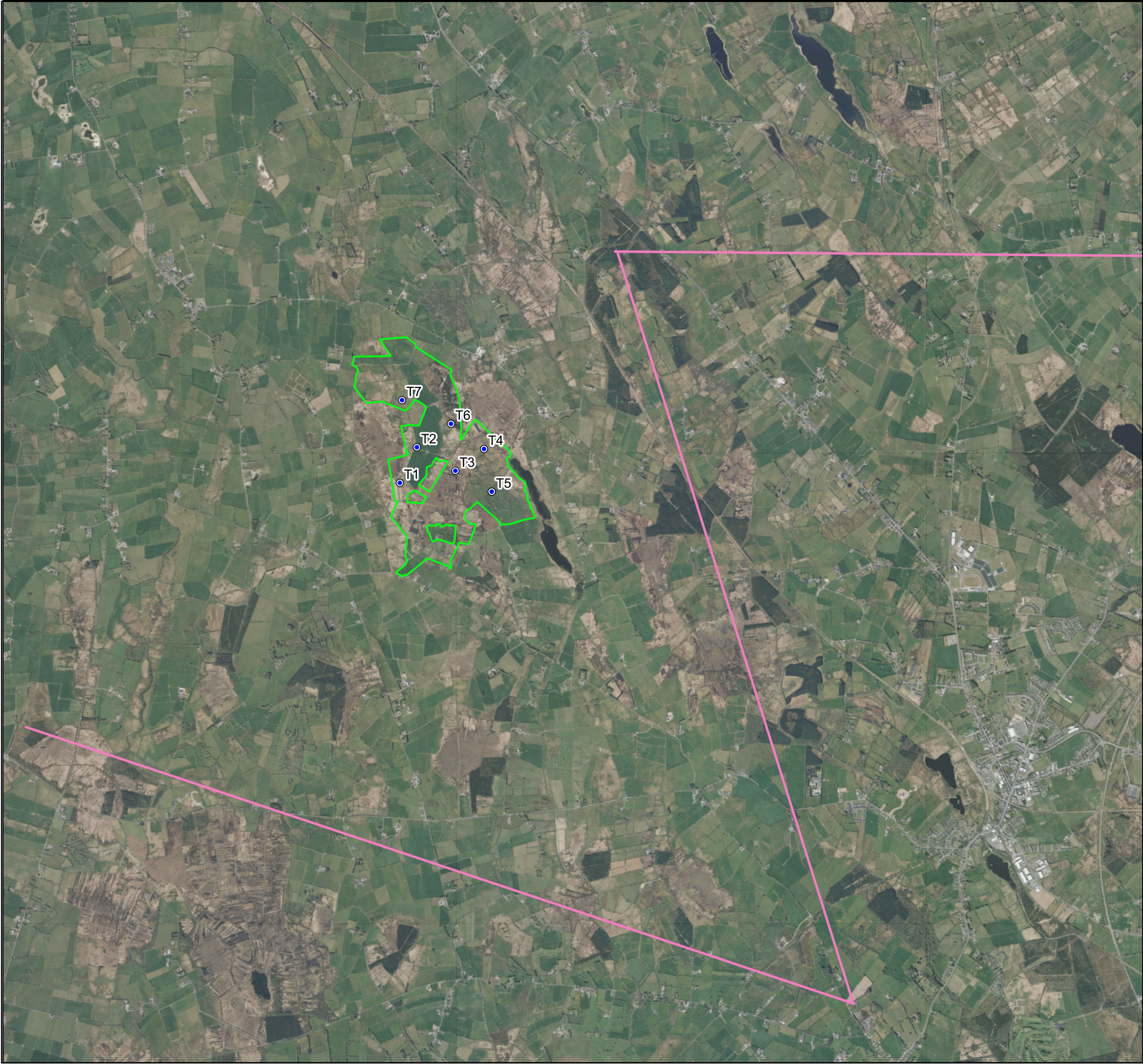
Three Ireland responded to a telecommunications and aviation scoping request from MKO on the 30th September 2025, noting that they had 2 no. links in the area, however there was no overlap with proposed turbine locations and therefore no interference with their links is anticipated.

Western Broadband Network

Western Broadband Network responded to a telecommunications and aviation scoping request from MKO on the 17th April 2023, noting that they had 1 no. link in the area, however there was no overlap with proposed turbine locations and therefore no interference with their links is anticipated. No response was received from Western Broadband Network on the follow up telecommunications and aviation scoping exercise conducted in September 2025.

Eir

Eir responded to a telecommunications and aviation scoping request from MKO on the 30th of September 2025, noting that they had 1 no. 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
- Telecommunications Links



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Drawing Title
Telecommunications Links

Project Title
Proposed Cunlaghfadda Green Energy Project

Drawn By NS	Checked By ÓM
Project No. 220825	Drawing No. Figure 15-15
Scale 1:35,000	Date 2026-04-30



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Irish Rail

Irish Rail responded to a general EIAR scoping request from MKO on the 12th May 2023, noting that they have Analogue Train Radio and GSM-R Train Radio in service along an operational adjacent railway line. A second response was received on the 12th September 2023 which noted the following recommendation:

1. **Exclusion zone:** *wind farm not less than 5km from antenna*
2. **Coordination zone:** *5km < wind farm <30km: this area, between operators is required to fix any issue and impact on the signal propagation*

Following the scoping and consultation exercises undertaken by MKO, Ai Bridges were engaged to carry out a Telecommunications Impact Assessment for the Proposed Wind Farm, which is included as Appendix 15-4. This details the field and desktop surveys undertaken to determine if telecommunications network infrastructure, notably those highlighted in the MKO scoping exercise, would be impacted by the Proposed Wind Farm.

The Site is within 5km of the Irish Rail Westport-Dublin Railway line, located approximately 1.5km at its closest point (T4), and approximately 5.1km away at its nearest point (T5) to an Irish Rail communications antenna, which is shown in Plate 15-1 and Plate 15-2 below. To assess the Irish Rail communication network, Ai Bridges undertook field surveys along the rail track in the vicinity of the Proposed Wind Farm. The field survey map and survey results are presented in Section 4.1 of Appendix 15-4.

From the findings of the field surveys, the antennas used by Irish Rail for their analogue train radio network is an omni-directional antenna installed near the top of the telecoms mast at Claremorris Train Station. The Analogue Train Radio equipment used by Irish Rail operates at relatively low frequencies in the UHF band (TX: 456.175-456.450 MHz, RX: 461.675-461.95 MHz). Objects such as turbines, do not interfere with UHF radio signals unless they are in close proximity to the transmitter (e.g. less than 500m) and in the near field of the radio antenna. Ai Briges were further commissioned to assess any potential impacts from the proposed turbines. Plate 15-2 above shows that the nearest of the proposed turbines to the Analogue Train Radio is proposed turbine T5, which is 5.1 km from the Telecoms Mast at Claremorris Train Station.

The field survey findings indicate that Irish Rail do not have any GSMR infrastructure in the vicinity of the Proposed Wind Farm.



Plate 15-1 Telecoms Mast at Claremorris Train Station

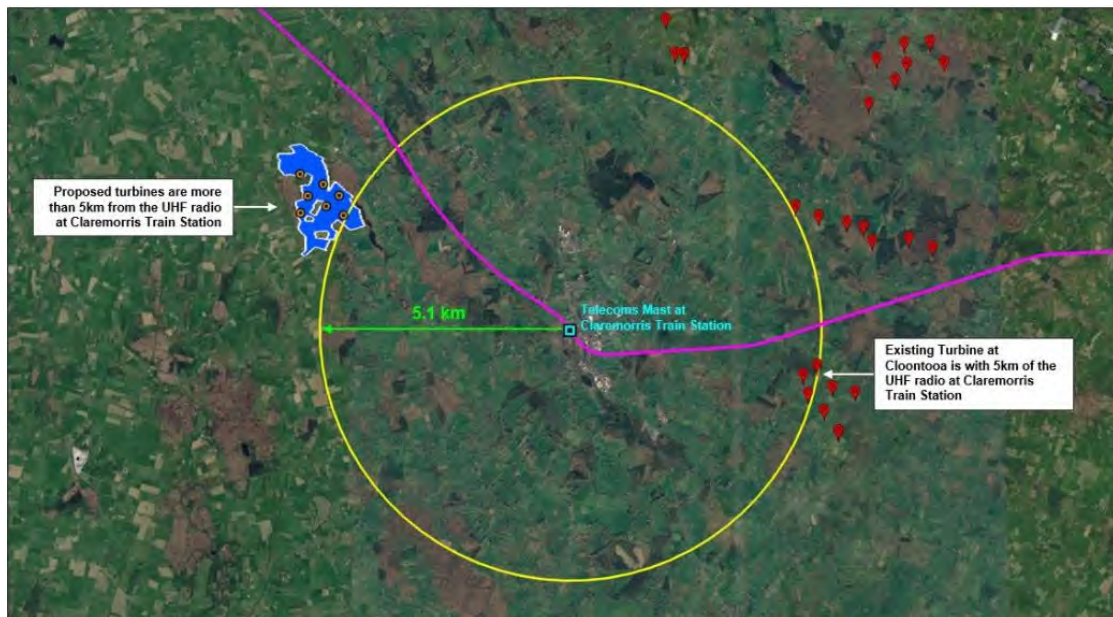


Plate 15-2 Proposed Turbines Proximity to Irish Rail Telecoms Mast at Claremorris Train Station

15.2.4.2 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 Project as summarised in Table 15-29; full details are provided in Section 2.7 in Chapter 2 of this EIAR.

15.2.4.2.1 **Aviation Review Statement**

An Aviation Review Statement has been produced by AiBridges to investigate any potential significant effects that the Proposed Project may have on the aeronautical resource in the wider area following feedback received from Ireland West Airport through the scoping exercise. Please see Section 15.2.3.2 above for summary of scoping response.

A range of items relating to aviation were assessed including the following:

- › Annex 14 - Obstacle Limitation Surfaces (OLS)
- › Annex 15 – Aerodrome Surfaces
- › Building Restricted Areas (BRAs)
- › Minimum Sector Altitudes (MSA)
- › Instrument Flight Procedures
- › Permitted Wind Farms in vicinity of Proposed Wind Farm
- › Communication and Navigation Systems
- › Radar Surveillance Sensors
- › Flight Inspection and Calibration
- › Aeronautical Obstacle Warning Light Scheme
- › Irish Air Corps / Department of Defence Safeguarding
- › Garda Air Support Unit (GASU)
- › Emergency Aeromedical Service (EAS)

The Aviation Review Statement concludes that the Site is located within 45 km of Ireland West Airport (i.e. within Total Manoeuvring Area 2d), with proposed turbines being greater than 100 m in height. As such, should the Proposed Project receive planning permission, the proposed turbines will be required to be included in the AirNav / IAA Electronic Air Navigation Terrain and Obstacle Dataset (eTOD).

Furthermore, should the Proposed Project be permitted, the associated turbine locations would be submitted to AirNav Ireland and aviation charts and Global Navigation Satellite Systems (GNSS) databases will be updated accordingly. This will assist the unlikely event of Garda Air Support Units operations in the general area.

Please see Appendix 15-6 for the full aviation review statement.

15.2.5 Likely Significant Effects and Associated Mitigation Measures

The below assessment evaluates the impact (where there is the potential for an impact to occur) on telecommunications and aviation during the construction, operation and decommissioning phases of the Proposed Project.

15.2.5.1 'Do-Nothing' Scenario

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

The opportunity to capture part of Mayo'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. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan (Appendix 6-4) to be implemented during the development's operation, the opportunity to enhance the site for biodiversity, at a local scale, would also be lost.

15.2.5.2 Construction Phase

The potential for electromagnetic interference from the Proposed Project may only occur during the operational phase of the Proposed Project. Therefore, no electromagnetic interference impacts can occur on telecommunications and aviation assets during the construction phase of the Proposed Project and therefore no mitigation required.

Whilst potential impacts during turbine erection and commissioning of the Proposed Wind Farm are construction phase activities, they are assessed in the operational phase impact assessment (Section 15.2.6.3 below) as their effects are more closely aligned.

15.2.5.3 Operational Phase

15.2.5.3.1 Telecommunications

Pre-Mitigation Impact

Consultation regarding the potential for electromagnetic interference from the Proposed Project was carried out with the relevant national and regional broadcasters, fixed line and mobile telephone operators and other operators.

There are no operators with telecommunication links traversing the Site, as detailed in Section 15.2.4 and Figure 15-15 above. No impacts to telecommunications from the Proposed Wind Farm are anticipated.

Following scoping with Irish Rail, a 5km exclusion zone was identified; in response, Ai Bridges was engaged on behalf of the Applicant to carry out a Telecommunications Impact Assessment (Appendix 15-4). The Telecommunications Impact Assessment concluded that the Proposed Project will have no impact on the Irish Rail communications network.

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 15-5. The Protocol Document ensures that in the event of any interference occurring to television or radio reception due to operation of the Proposed Wind Farm, 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 Project

Residual Effect

The Proposed Project will not have a residual effect on telecommunications, due to distance from, and absence of links crossing the Site. In addition, a Protocol Document, ensuring no impacts on broadcast signals, has been signed between 2rn and the Applicant, please see Appendix 15-5.

Significance of Effect

The effect on telecommunications from the Proposed Project during the operational phase is considered Not Significant.

15.2.5.3.2 Aviation

Pre-Mitigation Impact

The scoping response of the DoD and IAA has requested that standard lighting requirements be used at the Site. Pre-mitigation impacts are therefore direct, potential significant negative effects.

It should be noted that the nearest airport, airfield or airstrip to the Site is Ireland West Airport, which is located c.24km northeast from the nearest proposed turbine, which makes any interference between both the Proposed Project and aviation very unlikely. Nonetheless, an Aviation Review Statement was undertaken for the Proposed Project (see Appendix 15-6) to identify any potential impacts of the Proposed Project on aviation assets.

The Aviation Review Statement assessed the following in relation to aviation:

Annex 14 - Obstacle Limitation Surfaces (OLS): the Site is located outside of the Outer Horizontal Surfaces and there is no penetration of the take-off or approach surfaces. Therefore it is unlikely that there will be any impact to the OLS surfaces for Ireland West Airport caused by the Proposed Project.

Annex 15 – Aerodrome Surfaces: as discussed in Section 15.2.4.2.1, the Site is located within 45km of Ireland West Airport reference point and there is penetration of Area 2d of the Annex 15 Surface. With the proposed turbines being more than 100m above terrain, there is a potential significant, negative pre-mitigation effect on air navigation.

Building Restricted Areas (BRAs): as illustrated in Figure 6 of the Aviation Review Statement, the Site is located approximately 15km southwest of the Ireland West BRA. As such, at this distance there are no impacts anticipated.

Minimum Sector Altitudes (MSA): The Site is located within 25 nautical miles of the VOR/DME at Ireland West Airport. The MSA provides a minimum obstacle clearance of 1000 ft above the highest

obstacle within specified sectors. The proposed turbines would be located within the southwestern sector (MSA 3600 ft), as shown in Figure 7 of the Aviation Review Assessment (Appendix 15-6).

According to the Proposed Wind Farm location, the maximum construction height for the site would be 2600 ft / 792.5 m AMSL (3600 ft MVA minus 1000 ft). The highest of the proposed turbines is T02, with a tip-height of 751.3 ft AMSL. This is below the 2600 ft threshold, therefore the MSA would not be affected and there will be no potential impact on the published MSA altitude figures for Ireland West Airport.

Instrument Flight Procedures: As detailed in Appendix 15-6, there are 16 published Instrument and Visual Flight Procedures for arrivals to and departures from Ireland West Airport, with the proposed turbines being in close proximity to 4 of these. An analysis of these was undertaken as part of the Aviation Review Statement and it was concluded that there would be no potential for impact on any Instrument and Visual Flight Procedures caused by the Proposed Wind Farm.

Communication and Navigation Systems: As the Site is over 20 km from the localizers and transmitting antennas, it is very unlikely that the proposed turbines will have any impact on these ATS communications and radio navigational aids. Typically, interference to VHF communications systems will only occur when obstacles are in close proximity to the VHF transmitter e.g. less than 500 m. As

Radar Surveillance Sensors: The Site is located within Primary Surveillance Radar (PSR) and Secondary Surveillance Radar (SSR) Assessment Zone 4. Following assessment of AirNav Ireland radar surveillance sensors, no impact is anticipated.

Flight Inspection and Calibration: the Site is located on the outer edge of the ILS Localiser Lateral Coverage Sector. An assessment of this was undertaken and examined in conjunction with flight paths, please see Section 2.9 of the Aviation Review Statement for further detail. No pre-mitigation impact is anticipated.

Irish Air Corps / Department of Defence Safeguarding: The nearest of the Air Corps restricted areas to the Site is the 3 NM restricted area around the N17 between Sligo and Knock. As the Site is located outside the restricted area, there should be no impacts on Irish Air Corps activities. Please see Section 2.11.1 of Appendix 15-6 for further detail.

Garda Air Support Unit: The Site is located in an area that is sparsely populated and on agricultural / boggy terrain. For these reasons, it is highly unlikely that the Proposed Wind Farm would have any significant impacts on Garda Air Support Unit operations. Please see Section 2.12 of Appendix 15-6 for further detail.

Emergency Aeromedical Service (EAS): Helicopter landings are highly unlikely to occur in the subject area due to the agricultural / boggy terrain of the Site.

Mitigation Measures

The Proposed Project is outside of the DoD 3NM (Nautical mile) Buffer on motorways and National Roads, and therefore no mitigation measures are required.

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 Project be consented:

Irish Aviation Authority

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 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.*
1. *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.*
2. *Light intensity to be of similar value to that emitted in the visible spectrum of light.*

Annex 15 – Aerodrome Surfaces

Due to the Site being located within the ICAO Annex 15 Aerodrome Surface, should the Proposed Project receive planning permission the proposed wind turbines will be included in the IAA Terrain and Obstacle Data Set (eTOD).

Garda Air Support Unit

In the unlikely event of Garda Air Support Unit operations in the general area, it should be noted that all modern aircraft are equipped with a range of Global Navigation Satellite Systems (GNSS), e.g. GPS, GLNASS, Galileo, etc. These GNSS systems provide pilots with accurate navigation information including data to avoid obstacles during VFR operations. Should the Proposed Project be permitted, the associated turbine locations would be submitted to AirNav Ireland and aviation charts and GNSS databases will be updated accordingly

Residual Effect

With the implementation of the above, the Proposed Project will have no residual effect on aviation assets.

Significance of Effects

The effect on aviation assets from the Proposed Project during the operational phase is considered Not Significant.

15.2.5.4 Decommissioning Phase

As stated in Section 15.2.4.1.4 above, the potential for electromagnetic interference from proposed turbines may only occur during the operational phase of the Proposed Project (i.e., the Proposed Wind Farm and Proposed Grid Connection). There are no electromagnetic interference impacts associated with the construction or decommissioning phases of the Proposed Project, and therefore no mitigation is required.

15.2.5.5 Cumulative Effect

Chapter 2, Section 2.9 of this EIAR describes the methodology used in compiling the list of permitted or proposed projects 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, and is set out in Section 2.9 in Chapter 2 of this EIAR.

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 aviation, 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 15.2.6.3.2, the Proposed Project will have no residual effect on aviation as all lighting and mitigation requirements will be met by the Applicant.

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

15.3 Other Material Assets

15.3.1 Introduction

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

15.3.2 Methodology and Guidance

The methodology for this assessment includes:

- › Scoping exercise with stakeholders;
- › Desk study, including review of available maps and published information followed by mapping of constraints;
- › Likely Significant Effects and Mitigation Measures

Consultation with all statutory consultees, bodies with environmental responsibility and other interested parties is detailed in Chapter 2 of the EIAR. Scoping was undertaken in line with Section 3.3 ‘Scoping’ of EPA, 2022² on the information to be contained in EIARs.

15.3.3 Scoping and Consultation

In order to assess the potential for significant effects on built services and waste management in the vicinity of the Proposed Project, scoping requests were made to EirGrid, Gas Networks Ireland, Uisce Éireann and numerous sections of Mayo County Council, including the Roads Department, Water Department and Environment Department. Please refer to Section 2.7 of Chapter 2 of this EIAR for details in relation to the EIA scoping exercise.

No scoping response was received from EirGrid or the local authority. A scoping response was received from Uisce Éireann identifying relevant infrastructure within the vicinity of the Site detailed in Section 15.2.5 above. A scoping and consultation exercise was conducted with utilities operators, as outlined below in Section 15.3.2. A full description of the scoping and consultation exercise is provided in Section 2.7 of Chapter 2 of this EIAR.

² EPA, 2022. *Guidelines on the information to be contained in Environmental Impact Assessment Reports*. Available at: https://www.epa.ie/publications/monitoring-assessment/assessment/EIAR_Guidelines_2022_Web.pdf

15.3.3.1 Utilities

Uisce Éireann

The general EIAR Scoping document was sent to Uisce Éireann for comment on the 26th of May 2023. A response was received the 7th of June 2023 stating that they do not have the capacity to comment on individual projects, but general aspects of Water Services should be considered in the EIA where relevant. Some of the items to consider are listed below. Please see Chapter 2, Section 2.7 and Appendix 2-1 for a full list of Uisce Éireann comments. It should be noted that the Proposed Project does not intend to connect into Uisce Éireann assets.

1. *“Ensure that there will be no negative impact to Irish Waters Drinking Water Source(s) during the construction and operational phases of the development. Hydrological/hydrogeological pathways between the applicant’s site and receiving waters should be identified as part of the report.*
2. *Any and all potential impacts on the nearby reservoir as public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/surface water interactions.*
3. *If a development requires a connection to either a public water supply or sewage collection system, the developer is advised to submit a Pre-Connection Enquiry (PCE) enquiry to Irish Water to determine the feasibility of connection to the Irish Water network.*
4. *The applicant shall identify any upgrading of water services infrastructure that would be required to accommodate the Proposed Development.*
5. *In relation to a development that would discharge trade effluent—any upstream treatment or attenuation of discharges required prior to discharging to an Irish Water collection network.”*

A data request for all Irish Water infrastructure in and surround the Site was sent to Irish Water on the 26th of June 2023, with a follow up being issued on 24th of April 2025. Data was provided by Irish Water on the 26th of June 2023 which includes all Irish Water infrastructure in the vicinity of the Site, with revised infrastructure being circulated on the 24th of April 2025. There is a c.780m water mains running through the north/northwestern section of the Site which interacts with the Proposed Project infrastructure. This water mains is used for agricultural purposes. If the Proposed Project receives a grant of permission, the Applicant commits to liaise with Uisce Eireann about rerouting the pipe, with rerouting being done before commencement of construction work to maintain water supply during construction, in accordance with Uisce Eireann.

Waterways Ireland

A general EIAR Scoping request was sent to Waterways Ireland on the 26th of May 2023 and a response was received on the 29th of May 2023 stating that the Proposed Project is not located on lands under their jurisdiction and therefore they have no comment to make on the proposal. No response was received to the scoping request issued on 11th of February 2026.

Eirgrid

A general EIAR Scoping request was sent to Eirgrid on the 26th of May 2023 and 11th of February 2026. No response has been received to date.

Gas Networks Ireland (GNI)

GNI supply MKO with their latest infrastructure data quarterly. The latest data share illustrating all GNI infrastructure up to and including Q1 2026 was provided to MKO in April 2026. The data indicates

that there is no GNI infrastructure located within the Site with the nearest infrastructure being adjacent to the southern portion of the EIAR Site Boundary, running along the L1505. GNI require a set back of '2 times the turbine mast height from the nearest edge of a transmission pipeline' for wind farm projects, for the case of the Proposed Project this would be 184m which has been achieved.

Due to the proximity of the Site to GNI infrastructure, including an Above Ground Installation (AGI), High Pressure line and Medium Pressure line, further direct contact was made with GNI in order to ensure there was no potential for interaction with critical GNI Infrastructure. GNI provided the following Codes of Practice and Guidance Documents.

- › Gas Networks Ireland (2020). *Safety advice for working in the vicinity of natural gas pipelines*³.
- › Gas Networks Ireland (2021). *Code of Practice for Working in the Vicinity of the Transmission Network. Procedure No: AO/PR/127*⁴
- › Gas Networks Ireland (2023). *Guidance for Developing Electrical Infrastructure Near Gas Transmission Pipelines*⁵

Please see Chapter 2, Section 2.7 for a full list of Gas Networks Ireland comments. Further detail is provided in Section 15.3.4.1.2 below. Locations of the gas pipelines have been illustrated in Figure 3-1 of Chapter 3 Consideration of Reasonable Alternatives.

15.3.4 Baseline Environment

15.3.4.1 Existing Built Services and Utilities

The Proposed Project has been designed to avoid identified services and utilities. 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 Project. The proposed upgrade to the existing L15053 public road would also be subject to a Road Opening Licence (ROL). The timing of these works would therefore be controlled by the ROL process with the relevant Local Authority.

15.3.4.1.1 Electricity

Grid Infrastructure

The Castlebar to Cloon 110kV overhead line (OHL) traverses the Site in a northwest to southeast orientation in the townlands of Cloonbaul., It is proposed to connect into the National Grid via this existing 110kV OHL via a loop-in loop-out grid connection as part of the Proposed Grid Connection.

There are no other 38kV or higher known existing underground electricity cables present within the Site.

15.3.4.1.2 Gas

³Gas Networks Ireland (2020). *Safety advice for working in the vicinity of natural gas pipelines*. Available at: <https://www.gasnetworks.ie/sites/default/files/docs/safety/Safety-Advice-for-Working-in-the-Vicinity-of-Natural-Gas-Pipelines.pdf>

⁴Gas Networks Ireland (2021). *Code of Practice for Working in the Vicinity of the Transmission Network. Procedure No: AO/PR/127*. Available at: <https://www.gasnetworks.ie/sites/default/files/docs/safety/Code-of-Practice-for-Working-in-the-Vicinity-of-the-Transmission-Network.pdf>

⁵Gas Networks Ireland (2023). *Guidance for Developing Electrical Infrastructure Near Gas Transmission Pipelines*. Available at: <https://www.gasnetworks.ie/sites/default/files/docs/safety/Guidance-for-Developing-Electrical-Infrastructure-Near-Gas-Transmission-Pipelines.pdf>

There are no gas pipelines located within the Site however there are gas pipelines located nearby. A Gas Networks Ireland (GNI) High Pressure gas pipeline travels in a north to south direction c.340m west of the Site. A medium pressure gas pipeline runs south from the Knockroe Above Ground Installation (AGI) which is located c.212m west of the Site for approx. 430m, and then runs adjacent to the southern section of the EIAR Site Boundary along the L1505. A cathodic protection centreline gas pipeline runs from the Knockroe AGI in an east-west direction towards the EIAR Site Boundary and stops c. 41m near the proposed upgrade to public road (L15053).

The Applicant has been able to achieve a 400m setback from the closest turbines (T1) which exceeds the requirements requested by GNI, as outlined in Section 15.3.3.1 above. There are no turbines located within the designated setback distance of 184m. The proposed road upgrade works to the L15053, proposed temporary site entrance and temporary widening works are adjacent to the medium pressure gas pipeline which is located within the L1505. No crossing of any existing gas pipeline will be required during the construction phase of the Proposed Project.

Due to the nearby presence of gas pipelines, prior to construction the Applicant will engage with GNI via the 'Dial Before You Dig' procedure online. GNI will be contacted on 1800 42 77 47 **before** excavating near the identified gas pipelines.

Furthermore, the following guidance documents will be adhered to during all excavation works associated with the Proposed Project:

- › GNI (2020) '*Safety advice for working in the vicinity of natural gas pipelines Guideline No: HSQE/GU/016 Rev 2*'
- › GNI (2021) '*Code of Practice for Working in the Vicinity of the Transmission Network*'
- › Health and Safety Authority (2016) '*Code of Practice for Avoiding Danger from Underground Services*'
- › United Kingdom Onshore Pipeline Operator's Association (UKOPA) (2017) '*UKOPA Good Practice Guide: Requirements for the Siting and Installation of Wind Turbines Installations in the Vicinity of Buried Pipelines (UKOPA/GP/013)*'

Please see Section 15.3.4.2.1 below for further detail on mitigation measures associated with the interactions with the GNI network.

15.3.4.1.3 **Water**

The Pollavaddy Group Water Scheme and Source Protection Area are located approximately 5km northwest of any proposed infrastructure associated with the Proposed Project. The Site does not fall within the Claremorris urban wastewater treatment catchment.

A data request sent to Uisce Éireann on the 23rd of April 2025 indicated that a water mains runs through the Site. Should the Proposed Project receive planning permission, the water main will be diverted as agreed with Uisce Éireann under a diversion agreement.

15.3.4.1.4 **Motorways**

The Proposed Project is approximately 30km northwest of the nearest motorway (the M17) at its closest point (i.e., T5). During the construction phase, the M17 Motorway will be used in order to facilitate the delivery of the proposed turbines and abnormal loads, there will minimal interaction with the motorway otherwise during the construction, operation or decommissioning. Impacts associated with traffic and transport are outlined in Section 15.1.12 above.

15.3.4.1.5 **Railways**

The Westport-Dublin Irish Rail line runs to the southwest of the Site, approximately 1.4km at its closest point (T4). The Proposed Project will not directly interact with the rail line outside of crossing the

railway bridge in Claremorris Town during the proposed turbine and abnormal load delivery. Impacts associated with traffic and transport are outlined in Section 15.1.12 above.

15.3.4.2 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, McGrath Industrial Waste Facility (IE Licence No. W0143), is located approximately 15km northwest of the Site in Turlough, Co. Mayo.

A Waste Management Plan (WMP) has been prepared and forms part of the Construction and Environmental Management Plan (CEMP) in Appendix 4-5 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 Project. Disposal of waste will be a last resort.

All waste generated on site during the construction phase will be contained in a waste skip at a waste storage area on site. This waste storage area will be kept tidy with skips clearly labelled to indicate the allowable material to be disposed of therein. The expected waste volumes generated on site are unlikely to be large enough to warrant source segregation at the Proposed Wind Farm. Therefore, all waste streams generated on site 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 on site for disposal in the onsite waste skip. It will also be made clear that the burning of waste material on site is forbidden.

Further details on waste management are presented in the CEMP which is included as Appendix 4-5.

It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Project as only a small number of operational and maintenance personnel will be present within the Site certain times. Any waste generated due to the operation and maintenance of the Proposed Project will be disposed of in a covered 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.

The Applicant will comply with Circular Economy requirements and ensure that waste is prevented as much as possible. Any potential waste will be treated as a by-product as much as possible and where it is possible, materials removed off-site will be re-used in accordance with the Article 27 notification procedure or treated to comply with Article 28 if practicable (under the European Union (Waste Directive) Regulations 2011 as amended). Other materials will be recycled where possible.

Any materials containing invasive species will be appropriately managed and sent to authorised facilities. Please see Appendix 6-5 Invasive Species Management Plan for further detail.

15.3.5 Likely Significant Effects and Associated Mitigation Measures

15.3.5.1 'Do-Nothing' Scenario

If the Proposed Project were not to proceed, the potential to impact on material assets would be removed.

The opportunity to capture part of Mayo'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. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan (Appendix 6-4) to be implemented during the development's operation, the opportunity to enhance the site for biodiversity, at a local scale, would also be lost.

15.3.5.2 Construction Phase

15.3.5.2.1 Existing Built Services

Pre-Mitigation Impact

Electricity

There is 1 no. 110kV OHL located within the Site, this being the Castlebar to Cloon 110kV OHL. It is intended to connect the Proposed Wind Farm via a new onsite 'loop-in' 110kV substation to the OHL via underground cabling which will run from the proposed onsite 110kV substation through privately owned land (approx. 982m) in a south-eastward direction to the existing overhead line. The OHL will be broken by 2 no. end masts (lattice type towers) to facilitate the connection of the Proposed Wind Farm to the grid. The Proposed Grid Connection will facilitate the generation of clean, renewable energy by providing an alternative to electricity derived from coal, oil or gas-fired power stations.

There is potential for the OHL to be impacted through interference or breakage during the construction phase of the Proposed Grid Connection. This would have an unlikely but temporary, moderate negative impact on electricity supply.

There are no other 38kV or higher known existing underground electricity cables present within the Site. The Proposed Project has been designed to avoid existing underground electricity cables and can be described as mitigation by design therefore there is no potential to give rise to effects on underground electrical services.

Gas

The Proposed Project infrastructure has been designed to avoid any underground gas lines and can be described as mitigation by design. Notwithstanding this, there are gas pipelines surrounding the Site, with a medium pressure gas pipeline being located adjacent to the temporary site entrance. As such, in the absence of mitigation, there is a potential short-term, moderate, negative effect on nearby gas infrastructure caused by the construction of the Proposed Project.

Water

A data request sent to Irish Water on the 23rd of April 2025 indicates that a water main runs through the Site. Should the Proposed Project receive planning permission, the water main will be diverted as agreed with Uisce Éireann under a diversion agreement and there is therefore, under a precautionary scenario, a potential short-term slight negative impact, which is Not Significant, on water mains as a result of the Proposed Project.

Motorways

The Proposed Project is located approximately 30km northwest of the nearest motorway (the M17) at its closest point (T5). The Proposed Project will not directly interact with the motorway outside of proposed turbine and abnormal load delivery, therefore there is no potential to give rise to impacts on the motorway.

Impacts associated with traffic and transport are outlined in Section 15.1.12 above.

Railways

The Westport-Dublin Irish Rail line runs to the southwest of the Proposed Project, approximately 1.4km at its closest point (T4). The Proposed Project will not directly interact with the railway line outside of crossing the railway bridge in Claremorris Town during the proposed turbine and abnormal load delivery. Impacts associated with traffic and transport are outlined in Section 15.1.12 above. Therefore, there is no potential for the construction phase of the Proposed Project to impact railway services.

Mitigation Measures

Notwithstanding the above, specific measures are incorporated into the CEMP, included as Appendix 4-5 of this EIAR, to ensure that the construction of the Proposed Project will not have effect on underground electrical cables and built services within the Site. The mitigation measures include the following:

- › The construction of the Proposed Grid Connection will be in phases along the proposed on-site 982m underground grid cabling route, to minimise the duration of outage whilst making the connection to the Castlebar-Cloon 110kV OHL.
- › The suitability of machinery and equipment for use near power lines will be risk assessed by the Project Supervisor Construction Stage (PSCS).
- › All staff will be trained on operating voltages of overhead electricity lines running the Site. All staff will be trained to be aware of the risks associated with overhead lines. All contractors that may visit the sites are made aware of the location of lines before they come on to site.
- › Barriers will run parallel to the overhead line at a minimum horizontal distance of 6 metres on plan from the nearest overhead line conductor wire.
- › When activities must be carried out beneath overhead lines, e.g., component delivery or end mast construction, a site-specific risk assessment will be undertaken prior to any works. The risk assessment must take into account the maximum potential height that can be reached by the plant or equipment that will be used prior to any works. Overhead line proximity detection equipment will be fitted to machinery when such works are required.
- › Information on safe clearances will be provided to all staff and visitors.
- › Signage indicating locations and health and safety measures regarding overhead lines will be erected in canteens and on site.
- › All staff will be made aware of and adhere to the Health & Safety Authority's '*Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) (Amendment) Regulations 2021*'. This will encompass the use of all necessary Personal Protective Equipment and adherence to the site Health and Safety Plan.
- › All health and safety measures as detailed in the Construction Environment Management Plan and Chapter 5 Population and Human Health will be adhered to during the construction, operation and decommissioning phases.
- › 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 implement standard construction codes of practice in relation to working around electricity, gas, water, sewage and telecommunications networks.
- › Prior to construction, the Applicant will engage with GNI via the '*Dial Before You Dig*' procedure online. GNI will be contacted on 1800 42 77 47 **before** excavating near the identified medium-pressure pipeline adjacent to the temporary site entrance.

Furthermore, the ‘*Safety advice for working in the vicinity of natural gas pipelines*’ guidance document and the GNI ‘*Code of Practice*’ standards will be adhered to during all proposed works in vicinity of gas pipelines.

- The Applicant will also carry out further consultation in the pre-construction phase and construction phase with GNI to ensure that no new gas pipelines have been implemented.
- In advance of any construction activity, the contractor will undertake pre-commencement surveys to confirm the presence or otherwise of any services such as water supply. If found to be present, the relevant service provider will be consulted with in order to determine the requirement for specific excavation or relocation methods and to schedule a suitable time to carry out works.
 - As noted in the preceding sections, scoping consultation with Uisce Eireann identified a water mains that traverses through the Site. If the Proposed Project receives a grant of permission, the Applicant commits to liaise with Uisce Eireann to redirect the pipe, with diversion being done before commencement of construction work to maintain water supply during construction, in accordance with Uisce Eireann.
 - In the event that any additional water mains are encountered, the water supply will be turned off by the utility so work can commence on diverting the service. The section of existing pipe will be removed and will be replaced with a new pipe along the new alignment of the service. The works will be carried out in accordance with the specifications of the relevant utility provider.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual effect during the construction phase of the Proposed Project on existing built services.

Significance of Effects

The effect on existing built services from the Proposed Project during the construction phase is therefore considered Not Significant.

15.3.5.2.2 Waste Management

Identification of Impact

Construction waste will arise as a result of the Proposed Project (Proposed Wind Farm and Proposed Grid Connection) mainly from excavation and unavoidable construction waste including material surpluses and damaged materials and packaging waste. Full details of wastes expected to be generated are detailed with the Waste Management Plan (WMP) of the CEMP (Appendix 4-5 of this EIAR). In the absence of measures outlined in the WMP, impacts to the waste management services during the construction phase is considered to have a negative, moderate, short-term impact, which is Not Significant.

Mitigation Measures

- The CEMP, Appendix 4-5 of this EIAR, includes a Waste Management Plan (WMP) which outlines the best practice procedures during the construction and decommissioning phases of the project.
- Waste management will be carried out in accordance with ‘*Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction &*

Demolition Projects (2021) produced by the EPA. The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Project. Disposal of waste will be seen as a last resort.

- › All hazardous wastes will be stored in bunded containers/areas before being collected by an authorised waste contractor and brought to an EPA licensed waste facility. Hazardous wastes will be kept separate from non-hazardous wastes that contamination does not occur. Please see the CEMP for best practise measures to prevent the creation of waste materials.
- › All non-hazardous waste generated on-site by the Proposed Project will be contained in waste skips at a waste storage area on-site. This waste storage area will be kept tidy with skips clearly labelled to indicate the allowable material to be disposed of therein.
- › The expected waste volumes generated on-site are unlikely to be large enough to warrant source segregation at the Site. Therefore, all waste streams generated on-site will be deposited into a single waste skip. This waste material will be transferred to a Materials Recovery Facility (MRF) by a fully licensed waste contractor where the waste will be sorted into individual waste streams for recycling, recovery or disposal.
- › The waste generated from the turbine erection will be limited to the associated protective covers which are generally reusable. Considering the specialist nature of this packaging material the majority will be taken back by suppliers for their own reuse. Any other packaging waste generated from the turbine supply will be deposited into the on-site skips and subsequently transferred to the MRF.
- › It is not envisaged that there will be any waste material arising from the materials used to construct the site roads as only the quantity of stone necessary will be sourced from local quarries and brought on site on an 'as needed' basis.
- › Site personnel will be instructed at induction that under no circumstances can waste be brought to site for disposal in the on-site waste skip. It will also be made clear that the burning of waste material on-site is forbidden.

Residual Effects

With the implementation of the above measures, the residual effect is considered to be a negative, short-term, slight effect on waste management services during the construction phase.

Significance of Effects

The effect on waste management from the Proposed Project during the construction phase is considered Not Significant.

15.3.5.3 Operational Phase

15.3.5.3.1 Existing Built Services

There will be no operational phase impacts or associated effects on built services associated with the Proposed Project. The Proposed Project will have an installed capacity of 31.5MW which has potential to produce 96,579 MWh of electricity. This would be sufficient to supply approximately 19,542 Irish households with electricity per year during its operational phase. The Proposed Project will therefore have a positive, moderate, long-term effect on built services.

15.3.5.3.2 Waste Management

There will be no operational phase impacts or associated effects on waste management associated with the Proposed Project. It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Project 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 Project will be disposed of in a covered skip, located within the proposed onsite 110kV substation compound. 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.

15.3.6 Decommissioning Phase

The wind turbines proposed as part of the Proposed Wind Farm are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the proposed turbines may be replaced with a new set of turbines, subject to planning permission being obtained, or the Proposed Wind Farm will be decommissioned fully as described in Section 4.12 of Chapter 4 and the accompanying Decommissioning Plan in Appendix 4-6.

The works required during the decommissioning phase are described in Section 4.12 in Chapter 4 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 15.3.4.2, there will be no significant effects on existing and built services, or waste management as part of the decommissioning phase.

15.3.7 Cumulative and In Combination Effects

The potential cumulative effects on material assets between the Proposed Project and other permitted or proposed plans in the area (wind energy or otherwise), as set out in Section 2.9 in Chapter 2 has been carried out as part of this assessment. The developments considered as part of the cumulative effect assessment are described in Section 2.9 of this EIAR, with relevant developments presented in Appendix 2-3.

15.3.7.1 Construction Phase

15.3.7.1.1 Existing Built Services

Permission for upgrade works to the Castlebar-Cloon 110kV OHL has been granted by Mayo and Galway County Councils (MCC Pl. Ref. 22780, GCC Pl. Ref. 221030). Connection of the Proposed Grid Connection to this line via the 'loop-in, loop-out' connection may result in a temporary, slight negative cumulative effect if construction works overlap. This effect is Not Significant.

Other proposed wind farms or renewable energy projects which may connect into the Castlebar 110kV Substation or Cloon 110kV Substation will not be affected by the Proposed Project have been considered. Due to the nature of the 'loop-in, loop-out' grid connection proposed, there is no potential for cumulative effects. Connection of proposed renewable energy projects into the Castlebar-Cloon 110kV OHL via a similar 'loop-in, loop-out' grid connection may result in a temporary, slight negative cumulative effect if works overlap.

As demonstrated in Section 15.3.5.2.1 above, there are no significant effects on existing built services during the construction phase of the Proposed Project. Therefore, during the construction phase, there will be no significant cumulative effects on existing built services with other proposed or consented plans or projects within the surrounding landscape should they be constructed in parallel with the Proposed Project.

15.3.7.1.2 Waste Management

As demonstrated in Section 15.3.5.2.2 above, there are no significant effects on waste management services during the construction phase of the Proposed Project. Therefore, during the construction phase, there will be no significant cumulative effects on waste management services with other

proposed or consented plans or projects within the surrounding landscape should they be constructed in parallel with the Proposed Project.

15.3.7.2 Operational Phase

15.3.7.2.1 Existing Built Services

As demonstrated in Section 15.3.5.3.1, there is a long-term moderate positive effect on electricity supply during the operational phase. The Proposed Project will have an installed capacity of 31.5MW which has potential to produce 96,579 MWh of electricity. This would be sufficient to supply approximately 19,542 Irish households with electricity per year during its operational phase. There will be a positive, long-term, significant cumulative effect on electricity supply if planning permission is granted alongside existing and proposed wind energy developments in County Mayo. There is no cumulative effect with other non-energy producing developments within the surrounding landscape during the operational phase.

15.3.7.2.2 Waste Management

As demonstrated in Section 15.3.5.3.2 above, it is not anticipated that any significant volume of waste will be generated within the site during the operational phase of the Proposed Project as only a small volume of operational and maintenance personnel will be present within the Site. Therefore, during the operational phase, there will be no significant cumulative effects on waste management with other proposed or consented plans, projects within the surrounding landscape should they operate in parallel with the Proposed Project.

15.3.7.3 Decommissioning Phase

As demonstrated in Section 15.3.6 above, there are no significant effects on utilities and waste management during the decommissioning phase of the Proposed Project. Therefore, during the decommissioning phase, there will be no significant cumulative effects on utilities and waste management with other proposed or consented plans, projects within the surrounding landscape should they be constructed in parallel with the Proposed Project.

15.3.8 EIA Classification Summary

Please see Table 15-30 below for a summary of all identified impacts for the Proposed Project relating to traffic and transport, telecommunications and aviation, and other material assets.

Table 15-30 Impact Assessment Classification Summary

Topic	Pre-Mitigation Impact	Mitigation Section Reference	Residual Effect	Significance
Construction Phase				
Traffic and Transport	Temporary, Slight, Negative	Section 15.1.12.5.2	Short-term, Slight to Moderate, Negative	Not Significant
Telecoms and Aviation	N/A	N/A	N/A	N/A

Other Material Assets: (Existing Built Services) ⁶	Electricity: Temporary, Moderate, Negative Unlikely Gas: Short-Term, Moderate, Negative Water: Short-Term, Slight, Negative	Section 15.3.5.2.1	Short-Term, Imperceptible, Negative	Not Significant
Other Material Assets (Waste Management)	Short-Term, Moderate, Negative	Section 15.3.5.2.2	Short-Term, Slight Negative	Not Significant
Operational Phase				
Traffic and Transport	Long-Term, Imperceptible, and Negative	N/A (Section 15.1.12.5.3)	Long-Term, Imperceptible, and Negative	Not Significant
Telecoms and Aviation	Telecoms: no identified impacts	Section 15.2.5.3.1	Telecoms: no identified impacts	Not Significant
	Aviation: direct, potential significant	Section 15.2.6.3.2	Aviation: identified impacts	
Other Material Assets	Positive, Moderate, Long-Term	N/A	Positive, Moderate, Long-Term	Not Significant
Other Material Assets (Waste Management)	No impact identified	N/A	No impact identified	Not Significant
Decommissioning Phase				
Traffic and Transport	Temporary, Slight, and Negative.	Section 15.1.12.5.4	Short-term, Imperceptible to Slight, and Negative	Not Significant
Telecoms and Aviation	N/A	N/A	N/A	N/A
Other Material Assets	Any impact and consequential effect that occurs during the decommissioning phase will be similar	N/A	N/A	Not Significant

⁶ Services with no impact have been left out of the table to keep the summary condensed, please see Section 15.2.4.2.1 for further detail on effects associated with Existing Built Services



	to that which occurs during part of the construction phase.			
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