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# Ballyfasy Wind Farm, County Kilkenny Traffic Management Plan

BUILT ON KNOWLEDGE

| Document Control Sheet | |
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| Document Reference | Traffic Management Plan |
| Client: | Manogate Ltd |
| Project Reference | 11474 |

| Rev | Description | Author | Date | Reviewer | Date | Approval | Date |
|---|---|---|---|---|---|---|---|
| A01 | Report | JL | 02/10/2025 | CR | 28/11/2025 | AM | 28/11/2025 |
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# 1. INTRODUCTION

This Traffic Management Plan (TMP) has been prepared for the proposed Ballyfasy Wind Farm. The site is located in the southern portion of County Kilkenny, between the villages of Listerlin (c. 3 km to the northeast), Mullinavat (c. 4 km to the west), and Glenmore (c. 5 km to the southeast).

The purpose of this TMP is to assess the potential effects of the development on the local road network and to set out appropriate mitigation measures.

The proposed project comprises 10 no. wind turbines together with all associated site works, including the grid connection and works to facilitate turbine delivery. A detailed description of the project is provided in Chapter 2 (Description of the Proposed Project) of the Environmental Impact Assessment Report (EIAR).

This TMP is intended as a "live" document, to be updated as required throughout the planning and construction process. It will incorporate any changes arising from the detailed construction programme, together with inputs from the Contractor, the design team and the Client.

The measures contained in the EIAR, Construction Environmental Management Plan (CEMP) and Natura Impact Statement (NIS) represent the minimum requirements to be implemented by the Contractor. Further measures may be agreed during the construction phase, in consultation with the Local Authorities and other relevant stakeholders.

## 1.1 OBJECTIVES

This TMP has been prepared prior to the appointment of a Contractor, material suppliers and final construction phase programme. It will be updated following grant of planning permission and prior to commencement of any construction works.

The primary objectives of this TMP are as follows:

- Outline minimum road safety measures to be undertaken at site access/egress locations during the construction phase, including approaches to such access/egress locations; and,
- Demonstrate to the developer, contractor, and suppliers the need to adhere to the relevant guidance documentation for such works.

The TMP will address the following issues which are explained in detail in this Plan:

- Consent, Licenses, Notifications and Permissions,
- General Provisions,
- Site Access and Egress,
- Routing of Construction Traffic,
- Site Specific Temporary Traffic Measure,
- Enforcement of Traffic Management Plan, and
- Emergency Procedures During the Construction.

## 1.2 IMPLEMENTATION AND MONITORING

The principal Contractor will agree and implement measures to monitor the effectiveness of the TMP, in conjunction with Kilkenny County Council and Client. On finalisation of the TMP, the Contractor will adopt the plan and associated monitoring measures.

To ensure that environmental awareness and compliance are communicated effectively at the start and throughout the construction works, this TMP will be communicated to all site personnel, including management staff, operatives, and sub-contractors. The key elements of this TMP will form part of the site induction which will be mandatory for all employees, contractors and visitors attending the proposed project works.

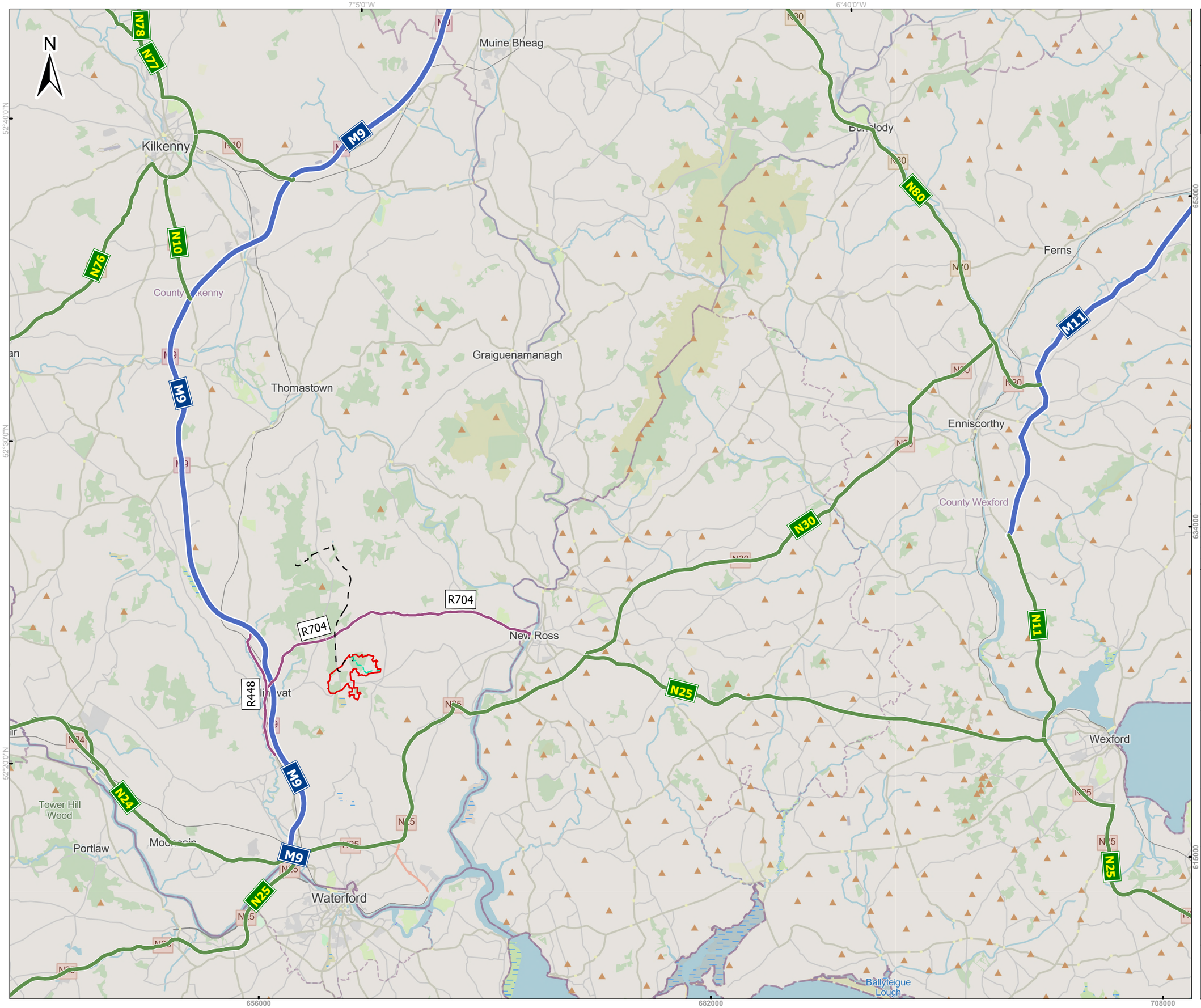
# 2. THE PROPOSED PROJECT

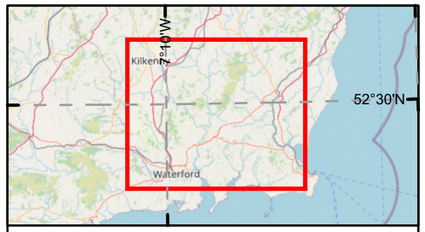
## 2.1 PROPOSED PROJECT LOCATION

The proposed wind farm 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 2-1 presents the location of the project in relation to regional site location. Figure 2-2 presents the relevant local road network surrounding the proposed wind farm site.

The wind farm site study area extends to approximately 348.14 hectares (ha). 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 developments.




**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 | 28/11/2025 | First issue | S.P | A.M |

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-1:
Site Location: Regional level

Scale @ A3: 1:200,000

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

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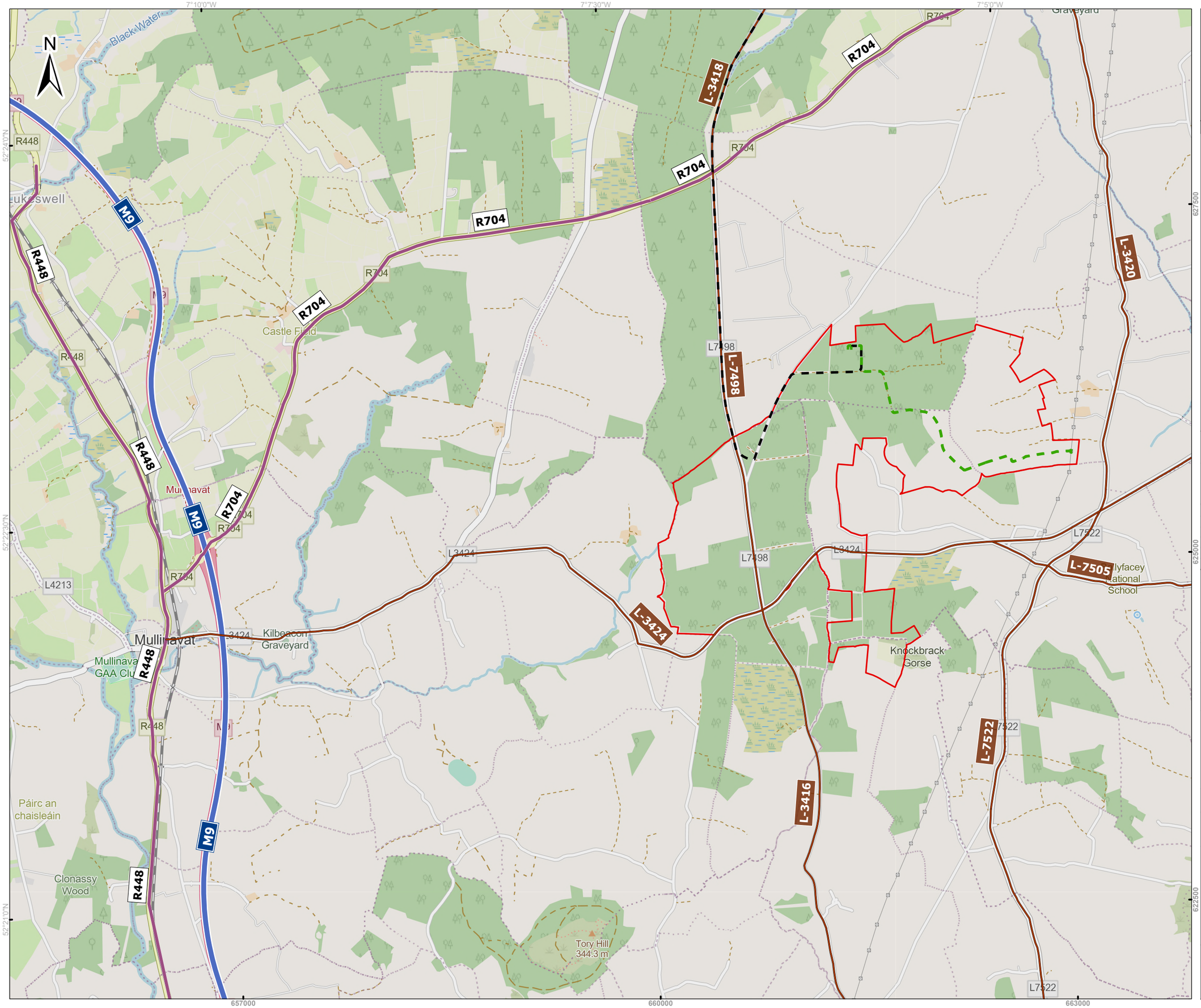



**Legend**

- 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
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Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-2:
Site Location: Local network

Scale @ A3: 1:25,000

| Prepared by: | Checked by: | Date: |
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## 2.2 DESCRIPTION OF THE 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 will also comprise facilitating works on the public road network and at private properties to accommodate the delivery of turbine components (TDR).

The proposal also includes:

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

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.

**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. 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 2.34 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 detailed description of the proposed project is provided in EIAR Chapter 2 (Description of the Proposed Project).

Construction of 1 no. permanent 110 kV electrical substation. This substation will either be a tail fed design or a loop in design depending on the grid connection.

## 2.3 PROPOSED SITE ACCESS AND EGRESS

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.

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 Abnormal Indivisible Loads (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.

**Temporary Crossings:**

- 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.

**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 EIAR Appendix 1-1).

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 EIAR Appendix 1-1). Materials will be sourced from on-site borrow pits.

**Operational Phase**:

A Road Safety Audit (RSA) (see EIAR Appendix 16-2) was undertaken for this project.

The entrance junctions have been designed in accordance with the Transport Infrastructure Ireland (TII) document Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) - DN-GEO-03060 May 2023.

The entrance visibility complies with the requirements of a 3 m 'x-distance' setback with 'y-distance' of 215 m and a 3 m 'x-distance' setback with 'y-distance' of 160 m for the regional roads. Swept path analysis for the largest vehicles accessing the site at the site entrances have been undertaken and can accommodate the wheel tracks of these vehicles, i.e., AIL (turbine blade) and maximum legal articulated vehicle (16.5 m in length), as shown in the drawings presented in EIAR Appendix 16-2.

## 2.4 EXISTING ROAD NETWORK

Chapter 16 (Traffic and Transportation) of the EIAR provides a detailed description of the existing road network surrounding the proposed wind farm. The primary haul routes to the site utilise the national and local road networks, which are generally of sufficient width to accommodate two-way passing of typical construction vehicles. The road network has been assessed in terms of its capacity to support Abnormal Indivisible Loads (AILs), general construction traffic, haul routes and the grid connection.

The strategic AIL haul route will utilise the national road network, including the N29, N25, and M9, providing a high-standard dual carriageway connection from Belview Port to the site. The N29 forms the key link between Belview Port and the N25 at Luffany Roundabout, with the N25 continuing towards Waterford and New Ross. From there, the R704 provides access to the M9 at Junction 11, approximately 4 km west of the site. The M9 motorway offers connections southwards to Waterford and northwards to the M7 at Newbridge. These national and regional roads are in good condition, with adequate carriageway widths, road markings, signage, drainage, and junction lighting, and are capable of safely accommodating turbine deliveries and other AIL movements.

Local access to the wind farm site will be provided via the L3424, L7522, L7499 and L3417. These local roads vary in width from 3 m to 6 m, are bordered by hedgerows and vegetation, and generally provide limited formal markings and signage. The L3417, which passes through the site, is narrower at 3–4 m and will require temporary crossings to safely facilitate turbine deliveries.

# 3. CONSTRUCTION PHASE

## 3.1 CONSTRUCTION PHASE WORKS

The proposed project has a construction period of approximately 24 months with construction envisaged to commence in 2028.

The construction phase can be broken down into 5 no. main phases as follows (there will be overlap between these):

- 18 months – Civils (including forestry felling and vegetation clearance, drainage, construction of site roads, hardstands, turbine foundations);
- 9 months – Electrical grid connection/substation installation and commissioning;
- 12 months – Site electrical (installing between turbines and substation, pulling cables);
- 4 months – Turbine deliveries and erection;
- 2 months – Commissioning.

## 3.2 CONSTRUCTION HOURS

The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations will be restricted to between 07:00 hrs and 19:00 hrs Monday to Friday (excluding public holidays) and between 07:00 hrs and 14:00 hrs on Saturdays.

However, during the following critical periods longer hours will be required:

- Concrete pours for turbine foundations;
- During turbine installation when the weather is suitable (i.e. light winds);
- Delivery of oversized loads; and
- In the unlikely event of an emergency (this is unlikely - see Chapter 17 (Major Accidents and Natural Disasters)).

Any such out of hours working will be agreed in advance with Kilkenny County Council apart from in the case of an emergency and in line with the project Construction Environmental Management Plan (see EIAR Appendix 2-6).

## 3.3 CONSTRUCTION PHASE TRAFFIC

### 3.3.1 STAFF LEVELS

The number of construction staff will vary depending on the phase of the construction activity. At the peak construction, approximately 135 staff are estimated, during off-peak activities 80 people are estimated on site. A reduction in construction staff on site is expected when the construction activities are more technical and less labour intensive.

In addition to the onsite construction workforce, additional construction staff will be required for the cable laying works and the advanced AIL haul route works. At each location off-site, approximately 10 construction staff are anticipated, including traffic management operatives.

### 3.3.2 STAFF TRIP GENERATION

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.

## 3.3.3 CONSTRUCTION VEHICLES

The construction phase for the proposed wind farm will result in additional traffic on the roads in the vicinity of the proposed wind farm. The proposed HVs will typically be rigid vehicles (i.e., concrete trucks, dump trucks, delivery vehicles) or maximum legal articulated vehicles within normal vehicle loading.

This additional construction traffic will include the following:

- Construction worker vehicles, e.g., cars or vans (light vehicles),
- HVs carrying conventional earthworks equipment such as an excavator, a roller, stone crusher, forklifts, etc.
- Mobile Cranes,
- Delivery vehicles carrying:
  - conventional construction materials for the site, e.g., aggregate, concrete, rebar, etc.
  - conventional construction materials for the substation, e.g., bricks, concrete, rebar, fencing, etc.
  - Drainage infrastructure i.e., tanks, etc.
  - met masts, electric cabling, inverter stations and electrical equipment for the on-site substation.

### *3.3.3.1 ABNORMAL INDIVISIBLE LOAD*

The transformer and the wind turbine components will be transported by abnormal indivisible loads (AILs). An assessment of the AILs has been made based on the details in EIAR Chapter 16 (Traffic & Transportation), pending confirmation of the specification during procurement at construction stage. The contactor will be responsible for obtaining all associated licences from Kilkenny County Council or Gardaí during construction for the abnormal loads.

## 3.3.4 CONSTRUCTION VEHICLES TRAFFIC GENERATION

During the construction phase, peak activity is expected to generate approximately 17 heavy vehicle (HV) one-way movements per day (34 trips total) and around 10 light vehicle (LV) movements. Off-peak days will generate an average of 11 HV and 10 LV one-way movements per day.

Staff numbers on site are estimated at 135 during peak periods and 80 during off-peak. For TMP purposes, all staff are assumed to travel in single-occupancy LVs, resulting in 270 two-way trips during peak and 160 two-way trips during off-peak periods. Staff numbers are expected to decrease during more technical, less labour-intensive phases.

Construction traffic on the construction haul route has been assessed based on peak generation. Concrete pours for turbine foundations occur over 10 days, with each foundation poured on a single day. During these pours, 142 HVs are expected on site per day, averaging 12 HV arrivals per hour. To reduce impact on the road network, all other HV movements will be limited to essential deliveries and scheduled on other days.

The TMP aligns with EIAR Chapter 16 (Traffic and Transportation) assessments, confirming that peak construction traffic will not exceed national or local road network capacity.

## 3.3.5 CONSTRUCTION HAUL ROUTE

### *3.3.5.1 TYPICAL CONSTRUCTION TRAFFIC DELIVERIES*

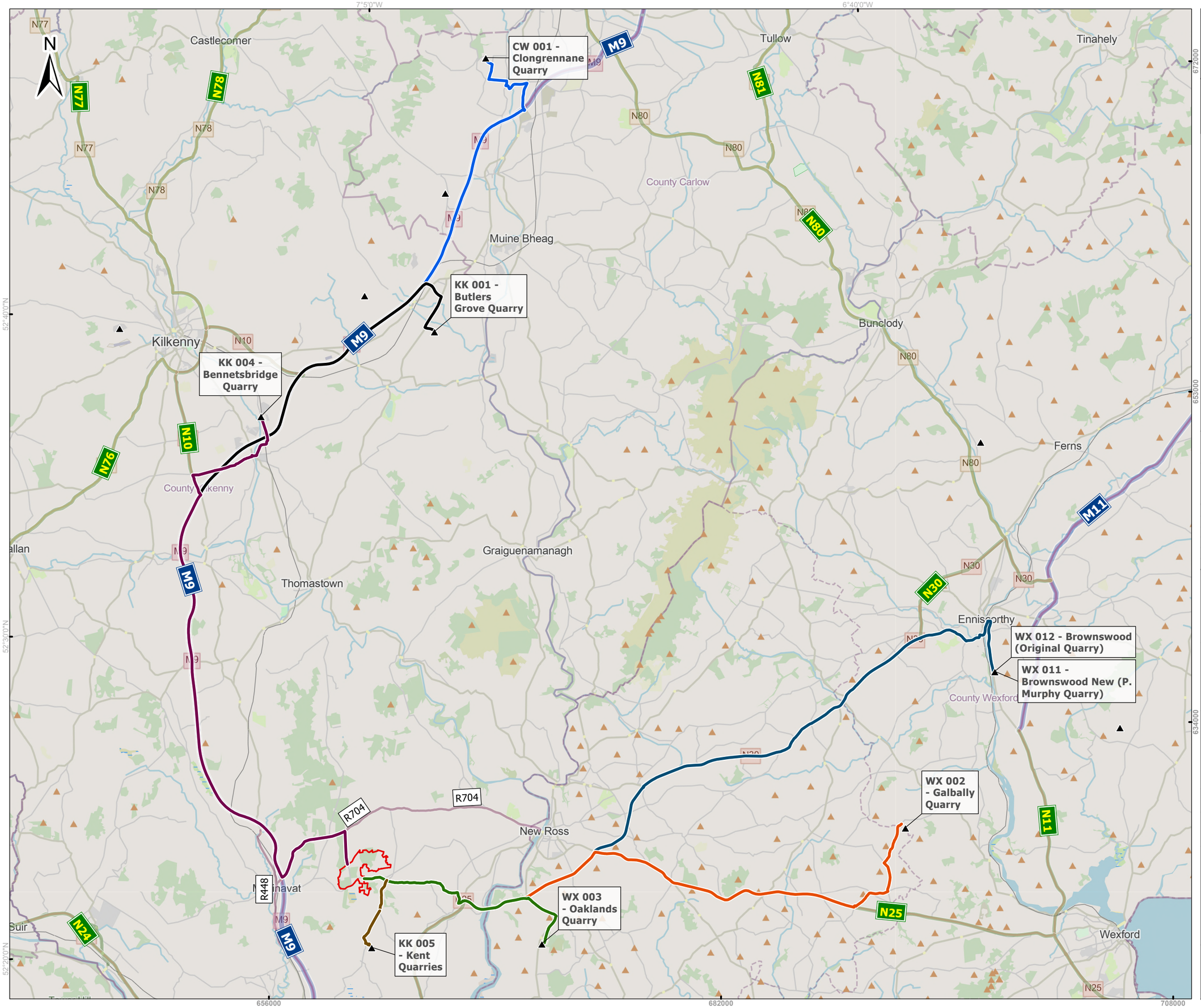
The proposed construction haul routes have been assessed with reference to local quarries and sensitive receptors in nearby towns and villages. Construction materials will be delivered by standard heavy vehicles (HVs), including rigid and articulated lorries, as well as construction machinery such as cranes, excavators, concrete trucks, tippers, and stone crushers.

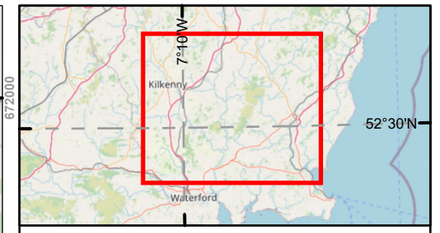
Peak daily traffic is expected between July and September 2028, associated with the importation of aggregate for site compounds, internal haul routes, turbine hardstanding areas, and steel and blinding for turbine foundations. The next highest traffic impact will occur during concrete pours for turbine foundations, which involve a continuous single pour per turbine per day.

Materials will generally be sourced from the quarries, while other materials—including met masts, building materials, fencing, drainage, water treatment, substation materials, and welfare facilities—are assumed to be sourced locally, arriving via the M9 and R704 to site accesses on the L3417 and L7499. Delivery routes and the final source of quarry material will be determined by the appointed contractor.

The proposed construction haul routes are shown in Figure 3.1 and have been reviewed as suitable to accommodate two-way delivery traffic in terms of alignment, width, and road condition.

Traffic volumes on the haul routes, both peak and average, are discussed in EIAR Chapter 16 (Traffic and Transportation).




**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

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| Rev | Date | Description | By | Chkd. |
|---|---|---|---|---|
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Client: Manogate Ltd.

Project: Ballyfasy Wind Farm

Title: Figure 3-1: Haul routes

Scale @ A3: 1:200,000

| Prepared by: | Checked by: | Date: |
|---|---|---|
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Map Ref: 11474-003..TMP-Haul.R-P.App.BO-TOB-A

Draft: A

#### *3.3.5.2 ABNORMAL INDIVISIBLE LOAD DELIVERIES*

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.

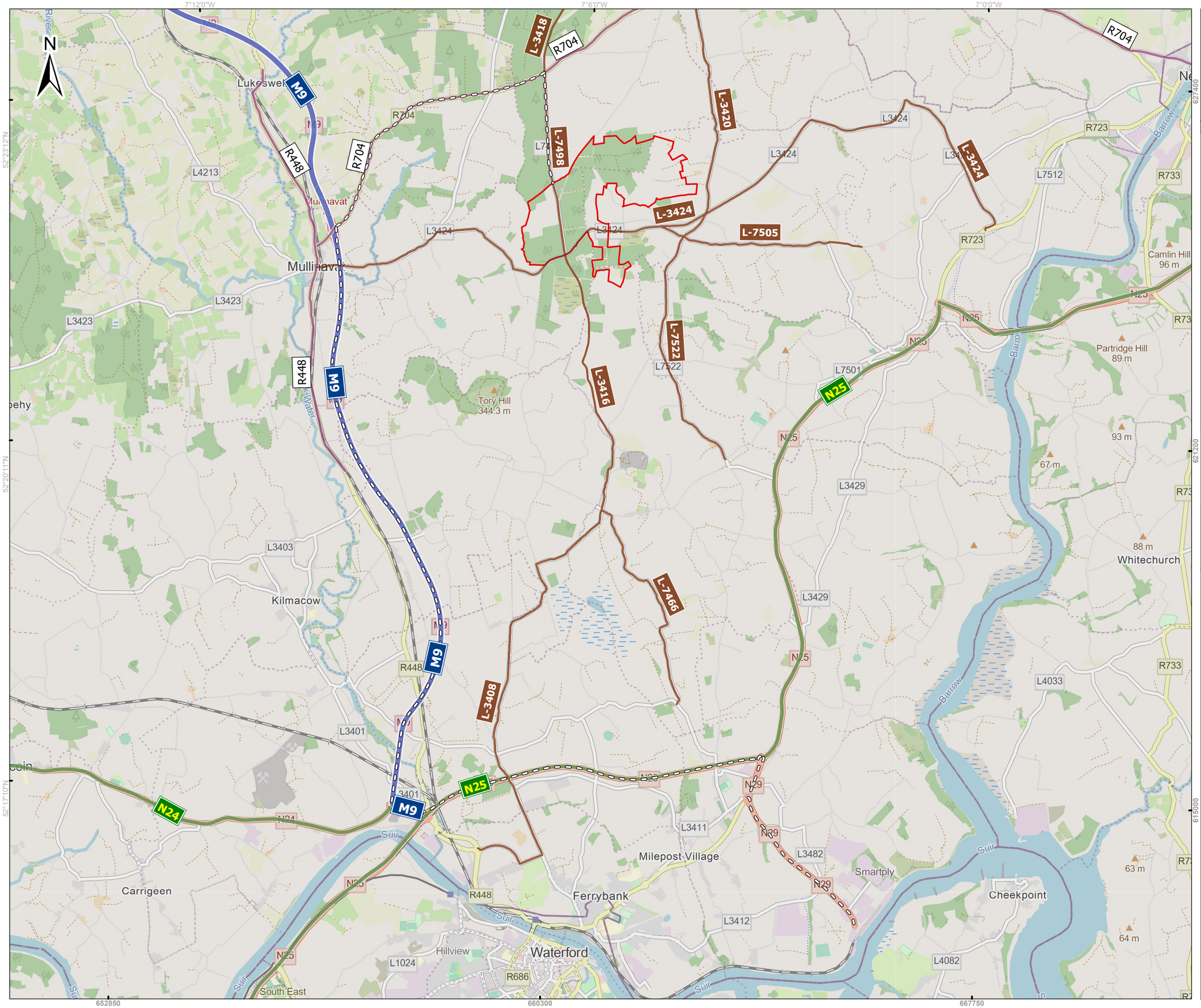
At the rotary grade separated Junction W1 there are two potential routes:

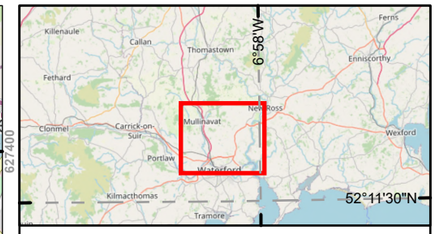
- Continuing south on the N25 mainline crossing into Co. Waterford to the Carrick Road Roundabout (N25/ R680). At this roundabout junction, the AIL will perform a U-turns back in a northly direction, on the N25 northeast bound lane to the W1 junction and onto the N9 Quarry Link Road.
- Alternatively, 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 Preliminary Route Assessment (TDR report) is presented as EIAR Appendix 2-2.




## Legend

- Wind farm study area
- Turbine Delivery Route

Road Network

- Motorways
- National Roads
- Regional Roads
- Local Roads

0 1.5 3
Kilometers

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| A | 28/11/2025 | First issue | S.P | A.M |

Client:
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Title:
Figure 3-2:
AIL Delivery Routes /
Turbine Delivery Route (TDR)

Scale @ A3: 1:60,000

| Prepared by: | Checked by: | Date: |
|---|---|---|
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### 3.3.6 INTERNAL ACCESS ROAD CONSTRUCTION HAUL ROUTE

Existing internal access roads will be upgraded where necessary and new site access roads will be created. These road works will be constructed at the start of the construction phase and will provide operational access via the L3424, L3417, and L7499.

After construction, only regular maintenance of visibility splays will be required, which will enhance safety at site entrances. Internal access tracks may also support existing forestry, or agricultural activities, which are considered to have a neutral effect.

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).

### 3.3.7 CONSTRUCTION PHASE SUMMARY

The construction traffic impact of the additional HVs and LVs on the existing road network has the potential to impact the existing pavement condition, the carrying capacity of the road, the existing junction flows on the haul route, and site access for the duration of the construction programme. The construction phases, including the advanced AIL works will have varying impacts on the road network and environs.

The proposed wind farm construction has an envisaged construction programme of 24 months and a peak construction activity for the concrete pours for the turbine foundations. During the construction phase, lower traffic volume impacts on the road network are expected. The main construction traffic associated with the proposed project may result in a negligible increase in delay at all surveyed junctions due to the increased traffic.

Traffic management operatives' control will be required to facilitate safe access/egress at the site during the peak construction activities.

Minor delays of short duration may be encountered on the turbine delivery haul route, M9, N9, N29, N25, R704, L7498, L7499 and L3424 due to temporary road works required to accommodate the AIL deliveries. Temporary roadworks include temporary hardstanding areas, temporary removal, or relocation of existing signage, and pruning of vegetation.

A temporary traffic management plan will be employed by the appointed contractor to safely facilitate works on/adjacent to the live carriageway for the advanced works for the AIL. It should be noted that these AIL advanced works on the national roads are at the junctions and their associated on and off ramps only, with no works on the mainline. At these locations, the driver speeds will be lower on approach to the junction than encountered on the mainline. The works themselves will be of short duration within the verges, splitter island, and the roundabout centre islands. These advanced AIL works will occur in advance of the delivery of the AILs to the proposed wind farm site.

# 4. CONSTRUCTION PHASE TRAFFIC MANAGEMENT PLAN

The Contractor will develop and take account of the commitments imposed within this TMP. The following are the commitments made at the planning stage of the proposed project, which shall be further developed by the Contractor and agreed upon with the Roads Authorities, prior to works commencing on site:

- General Provisions,
- Site Access and Egress,
- Routing of Construction Phase Traffic,
- Site Specific Temporary Traffic Measures,
  - Traffic Management Logistics,
  - Traffic Management Speed Limits,
  - Traffic Management Signage,
  - Road Closures,
  - Timings of Material Deliveries to Site,
  - Abnormal Load,
  - Road Cleaning,
- Enforcement of Traffic Management Plan, and
- Emergency Procedures During the Construction.

## 4.1 CONSENTS, LICENCES, NOTIFICATIONS AND PERMISSIONS

The key consents, licences, notifications, and permissions likely to be required for the proposed project with regards to traffic and roads are summarised as:

- Planning permission and associated planning compliance.
- Abnormal loads – it is envisaged that permits will be required for the abnormal loads that will be required for the delivery of the transformer and turbine components to the site.
- Road opening licences for underground cable works, junction upgrade works, foundations in the public roadway, etc.
- Approval of temporary traffic management plans.
- Road closures and diversions.
- Permission for works outside of standard construction operation hours agreed upon with Kilkenny County Council.
- Permission from the Motorway Maintenance and Renewal Contractor (MMaRC)/Public Private Partnership Contractor (PPP) on the relevant national roads.

The above list is non-exhaustive but identifies the key consents, licenses, notifications, and permissions required for the proposed project. This list will be further populated as required through planning compliance and stakeholder engagement to ensure that any further consents are identified as early as possible and do not impact on the construction programme.

## 4.2 GENERAL PROVISIONS

The construction traffic impacts of the proposed project have been identified as being temporary in nature. It is important that any impact caused by the proposed project is minimised as far as possible, and, considering this, the following mitigation measures shall be included in future developments of this 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.
- HV movements for the proposed development shall be directed away from sensitive areas (i.e., schools, urban centres).
- A temporary over-run area will be provided with a suitably bound surface treatment to prevent migration of loose material onto the carriageway and to maintain safe conditions for all road users in liaison with Kilkenny County Council. Temporary street lighting will be implemented to always ensure adequate and uniform lighting levels in liaise with Kilkenny County Council to provide suitable temporary lighting during the works.
- Temporary protection for drainage kerbs will be provided, in liaison with Kilkenny County Council, to maintain drainage function during the works.
- Temporary barriers will be provided, in liaison with Kilkenny County Council, to prevent inadvertent use of temporary over-run areas and to maintain safe conditions for all road users.
- Overhead cables will be managed in liaison with the utility provider to ensure safe clearance is always maintained.
- Affected sections of footpath will be physically closed and a suitable diversion route provided for the duration of deliveries. This will be implemented in liaison with the Kilkenny County Council to ensure pedestrian safety.
- Utility poles and associated cables will be properly secured in liaison with the utility provider to maintain safety during the works.
- No parking will be permitted along the access route for unloading or activities that result in blockages of access routes. Such vehicles will be immediately requested to move to avoid impeding the works and traffic on the road network.
- Measures to remove queuing of construction traffic on the adjoining road network, including turning space and queuing of convoy HVs will be provided within the sites.
- Wheel wash equipment will be used on site to prevent mud and stones from being transferred from the site to the public road network.
- Activities generating dust will be minimised where practical during windy conditions. Loads will be covered on arrival and departure from the site, where required.
- Clear construction warning signs will be placed on the public road network to provide advance warning to road users of the presence of the construction site and slower-moving vehicles making turning manoeuvres.

- Access to the construction site will be controlled by onsite personnel and all visitors will be asked to sign in and out of the site by security/site personnel, and site visitors will all receive a suitable Health and Safety site induction.
- Security gates will be sufficiently set back from the public road, so that vehicles entering the site will stop well clear of the public road.
- The final TMP will also include provisions by the appointed Contractor, for details of the intended construction practice for the development, including:
- Traffic Management Co-ordinator – a competent traffic management co-ordinator will be appointed for the duration of the proposed development, and this person will be the main point of contact for all matters relating to traffic management,
- Delivery Programme – a programme of deliveries will be submitted to Kilkenny County Council in advance of the delivery of the turbine components to the site,
- Information to locals – residents in the area will be informed of any upcoming traffic related matters, e.g., temporary lane/road closures (if required) or any night deliveries of turbine components, via posters in public places. Information will include the contact details of the Developer's representative, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided,
- Pre and Post Construction Condition Survey – a pre-construction survey of roads on approach to the site will be carried out prior to construction commencement to record the condition of the road. A post construction survey will be carried out after the works are completed. The timing of these surveys will be agreed with Kilkenny County Council,
- Liaison with Local Authorities – liaison with Kilkenny County Council, including the roads and transport section, through which the delivery route traverses, and An Garda Siochána, during the delivery phase of the AILs, wherein an escort for all convoys may be required;
- Temporary Alterations – implementation of temporary alterations to road network at critical junctions,
- Travel plan for construction workers – a travel plan for construction staff and sub-contractor construction staff,
- Temporary traffic signs – As part of the traffic management measures, temporary traffic signs will be put in place.
- Traffic Management Operatives (TMOs) will be present at site access point during peak delivery times, and
- Delivery Times of Large Turbine Components – The management plan will include the option to deliver the large wind turbine plant components at night in order to minimise disruption to general traffic during the construction stage.

The TMP will be updated by the principal Contractor and agreed with the Planning Authorities prior to the commencement of project works in the event of a grant of permission.

## 4.3 CONSTRUCTION PHASE SITE ACCESS AND EGRESS

At the proposed main site access point visibility splays will be provided and maintained in accordance with the Kilkenny City and County Development Plan 2021-2027. It requires a 4.5-metre setback over a length of 160 min both directions. To ensure safe working access for all

construction vehicles on the proposed wind farm site, these works will be required to be undertaken in advance of all other activities on the site utilising this access. Minor improvements to the sight lines in the form of trimming and ongoing maintenance of existing foliage within the lands of the applicant shall be required upon completion of the site access construction works on the L3417, L7499, and L3424.

The Contractor shall be required to utilise a safe system of traffic management, potentially including the use of Traffic Management Operatives (TMOs) for the control of traffic during access/egress operations at the site access location during peak construction activities.

## 4.4 ROUTING OF CONSTRUCTION PHASE TRAFFIC

The proposed construction haul routes were identified based on review of existing local quarries, principal road networks (i.e., national and regional) and consultation with Kilkenny County Council. The haul routes utilise the national and regional road network as much as feasible, with only localised use of the local road network. Construction traffic will arrive to the proposed wind farm site via the Regional Road R704 and the Local Roads L3417, L7499, and L3424.Most materials will be delivered using maximum legal articulated lorries or smaller vehicles.

Construction HV traffic will be directed away from communities and sensitive receptors (i.e., schools, dense residential areas, urban centres) where possible to minimise the effect on these communities.

## 4.5 SITE SPECIFIC TEMPORARY TRAFFIC MEASURES

The specific details of each temporary traffic measure shall be developed by the Contractor(s) for site access in consultation with the Roads Authority, An Garda Síochána and other Emergency services, before being submitted to the Roads Authority for formal approval prior to any works taking place.

The maximum length of the active traffic management area (i.e., including taper lengths) shall be no more than 500 metres in length for any proposed shuttle system. To minimise traffic delays, it may be necessary to limit the works site to shorter lengths if queuing delays are encountered.

Traffic lane closures will be controlled by an active traffic management system (i.e., temporary traffic signals or Stop & Go/Taigh discs). An Garda Síochána will be consulted prior to the implementation of the active traffic management system. The operation of a manual 'Stop & Go/Taigh' system will be undertaken by trained personnel, wearing suitable high visibility garments. The operators of this type of system will be in verbal contact (i.e., radio) and preferably inter-visible. At these locations queue lengths will be estimated initially with onsite measurements to determine the necessary warning distance for approaching drivers. The signage shall be adjusted as necessary when the actual impact on traffic flows is established.

For Grid Connection Option One– during grid connection cabling works on the R704, L3417, L7499 and L3418, a diversion route for traffic will be implemented. This shall be approved by the Road Authority following consultation with the Road Authority, An Garda Síochána and other emergency services.

For Grid Connection Option Two - during grid connection cabling works, a diversion route for traffic will not be necessary as all cabling works will be carried out within the boundary of the proposed site, having no effect on the public roads system.

Where roadworks impede dwelling access onto the road network, the residents shall be instructed on how to egress the property at times when a shuttle system is in operation. The Contractor shall provide a TMO where the motorist is having difficulty following the instructions.

Were reasonably practicable, consideration will be given to the possibility of removing the traffic management measures to deal with:

- Particularly high traffic volumes due to sporting or other events,
- Adverse weather conditions,
- Emergency access, or
- Times when work is not in progress.

If the night-time or weekend Temporary Traffic Management (TTM) measures vary from the daytime plan, a separate TTM will be prepared to be approved by the Roads Authority.

On completion of the works, the traffic management measures are to be removed when the road is safe and free from obstructions, all reinstatement of road surfacing is completed, and all permanent signs, road markings, and other items are in place.

## 4.5.1 TRAFFIC MANAGEMENT SYSTEMS/LOGISTICS

The Contractor as a minimum will employ the following traffic management systems and logistics to facilitate the safe transport of materials to and from the proposed project.

### *4.5.1.1 TRAFFIC MANAGEMENT OPERATIVES (TMOs)*

During peak construction activities, with a higher number of HV movements to and from the site, a TTM (i.e., stop/go system) at the site access may be required to facilitate the movement of construction vehicles.

Also, during peak construction activities, TMOs may be required within the site to manage the movement of HVs within the internal layout.

TTM for the AIL delivery will be developed by the appointed Contractor in consultation with the specialised haulage provider, An Garda Síochána, and the Local Authority.

### *4.5.1.2 CONVOY SYSTEM*

A convoy system will be employed by the Contractor, applied to HVs departing the site, involving:

- Traffic management operatives at the proposed wind farm access/egress point to facilitate movement of construction vehicles in a convoy system (maximum 4 no. HVs),
- Suitable spaces shall be made available within the site for queuing of HVs (i.e., passing bays and at site access),

- Traffic management operatives shall be stationed at the site access T-junction with a suitable intercommunication system (i.e., radio) to control the release of the convoy system,
- The convoy shall have separation between convoys to facilitate use of the public road network in the absence of construction HV movements.

### 4.5.2 TRAFFIC MANAGEMENT SPEED LIMITS

Once a temporary speed limit is deemed appropriate by the Contractor to facilitate the construction phase activities along the public roads serving the proposed development, it shall be required for the Contractor to liaise with the relevant Roads Authority for obtaining a temporary speed limit.

Adherence to posted/legal speed limits will be emphasised to all staff, suppliers, and contractors. In speed zones greater than 60 km/h, drivers of construction vehicles/HVs will be instructed that vehicular movements in sensitive locations, such as schools and local community areas, shall be restricted to 60 km/h. Such advisory speed limits will only apply to construction phase haulage traffic and will not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users.

### 4.5.3 TRAFFIC MANAGEMENT SIGNAGE

Signage for temporary traffic measures shall be provided in accordance with the Department of Transport, Tourism and Sport - Chapter 8 – Temporary Traffic Measures and Signs for Roadworks – August 2019.

Advanced warning signs will be used to alert drivers to the unexpected road layout. Clear construction warning signs shall be placed at adjacent roads and the entrances, to advise the general public of the presence of construction sites and activities. All permanent road signs contrary to the proposed roadworks will be covered for the duration of the works and uncovered on removal of the temporary traffic management measures.

### 4.5.4 TIMING OF MATERIAL DELIVERIES

With the aim to reduce impacts on local communities and residents adjacent to the proposed wind farm site, it is planned that:

- Construction activities will be undertaken based on a six-day working week, with deliveries between 07:00 hrs - 19:00 hrs on weekdays and 07:00 hrs - 14:00 hrs on Saturdays.
- Construction activities and deliveries outside these hours shall be agreed with the Local Authority in advance.
- The Contractor shall liaise with the management of other construction projects and the local authority to co-ordinate deliveries.
- The Contractor shall schedule deliveries in such a way that construction activities and delivery activities do not occur during peak traffic flows or run concurrently, such as:
    - avoiding pouring of concrete on the same day as other large material deliveries to site with the purpose of minimise conflicts between vehicles.
    - staggering the pouring of concrete on different days.

- HV deliveries to the development site will be suspended on the days of any major events (i.e., sporting, agricultural etc), that have the potential to increase traffic volumes on the existing road network in the vicinity.

The scheduling of material deliveries is required to facilitate the implementation of traffic management activities at the site and the work zones within the site. It will also impact on the offsite work locations for the AIL advanced works. A convoy system shall be employed for HVs departing the proposed wind farm site to reduce the frequency of isolated HV movements on the public road network as much as practicable.

### 4.5.5 ABNORMAL INDIVISIBLE LOAD

A total of 81 no. AILs are anticipated to be transported to the site along the AIL haul routes illustrated in Figure 3-2. A maximum of 10 turbines (i.e., all tower, nacelle and blades) will be delivered to site per month. It is envisaged that these loads will be moved outside of normal hours as night-time works in convoys.

The principal Contractor shall ensure that the haulage of these AILs is done in conjunction with an Gardaí Síochána and the Roads Authorities. The appointed Contractor and their haulage provider will be responsible for obtaining all necessary permissions and licences from the local authorities and Gardaí.

### 4.5.6 ROAD CLOSURE

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.

### 4.5.7 ROAD CLEANING

Regular visual surveys of the road network in the vicinity of the proposed wind farm site will be carried out. Where identified/required, the Contractor shall carry out road sweeping operations, employing a suction sweeper to remove any proposed development related dirt and material deposited on the road network by construction/delivery vehicles. It shall be a requirement of the works contract that the Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles.

## 4.6 ENFORCEMENT OF TRAFFIC MANAGEMENT PLAN

The appointed Contractor will further develop this TMP in consultation with the Road's Authority Kilkenny County Council. The Contractor will agree and implement an appropriate way of monitoring the effectiveness of the plan.

All proposed project staff and material suppliers will be required to adhere to the TMP. Inspections/spot checks will also be carried out by the Contractor to ensure that all staff and material suppliers follow the agreed measures adopted in the TMP.

## 4.7 EMERGENCY PROCEDURES DURING THE CONSTRUCTION

In case of emergency, the following procedures shall be implemented:

- Emergency Services will be contacted immediately by dialling 112,
- Exact details of the emergency/ incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner,
- Follow the instructions of the Local Authorities and An Garda Síochána,
- Emergency will be reported to the Site Team Supervisor and the Safety Officer,
- Where required, site first aiders will attend the emergency immediately, and
- The Safety Officer will ensure that the emergency services are enroute.

It is important that during the construction phase, emergency services can gain ready access to any property along the haul road or in the vicinity of any of the infrastructure sites or indeed can gain priority usage of any haul road. Emergency procedures will be agreed, and contact numbers provided to the local emergency services. On being notified of a priority condition, all construction vehicles will be directed to give right of way to the emergency vehicles until the need for priority access has passed.

With respect to an emergency condition arising on the proposed wind farm site, priority access to and from the site will be given to ambulance or fire tenders.

# 5. OPERATIONAL AND DECOMMISSIONING PHASES

## 5.1 OPERATIONAL PHASE

Following construction, traffic at the wind farm will be minimal, primarily small vehicles for maintenance or amenity purposes. Site access will be via permanent access roads: Entrance 1 (L7499), Entrance 2 (L3417), Entrance 3 (L3417), Entrance 4 (L3424), and Entrance 5 (L7499).

The operational phase is expected to last 35 years. During this period, traffic will remain low, with a maximum of six light vehicle (LV) movements per day (three arrivals and three departures). This level of traffic is sub-threshold under TII TTA Guidelines, as it does not exceed 10% of turning movements at national road junctions and remains below 100 trips in/out during peak hours. Consequently, operational traffic impacts will be negligible compared to existing background traffic.

Internal access tracks may also be used for forestry, agricultural, or recreational purposes, which are existing activities and considered to have a neutral effect. Site access roads will be maintained as needed, primarily for hedgerow management to preserve visibility splays. Adequate visibility is available in both directions in accordance with the Kilkenny City and County Development Plan 2021–2027 and TII DN-GEO-03060 (May 2023).

## 5.2 DECOMMISSION PHASE

The proposed wind turbines are expected to have a lifespan of up to 35 years without replacement of major components.

Turbine design renders the decommissioning process as a straightforward process. In the decommissioning phase, cranes disassemble each turbine section and remove from the 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 internal site access roads/tracks and substation will be retained. The proposed car parking and internal site access roads will be used for amenity purposes and will not be removed.

On completion of the decommissioning works, the site will still facilitate public recreational/amenity access. The substation will form part of the national grid network and will be retained.

The traffic management of the decommissioning phase will be advised by the road conditions at the time of decommissioning. It is not possible to predict the changes to the public road infrastructure and policies in the next 35 years. It is envisaged that a Traffic Management Plan will be developed for the decommission phase.

# 6. CONCLUSION

The Traffic Management Plan is a living document and will be developed through the detailed design and construction phase with ongoing consultation with Kilkenny County Council, An Garda Síochána, Emergency Services and other stakeholders.

This TMP has thus far been developed to the Planning Stage, so that the necessary steps are taken throughout the planning proposals to support an efficient, safe transportation operation, with the least possible impact upon vulnerable road users and traffic along the haul roads or close to the proposed project works.

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