16. TRAFFIC AND TRANSPORTATION

16.1 INTRODUCTION

This chapter of the Environmental Impact Assessment Report (EIAR) outlines the Traffic and Transportation Assessment (TTA) for the proposed Ballyfasy Wind Farm project. The chapter considers the potential impacts of the project and identifies appropriate mitigation measures to minimise these effects.

The proposed project consists of 10 no. wind turbines with all associated site works (including a grid connection and works to accommodate turbine delivery). A full description of the proposed project is provided in Chapter 2 (Description of the Proposed Project).

For developments of this nature, the construction phase constitutes the critical period of potential impact on the surrounding road network. These impacts primarily relate to the temporary increase in traffic volumes and the specific geometric requirements necessary to accommodate abnormal indivisible loads (AIL) associated with turbine components. The locations where temporary and permanent remedial works are required to facilitate turbine delivery have been identified and are detailed within this chapter. To mitigate these impacts during the construction stage, a comprehensive Traffic Management Plan (TMP) has been prepared and is provided in Appendix 16-1 of this EIAR.

16.1.1 Statement of Authority

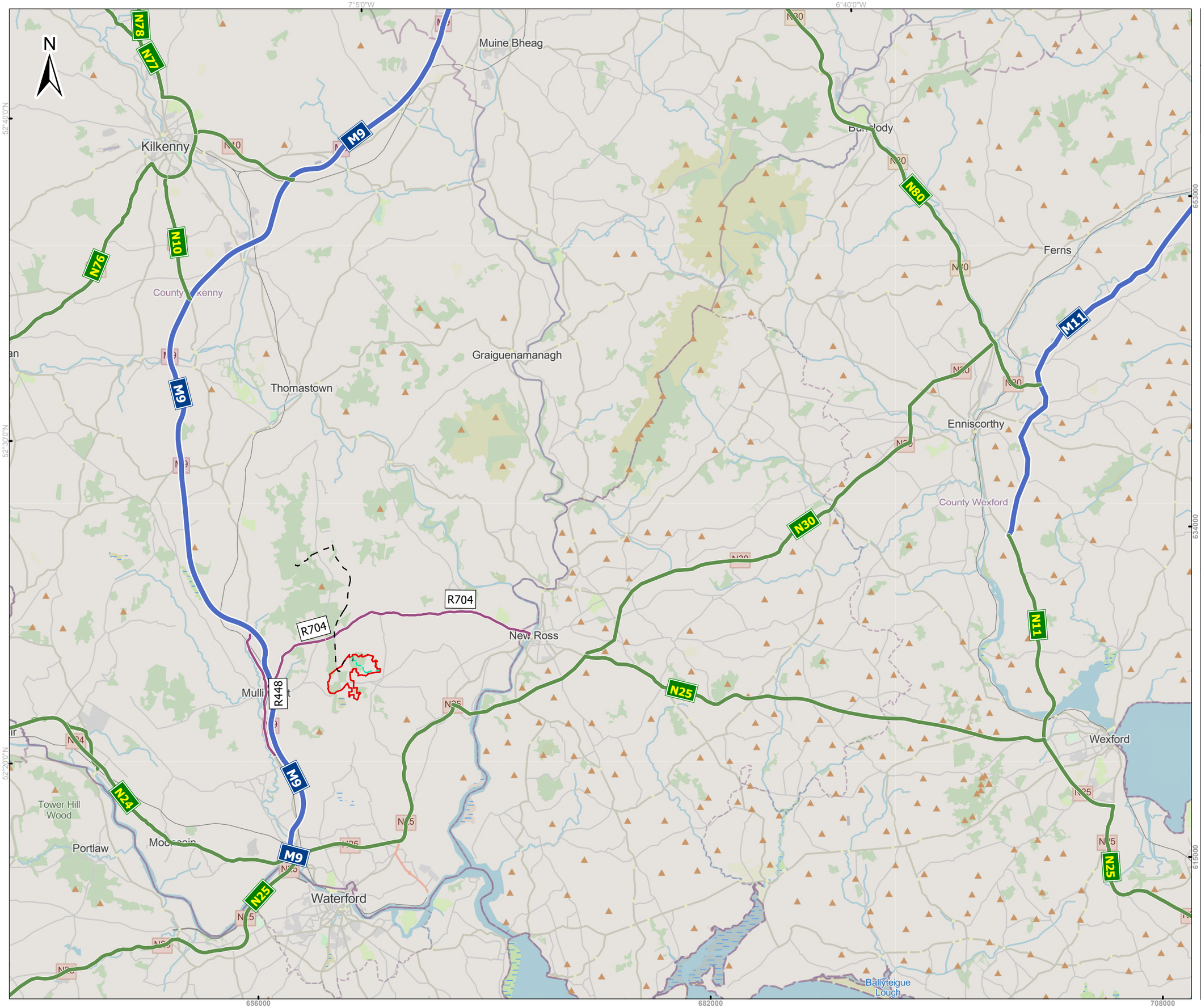
This chapter of the EIAR has been prepared by Carol Rosario of TOBIN. Carol Rosario has over six years of professional experience in the Traffic and Transport field. She holds an MSc in Transport Planning & Modelling and a BEng degree. Her expertise includes the delivery of Traffic and Transport Assessments for both public and private sector projects, with specific experience in the preparation of EIAR and EIS documentation for environmental developments.

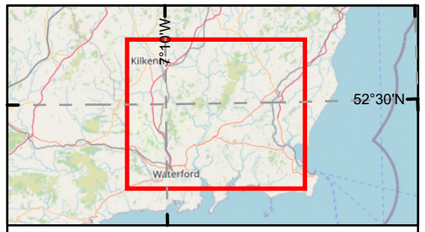
In addition, Carol has technical proficiency in junction and network analysis using industry-standard modelling software packages, including LinSig3, ARCADY, PICADY, and VISSIM.

This chapter was reviewed by Maria Rooney (TOBIN Associate Director: Roads and Traffic) who is a Chartered Engineer and has a Bachelor of Engineering in Civil Engineering and Master of Engineering in Roads and Transport Engineering. She has over ten year's work experience in roads and transport engineering. Maria has undertaken many Traffic and Transportation Assessments (TTA) and EIAR Traffic Chapters for various developments including environmental projects, waste management facilities and energy projects.

16.1.2 Site Location and Use

The proposed project site is located in the southern portion of County Kilkenny, between the villages of Listerlin (approximately 3 km northeast), Mullinavat (approximately 4 km west), and Glenmore (approximately 5 km southeast). The proposed wind farm site borders between the L3420, L3417, L7499 and L3424 local roads, approximately 4 km east from the M9 motorway at Mullinavat. Figure 16-1 and Figure 16-2 present the location of the proposal in relation to relevant road network.





Legend

- Wind farm study area

Grid Connection Options

- Option 1
- Option 2

Roads

- Motorways
- National Roads
- Regional Roads
- Local Roads

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	03/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 16.1:
Site Location: Regional level highlighting strategic road network and relevant towns

Scale @ A3: 1:200,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

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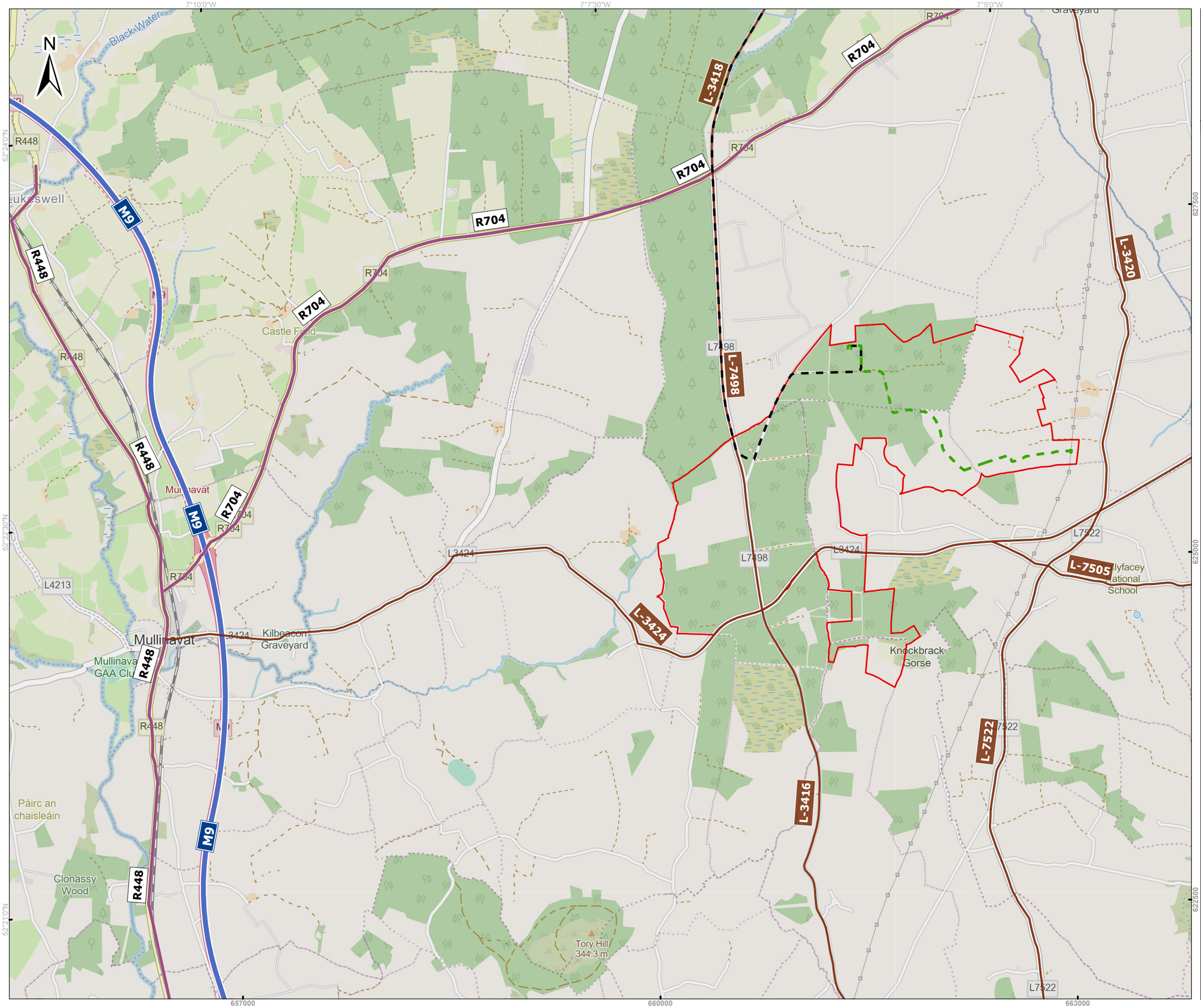
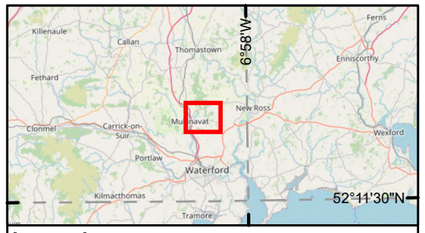
Map Ref: 11474-059-REG-P.App.BO-TOB-A

Draft: A





Legend

- Wind farm study area

Grid Connection Options

- Option 1
- Option 2

Roads

- Motorways
- Regional Roads
- Local Roads

0 500 1,000
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	01/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 16.2:
Site Location at Local Level

Scale @ A3: 1:25,000

Prepared by:	Checked by:	Date:
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Map Ref: 11474-060-L.NET-P.App.BO-TOB-A

Draft: A

The wind farm study area extends to approximately 348.14 hectares (ha). The footprint of the proposed wind farm infrastructure will require approximately 53 ha within this area. In general terms, the area surrounding the main wind farm site can be described as an agricultural and forested landscape with some existing wind farm development.

16.1.3 Proposed Project

The project comprises of the development of a wind farm of up to 10 no. wind turbines and all associated infrastructure including turbine foundations, hardstanding areas, access tracks, an on-site 110 kV electrical substation, and a grid connection. The project also comprises facilitating works on the public road network and at private properties along the turbine delivery route (TDR) to accommodate the delivery of turbine components.

Other transport related elements of the proposal are:

- A new site entrance with access onto the Local Road L3417 (see Site Entrance 2 on Drawing 11474-2010 in Appendix 1-1);
- Modifications at one existing site entrance with access onto the Local Road L3417 (see Site Entrance 3 on Drawing 11474-2010 in Appendix 1-1);
- Modifications to two existing site entrances with access onto the Local Road L7499 (see Site Entrance 1 and Site Entrance 5 on Drawing 11474-2010 in Appendix 1-1);
- Modifications at one existing site entrance with access onto Local Road L3424 (see Site Entrance 4 on Drawing 11474-2010 in Appendix 1-1);
- A temporary road crossing location to allow turbine delivery along the Local Road L3417 (see Drawing 11474-2010 in Appendix 1-1); and
- A temporary crossing location to allow turbine delivery along the Local Road L7499 (see Drawing 11474-2010 in Appendix 1-1);
- A temporary crossing location to allow turbine delivery along the Local Road L3424 (see Drawing 11474-2010 in Appendix 1-1).

Other non-transport elements of the proposal are detailed in Chapter 2 (Description of the Proposed Project).

The proposed project is the subject of two separate planning applications. The first application is for the proposed wind farm and on-site 110 kV substation along with the works on private lands along the proposed TDR. The second application is for the proposed grid connection. This EIAR assesses the project as a whole and will be presented with both planning applications which will be submitted in parallel to An Coimisíun Pleanála.

Grid Connection Route

Two options for the grid connection are considered to connect the proposed project to the national grid.

Grid Connection Option (GCO) One proposes to install a 110 kV underground cable from the proposed onsite substation to the consented Castlebanny Wind Farm 110 kV substation 12 km to the north.

GCO Two will connect the onsite substation with the existing 110 kV Great Island-Kilkenny overhead line which crosses 2.3 km to the east of the proposed wind farm site.

A single grid connection will be constructed for the proposed project and will become a permanent component of the Irish national grid network. The detailed description of the proposed project is provided in Chapter 2 (Description of the Proposed Project).

16.1.4 Relevant Standards

The following relevant standards have been used in the preparation of this chapter:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022);
- Traffic and Transport Assessment Guidelines (TII PE-PDV-02045, May 2014);
- Kilkenny City and County Development Plan 2021-2027;
- Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections (TII PE-PAG-02017, October 2021);
- Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) (TII DN-GEO-03060, May 2023);
- Rural Road Link Design (TII DN-GEO-03031, May 2023);
- Road Safety Audit (TII GE-STY-01024, December 2017); and
- 'Purple Book' - Guidelines for Managing Openings in Public Roads (Second Edition April 2017 DoTTS).

16.1.5 EIAR Scoping

Scoping is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information.

EIAR Scoping was undertaken with Kilkenny County Council in 2023 and 2024 as detailed in Chapter 1 (Introduction). Scoping for the traffic chapter was also undertaken with Kilkenny County Council's Roads Department on the 4th of September 2024.

The Abnormal Indivisible Loads (AIL) haul route starts in Belview Port in Co. Kilkenny and continues through two roundabouts in Kilkenny. Slieverue and Luffany roundabouts on N29 will require temporary works to accommodate the deliveries. These works include hard standing area and temporary removal of existing signage.

The main items identified during the scoping process included the following:

- A need to assess the traffic impact associated with the construction stage, as it has the largest associated traffic volumes.
- The scope of the TTA is limited to the local roads L3417, L7499 L3420, L3424, and regional road R704,
- Traffic counts were undertaken by TRACSIS on Tuesday, 1st of October 2024 around the wind farm site at the following location:
  - Site 1 - JTC 1 - R704 / L3417 / Three friars cross Staggered Junction.
  - Site 2 - JTC 2 - R704 / L3420 T-Junction (junction no longer in haul route, therefore not considered in the assessment).
  - Site 3 - JTC 3 - L3420 / L3424 Staggered Junction (junction no longer in haul route, therefore not considered in the assessment).

  - Site 4 - ATC 1 in the vicinity of site entrance on Local Road L7499.
  - Site 5 - ATC 2 in the vicinity of site entrances on Local Road L3417.
  - Site 6 - ATC 3 in the vicinity of site entrance on Local Road L3424.
  - Site 7 - ATC 4 in the vicinity of site entrance on Local Road L3420 (*note a site entrance is no longer required from this local road).
- Suitable quarries in the vicinity of the site were presented in order to determine construction vehicles haul routes during construction phase.
- Abnormal Indivisible Loads (AIL)[1] haul route and temporary works along the TDR are required.
- Scope of the Road Safety Audit:
  - At the proposed site accesses; and
  - Temporary and permanent works required along the AILs haul route.

Other relevant institutions from a transport-perspective—including An Coimisiún Pleanála (formerly An Bord Pleanála), the Department of Transport, and Transport Infrastructure Ireland (TII)—were consulted at the scoping stage. Details of the scoping process and the responses received from these bodies are provided in Chapter 1 (Introduction) of this EIAR.

16.2 Assessment Methodology

16.2.1 Traffic and Transport Assessment Objectives

The objective of a TTA within an EIAR is to evaluate the potential impacts of a proposed project on the surrounding transport network during both the construction and operational phases. The assessment considers existing baseline conditions, forecasts traffic demand arising from the project, and identifies any constraints or capacity issues on the local and regional road network. It also determines the requirements for abnormal load deliveries, construction traffic routing, and access arrangements.

The TTA provides a basis for developing mitigation measures, including a Traffic Management Plan (TMP), to ensure that the development can be delivered in a safe, efficient, and sustainable manner, while minimising disruption to other road users and ensuring compliance with relevant national and local transport policy and design standards.

16.2.2 EPA Description of Effects

The effects of the proposed project shall be described in accordance with the *EPA - Guidelines on the information to be contained in Environmental Impact Assessment Reports* (2022). Details of the methodology for describing the significance of the effects are provided in Chapter 1 (Introduction).

16.2.3 Assessment Criteria

The construction phase has the greatest impact period, with impacts experienced on the surrounding road network. The impacts of the proposed project have been assessed as traffic percentage (%) increase at assessment junctions with the proposed wind farm in place. These impacts are both the short-term additional traffic volumes and the geometric requirements of

[1] Abnormal Indivisible Load - a load which cannot be divided or broken down e.g. containers, large equipment etc. and exceeds the weight, height, width or length limit(s) set out in the above road traffic regulation. (www.rsa.ie)

the abnormally large loads associated with the turbine components. To minimise the impact of the proposed project during the construction stage, a TMP has been prepared and is included in Appendix 16-1 of this EIAR.

In accordance with TII recommendation presented in the document *Traffic and Transportation Assessment Guidelines (TII PE-PDV-02045, May 2014*), the methodology undertaken for this assessment is summarised as follows:

- A review of the existing and future transport infrastructure in the vicinity of the Proposed Project and the Abnormal Indivisible Load delivery route (Section 16.3- Existing Environment)
- 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.
- A description of the abnormally large loads and vehicles that will require access to the site and a review of the traffic impacts on the proposed delivery routes.
- A review of the potential impacts of the proposed project (Section 16.8- Potential Effects)
- An identification of mitigation measures - (Section 16.9 - Mitigation Measures)
- An assessment of residual effects - (Section 16.10- Residual Effects); and
- An assessment of cumulative effects - (Section 16.11- Cumulative Effects).

The geometric design elements of the wind farm have been assessed in accordance with the best practice guidelines and standards as outlined below:

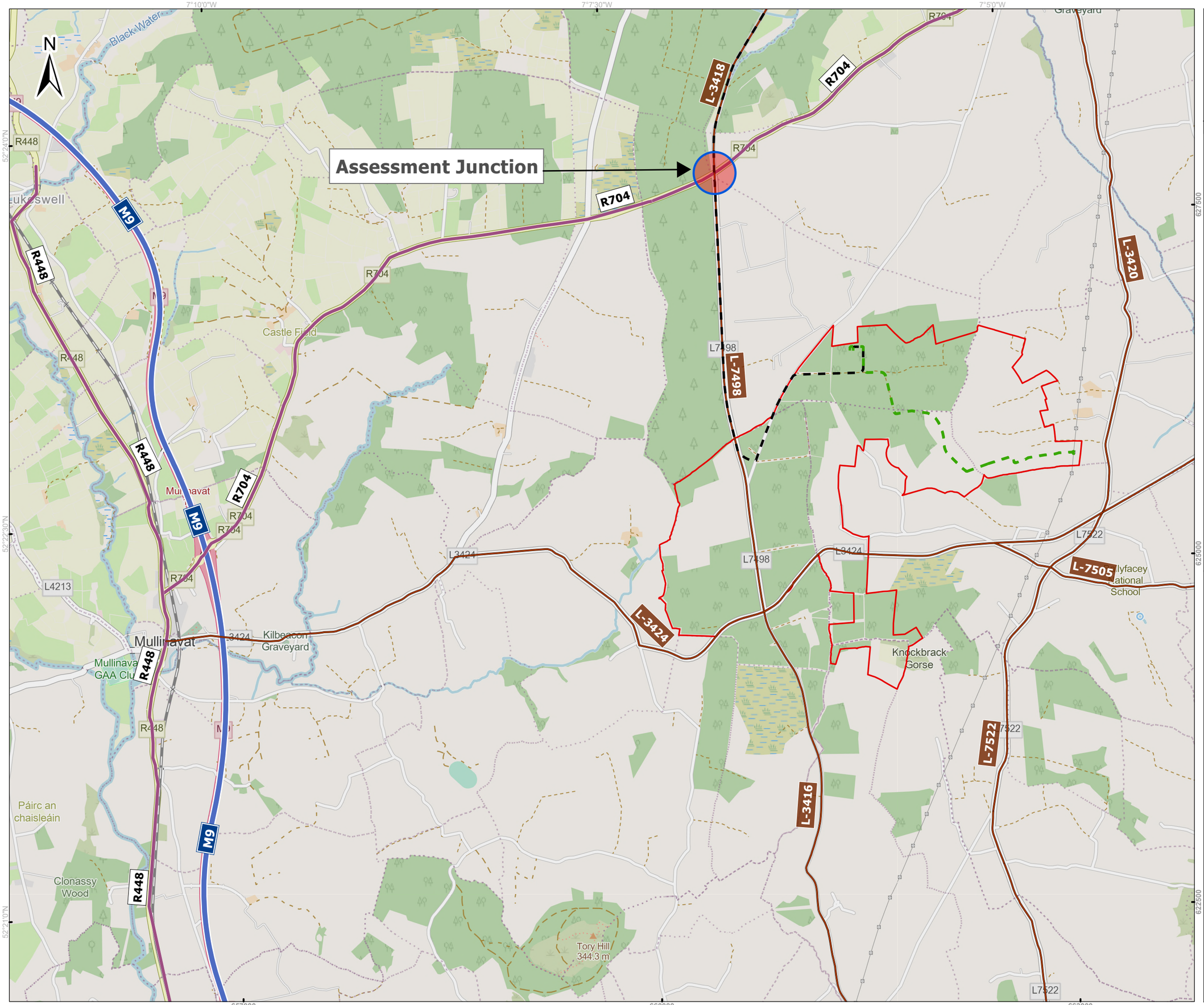
- A swept path analysis has been carried out considering the proposed site access geometry using Autodesk AutoCAD Vehicle Tracking for associated construction vehicles.
- A swept path analysis on the existing geometry of the road network has been carried out for the Abnormal Indivisible Loads (AILs) haul route (for the longest AIL, the turbine blade components) using Autodesk AutoCAD Vehicle Tracking.

16.2.4 Assessment Junctions

For the purposes of the TTA, three junctions were identified for detailed assessment. Classified Junction Turning Count (JTC) were undertaken by TRACSIS on Thursday, 1st of October 2024, between 07:00 and 19:00, during a neutral traffic period, in line with standard data collection requirements. The locations of the traffic counts are presented in Figure 16-3 and are outlined below.

- Site 1 - JTC 1 - R704 / L3417 / Three friars cross Staggered Junction
- Site 2 - ATC 1 in the vicinity of site entrance on Local Road L7499
- Site 3 - ATC 2 in the vicinity of site entrances on Local Road L3417
- Site 4 - ATC 3 in the vicinity of site entrance on Local Road L3424
- Site 5 - ATC 4 in the vicinity of site entrance on Local Road L3420 (*note this is no longer a site entrance).

In addition to the JTC, Automatic Traffic Counts (ATCs) and a speed survey were carried out over a continuous two-week period in the vicinity of the proposed site access points.



Legend

- Wind farm study area

Grid Connection Options

- Option 1
- Option 2
- Assessment Junction

Roads

- Motorways
- Regional Roads
- Local Roads

0 500 1,000
Meters

Spatial Reference
Datum: IRENET95
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Rev	Date	Description	By	Chkd.
A	01/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 16.3:
Assessment Junction

Scale @ A3: 1:25,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	December 2025

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Map Ref: 11474-067-Junc-P.App.BO-TOB-A

Draft: A

16.2.5 Haul Routes Classification

For wind farm projects there are two types of haul routes required for the transport of the materials to the site during the construction stage. These haul routes are:

- Construction Haul Route for standards axle loaded vehicles (see Figure 16-5) and
- Construction Haul Route for Abnormal Indivisible Loads (AIL) (see Figure 16-6).

Section 16.5 of this TTA details the expected haul routes and the associated traffic impacts.

16.2.6 Assessment Limitations

No significant limitations were identified during the preparation of this Traffic and Transport Assessment Chapter. All data used in the analysis was collected in accordance with Transport Infrastructure Ireland (TII) guidance and under suitable conditions. The assessment methodology followed recognised standards, including TII Publications PE-PAG-02017 – Project Appraisal Guidelines for National Roads Unit 5.3: Travel Demand Projections, and Traffic and Transport Assessment Guidelines (TII PE-PDV-02045, May 2014), as well as other relevant TII technical documents and design standards.

Traffic surveys were undertaken during representative periods, and all analysis was carried out using established industry-standard tools and parameters. Where professional judgement or assumptions were required, these were applied in line with best practice and validated against available data. Accordingly, the results of this assessment are considered to be robust and provide a reliable basis for evaluating the transport impacts of the proposed development.

16.3 Existing Environment

16.3.1.1Existing Access Arrangements

Access to the proposed wind farm site is currently provided via the local roads L3417, L7499, and L3424, which are generally in good condition. Within the wind farm site, a network of well-maintained forest roads offers comprehensive access throughout the area.

16.3.2 Existing Road Network

Figure 16-1 and Figure 16-2, in Section 16.1.2, illustrate the location of the proposed wind farm in relation to the relevant road network. The remainder of this section describes the existing road network that may be affected by the proposed wind farm project, taking into account AILs, construction material haul routes, and the grid connection haul route.

16.3.2.1Relevant Regional Road Network

M9

The M9 is a standard dual carriageway motorway located approximately 4 km west of the proposed wind farm site. The nearest access point to this motorway is Junction 11 at Mullinavat, which can be reached via the R704. The motorway has a speed limit of 120 km/h and provides a direct link southwards to Waterford and northwards to the M7 at Newbridge, Co. Kildare. The M9 consists of two 3.65 m lanes in each direction, with a hard shoulder of at least 2.5 m. Traffic flows are separated by a central median barrier. Road markings and signage are provided throughout the motorway, while street lighting is installed at junctions but not along the diverging or merging lanes.

N9

The N9 is a short national primary road of approximately 500 metres that links the N25 Waterford City Bypass to the M24 and M9 in County Kilkenny. The speed limit on this road is 100 km/h. This section is a Type 1 dual carriageway with hard shoulders, and the pavement is in good condition, with road markings, signage, and drainage provided throughout. The carriageways are separated by a concrete central median, and street lighting is installed within the nearside grass verge. This short link forms part of the route for delivering Abnormal Indivisible Loads (AILs) from Belview Port to the site.

N25

The N25 is a national primary road situated approximately 5 km east of the site. It will be used for both the Abnormal Indivisible Load (AIL) haul route and regular construction traffic. The section of the road designated for AIL movements is located approximately 10 km to the south, on the outskirts of Waterford. This section is a Type 1 dual carriageway with hard shoulders, operating under a speed limit of 100 km/h. Pavement along this road is in good condition.

N29

The N29 is a national primary road located approximately 10 km southeast of the site, providing a strategic link between Belview Port and the N25 at Luffany Roundabout. This road forms part of the AIL haul route for the proposed development. A speed limit of 100 km/h is currently in operation along the route. The pavement is in good condition, with road markings, signage, and drainage provided throughout. Street lighting is present at key junctions, enhancing safety along the corridor.

N30

The N30 is a national primary road located approximately 15 km northeast of the site, linking to the N25 on the outskirts of New Ross in County Wexford. This road forms part of the haul route for construction traffic and provides a connection from the site north-eastwards to Enniscorthy. The speed limit is 100 km/h, and the pavement is in good condition. The road is equipped with road markings, signage, and drainage throughout, with street lighting provided at key junctions along the route.

16.3.2.2Relevant Local Road Network

R704

The R704 is a regional road located to the north of the site, linking westwards to M9 Junction 11 and eastwards to New Ross. It is a Type 1 single carriageway with a kerbed footway along the southbound lane for approximately 300 m from the eastern roundabout of the M9. Street lighting, road markings, and signage are provided along much of the road. The speed limit is 60 km/h in the vicinity of the M9 and 80 km/h along the remaining sections. A 1.2 km section northeast of the M9 lacks road markings, which resume beyond the site access.

L3424

The L3424 is a local primary road located directly to the south of the site. It has an approximate carriageway width of 5–6 m, bordered by vegetation, hedgerows, and trees on both sides. Road markings and signage are provided near the main junctions.

L3417

The L3417 is a local secondary road that runs through the site. It has an approximate carriageway width of 3-4 m, bordered by vegetation and hedgerows on both sides. Road markings and signage are provided near the main junctions.

L7499

The L7499 is a local secondary road to the northeast of the wind farm site onto which Site Entrance 1 and Site Entrance 5 adjoin. It has 4.6 m wide carriageway.

L3418

The L3814 is a local secondary road to the northeast of the wind farm along which Grid Connection Option One is proposed. It has 4.5 m wide carriageway.

16.3.3 Existing Traffic Volumes in Local Road Network

Classified Junction Turning Counts were undertaken over a 12-hour period at the assessment junctions on Tuesday, 1st of October 2024. Following the analysis of the survey data, it was determined that the AM peak occurs between 07:45 and 08:45, while the PM peak occurs between 17:00 and 18:00.

Table 16-1 summarises the total approach flows recorded.

Table 16-1: Traffic Survey Results Approach Flows

Junction	Peak Periods	Total Approach Traffic Flows
Junction 1: Three Friars Cross / R704	**AM: 07:45-08:45**	176
	PM: 17:00-18:00	178

As shown in Table 16-1 the assessment junctions recorded very low traffic volumes.

16.4 Proposed Access Arrangements

16.4.1 Accesses

The proposed wind farm, comprising four separate land parcels, will be served by five permanent site entrances and three temporary road crossings.

Permanent Entrances:

- Site Entrance 1 (L7499): Access to the main wind farm site.
- Site Entrance 2 (L3417): New entrance to serve Turbines T1 and T10.
- Site Entrance 3 (L3417): Modified entrance to serve Turbine T2.
- Site Entrance 4 (L3424): Modified entrance to serve Turbine T8.
- Site Entrance 5 (L7499): Access to the proposed substation.

Site Entrances 1 and 5 are existing and will be modified, as part of the proposed project. All permanent entrances will be designed in accordance with TII standards (DN-GEO-03060, May 2023), with sightlines provided to the required x- and y-distance standards. Swept path analysis confirms suitability for both AILs such as turbine blades and the maximum legal articulated vehicle (16.5 m). Entrances will remain in place after decommissioning for forestry and agricultural use.

Internal Roads:

Approximately 6.5 km of new access roads and 2.0 km of upgraded existing roads will be constructed. Site access roads will have a running width of approximately five metres (5.5 m including shoulders), with wider sections which vary at road bends and passing bay locations, and on the final approaches to turbine hardstands, as shown on the planning drawings accompanying the application (see Appendix 1-1 of this EIAR).

The proposed new roadways will incorporate passing bays to allow traffic to pass easily while traveling around the site. Roads will incorporate a 2.5% camber and drainage design as detailed in the planning drawings (see Appendix 1-1). Materials will be sourced from on-site borrow pits.

Chapter 2 (Description of the Proposed Project) of this EIAR provides a detailed description of the proposed wind farm site, including access arrangements and crossing points. Figure illustrates the location of the access points and temporary road crossing points.

7°7'18"W
7°6'0"W
7°4'42"W
52°23'20"N
52°22'40"N
52°22'0"N
626650
625300
623950
660000
661500
663000

N

Permanent site entrance (5)
Permanent site entrance (1)
Temporary road crossing (1 & 2)
Permanent site entrance (2)
Permanent site entrance (4)
Temporary road crossing (3)
Permanent site entrance (3)

L-7498
L-7498
L-3420
L-3420
L-3424
L-7522
L-7505
L-3424
L-3416
L-7522

Legend

- Wind farm study area
- Local Roads

Site Entrances

- Construction & Operational Phase
- Construction Phase

0 250 500
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	01/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 16.4:
Site Entrances and
Temporary Crossing Points

Scale @ A3: 1:12,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	December 2025

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Map Ref: 11474-061-L.NET-Access-TOB-A

Draft: A

16.4.2 Crossing Points

The proposed wind farm requires 3 no. temporary crossing points which will be used for the delivery of turbines during the construction and operational phases (as required). These crossings are listed below.

- Crossing 1 (L3417): Provides access via Coillte lands, avoiding a tight bend onto the L7499.
- Crossing 2 (L7499): Connects to the main wind farm site.
- Crossing 3 (L3424): Provides access for turbine deliveries, avoiding a sharp bend at the L3417/L3424 junction.

These crossings are designed to minimise use of the public road network and to remove difficult turning manoeuvres for turbine deliveries.

16.5 Construction Programme and Haul Routes

16.5.1 Construction Programme

The wind farm construction has a construction period of approximately 24 months with construction envisaged to commence in January 2028. Peak construction activity is expected to take place between July and September 2028 (3 months). The phasing and scheduling of the main construction task items for Ballyfasy Wind Farm are detailed in Chapter 2 (Description of Proposed Project). A summary is provided in Table 16-2.

Table 16-2: Construction Programme Summary

PHASE	DESCRIPTION OF WORKS	NOTES / OVERLAPS
Phase 1 – Site Preparation	- Site clearance and ground preparation - Establishment of temporary construction compounds - Installation of fencing	Initial enabling works
Phase 2 – Internal Access Works	-Widening existing access tracks - Construction of new tracks - Preparation of substation base - Opening of borrow pits and access for the deposition areas.	Provides access for later phases
Phase 3 – Hardstanding & Heavy Plant Delivery	- Delivery of materials for hardstanding areas (parking, substation, laydown) - Blinding works- Arrival of cranes	Prepares platforms for major works
Phase 4 – Foundations & Substation Works	- Concrete pours for turbine and substation foundations - Substation construction - Electrical works and cable laying	Overlaps with hardstanding activities

PHASE	DESCRIPTION OF WORKS	NOTES / OVERLAPS
Phase 5 – Turbine Delivery & Erection	- Delivery of turbine components. - Erection using cranes- Backfilling and landscaping works	Runs in parallel with finishing works
Phase 6 – Grid Connection & Commissioning	- Grid connection cabling works. - Final commissioning of substation and turbines.	Occurs at the later stages of construction

As the construction activities progress inward from the site access, various phases will become active and will overlap with each other in different areas within the site at different phases of the construction programme. The grid connection cabling works are envisaged to occur later in the construction programme.

16.5.2 Construction Hours

Construction activities will be carried out during normal daytime working hours (i.e., weekdays 07:00 – 19:00hrs and Saturday 07:00 – 14:00hrs). However, to ensure that optimal use is made of good weather periods or at critical periods within the programme (i.e., concrete pours), it may be necessary on occasion to work outside of these hours. Any such out-of-hours work will be agreed upon in advance with Kilkenny County Council.

Turbine deliveries will take place outside of normal construction hours, primarily during night-time, to take advantage of lower traffic volumes on public roads. These movements will be carried out under traffic management measures and accompanied by a Garda escort.

16.5.3 Construction Haul Routes

Based on the nature of the project, various construction materials will be delivered to the site over the construction programme. The materials will be delivered by standard heavy vehicles (HVs) including rigid lorries and articulated lorries. Other vehicles that will attend the site include standard construction machinery, i.e., crane, excavator, stone crusher, concrete trucks, tipper trucks.

The construction traffic with the highest daily impact (i.e., peak) is the combined construction activities from July to September in 2028, as outlined in the Construction Programme (see Section 16.5.1). This traffic is associated with the importation of the aggregate for the site compound, internal haul routes, turbine hardstanding areas and the steel and blinding for the turbine foundations. The second greatest impact arises from the concrete pours for the turbine foundations, as each foundation requires a continuous single pour completed within one day.

For the purpose of this assessment, it has been assumed that the construction material will be delivered from the potential quarries outlined in Table 16-3.

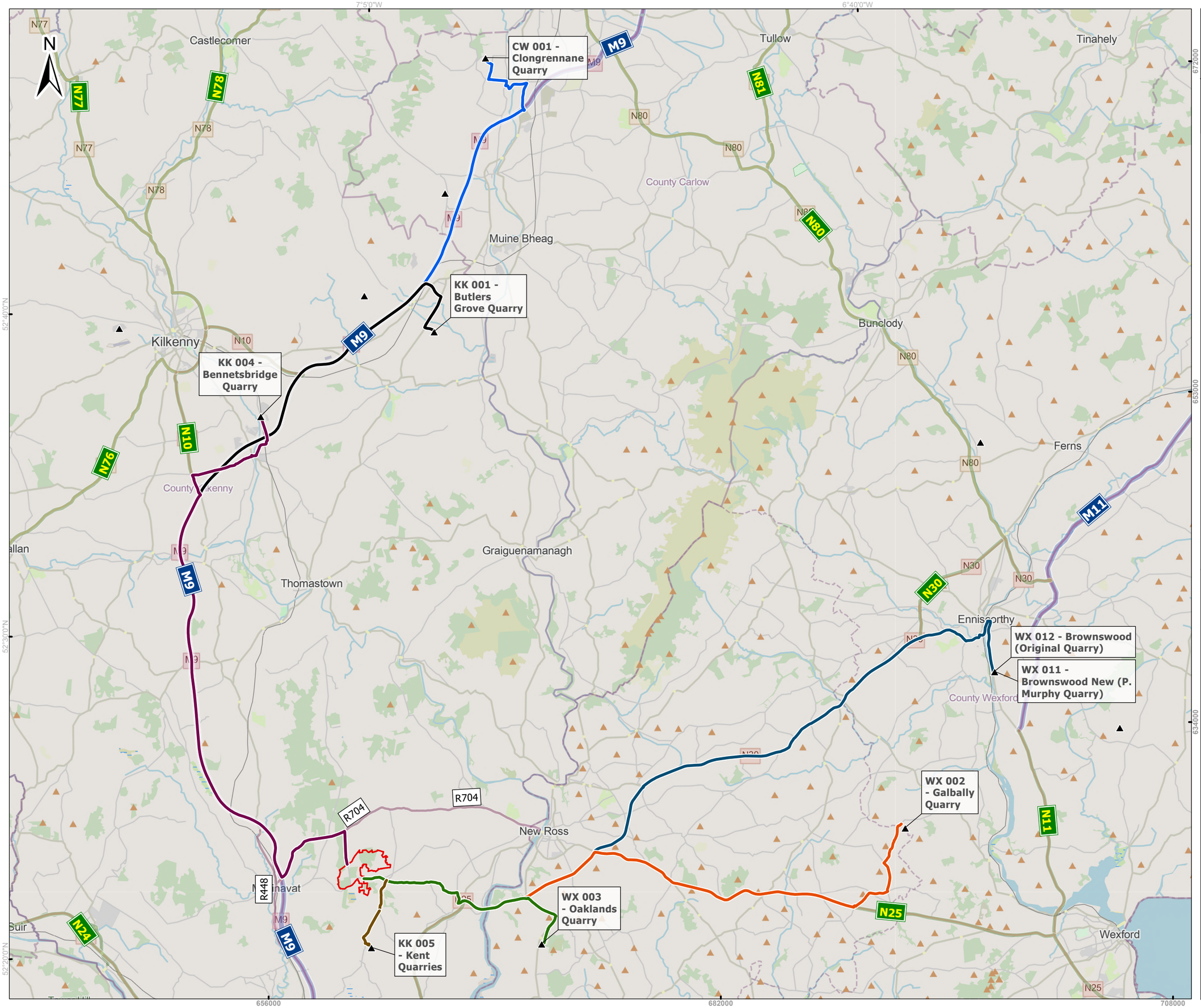
Table 16-3: Quarries and Haul Routes

Quarry	Location	Access Route
Clongrennane Quarry	Clogrennane, Co. Carlow	M9-R704-L3420
Butlers Grove Quarry	Gowran, Co. Kilkenny	
Bennettsbridge Quarry	Sheastown, Co. Kilkenny	
Brownswood Quarry	Brownswood, Enniscorthy, Co. Wexford	R772-R744-N30-N25-R723-L3024
Galbally Quarry	Adamstown, Co. Wexford	N25-R723-L3024
Oakland Quarry	Ballykelly, New Ross, Co. Wexford	R733-N25-R723-L3024

Figure 16-5 presents the anticipated Haul Routes, as outlined in preceding Table 16-3.

Other materials required onsite will include met mast, building materials, fencing, drainage, water treatment, substation materials, welfare facilities etc., are assumed to be sourced locally and arrive to site via the M9 and the R704 to the site accesses on L3417 and L7499. Construction delivery routes are presented in Figure 16-5. The source of the quarry material will be determined on appointment of a contractor.

The traffic volumes, both peak and average on the construction haul route are discussed in Section 16.6.



Legend

- Wind farm study area

Road Network

- Motorways
- National Roads
- Regional Roads
- Local Roads
- Quarries

Routes

- CW001
- KK01
- KK04
- WX012-WX011
- WX02
- WX03
- KK005

0 5 10 Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	01/12/2025	First issue	S.P	A.M

Client: Manogate Ltd.

Project: Ballyfasy Wind Farm

Title: Figure 16.5: Construction Haul routes

Scale @ A3: 1:200,000

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Draft: A

16.5.4 Abnormal Indivisible Load (AIL) Haul Route

16.5.4.1 Route Assessment Considerations

For Ballyfasy Wind Farm the AIL delivery haul route has been assessed based on several considerations including but not limited to the following:

- Wind Turbine Specification.
- Ports suitable to receive the turbine components.
- Desk study and site visit of alternative AIL haul routes undertaken by Digital Land Surveyors Limited in September 2024.
- Swept path analysis of pinch points / junctions on the AIL Haul Route.

The alternative routes are discussed in Chapter 3 (Consideration of Reasonable Alternatives).

16.5.4.2 Belview Port to Ballyfasy Wind Farm Delivery Route

Belview Port is the anticipated port for the import of the AILs. The route selected for the AILs utilised the national road network as much as feasible from the port to the site. The AIL route on the national road network is a Dual Carriageway and Type 1 Single Carriageway, with wide carriageway widths and hard shoulders.

The route commences at the Port of Waterford (Belview Port) from the harbour along Belview Port Road until the National Road N29, passing through Slieverue Roundabout and continuing northeast until Luffany Roundabout.

The route continues to the west on the National Road N25, national primary route known as the N25 Waterford Bypass.

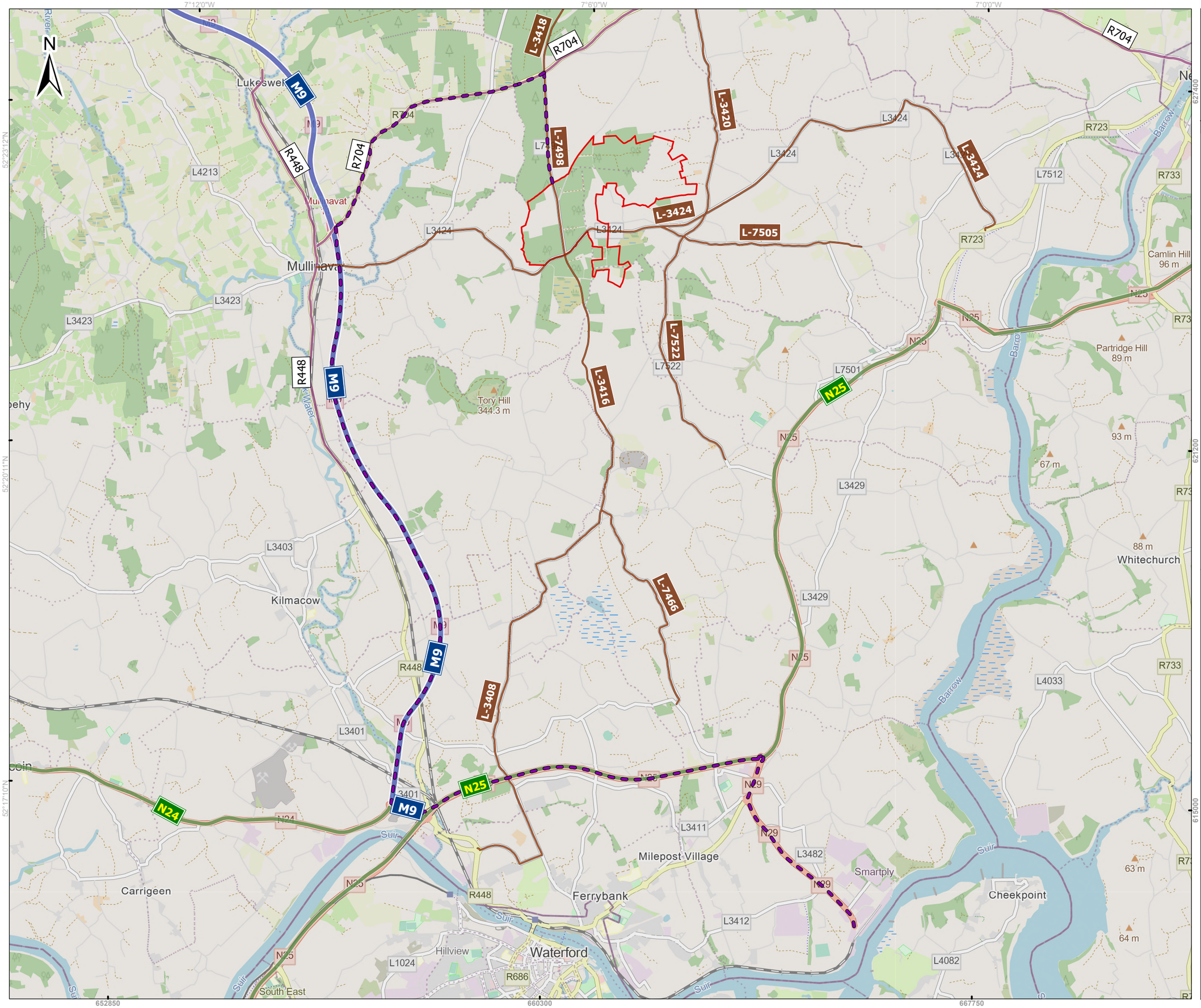
At the rotary grade separated junction W1 there are two potential routes:

- Continuing south on the N25 mainline crossing into Co. Waterford to the Carrick Road Roundabout (N25/ R680). At this roundabout junction, the AIL will perform a U-turns back in a northly direction, on the N25 northeast bound lane to the W1 junction and onto the N9 Quarry Link Road.
- Alternatively, exiting off the N25 Waterford Bypass at the rotary grade separated junction (i.e. Grannagh Junction Roundabout) onto the N9 Quarry Link Road.

At the Quarry Roundabout, M9 Junction 12, the route continues north on the M9 to Exit 11, at Mullinavat.

The route continues on the regional road R704 up to the R704/L3417 Staggered Junction before turning southwards on the L3417 local road to Site Entrances 2 and 3 and onto the L7499 for Site Entrances 1 and 5. The final part of the AIL haul route is via the local road L3417 through Site Entrance 3 onto the L3424 along to Site Entrance 4.

The AIL delivery route is shown in Figure 16-6 and the swept path analysis is included in planning drawings Appendix 1-1. Traffic generation associated with the AIL haul route during the construction phase is outlined in Table 16-4. The AIL delivery route is presented in Figure 16-6.



Legend

- Wind farm study area
- Turbine Delivery Route

Road Network

- Motorways
- National Roads
- Regional Roads
- Local Roads

0 1.5 3
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	01/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 16.6:
AIL Delivery Routes /
Turbine Delivery Route (TDR)

Scale @ A3: 1:60,000

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Map Ref: 11474-064-TDR-AIL-TOB-A

Draft: A

Table 16-4: Traffic Generation during the Construction Phase – AIL

AIL Elements	No. of Turbines	Parts	Components per Element	Total Components	Trips with 3 AIL per Convoy	Trips with 5 AIL per Convoy
Nacelle	10	1	10	80	27	17
Blade		3	30			
Tower		4	40			
Transformer				1		

Note:

(1) Traffic associated with the delivery of AILs has not been included in the traffic impact percentage increase, as these deliveries will take place at night, when traffic volumes are low, and will be managed under traffic control measures with Garda escort.

(2) The AILs will be transported in convoys of 3 to 5 no. components per convoy.

16.6 Proposed Wind Farm Trip Generation

16.6.1 Construction Trip Generation-HV

The traffic generations are estimated based on the materials / deliveries / disposals required at the site and attributing these deliveries to the associated construction activity according to the construction programme. The following assumptions have been made in the estimation:

- All construction deliveries (excluding concrete pours) have been averaged over the Monday-Friday and half day Saturday working week.
- Concrete pours for each foundation will occur on 1 day as required by the construction methodology.
- The temporary construction compounds will be retained onsite after the construction phase.

A total of 17 HV one-way (34 trips total) have been estimated at peak construction time (excluding the concrete pour volumes) and an average of 11 HV during off-peak. The peak movements are anticipated to occur from July to September 2028 (i.e., including peak staff trips over the 3 months), when the site compounds, site roads, turbine hardstands, and turbine foundations are occurring simultaneously. Table 16-5 show the number of construction HVs assigned to their corresponding activity and duration in the construction programme.

16.6.1.1CONCRETE POUR VOLUMES

The construction methodology for the concrete turbine foundations occurs over 10 days requiring the foundations to be poured on a single day, resulting in 142 HVs arriving onsite per day. Considering the working hours, it is expected an average of 12 HVs arriving on site per hour during concrete pours.

To mitigate the impact of the construction traffic on the road network and surrounding environment, during the days for the concrete pours all other construction HVs will be limited to essential deliveries and programmed to occur on other days of the construction programme.

Table 16-5: Construction Programme 1-way HV Construction Volumes per Day (Excluding Turbine Foundation Concrete Pours)

	2028												2029											
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Site Health and Safety	2																							
Site Compounds	2	2	2				2	2	2															
Site Roads	2	2	2	2	2	2	2	2	2	2	2	2	2	2										
Turbine Hardstands					4	4	4	4	4	4	4	4	4	4	4	4	4	4						
Turbine Foundations						9	9	9	9	9	9	9	9	9	9	9	9							
Substation Construction & Electrical Works										2	2	2	2	2	2	2	2	2	2	2	2			
Backfilling & Landscaping																								
Turbine Delivery and Erection																								
Substation Commissioning																								
Turbine Commissioning																								
Total HGV 1-way/day	6	4	4	2	6	15	**17**	**17**	**17**	17	17	17	17	17	15	15	15	6	2	2	2	0	0	0
Total HGV 2-way/day	12	8	8	4	12	30	**34**	**34**	**34**	34	34	34	34	34	30	30	30	12	4	4	4	0	0	0
Average HGV 1-way	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Average HGV 2-way	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
LGV 1-way/day	80	80	80	80	80	80	**135**	**135**	**135**	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
LGV 2-way/day	160	160	160	160	160	160	**270**	**270**	**270**	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160

Notes:

(1) The turbine deliveries for Ballyfasy Wind Farm will occur during night-time with traffic management and garda escort. As this traffic will be isolated from other daily traffic movements, it has not been added into the daily traffic volumes in this table.
(2) This construction traffic table is a simplified traffic volume; a more detailed delivery schedule will be developed by the appointed contractor.
(3) The above quantities assume that some materials are obtained from the borrow pits onsite, decreasing the amount of HV required from offsite.

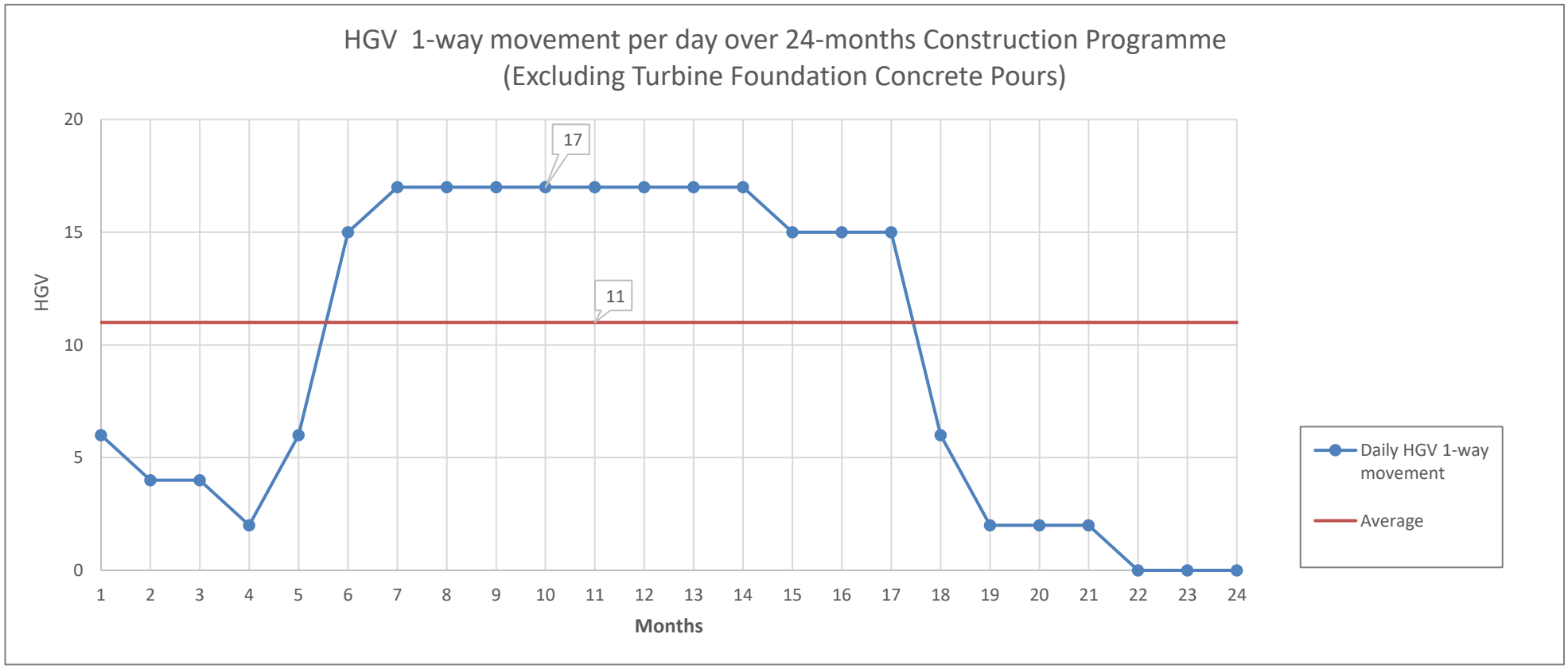


Figure 16-7: Graphical representation of the Construction Traffic over Construction Programme, representing 1-way movement per Day - Excluding Concrete Pour HV

16.6.2 Construction Trip Generation-Staff (LV)

At the peak construction, approximately 135 staff are estimated, during off-peak activities 80 people are estimated on site. For the purpose of this assessment, all staff members are assumed to arrive at the site by LVs with an occupancy of 1 person per vehicle, as such a total of 270 trips (two-way) can be expected during peak construction and 160 trips (two-way) daily during off-peak.

A reduction in construction staff on site is expected when the construction activities are more technical and less labour intensive.

The construction traffic associated with the construction of the wind farm on the construction haul route is assessed under peak traffic generation.

16.6.3 Operational Traffic

Once the proposed project is operational, most of the traffic generated will be formed by small vehicles for maintenance purposes. When maintenance is required, it is expected that the operational phase will generate a maximum of 6 no. LV movements per day (i.e., 3 arrivals and 3 departures).

In the unlikely event that a turbine requires a large replacement part, such as a blade or tower section, this will need to be agreed upon with Kilkenny County Council and involve the relevant consents obtained.

16.6.4 Decommissioning Traffic

During the decommissioning phase, turbine components will be separated, broken down, and removed off-site. These components will be transported by HVs. Turbine foundations will be kept on site, the upper sections of the foundations projecting above ground will be removed, and the remainder of the foundations will be covered by soils typical of the surrounding environment and then re-seeded or left to re-vegetate according to ecological requirements.

The on-site substation and 110 kV grid connection will not be removed at the end of the useful life of the proposed project as it will form part of the national electricity network. Therefore, the substation will be retained as a permanent structure and will not be decommissioned.

Considering that turbine foundation, hardstanding areas, and access tracks will be left in situ, and the substation and grid connection will not be decommissioned, the traffic volume generated during decommissioning phase will be lower than during the construction phase and decommissioning phase effect will be slight negative.

16.7 Traffic Impact Assessment

16.7.1 Assessment Scope

The junction below has been considered in the assessment presented in this section:

- Junction 1 - JTC 1 - R704 / L3417 / Three friars cross Staggered Junction

See Figure 16-3 for the location of this junction in relation to the proposed wind farm.

As outlined in Section 16.1.5, consultation and scoping discussions were undertaken with Kilkenny County Council to identify the junctions to be included in the Traffic and Transport Assessment. Following this scoping exercise, the proposed haul route was subsequently revised. As a result of these changes, Site 2 – R704/L3420 T-Junction and Site 3 –L3420/L3424 Staggered Junction are no longer located along the finalised haul route and have therefore been scoped out of the assessment. In accordance with the updated haul route and in agreement with the Local Authority, only Site 1 – R704/L3417/Three Friars Cross Staggered Junction has been retained and assessed in detail within this chapter.

16.7.2 Assessment Years and Time Periods

Given that the operational traffic associated with the proposed wind farm is expected to be negligible, it was deemed appropriate to focus the assessment solely on the peak construction phase, when traffic impacts will be at their greatest. Consequently, the operational assessment years typically required under *TII's Traffic and Transport Assessment Guidelines*—namely the Year of Opening (YoO), YoO +5, and YoO +15—have not been included in this assessment, as no material change in traffic conditions is anticipated during the operational period.

Considering the above, the following assessment years have been established, based on the Project Programme:

- Construction Years: 2028-2029.
- Peak Construction Period: 2028 (3 months only) (*Assessment Year)*
- Operational Year: 2030 – 2065.
- Decommissioning: Year 2066.

The assessment will concentrate on the critical periods of the local road network, as identified through traffic surveys, to evaluate the traffic impacts of the proposed development (see Table 16-1 for relevant peak periods at Junction 1).

16.7.3 Assessment Scenarios

The following scenarios have been developed in assessing the proposed project's traffic impacts:

- **Do-Nothing Scenario**: This represents the baseline traffic conditions on the local road network in the absence of the proposed development. It reflects the expected traffic flows based on current patterns, as well as forecasted traffic flows, but excludes any additional traffic generated by the project. Establishing the do-nothing scenario provides a reference point against which the potential impacts of the proposed development can be assessed. In this assessment, the baseline traffic flows have been determined from the traffic surveys described in Section 16.3.3 and forecasted traffic discussed in section 16.7.6 of this chapter.

- **Do-Something Scenario**: The with-development or 'do-something' scenario represents traffic conditions at peak construction time, i.e., do-nothing plus additional traffic generated by the development at peak construction stage.

16.7.4 Traffic Assessment Criteria

The impacts of the proposed project have been assessed as traffic percentage (%) increase at assessment junctions with the proposed wind farm in place.

16.7.5 Committed Development Traffic

A review of the planning applications submitted in the area in proximity to the site (as detailed in Chapter 1 Introduction) has been undertaken to identify committed developments (developments with planning permission, but not yet delivered).

No planning applications of significant scale/proximity have been identified in the local area at the time of this assessment.

16.7.6 Forecast Background Traffic Flows

Existing traffic flows on the surrounding road network, as determined from survey data, have been adjusted using appropriate growth factors to estimate traffic volumes on the local network during the peak construction period, i.e., 2028. For this assessment, growth factors were determined from the *Transport Infrastructure Ireland (TII) Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, October 2021 (PE-PAG-02017).* Information within these guidelines is provided for Kilkenny Area from 2016-2030 for low, central, and high sensitivity growth scenarios. This information is provided for light vehicles (LVs) and heavy vehicles (HVs) and was used to determine the future year do-nothing traffic flows. *TII Central Sensitivity Growth Rates* have been assumed to forecast background traffic growth on the surrounding road network. which follows.

Table 16-6: Construction TII Growth Factors (Extract from PE-PAG-02017, October 2021)

Years	Growth Factor for LVs	Growth Factor for HVs
Annual growth factor	**1.0124 (2016-2030)**	**1.0268 (2016-2030)**
2024 to 2028 (4 years)	1.0505	1.1116

16.7.7 Do-Nothing Traffic Flows

Table 16-7 presents the estimated 'do-nothing' traffic volumes at the relevant junction for each assessment period.

Table 16-7: Do-Nothing Traffic Flows

Junction	Peak Periods	Baseline Approach Flows (2024)	Background Flows at Peak Construction (2028)
Junction 1: Three Friars Cross / R704	AM: 07:45-08:45	176	183
	PM: 17:00-18:00	178	186

As shown above, the assessment junctions recorded very low traffic volumes; accordingly, it can be assumed that there is ample capacity available.

16.7.8 Summary Peak Construction Trip Generation

The methodology used to determine the peak construction trip generation for the project is presented in Section 16.6 of this chapter.

As outlined in Section 16.4, there are two types of haul traffic in this EIAR, namely 'the Construction Haul Trips and the 'AIL Haul Trips'. For the junction assessment, only the Construction Haul Trips are considered, as the AIL will be delivered at night-time under Garda escort.

On the Construction Haul Trips, the peak and average traffic volumes do not include the concrete pour for the turbine foundations, as it is assumed that this activity occurs onsite while all other activities requiring deliveries are restricted.

As noted in Section 16.5.2, construction activities are expected to take place during standard daytime working hours (weekdays 07:00–19:00 and Saturdays 07:00–14:00). Consequently, the majority of traffic generated by the project is likely to occur outside the network peak hours. For the purposes of this assessment and using professional judgement, a worst-case scenario has been assumed, in which 20% of the traffic access and leave the site during peak periods. Table 16-18, summarises the anticipated daily and assumed peak traffic generated by the development.

Table 16-8: Summary Peak Construction Daily Trip Generation

	IN		OUT		TWO-WAYS
	LV	HV	LV	HV	
Daily Peak Construction Traffic	135	17	135	17	**304**
Assumed Traffic During Peak Periods	27	3	27	3	**61**
Daily Off-Peak Construction Traffic	80	11	80	11	**182**
Assumed Traffic During Off-Peak Periods	5	1	5	1	**12**

16.7.9 Trip Generation Distribution

For the purpose of this assessment, it has been assumed that 100% of the proposed wind farm peak construction traffic will transit through the assessment junction, accessing the site via the R704. HV traffic are assumed to both arrive and depart within the same hour. Staff trips are one-way in each peak period, i.e., arrivals in the AM peak, departures in the PM peak, so they are not counted twice in the assessment.

16.7.10 Do-Something Traffic Flows and Traffic Percentage Increase

Based on the assumptions discussed in preceding sections, the do-Something traffic has been calculated for Peak and Off-Peak construction periods, presented in Table 16-9.

Table 16-9: Do-Something Traffic Flows

	Peak Periods	Baseline Approach Flows (2024)	Do-Nothing Traffic Flows (2028)	Peak Construction	Off-Peak Construction
				Do-Something Traffic Flows (2028)	Do-Something Traffic Flows (2028)
Junction 1 Three Friars Cross / R704	AM: 07:45-08:45	174	183	216	190
	PM: 17:00-18:00	178	186	219	193

16.8 POTENTIAL EFFECTS

16.8.1 Do Nothing Effects

If the development did not progress, the existing traffic and transportation environment would remain largely unchanged, with increases in traffic volumes on the road network gradually over time due to annual traffic growth rates as per the *TII PE-PAG-02017 (October 2021).*

Forestry operations and agricultural activity will continue, and construction traffic associated with the maintenance of the existing conifer plantation within the proposed wind farm site will remain at current levels.

16.8.2 Construction Phase

This section outlines the potential impact of the construction stage on the existing road infrastructure. The construction traffic (i.e., additional heavy vehicles, light vehicles, and abnormal loads) has the potential to impact on the existing road infrastructure as a result of access to the site, drainage, existing road infrastructure, and traffic flow capacities on the haul routes (typical construction vehicles and abnormal loads), road pavement condition, and during cable route works (i.e., trenching).

The Construction Haul Route and the AIL Haul Route have been assessed separately as the character of the impacts are different.

16.8.2.1 Construction Haul Route

This section assesses the potential effects of standard construction related traffic on the road network. The construction traffic is assessed on both:

- the short-term peak construction traffic volumes over the 3-month period when the combined construction activities result in the peak traffic volumes on the road network and

- the long-term average construction traffic volumes over the remaining months of the construction programme.

Concrete pours will also have a high volume of traffic over the 10 days of the main turbine foundation concrete pours. However, the envisaged traffic volumes for this activity will be lower than the estimated peak traffic for the combined activities. In addition, concrete pours will happen for 10 days during the 2-year construction programme. The works at other areas within the proposed wind farm site will continue during these concrete pours. But, in order to mitigate concrete pour effects only essential deliveries will be scheduled to occur on the same day as the concrete pours.

The potential effects of the traffic generation and distributions associated with the construction phase of the wind farm for both the peak and average traffic volumes on the assessment junction were analysed according to assessment criteria outlined in Section 16.7.4.

Table 16-10: Construction Haul Route Impact – Potential Impact

	Peak Periods	Peak Construction		Off-Peak Construction	
		Additional Traffic	Traffic Percentage (%) Increase	Additional Traffic	Traffic Percentage (%) Increase
Junction 1 Three Friars Cross / R704	**AM: 07:45-08:45**	+33	18%	+7	4%
	PM: 17:00-18:00	+33	18%	+7	4%

As presented in Table 16-10, with the assumption of 20% of construction traffic accessing the site during the peak hours, a maximum increase of 18% has been estimated. Although the assessment indicates a high percentage increase in traffic, this outcome is primarily a reflection of the very low background traffic volumes recorded during the survey. Given that existing traffic levels are minimal, it can reasonably be assumed that the junctions have sufficient capacity to accommodate the additional traffic associated with the proposed wind farm without adverse impact on network performance. On this basis, further detailed junction capacity analysis is not considered necessary.

This impact of peak traffic is of short duration, over 3 months, with a ***temporary moderate negative*** effect on the road network.

The average construction traffic potential impact is lower, with a maximum traffic volume increase of 4%. The impact of these movements is longer over the remaining 21 months of the construction programme. The average traffic potential impact will be ***slight negative*** and of ***short-term*** effect.

16.8.2.2 Construction Traffic

The potential effects associated with the construction phase, according to EPA's guidelines, are presented Table 16-11.

Table 16-11: Construction Haul Route- EAP Criteria Effect

Extent	Scenario	Significance	Duration
Assessment Junctions as per Section 16.7.1	Peak Traffic	Moderate Negative	Temporary (3 months)
	Average Traffic	Slight Negative	Short-term (21 months)

16.8.2.3 AIL Haul Route Impact

This section is assessed on the potential effects that the haul of the AILs will have on the existing road network infrastructure. The focus of this assessment is on the longest turbine component, the turbine blade. Swept path analysis has been undertaken, and the details are included in planning drawings Appendix 1-1. This section is not assessed based on traffic volumes as the AILs will be transported to site during low volume traffic flows on the network at off-peak time and under Garda escort and traffic management.

The impact of the AIL deliveries on the existing road network had been assessed based on the longest component to be delivered to site, the turbine blade. The route had been assessed from Belview Port to the proposed Ballyfasy Wind Farm site accesses. The swept path analysis typically indicates locations where temporary works are required to accommodate the component deliveries. These works will result in low volumes of traffic similar to maintenance works by the Local Authority and will be undertaken for a short period of time. Table 16-12 presents the temporary works required to accommodate the AIL haul route. Minor advanced works have been identified along the route including temporary hardstanding areas, temporary removal or relocation of existing signage, and pruning of vegetation.

Table 16-12: Swept Path Analysis- Drawings and Actions (*P: Pinch Point as per TDR Report)

Dwg No.	Title	Demount Signage	Public Lighting /Electric pole Removal	Hardstanding area	Prune Vegetation	Oversail
I2456	N29/R711 roundabout	P2*	-	P2	-	-
I2456	N29/N25 roundabout	P3	P3	P3	-	P3
I2456	N25/N9	P5	P5		-	P5
I2456	N24/N9	P6	P6	P6	-	P6
I2456	M9 EXIT 11	P7	-	-	-	P6
I2456	M9 EXIT 11	P8	-	-	-	P8
I2456	R704 LEFT BEND	-	P9	-	-	P9

Dwg No.	Title	Demount Signage	Public Lighting /Electric pole Removal	Hardstanding area	Prune Vegetation	Oversail
I2456	R704 RIGHT BEND	-	P10	-	P10	P10
I2456	R704 RIGHT BEND	-	P11	-	P11	P11
I2456	R704 LEFT BEND	-	P12	-	P12	P12
I2456	R704 RIGHT BEND	-	-	-	P13	P13
I2456	R704 The Tree Friars Cross	P14	-	-	P14	P14
I2456	SITE ENTRANCE	-	-	P15	-	

At Construction Stage, the appointed Contractor and Haulage Company will be responsible for the temporary traffic management, agreements, and licensing with the Local Authorities and an Garda Síochána. The hardstanding areas are to be temporary in nature and the land reinstated on completion of the works. The hardstanding areas will be laid in advance of the delivery of the Abnormal Indivisible Loads (AILs) to site and reinstated immediately after delivery of the final AIL.

The construction of the AIL delivery route works areas will have a likely ***temporary, moderate, negative*** effect at each pinch point requiring hardstanding. The negative effect is due to delays caused to traffic due to the works and the associated traffic management. The hardstanding works at all the pinch points is envisaged to take less than 2 weeks in total, with works at each pinch point varying from 1 day to 4 days. The removal of the hardstanding will be similar in nature and duration to the construction with a similar potential impact. On completion of the reinstatement of the hardstanding at all pinch points, it will result in a reversible impact.

During the haul of the AILs limited works will be required at the hardstanding areas (i.e., laying mats, ramps at kerbs / islands, removal of temporary bolt down kerbs etc.) immediately in advance of the AIL movement through the pinch points. These works will be undertaken under traffic management and have a brief moderate negative effect lasting less than a few hours.

At locations requiring removal of traffic signs, these will be made demountable with retention sockets instead of fixed posts in foundation. This will facilitate the temporary removal of the sign face and post immediately in advance of the AIL movement through the pinch point location and erecting after the AIL convoy has passed the pinch point. Reducing the duration of impact at these locations and allowing for them to be readily open to background traffic without the need for significant temporary traffic management.

The making of street furniture demountable will be undertaken in conjunction with the hardstanding works and under the same traffic management. The potential impact of this work will be a moderate negative brief / temporary effect. The temporary works (i.e., removing signs and posts) will be required immediately in advance of the AIL passing the pinch points. These works will be undertaken under traffic management and have a brief moderate negative effect lasting less than a few hours. Once the AIL convoy passes the pinch point, under this same traffic management the signs and posts will be reinstated within the retention sockets and the road open to traffic. The impact will be reversible between AIL delivery and on completion of AIL delivery.

The hedgerow and minor vegetation cutting, required as a result of the AIL over-sail, will be carried out using a single tractor with minimal traffic management requirements. These works will be undertaken concurrently with offsite preparatory activities, ahead of the AIL deliveries.

16.8.2.3.1 Description of Effects- AIL Haul Route

The potential effects associated with AIL haul route, according to the EPA's guidelines, are presented below.

Table 16-13: AIL Haul Route – EPA Criteria Effect

Extent	Scenario	Significance	Duration
AIL Haul Route	Advanced Works	**Moderate Negative**	Temporary
	AIL Convoy	**Moderate Negative**	Brief/Temporary

The advanced works to accommodate the haulage of the AILs will be imperceptible due to the low volume of permanent works required on the route. The vegetation pruning, and signage removal/relocation may be undertaken as maintenance works with low volumes of traffic associated.

For the transport of the AILs by convoy, the volume per convoy is low, however, the impact on the existing road environment will be moderate. To allow the vehicles to travel on some of the roads of narrower width, temporary traffic management operations will be required.

16.8.2.4 Grid Connection Route Impact

Two options for the grid connection are considered to connect the proposed project to the national grid.

Grid Connection Option (GCO) One proposes to install a 110 kV underground cable from the proposed onsite substation to the consented Castlebanny Wind Farm 110 kV substation 12 km

to the north. It utilises a mix of third-party lands and public roads. This route requires a section of the grid cable to be laid within part of the L7499, L3417 and L3418 local roads.

GCO Two will connect the onsite substation with the existing 110 kV Great Island-Kilkenny overhead line which crosses 2.3 km to the east of the proposed wind farm site. This option is within the proposed wind farm site and does not go onto public roads.

A single grid connection will be constructed for the proposed project and will become a permanent component of the Irish national grid network.

The progress of the grid connection will ensure no more than 250 m of trench open at any one time. The cabling works will require a temporary lane/road closure of local roads and a temporary lane closure of regional road R704 for trenched crossings. These works will be agreed in advanced with Kilkenny County Council.

The trench shall be suitably backfilled at the end of the working day, with the provision of suitable temporary surfacing material, as may be requested by the local authority. Such closures shall only be undertaken following consultation with the local authority and following any requests for notifications by the local authority. A road opening licence shall also be applied by the principal contractor to the local authority.

Grid connection works will result in disruption for local road users. However, diversions will be provided, local access maintained, and activities will be carried out at off-peak times. The Contractor shall carry out such temporary road closures outside of peak traffic flow times, and only for the duration of the working days. At the time of this construction work and in advance of the required Road Closure, the appointed Contractor shall consult and comply with the Roads Authority, An Garda Síochána and other Emergency services to agree a suitable diversion route prior to implementing a Road Closure.

16.8.2.4.1 Description of Effects

The potential effects associated with GCO One according to the EPA's guidelines, are presented below.

Table 16-14: Grid Connection Route- EPA Criteria Effect

Extent	Scenario	Significance	Duration
Grid Connection Option One	Advanced Works	**Moderate Negative**	Temporary
	Operational Phase	**Imperceptible**	Long-term (35 years)

The grid connection advanced works will have a moderate negative impact due to the temporary lane and road closure for cabling works. Once advanced works are finished, the operational effects will be imperceptible over the 35 years of operation.

GCO Two is within the proposed wind farm site and does not go onto public roads, therefore the effects will be Imperceptible.

16.8.3 Operational Phase

The operational phase of the project is envisaged to last for 35 years. During this time, the development will generate small volumes of traffic for operational and maintenance purposes.

16.8.3.1 Site Entrance and Internal Access Tracks

For the operational phase, the site will be accessed on the L3424, L3417 and L7499. The works to construct this access will be completed at the start of the construction phase and, with the exception of regular maintenance for hedgerows for the visibility splays, no works are envisaged to be required at the site access.

The maintenance of the visibility splays will have a positive effect on the safety aspect of the access. The internal access tracks may be in use for additional purposes to the operation of the wind farm (e.g., for forest/agricultural and recreational access). Both the forestry and agricultural activities are existing operations and have a neutral effect.

16.8.3.2Operational Traffic Impact

As previously mentioned, the construction activities for the proposed project have the potential to generate the largest traffic volumes in comparison to the operational and decommissioning phases of the wind farm development. The construction traffic assessment indicates that there is suitable capacity during construction activities.

It is expected that the operational phase will generate a maximum of 6 no. LV movements per day (i.e., 3 arrivals and 3 departures). The wind farm operational traffic volumes were assessed against the *TII TTA Guidelines thresholds.* This assessment indicates that the operational phase of the development will be sub-threshold based on the following:

- Development traffic (i.e., 6 no. LV movements) will not exceed 10% of turning movements at junction with and on National Roads; and
- Less than 100 trips in/out combined in the peak hours for the proposed project will be generated.

16.8.3.2.1 Description of Effects-Operational Phase

The potential effects associated with the operational phase, according to the EPA's guidelines, are presented in Table 16-15.

Table 16-15: Operational Phase – EPA Criteria Effect

Extent	Scenario	Significance	Duration
L3424, L3417 and L7499	Site Entrance and Internal Access - Maintenance Traffic	**Imperceptible**	Long-term (35 years)
L3424, L3417 and L7499	Site Entrance and Internal Access - Safety	**Significant Positive**	Long-term (35 years)
L3424, L3417 and L7499	Operational Traffic	**Imperceptible**	Long-term (35 years)

As these works are routine maintenance, the operational traffic volumes will result in a low increase in traffic with imperceptible consequence on the road network over the 35 years of operation.

16.8.4 Decommissioning Phase

The operational life of the wind farm is 35 years, it is proposed that turbine foundations and hardstanding areas will be left in place and covered with soil, it is proposed to leave the access tracks in situ at the decommissioning phase (i.e., for forestry, agricultural use).

When the site is decommissioned, cranes will disassemble each turbine tower and all equipment. All infrastructure including turbine components will be separated and removed off-site. These components will be transported by HVs.

The on-site substation and 110 kV grid connection will not be removed at the end of the useful life of the proposed project as it will form part of the national electricity network. Therefore, the substation will be retained as a permanent structure and will not be decommissioned.

Due to the potential changes to baseline traffic conditions over the operational time period of the wind farm, detailed assessment of the decommissioning phase of the development is not included as part of this assessment. It is proposed that in advance of the decommissioning process a Traffic Management Plan will be prepared to ensure that traffic impacts are minimised during this phase.

16.8.4.1Decommissioning Traffic Impact

It is estimated that the volume of traffic associated with the decommissioning phase will be significantly less than the construction phase as the turbine foundation, internal access roads and substation will be retained. The large volume of stone aggregate and concrete for the concrete pours brought to site during the construction phase will not require removal. The overall traffic associated with the decommissioning phase will be significantly lower than during the construction phase, and the decommissioning phase is likely to have a ***slight***, ***adverse, temporary*** effect.

On completion of the decommissioning works, the site will still facilitate agricultural and commercial forestry use. These uses will have a not significant impact on the road network as they are existing operations occurring in the absence of the wind farm.

16.8.4.1.1 Description of Effects- Decommissioning Phase

The potential effects associated with the worst-case effects of the decommissioning phase will be similar to the construction phase effect. On this basis, the effect is outlined in Table 16-16.

Table 16-16: Decommission Traffic- EPA Criteria Effect

Extent	Scenario	Significance	Duration
R704, L3417, and L3420	Decommissioning Phase	**Slight Negative**	Temporary

The above effects should be noted as the worst-case scenario, as a number of deliveries for the construction of infrastructure will not be required at decommissioning.

16.9 Mitigation Measures

The assessment of potential impacts demonstrates that the proposed project will not have a significant effect. However, to reduce the impact on the environment, the following mitigation measures will be undertaken.

16.9.1 Embedded Mitigation

The potential effects of traffic within the proposed wind farm site and on the local road network were considered in the design of the project and several embedded mitigations included in the design of the project. These measures included:

- The use of existing access roads and trackways on site for the proposed wind farm site access road.
- Passing bays have been included in the site design to enable vehicles to pass each other.
- Using existing site entrances where possible to gain site access.
- Site Entrance 5 will be used during the construction phase for the onsite substation works, therefore keeping the substation associated traffic separate from the wind farm construction traffic.
- Temporary road crossings have been included in the design for turbine delivery using third party lands to remove potential accommodation works required to tight bends on the public road network or difficult manoeuvres by drivers.

16.9.2 Construction Phase

To mitigate the impact of the construction traffic, the wind farm will utilise all available resources within the existing site to reduce the requirement for importation of materials to site. Excavation of stone material from the borrow pits within the wind farm site to provide construction material will reduce the HV volumes.

The greatest traffic volume impact is associated with the haulage of the materials for the combined construction activities from July to September 2028. Key deliveries during this period are aggregate and stone which may be sourced from the borrow pits onsite. The internal access tracks have been designed to utilise existing forestry access tracks where feasible, reducing the volume of materials required for importation to the site.

The second greatest volume of traffic impact is associated with the concrete pours for the turbine foundations. The works at other areas within the main site will continue during these concrete pours, but only essential deliveries will be scheduled to occur on the same day as the concrete pours, and local authorities and the community will be informed in advance of the foundation pours.

16.9.2.1Traffic Management Plan (TMP)

The TMP is a comprehensive set of mitigation measures that will be put in place by the Contractor before and during the construction phase of the project to minimise its effects. The purpose of the TMP is to capture the mitigation measures in this EIAR and any future traffic mitigation as they may arise during the project. The TMP proposed for the Ballyfasy Wind Farm is included in Appendix 16-1.

The following mitigation has been incorporated into the TMP:

- Traffic movements will be limited to 07:00 – 19:00 Monday to Friday and 07:00 – 14:00 Saturday, unless otherwise agreed in writing with Kilkenny County Council.
- HGV movements will be restricted during peak road network hours (including school hours) from 08:00 – 09:00 and 17:00 – 17:00 Monday to Friday, unless otherwise agreed in writing with Kilkenny County Council.
- Clear construction warning signs will be placed on the public road network to provide adequate warning to road users of the presence of the construction site and slower-moving vehicles making turning manoeuvres.
- Haul route selection to avoid sensitive receptors.
- The existing and widened internal access roads facilitate queuing of construction vehicles off the public road.
- Traffic Management Operatives (TMOs) will be provided by the principal contractor in accordance with the Traffic Management Plan at the site access during peak construction traffic activities.
- Wheel washes will be provided on site as per the site layout drawings (see Appendix 1-1) to prevent the build-up of mud on public roads.

16.9.2.2Traffic Impact

To mitigate the impact of the construction traffic, the TMP in Appendix 16-1 will be implemented. During the construction phase, all available resources within the existing site will be utilised to reduce the requirement for the importation of materials to the site. Excavation of stone material from two borrow pits within the wind farm site to provide capping material will reduce the HGV volumes required.

In addition to the borrow pits, the internal access tracks have been designed to utilise existing forestry access tracks where feasible, reducing the volume of materials required for importation to the site.

The largest traffic volume is associated with the concrete pours for the turbine foundations. The works at other areas within the main site will continue during these concrete pours, but only essential deliveries will be scheduled to occur on the same days as the concrete pours.

16.9.2.3Junction Visibility

Adequate visibility is available from the site access onto the Local Roads L3417, L7499, L3424 of 4.5 m 'x- distance' and 'y-distance' of 160 m. Visibility sightlines are in accordance with Kilkenny City and County Development Plan and TII DN-GEO-03060 (May 2023).

Maintenance of the hedgerows within the visibility splays shall be undertaken to maintain the required visibility splays and mitigate the potential for overgrown vegetation which may result in inadequate visibility at the access and crossing points during the construction activities.

Adequate visibility at the site accesses will mitigate the potential increased likelihood for collisions between construction generated traffic and existing road network traffic.

16.9.2.4Junction Swept Path Analysis

In accordance with the TII DN-GEO-03060 (May 2023) swept path analysis has been undertaken at the site access for a worst-case typical construction vehicle (i.e., articulated truck with 16.5m long), in addition to those undertaken for the AIL as outlined in Table 16-12.

The swept path analysis of the longest AIL, the turbine blade, were undertaken following identification of potential pinch points in the route assessment report as presented in Appendix 1-1. The swept path analysis used a 79.7m blade length which is the maximum blade length to be used in the windfarm.

The proposed site access design has been developed to take cognisance of the swept path of all vehicles arriving to and departing from the site. The gate has been positioned to allow for a large vehicle to wait clear of passing traffic on the local roads; to avoid potential collision between a passing vehicle and one stopped to open the gates at the site access.

Site access roads will have a running width of approximately five metres (5.5 m including shoulders), with wider sections which vary at road bends and passing bay locations, and on the final approaches to turbine hardstands, as shown on the planning drawings accompanying the application (see Appendix 1-1 of this EIAR).

16.9.2.5Haul Routes

Mitigation measures on the haul roads and cable route includes:

- Selection of a viable route with the lowest impact on the road network.
- Avoidance of sensitive receptors and urban settings
    - The site access route encourages the use of the existing infrastructure in the area while avoiding the local road and potential sensitive receptors.
    - Turbine delivery route along national roads with largest capacity to accommodate the vehicles.
    - The typical construction materials are obtained from borrow pits onsite and from local quarries in the proximity of site.
    - Restricting HV movements during peak sensitive times on the road networks (i.e., at school times).
    - The grid connection route will be carried out at off-peak times.
- To mitigate the impact of the AIL delivery on the road network, the advanced works will be undertaken (i.e., hardstanding, making signs demountable, utility diversions etc). The hardstanding works areas will be temporary in nature and removed once the final turbine is delivered to site.

To mitigate the impact of the AIL deliveries these deliveries will be undertaken under Garda and traffic management escort during off-peak (i.e., night-time) hours. The arrangement of the appropriate abnormal load licences will be obtained by the appointed contractor in a timely fashion on procurement of the AIL. The appointed contractor will liaise with the relevant road's authorities and, an Garda Síochána on the delivery schedule for the AILs.

16.9.2.6 Pre and Post-Construction Pavement Surveys

The client will undertake pre-construction and post-construction visual pavement surveys on the haul roads. Where the surveys conclude that damage on the roadway is attributable to the construction phase of the proposed project, the applicant will fund the appropriate reinstatement works to bring the road back to pre-construction condition as a minimum, details for which will be agreed with the Roads Authorities.

16.9.2.7 Trench Reinstatement

In GCO One the grid connection via cabling from the proposed onsite substation to the permitted Castlebanny substation is proposed. To mitigate the impact on the road network, at the time of the construction work and in advance of the required road closure, the appointed Contractor shall consult and comply with the Roads Authority, An Garda Síochána and other Emergency services to agree a suitable diversion route prior to implementing a road closure.

To mitigate the impact of the cable laid within the public road, the reinstatement works will be backfilled and reinstated as soon as practicable. The reinstatement works will be undertaken in accordance with the "Purple Book" best guidance and practices. The proposed reinstatement and construction details and phasing will be agreed with associated Local Authorities in advance of the works. The Contractor will be responsible for arranging for the required road opening licences.

16.9.2.8 Project Delays

All required road opening licences, agreements with the Local Authorities, and an Garda Síochána to facilitate the movement of AILs will be sought by the appointed Contractor in a timely manner to avoid delays to the project.

A delay to the project construction programme will have a negative environmental impact by increasing the duration of construction vehicles on the road network and potentially extending traffic management timeframes.

16.9.3 Operational Phase

Due to the relatively low operational traffic of the wind farm, it is envisaged that the operational effect of the proposed project will be imperceptible when compared to the existing background traffic. As such, no mitigation measures are proposed for the operation and maintenance of the wind farm.

In the event that a turbine requires replacing in the future, the current TDR will have to be re-assessed as road conditions may change over time.

16.9.4 Decommissioning Phase

On the decommissioning of the wind farm, a decommissioning plan will be prepared and implemented to minimise the effects during this phase. The decommissioning phase will employ similar mitigation measures as the construction phase.

As the decommissioning phase is envisaged to be over 35 years from now, a detailed TMP will be undertaken and will consider any road improvements and changes to the network. The plan will also consider the future baseline traffic in order to minimise the decommissioning phase effects in the vicinity.

The turbine components will be separated and removed in manageable sizes. The reduced blade section lengths, tower sections, and nacelle are likely to remain abnormal loads. However, the swept path of the long blades will be reduced. This will reduce the impact on third parties and existing road infrastructure.

As previously mentioned, the large volume of aggregate and concrete imported will remain onsite. The principal expected volumes of traffic will be primarily associated with the transportation off-site of turbine components and a significantly reduced volume of materials.

16.10 Residual Effects

16.10.1 Construction Phase

During the 24-month construction phase of the project, it is forecast that the additional construction traffic that will appear on the delivery route will have a variable effect and duration on the existing road network. The traffic volumes predicted to be generated to the wind farm site, as shown in Table 16-5, already account for the general mitigation by design (i.e., use of onsite borrow pits and use of existing forestry track infrastructure where feasible).

The residual average construction traffic impact will remain a ***short-term, slight. negative effect*** on the road network. The worst-case scenario residual construction traffic impact is the same as the peak potential impact on the local roads (i.e., L3417, L7499, and L3424), with an expected short-term adverse effect corresponding to the 10 no. days associated with the turbine foundation concrete pours. On the AIL delivery route there will be a non-significant residual effect following the temporary advanced works to accommodate the delivery of the turbine components (i.e., all street furniture demounted will be re-erected). At the locations requiring hard standing, the areas will be reinstated to existing conditions, resulting in a non-significant effect. During the construction works themselves, appropriate temporary traffic management will be employed at all works areas within the road. This will result in an impact on existing traffic on the road network and will have a moderate negative brief to temporary effect (depending on the location).

The cabling works will have a moderate negative brief effect on the local road network. Brief closures will be required but works will be undertaken off-peak and will be of very short duration. On reinstatement of the road in accordance with the "Purple Book", there will be no residual impacts caused by the cable laying.

16.10.2 Operational Phase

As the traffic impact of Ballyfasy Wind Farm will be imperceptible, long-term, negative during the operational phase, there will be no significant residual effects during this phase of the development.

16.10.3 Decommissioning Phase

As stated above, when the proposed wind farm is decommissioned, a decommissioning plan will be prepared and implemented in order to minimise the residual effects during this phase. The decommissioning phase will employ similar mitigation measures as the construction phase. When the turbine blades are decommissioned, they are separated and removed in manageable sizes, reducing the overall impact of the AILs during removal from site. As the expected volumes of traffic will be primarily associated with the transportation off-site of turbine components and materials only, the residual impact is considered to be not significant and temporary in duration.

16.10.4 Description of Effects-Residual

The residual effects associated with the project, according to the EPA's guidelines, are presented in Table 16-17.

Table 16-17: Residual Effect- EPA Criteria Effect

Extent	Scenario	Significance
R704, L3417, L3420, and L3424	Construction Phase	**Not Significant**
	Operational Phase	**Imperceptible**
	Decommissioning Phase	**Not significant**

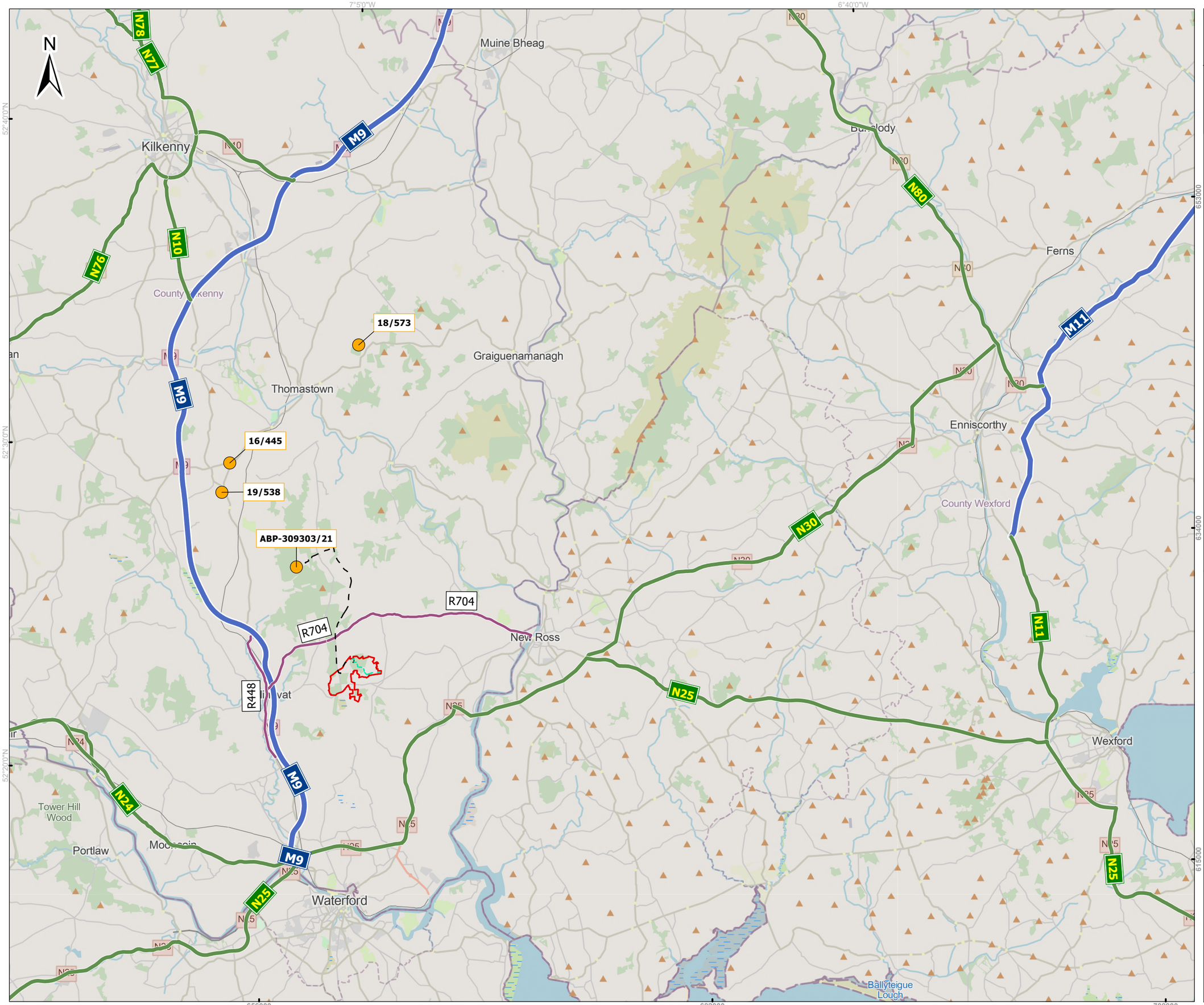
16.11 CUMULATIVE EFFECTS

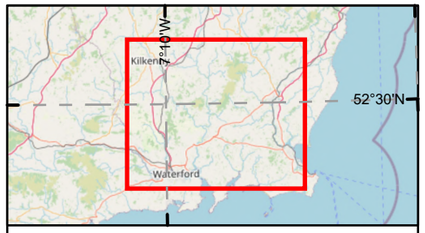
16.11.1 Construction Phase - Cumulative Developments

Cumulative developments are referred to in roads terminology as per *the TTA Guidelines* as Committed developments. According to *TII PE-PDV-02045 (May 2014)*, the TTA should consider all committed developments within the vicinity of the site. This includes sites which have previously been granted planning permission and have not been constructed. All retained and continuation of operations planning applications are accounted for within the baseline traffic.

Committed developments are considered in the TTA assessment to get a cumulate understanding of the future baseflow traffic volumes on the road network, that have not been captured within the traffic counts as these developments are pending construction or operation.

Chapter 1 Introduction outlines all the relevant planning applications within the vicinity of the site to be considered as part of this cumulative assessment. A 10 km planning search (between January 2013 – October 2025) has been completed to identify relevant projects and developments currently within the planning system. A 10 km search of An Coimisiún Pleanála's planning database and local authority planning databases (see Kilkenny County Council and Wexford County Council's results in Appendix 1-4) was undertaken. This distance is sufficient to capture the zone of influence or study area for all EIAR chapter. These planning applications are considered cumulative impacts if they have a current planning application and have not been constructed. The location of these developments in relation to the site are presented in Figure 16-8.





Legend

- Wind farm study area
- Grid Connection Options
  - Option 1
  - Option 2
- Roads
  - Motorways
  - National Roads
  - Regional Roads
  - Local Roads
- Cumulative Developments

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	01/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 16.8:
Cumulative Developments
in the Local Area

Scale @ A3: 1:200,000

Prepared by:	Checked by:	Date:
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Map Ref: 11474-068-CUMUL-REG-TOB-A

Draft: A

The following cumulative developments have been identified:

- ABP-309306/21 - Application to construct a 21- turbine windfarm and associated works at Castlebanny in County Kilkenny. The site is located north of the proposed project. The construction period is envisaged to be 24 months and Castlebanny wind farm is expected to generate an average of 60LVs and 18 HVs two-way movements per day. The haul routes are from the national road network (i.e. via M9 Exit 11 Mullinavat) to the R704 up to the site access. The grid connection connects the on-site substation at Castlebanny with the existing 110 kV overhead line at Ballyvool. The overall length of the grid connection between the proposed substation and the existing overhead line is approximately 4km, of which, 1km is within the site of Castlebanny wind farm, 2.7km is located off road and 0.3km is located along the public road corridor of the L3418. The operational traffic will be mainly for maintenance, with 2-3 individuals commuting to the site by LVs. The operational traffic is very low and will have an imperceptible effect.
- Pl. Ref. 16/445 – Highfield Solar Limited application for a 10-year permission for the construction of a Solar PV Energy development at Derrynahinch, Knocktopher. The site is located 16km from the access to our proposed project. The construction period is envisaged to be 16 weeks and no details on traffic volumes were identified in the planning application. The haul route is from the national road network (i.e. via M9 Exit 10 Knocktoper) to the R448 to the site on local roads. The cabling works are proposed within local roads outside the scope of this EIAR. The traffic volumes are anticipated to be medium to low and cross the part of the wind farm haul route on the national road which has sufficient space capacity. Maintenance traffic of 1-2 visits per month for service personnel was mentioned in their planning application. The cumulative impact of this development for construction with the wind farm will not result in a significant increase in effect and would be temporary in nature. The low volume of traffic for operation is very low and have an imperceptible effect.
- Pl Ref: 19/538 – Solar Sense SPV 3 Ltd applied for permission for the provision of 4 no battery storage container required by the previously granted solar farm (Reg Ref: 16/592). As outlined under the Pl Ref: 16/592, the impact of the solar farm in the previous application will have a slight impact over the 12-week construction programme. The materials for the civil works and trucks required to transport the battery containers (i.e. articulated trucks) will only result in minimal increase to the traffic volumes outlined in its original planning. The cumulative effect of this solar farm being constructed in conjunction with Ballyfasy Wind Farm will result in a slight temporary effect.
- Pl Ref: 18/573 – EirGrid plc application for proposed uprate works on the existing 110 kV line between Great Island substation, Co. Wexford and Kilkenny substation, Co. Kilkenny. This application will impact on a number of regional and national roads. However, these impacts are limited as outlined in their Planning Environmental Considerations report:
- "direct access to the structures will be via the local road network with limited accesses from the regional roads and only two accesses from the national road (N25). Some temporary inconvenience during the construction period to other road users will arise as a result of the need to open temporary accesses to structures and to offload construction equipment and materials. However, the relatively low level of current use

of the local roads in the area surrounding the line means that only a limited number of existing road users will be impacted. Any such impacts will be managed safely and outlined in the Construction Phase Traffic Management Plan."

Following a review of the cumulative developments described above, it was identified that a peak of eight deliveries over a period of one to two days at each location is anticipated. This level of additional traffic is expected to have a brief and imperceptible impact on the road network. When considered in conjunction with the traffic from the Ballyfasy Wind Farm, these cumulative flows are similarly assessed to have an insignificant effect on network performance.

In addition to the cumulative developments, the planning applications are typically isolated one-off housing, minor farm works and retentions. It is envisaged that the additional traffic associated with these developments will be accounted for in the central growth factor applied to the baseflow traffic.

16.11.2 Operational Phase

The cumulative effect on roads and traffic will be the use of the infrastructure for existing agricultural activities, and the proposed operational activities. As outlined in Section 16.8.3, the traffic volumes associated with these activities will be low and will have a likely slight negative long-term effect on the road network in the vicinity of the wind farm.

16.11.3 Decommissioning Phase

No significant cumulative effects on roads and traffic are envisaged; the expected volumes of traffic will be primarily associated with the transportation off-site of turbine components and materials. The other cumulative effect of agriculture traffic is baseflow traffic, and recreational traffic will generate low levels of traffic. The overall decommissioning phase traffic will be slight and temporary.

16.11.4 Description of Effects-Cumulative Impact

The potential effects associated with the cumulative effect of the projects in the vicinity, according to the EPA's guidelines, are presented below.

Table 16-18: Cumulative Effect- EPA Criteria Effect

Extent	Scenario	Significance	Duration
R704, L3417, L3420, L3424	Construction Phase	**Slight/moderate negative**	Temporary/Short-term
	Operational Phase	**Not significant**	Long-term (35 years)
	Decommissioning Phase	**Not significant**	Temporary

16.12 Road Safety Audit

A Stage 1 Road Safety Audit was undertaken by CST GROUP in October 2025 at the following locations:

- the proposed wind farm site accesses, and
- sections of the AIL haul routes where temporary works are required.

The Road Safety Audit report is provided in Appendix 16-2, and its recommendations have been incorporated into the scheme design.

The turbine component delivery and transformer delivery are a specialist operation due to the size of the loads transported. The AIL vehicles will accommodate transport of the tower, nacelle, blades, and substation transformers.

16.13 Conclusion

This chapter assesses the potential impact of the proposed project on the surrounding road network and its capacity. For developments of this nature, the construction phase is the critical impact period, with impacts experienced on the surrounding road network. The construction traffic impact assessment for the proposed project was developed based on the site layout, the construction materials required and the construction programme. In addition to this construction traffic also considers the traffic associated with the works required off site to accommodate a development of this nature, such as advanced AIL works.

The potential traffic effects on the road network are considered for two scenarios regarding the construction phase traffic:

- Peak construction traffic, and
- Average construction traffic.

The junction assessments based on ADT and the percentage of HVs on the road network indicated the following potential impacts:

- Peak construction traffic has a moderate negative effect over a temporary duration; and
- Average construction traffic has a slight negative effect over a short-term duration.

The impact of transporting the AILs to the site, will be moderate and temporary in nature. The transport of the AILs by convoy will be mitigated by traffic management during the construction phase.

The impact of the wind farm's operational phase will be imperceptible over its long-term duration, and the decommissioning phase will have a lower impact than the construction phase. The impact of the decommissioning phase will be slight negative for a temporary duration.

In accordance with TTA Guidelines, Junction 1 was assessed during the construction phase. The operational phase does not meet threshold criteria, and there is no need to be assessed. The decommissioning phase will be in a year beyond the available parameters for forecasting traffic data. However, considering that the traffic volume generated will be lower than during the construction phase, the impact will also be lower.

The residual effects will be as per the potential effects with the adoption of the mitigation measures as outlined in the EIAR. The residual effects will be imperceptible/not significant on the road network.

The review of the cumulative developments indicates that the projects in the vicinity will not overlap their construction haul routes and timelines. In addition, the operational phase of developments such as solar farms, wind farms and grid connection does not generate a

significant increase in traffic volumes. Therefore, the cumulative effect will be not significant/slight negative.

To minimise the impact of the proposed project during the construction phase a TMP has been prepared. The proposed wind farm site layout incorporates passing bays, widened approaches to the site access, internal access track loops and compounds to assist with the traffic management and delivery on the site by providing adequate locations clear of the public road for vehicles to queue, facilitating larger HVs onsite to pass each other safely and reducing the high-risk reversing manoeuvres on site. Traffic information from similar sites indicates that the recreation amenity will result in low volume of traffic, no mitigation measures were applied to the operational phase impacts. Overall, the operational phase traffic impact is likely to have an imperceptible long-term effect on the road network in the vicinity of the wind farm.

16.14 REFERENCES

- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022).
- Traffic and Transport Assessment Guidelines (TII PE-PDV-02045, May 2014).
- Kilkenny City and County Development Plan 2021-2027.
- Spatial Planning and National Roads Guidelines for Planning Authorities (2012.)
- Project Appraisal Guidelines Unit 5.2 - Data Collection (TII PE-PAG-02016, Dec 2023).
- Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections (TII PE-PAG-02017, Oct 2021).
- Guidelines for Managing Openings in Public Roads (Department of Transport, Tourism and Sport, 2017).
- Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) (TII DN-GEO-03060, May 2023).
- Rural Road Link Design (TII DN-GEO-03031, May 2023).
- Road Safety Audit (TII GE-STY-01024, 2017).
- 'Purple Book' - Guidelines for Managing Openings in Public Roads (Second Editions April 2017 DoTTS).