14. TRAFFIC & TRANSPORTATION

14.1 INTRODUCTION

This chapter of the EIAR outlines the traffic and transportation assessment for the proposed project.

The proposed project consists of 11 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 the proposed project, the construction phase constitutes the critical period with potential to result in impact on the surrounding road network. This potential for impact primarily relates to the temporary increase in traffic volumes and the specific geometric requirements necessary to accommodate abnormal indivisible loads (AIL) associated with delivery of turbine components. The locations where temporary remedial works are required to facilitate turbine delivery have been identified and are detailed within this chapter in Section 14.5.5. To mitigate impacts during the construction stage, a comprehensive Traffic Management Plan (TMP) has been prepared and is provided in Appendix 2-2 of this EIAR.

14.1.1 Statement of Authority

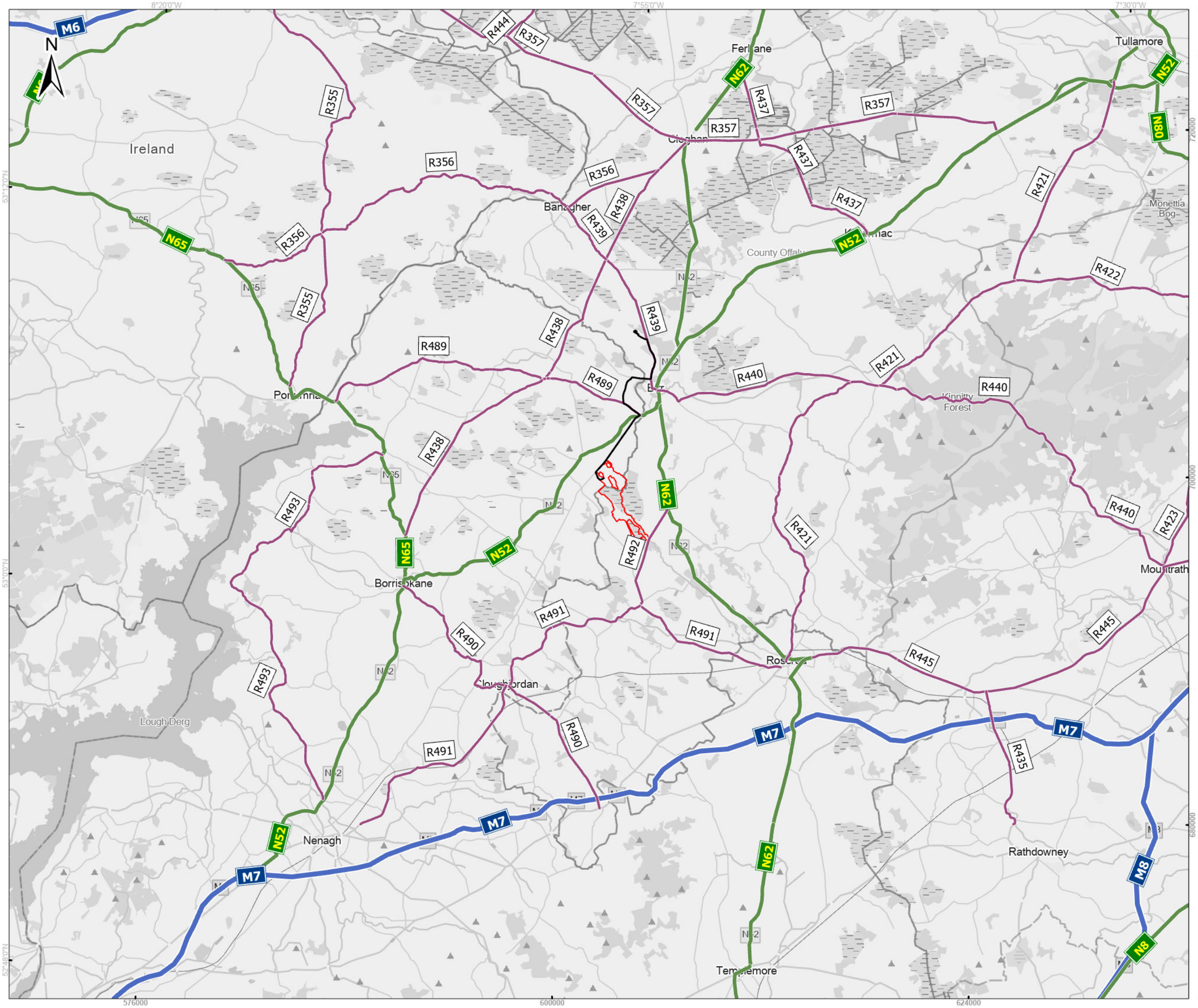
This chapter of the EIAR has been prepared by Carol Rosario of TOBIN. Carol Rosario has over six years of professional experience in the Traffic and Transport field. She holds an MSc in Transport Planning & Modelling. Her expertise includes the delivery of Traffic and Transport Assessments for both public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

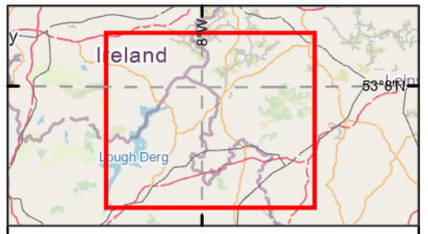
In addition, Carol has technical proficiency in junction and network analysis using industry-standard modelling software packages, including LinSig3, ARCADY, PICADY, and VISSIM.

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 produced EIAR Traffic & Transportation Chapters for various developments including environmental developments, wind farms, waste management facilities and energy projects.

14.1.2 Site Location and Use

The proposed wind farm site is situated within the townlands of Curralanty, Ballincor, and Cloonaheen in County Offaly, and Clonfree, Cronekill, and Carrig in County Tipperary. The site is located 5 km south of Birr and 3.6 km north of Shinrone, bordering the L1071 local road to the north and the R492 to the south, west of the Little Brosna River. Figure 14-1 and Figure 14-2 present the location of the proposal in relation to relevant road network.





Legend

- Wind Farm Site Boundary
- Proposed Grid Connection Route

Roads

- Regional Roads
- National Roads
- Motorways

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	07/11/2025	First issue	S.P	J.D

Client: RWE

Project:
Ballincor Wind Farm

Title:
Figure 14-1:
Site Location at Regional Level

Scale @ A3: 1:200,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Dillon	November 2025

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11333-032-REG-P.App.BO-TOB-A

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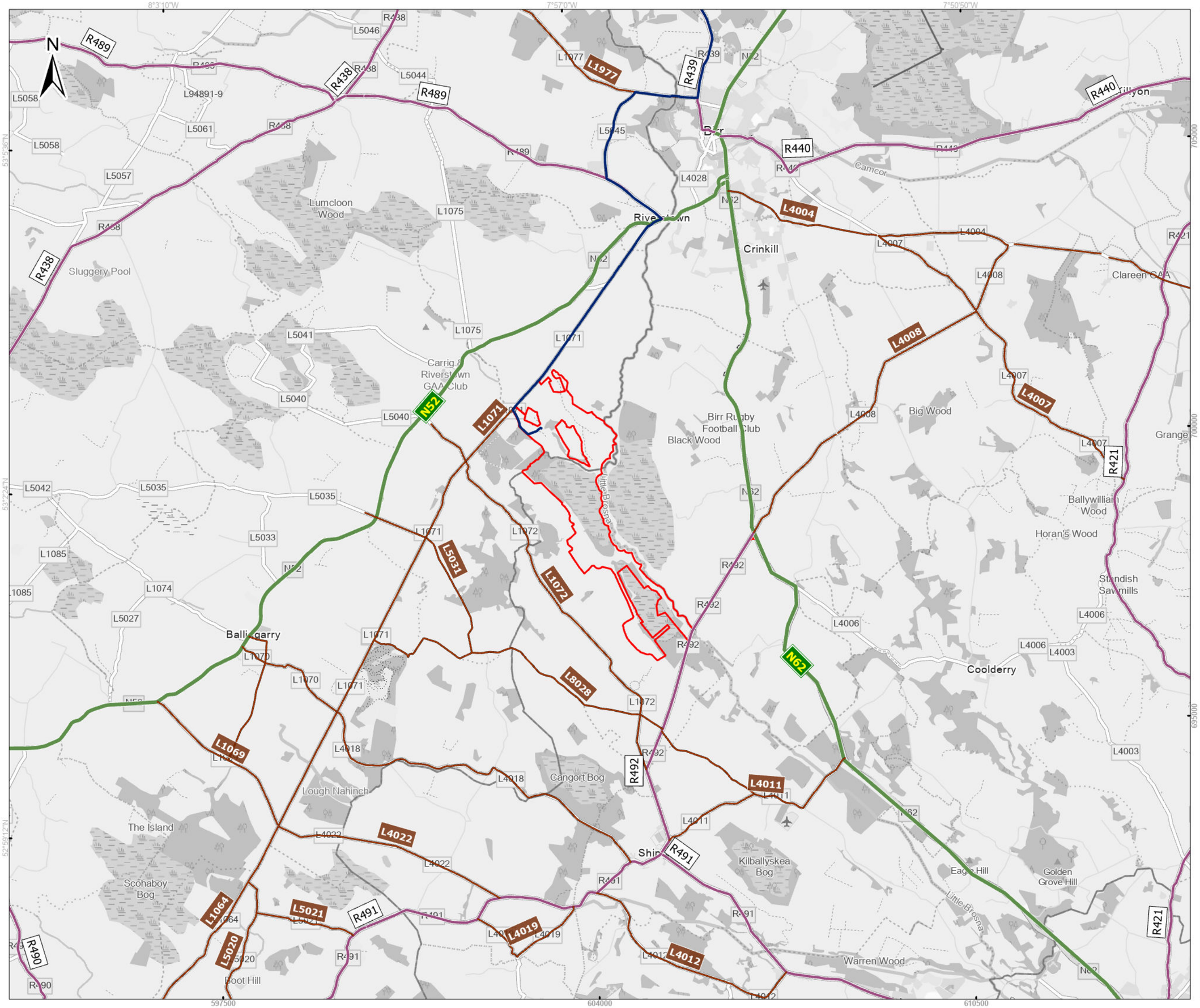
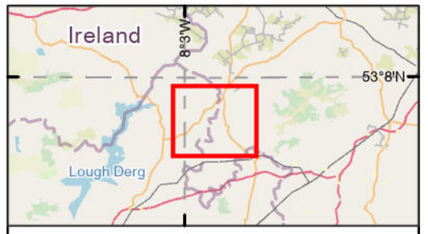




Legend

- Proposed Wind Farm Site Boundary
- Proposed Grid Connection Route

Roads

- Local Roads
- Regional Roads
- National Roads

0 1.5 3
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	13/01/2026	First issue	S.P	J.D

Client: RWE

Project:
Ballincor Wind Farm

Title:
Figure 14-2:
Site Location at Local Level

Scale @ A3: 1:60,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Dillon	January 2026

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11333-033-L.NET-P.App.BO-TOB-A

Draft: A

The proposed wind farm site extends to approximately 355 hectares (ha) consisting of multiple land parcels extending roughly 4.5 km in a northwest–southeast orientation and up to 1 km wide at its widest point in a southeast–northwest direction. The construction footprint of the proposed wind farm infrastructure will require approximately 35 ha. within this area. The total area within the GCR for the construction phase is 41 hectares. Less than 0.22 hectare is located with the TDR works areas. In general terms, the area surrounding the wind farm site can be described as agricultural land, forestry, and peatland.

14.1.3 Proposed Project

The proposed project comprises of the development of a wind farm of up to 11 no. wind turbines, Battery Energy Storage System (BESS), substation and all associated infrastructure. The proposed project comprises facilitating works on the public road network and at private properties along the proposed turbine delivery route (TDR) to accommodate the delivery of turbine components. The project also includes:

- Upgrading of existing access tracks, construction of new founded access roads and floating roads within the proposed site. Total length of internal access roads is 8.8km.
- Construction upgrades of two site entrances on R492 and L1071;
- A temporary access track is required to facilitate the delivery of turbines at Sharavogue crossroads.

The GCR spans approximately 12.23 km, running north from the proposed project 110 kV substation in County Tipperary to the existing ESB Dallow 110 kV substation in County Offaly. The route begins on private land before joining the L1071 public road for 4.7 km, then merges onto the N-52 near Riverstown Village, where horizontal directional drilling (HDD) is used to avoid NIAH protected bridge (Bridge 1) (TN-N52-088-00) which was built to cross over the disused Parsonstown (Birr) to Portumna Bridge railway line. After a short stretch on the N-52, the GCR turns northwest onto the R489, then north on the L5045, and east on the L1077. It crosses the Little Brosna River using HDD within private land, continues along local roads to the R-439, and finally transitions to private land near the L70152 junction before reaching the existing ESB Dallow 110 kV substation.

A full description of the proposed project is provided in Chapter 2 – Description of the Proposed Project.

14.1.4 Relevant Standards

The following relevant standards and policy documents 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)
- Offaly County Development Plan 2021-2027
- Tipperary County Development Plan 2022- 2028
- 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.

14.1.5 EIA Scoping

As part of the scoping process for the proposed project, representatives from Offaly County Council and Tipperary County Council were contacted in August 2024 via email to seek feedback on the proposed scope of this assessment. A follow-up email was sent in September 2024, but no additional response was received from either county council.

The email to each county council highlighted the following main topics to be considered in this assessment:

- **Project overview and location** – description of the proposed wind farm site and surrounding area.
- **Proposed assessment junctions** – key junctions and road links to be assessed for traffic impacts.
- **Site access and Haul Routes** – proposed entrances and construction traffic routes.
- **Abnormal Indivisible Load (AIL) Delivery** – route for turbine component deliveries and associated temporary works.
- **Construction phase traffic** – anticipated vehicle movements and peak/off-peak traffic impacts.
- **Operational phase traffic** – traffic associated with maintenance visits and ongoing operations.
- **Grid connection route** – underground cable route and related road impacts.
- **Traffic surveys and data collection** – baseline traffic surveys methodology, including JTCs and ATCs.
- **Traffic management considerations** – measures to minimise disruption, including delivery timing and convoy systems.

This correspondence provided the framework for scoping this assessment, ensuring that the assessment addresses the key traffic and transport issues relevant to both counties and informs the development of the subsequent Traffic and Transport Assessment (TTA) and Traffic Management Plan (TMP). The assessment has therefore been carried out in accordance with the contents and topics outlined in this email.

14.2 ASSESSMENT METHODOLOGY

14.2.1 Traffic and Transport Assessment Objectives

The objective of a Traffic and Transport Assessment (TTA) within an EIAR is to evaluate the potential impacts of a proposed project on the surrounding transport network during the construction, operational and decommissioning 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, to ensure that the proposed project 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.

14.2.2 Assessment Criteria

The potential for impacts as a result of the proposed project have been assessed as traffic percentage (%) increase at assessment junctions with the proposed project in place. These impacts are both the short-term additional traffic volumes and the geometric requirements of 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 2-2 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 (Section 14.3- 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 14.8 – Assessment of Effects)
- An identification of mitigation measures – (Section 14.9 - Mitigation Measures)
- An assessment of residual effects – (Section 14.10- Residual Effects); and
- An assessment of cumulative effects – (Section 16.7 - Cumulative Effects).

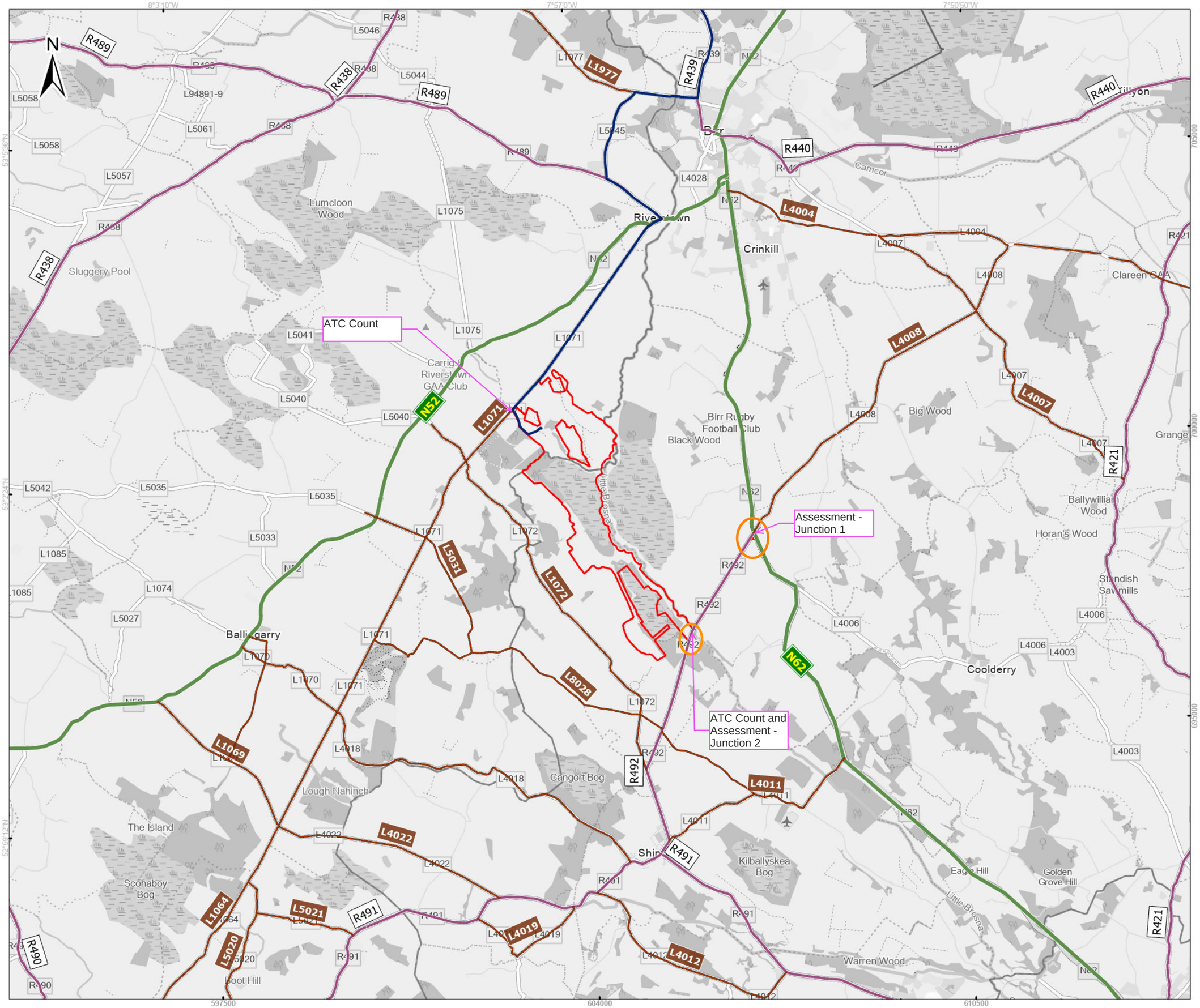
The geometric design elements of the project have been assessed in accordance with the best practice guidelines and standards as outlined below:

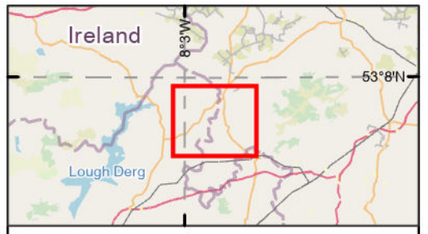
- A swept path analysis has been carried out considering the proposed site access geometry using Autodesk AutoCAD Vehicle Tracking for associated construction vehicles.
- A swept path analysis on the existing geometry of the road network has been carried out for the Abnormal Indivisible Loads (AILs)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

14.2.3 Assessment Junctions

For the purposes of the Traffic and Transport Assessment, three junctions were identified for detailed assessment.

A Classified Junction Turning Count (JTC) was undertaken by IDASO on Thursday, 16th May 2024, between 07:00 and 19:00, at the N62/R492 Crossroads Junction. In addition, Automatic Traffic Counts (ATC) were undertaken at two locations along the R492 and L1071, corresponding to the proposed site access points over a continuous one-week period. The locations of the traffic counts are presented in **Error! Reference source not found.** and Appendix 14-2.





Legend

- Proposed Wind Farm Site Boundary
- Proposed Grid Connection Route

Roads

- Local Roads
- Regional Roads
- National Roads

0 1.5 3
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	13/01/2026	First issue	S.P	J.D

Client: RWE

Project:
Ballincor Wind Farm

Title:
Figure 14-3
Assessment Junctions

Scale @ A3: 1:60,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Dillon	January 2026

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11333-033-L.NET-P.App.BO-TOB-A

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14.2.4 EPA Description of Effects

In addition to the assessment approach outlined in the Traffic and Transportation Assessment Guidelines (TII PE-PDV-02045, May 2014), the Environmental Protection Agency (EPA) specifies that the effects of the proposed project shall be described in accordance with the 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.

14.2.5 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 *14-5*) and
- Construction Haul Route for Abnormal Indivisible Loads (AIL) (see Figure 14-6)

Section 14.5 of this chapter details the expected haul routes and the associated traffic impacts.

14.3 EXISTING ENVIRONMENT

14.3.1.1 Existing Access Arrangements

Access to the proposed wind farm site is currently provided via the local road L1071 and regional road R492, which are generally in good condition. Within the proposed wind farm site, a network of well-maintained forest roads offers comprehensive access throughout the area.

14.3.2 Existing Road Network

Figure 14-1 and Figure 14-2 illustrate the location of the proposed wind farm site in relation to the relevant road network. The remainder of this section describes the existing road network that may be affected by the proposed project, taking into account Abnormal Indivisible Loads (AILs), construction material haul routes, and the proposed grid connection route (GCR).

14.3.2.1 Relevant National and Regional Road Network

M7

The M7 motorway, located to the south of the proposed project site, forms a key section of the proposed TDR from Foynes Port. The M7 is a dual carriageway with two lanes in each direction, separated by a central median, and features grade-separated junctions throughout. The standard speed limit is 120 km/h, and the carriageway has wide lanes and hard shoulders suitable for heavy goods vehicles and Abnormal Indivisible Loads (AILs). The road surface is

generally in good condition, and the structural capacity is sufficient to support the weight and dimensions of AILs without requiring modifications.

N69

The N69 is a national secondary road located to the southwest of the proposed wind farm site and forms the initial section of the proposed TDR from Foynes Port. This single carriageway road connects the port area to the N18 and accommodates a mix of local, freight, and HGV traffic. The standard speed limit along the N69 is 100 km/h, and the road features generally straight alignment with occasional bends and narrow sections typical of rural roads. The road surface is generally in good condition and provides an efficient route from the port to the N18.

N18

The N18 is a national primary road located to the southwest of the proposed wind farm site and forms part of the proposed TDR from Foynes Port. It connects the N69 near Foynes to the M7 motorway, providing a high-capacity link for HGVs and Abnormal Indivisible Loads (AILs). The N18 is predominantly a single carriageway with standard lane widths suitable for large vehicles. The speed limit along the entire route is 100 km/h. The carriageway is generally well-maintained, with good alignment and geometry to accommodate heavy freight traffic. The road is used by a mix of commuter, freight, and HGV traffic and provides a reliable connection between the port and the M7 motorway for turbine deliveries.

N62

The N62 is a national secondary road located to the east and northeast of the proposed wind farm site and serves a dual function, forming part of both the proposed TDR from Roscrea to Sharavogue and the construction material haul routes from local suppliers. The road is predominantly single carriageway with standard lane widths suitable for heavy goods vehicles (HGVs) and Abnormal Indivisible Loads (AILs). The speed limit along the N62 is 100 km/h, and the carriageway features generally good horizontal and vertical alignment, enabling safe passage for both standard HGVs and oversized turbine components. The N62 carries a mix of commuter, freight, and local traffic and is well-maintained with sufficient structural capacity to support the weight and dimensions of all construction-related vehicles.

N52

The N52 is a national secondary road located to the north of the proposed wind farm site, forming part of the construction material haul routes for the proposed project. It is a single carriageway accommodating two-way traffic, with a standard speed limit of 100 km/h. The road has generally good horizontal and vertical alignment.

14.3.2.2 Relevant Local Road Network

R492

The R492 is the primary site access road for the proposed wind farm site, located to the southeast of the site. This single carriageway regional road connects the N62 to the site

entrances and will be used by both construction material haulage and turbine deliveries. The road accommodates two-way traffic, with a standard speed limit of 80 km/h. It is relatively narrow, with limited hard shoulders and several bends, typical of rural roads in the area.

R433

The R433 forms part of the Haul Route to the proposed wind farm site. This single carriageway road is located to the south of the proposed wind farm and accommodates two-way traffic, with a speed limit of 80 km/h. It carries low to moderate traffic volumes and has a rural character.

R435

The R435, located to the south of the proposed wind farm site, connects Junction 21 of the M7 motorway to Kyle Manor and is part of the AIL delivery route. It is a single carriageway accommodating two-way traffic, with a speed limit of 80 km/h. The road has moderate traffic volumes and predominantly rural characteristics, with alignment and lane width suitable for HGVs.

R445

The R445, located to the southeast of the proposed wind farm site, continues the AIL delivery route from Kyle Manor to the Dublin Road Roundabout in Roscrea. This single carriageway road carries two-way traffic with a speed limit of 80 km/h. It accommodates moderate traffic volumes and is suitable for HGVs.

R439

The R439 is a regional road located to the northeast of the proposed wind farm site and forms part of the proposed GCR. The road accommodates two-way traffic and has a posted speed limit of 80 km/h. It connects with the wider regional and national road network, providing access between Birr and Banagher.

L3246

The L3246 is a local road located to the southeast of the proposed wind farm site and forms part of the Haul Route. It is a single carriageway accommodating two-way traffic with a standard speed limit of 60 km/h. The road has a rural character, low traffic volumes, and features typical narrow widths and bends of local roads.

L1071

The L1071 is located to the north of the proposed wind farm site and forms one of the site access points. This single carriageway road accommodates two-way traffic, with a speed limit of 60 km/h. It has a rural character and moderate alignment suitable for light vehicles and HGVs accessing the site.

L-70152

The L-70152 is a local road located to the north of the proposed wind farm site, forming part of the proposed GCR. It is a narrow single carriageway rural road that accommodates two-way traffic. The posted speed limit along this road is 60 km/h, consistent with local rural roads.

14.3.3 Existing Traffic Volumes in Local Road Network

A Classified Junction Turning Count (JTC) was undertaken by IDASO on Thursday, 16th May 2024, between 07:00 and 19:00, at the N62/R492 Crossroads Junction. In addition, Automatic Traffic Counts (ATC) were undertaken at two locations along the R492 and L1071, corresponding to the proposed site access points over a continuous one-week period – See appendix 14-2.

The ATC locations were selected to establish existing traffic volumes at the anticipated site access points, while the N62/R492 Crossroads Junction was chosen as it is the nearest junction to the site and is expected to accommodate the majority of development-related traffic.

Following the analysis of the survey, the network peak periods at N62/R492 junction and the L1071 were determined to be 08:15–09:15 during the AM peak and 17:00–18:00 during the PM peak. The R492 site access location recorded an earlier AM peak hour, between 07:30–08:30, reflecting a variation in traffic patterns along this section of the network during this period. These peak hours were adopted as the worst-case scenarios for assessment in this TTA.

Table 14-1 summarises the total approach flows recorded.

Table 14-1 Traffic Survey Results Approach Flows

Junction	Peak Periods	Total Approach Traffic Flows
Junction 1 N62/R492 Crossroads	**AM: 08:15-09:15**	685
	PM: 17:00-18:00	747
R492 Site Access	**AM: 07:30-08:30**	124
	PM: 17:00-18:00	132
L1071 Site Access	**AM: 08:15-09:15**	47
	PM: 17:00-18:00	51

As shown in Table 14-1 the assessment junctions recorded very low traffic volumes. The R492 access point will serve as the primary site entrance and exit during the construction phase, as it is the only access suitable for accommodating construction vehicles on the existing road network. Accordingly, the traffic percentage increase has been calculated on the basis that all construction traffic (100%) will use the R492, with no assumed increase at the L1071 access.

14.4 PROPOSED ACCESS ARRANGEMENTS

14.4.1 Accesses

The proposed wind farm site will be accessed by two site entrances, located on the regional road R492 (Co. Offaly) and local road L1071 (Co. Tipperary).

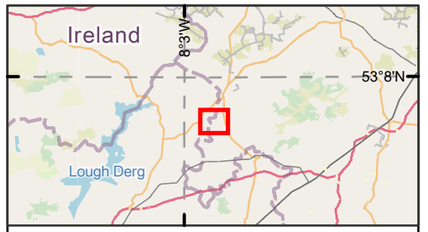
The R492 access point will be the main site access / egress point for the construction phase, as this is the only suitable access point to the existing road network to accommodate construction vehicles. A temporary contractor's compound will be located at the site entrance to

accommodate vehicles and a temporary lay by / set down area is located along the first portion of the access track.

New internal access roads will be built, and any existing tracks upgraded to allow the transport of components and construction materials. Crane pads will be established at each wind turbine location for the assembly and maintenance of the wind turbines.

Heavy vehicles (HVs) access during the construction phase will be limited to the R492 entrance. During the operational phase, site traffic will predominantly comprise light vehicles (LVs). Notwithstanding this, larger vehicles, similar to HGVs, may be required intermittently for the replacement of major components and for periodic track maintenance works.

Chapter 2 of this EIAR provides a detailed description of the proposed project, including access arrangements and crossing points. Figure 14-4 illustrates the location of the access points and temporary road crossing points.



Legend

- Proposed Wind Farm Site Boundary
- Proposed Grid Connection Route
- Proposed Site Entrances

Site Layout

- Proposed Turbine locations
- Proposed BESS
- Proposed Borrow Pit Locations
- Proposed Construction Compounds
- Deposition Areas
- Turbines Hardstands
- Met Mast Locations
- Overrun Area
- Proposed Passing Bay
- Proposed Site Roads
- Proposed Substation Location
- Turbine Foundations
- Turning areas
- Wheelwash

Roads

- Local Roads
- Regional Roads
- National Roads

0 500 1,000
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	16/01/2026	First issue	S.P	J.D

Client: RWE

Project:

Ballincor Wind Farm

Title:

Figure 14-4:
Site Entrances

Scale @ A3: 1:20,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Dillon	January 2026

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11333-034-L.NET-Access-TOB-A

Draft: A

14.5 CONSTRUCTION PROGRAMME AND HAUL ROUTES

14.5.1 Construction Programme

The proposed project has a construction period of approximately 24 months with construction envisaged to commence in 2027 subject to planning approval. The construction phase is divided into five main phases, as outlined in Chapter 2 of the EIAR (Description of the Proposed Project), as follow:

- **Civils (24 months):** Including forestry felling and vegetation clearance, drainage works, construction of site access tracks, hardstands, and turbine foundations.
- **Electrical Grid Connection/Substation/BESS (18 months):** Installation and commissioning of the substation and associated grid infrastructure.
- **Site Electrical (12 months):** Installation of cabling between turbines and the substation.
- **Turbine Deliveries and Erection (12 months):** Transportation and assembly of turbines on-site.
- **Commissioning (4 months):** Testing and commissioning of turbines and electrical systems.

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 proposed project site at different phases of the construction programme. The grid connection cabling works are envisaged to occur towards the end of the wind farm construction programme.

14.5.2 Construction Hours

The hours of construction activity will be limited to avoid unsociable hours, where possible. Construction operations shall generally be restricted to between 07:00hrs and 19:00hrs on weekdays and between 07:00hrs and 14:00hrs on Saturdays.

However, to ensure that optimal use is made during good weather periods or at critical periods within the programme (i.e., concrete pours for turbine foundations, turbine installation when the weather is suitable or to accommodate delivery of large turbine components along public routes), it will be necessary on occasion to work outside of these hours. Any such out-of-hours work will be agreed upon in advance with both Offaly and Tipperary County.

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.

14.5.3 Construction Haul Routes

Based on the nature of the proposed project, various construction materials will be delivered to the proposed wind farm 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 highest level of construction trip generation is anticipated between July and September 2027, when multiple construction activities will occur concurrently, as outlined in the Construction Programme (see section 14.5.1). 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 highest level of construction trip generation is expected during the concrete pours for the turbine foundations, as each foundation requires a continuous single concrete pour completed within one day.

For this assessment, it has been assumed that the construction material will be delivered from the potential quarries outlined in Table 14-2.

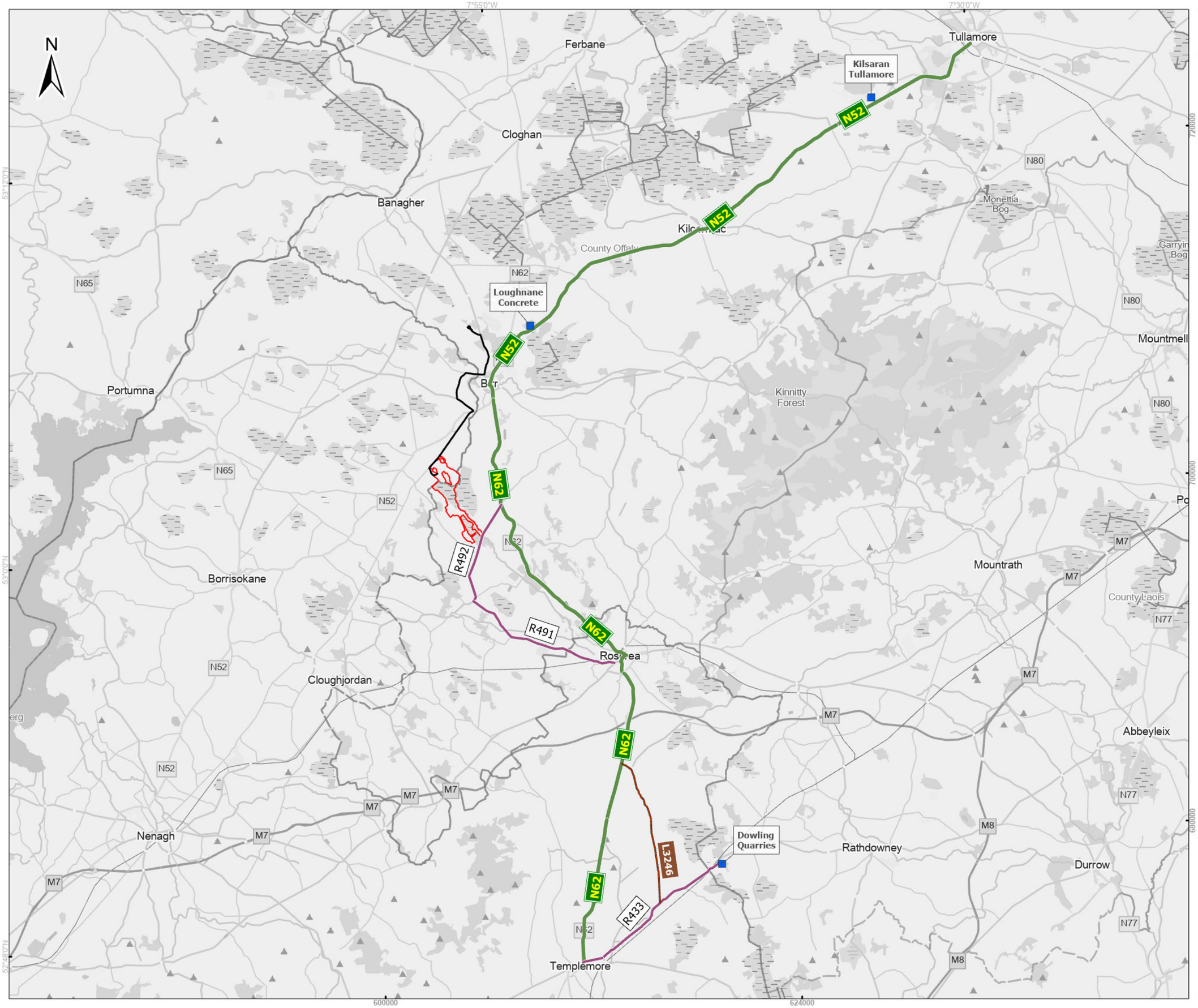
Table 14-2 Quarries and Access Routes

Quarry	Location	Access Route
Loughnane Concrete	Ballynaguilsha, Birr, Co. Offaly	N52, N62, R492
Dowling Quarries	Lisduff, Errill, Co. Laois	R433, L3246, N62, R492
Kilsaran Tullamore	Tullamore, Co. Offaly, R35 Y688	N52, N62, R492

Figure *14-5* presents the anticipated Haul Routes, as outlined in preceding Table 14-2.

Other materials required onsite will include met mast, building materials, fencing, drainage, culverts, water treatment, BESS / substation materials and welfare facilities. Procurement strategies will prioritise local sourcing where available and technically suitable. Construction delivery routes are presented in Figure *14-5*. The source of the quarry material will be principally from the south (Dowlings), thereby limited effects on Birr town.

The traffic volumes, both peak and average on the construction haul route are discussed in section 14.6.



Legend

- Proposed Wind Farm Site Boundary
- Proposed Grid Connection Route
- Quarries Locations

Haul Routes

- Local Roads
- Regional Roads
- National Roads

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	13/01/2026	First issue	S.P	J.D

Client: RWE

Project:
Ballincor Wind Farm

Title:
Figure 14-5:
Construction Haul Routes

Scale @ A3: 1:200,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Dillon	January 2026

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11333-035-Haul.R-P.App.BO-TOB-A

Draft: A

14.5.4 Proposed Grid Connection Route

The proposed GCR construction works will require a combination of temporary road works with traffic diversions and temporary traffic management measures such as Stop / Go systems along the proposed route. For further information on the temporary road works required for the grid connection cable, please refer to sections 2.6 of the Traffic Management Plan.

The GCR will require a road opening licence under Section 254 of the Planning and Development Act 2000, as amended from both Tipperary County Council and Offaly County Council. The TMP and suggested diversion routes will be agreed with Tipperary County Council and Offaly County Council prior to the commencement of the project. It is anticipated that the cable installation along local roads will be advanced using a combination of rolling lane closures where the existing road width is insufficient to accommodate an open lane for traffic to pass the works area. If rolling lanes cannot be accommodated, local diversions will be put in place, in consultation with Tipperary County Council and Offaly County Council. All works will be carried out in accordance with the conditions attached to any licence granted under Section 254. Public traffic movements will be maintained during these works using trench covers and traffic management measures. Where diversions are required, these will be agreed with Tipperary County Council and Offaly County Council in advance. The grid connection cable works by its nature will be isolated to a relatively small works area which will move on a daily basis. Impacts associated with the works will be experienced on the road network in the immediate vicinity to the works area. Off-line sections of the proposed grid connection through private lands will not generate an impact to existing traffic flows.

The underground electrical cabling route that will affect public roads – split into eight sections as detailed below. A summary of each section's length, and potential diversion length during any road closure is provided below.

- Section 1 (2.6 km) is from the onsite 110kV substation and runs northeast along the L1071 to the L1071/L9520 junction. Full closure may be needed at points. A local diversion will be in place, with a detour of 5.9 km.
- Section 2 (1.3 km) continues northeast along the L1071 to the N52. Full closure may be needed at points. If required, the diversion would be 2.1 km.
- Section 3 (0.2 km): Continuing northeast on the N52 between the L1071 and the R489 in Riverstown. A one-way "stop and go" system is proposed. If full closure is needed for this short section, the diversion would be approximately 4.6 km.
- Section 4 (1.2 km) runs northwest on the R489 to the junction with the L5045. Two-way traffic or one-way "stop and go" is proposed on this section. If closure is necessary, the diversion would be 4.6 km.
- Section 5 (1.7 km) is along the L5045. The L5045 runs past Killeen National School to the L1077/L70065. Full closure may be needed at points. The diversion could add up to 3.7 km.

- Section 6 (1.1 km) continues from the L5045 east along the L1077 and L70065 to the R439 at Birr. A one-lane "stop and go" system is proposed. If partial closure is required, the diversion would add 4.9 km per trip.

- Sections 7 (2.4 km) will follow the R439 north from Birr. A one-lane "stop and go" system will be maintained. Potential diversions are 2 and 7.1 km.

- Section 8 (0.7 km): The final section runs from the R439 to the existing 110 kV Dallow substation. This section will not require closure as the cable will run parallel to the L70152.

14.5.5 Abnormal Indivisible Load (AIL) Haul Route

14.5.5.1 Route Assessment Considerations

For the proposed project, the AIL delivery haul route or proposed Turbine Delivery Route (TDR) 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.
- Swept path analysis of pinch points / junctions on the AIL Haul Route.

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

14.5.5.2 Foynes Port to Ballincor Wind Farm Delivery Route

It is proposed that turbine components will be delivered to the proposed wind farm site via Foynes Port, Co. Limerick. The route heads west along the N69, where it will join the N18 on the outskirts of Limerick. The route continues onto the M7 and depart the M7 at Junction 21 near Derrinsallagh and join the northbound R435 towards Kyle Manor. At Kyle Manor loads will turn left and join the R445. the route will continue west along the R445 to the Dublin Road Roundabout where loads will turn right and then left to travel west towards Roscrea. The route continues along the Dublin Road onto the N62 travelling northwest through Roscrea. It continues north-westerly on the N62 to Sharavogue where it turns left onto the R492 and continues southwest to the proposed wind farm site entrance.

Pell Frischmann completed an assessment of the TDR (See Appendix 2-1). A number of pinch points have been identified and assessed. An assessment was carried out using site visits and Autotrack to determine what, if any, works are required at these pinch points to allow the turbine components to be moved to the site. Works range from hedgerow trimming/clearing to facilitate oversail of turbine blades to the temporary placement of hardcore to allow the oversize vehicles to pass. The planning application includes the proposed temporary works required for turbine delivery within private lands at Sharavogue crossroads. 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 proposed project. The AIL delivery route is shown in Figure 14-6 and the swept path analysis is included in Appendix 2-1. Traffic generation associated with the AIL haul route during

the construction phase is outlined in Table 14-3. The AIL delivery route is presented in Figure 14-6.

Legend

- Wind Farm Site Boundary
- Turbine Delivery Route
- Proposed Grid Connection Route

Roads

- Regional Roads
- National Roads
- Motorways

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Copyrights:

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A	07/11/2025	First issue	S.P	J.D

Client: RWE

Project:
Ballincor Wind Farm

Title:
Figure 14-6:
AIL Delivery Routes /
Turbine Delivery Route (TDR)

Scale @ A3: 1:320,000

Prepared by:	Checked by:	Date:
S.Pezzetta	J.Dillon	November 2025

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11333-036-TDR-AIL-TOB-A

Draft: A

Table 14-3: Traffic Generation during the Construction Phase – AIL

Components of Turbines	No. of Turbines	Parts	Components	Total Components	Trips with: 3 AIL per convoy	Trips with: 5 AIL per convoy
Nacelle	11	1	11	88	30	18
Blade	11	3	33			
Tower	11	4	44	1		
Transformer						

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.

14.6 PROPOSED PROJECT TRIP GENERATION

14.6.1 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 and these reflect standard construction practice and anticipated site working arrangements:

- All construction deliveries (excluding concrete pours) have been averaged over 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 maximum of 27 daily HV one-way trips have been estimated at peak construction time (excluding the concrete pour volumes) and an average of 15 HV during off-peak. The peak movements are anticipated to occur from July to September 2027 (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 14-4 show the number of construction HVs assigned to their corresponding activity and duration in the construction programme.

14.6.1.1 CONCRETE 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 93HVs arriving onsite per day. Considering the working hours, it is expected an average of 9 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 14-4: Construction Programme 1-way HV Construction Volumes per Day (Excluding Turbine Foundation Concrete Pours)

	2027												2028											
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	1																							
Site Compounds		12	12	12			12	12	12															
Site Roads	2	2	2	2	2	2	2	2	2	2	2		2	2	2	2	2							
Turbine Hardstands					6	6	6	6	6	6	6	6	6	6	6	6	6	6						
Turbine Foundations						7	7	7	7	7	7	7	7	7	7	7	7							
Substation Construction & Electrical Works										3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Backfilling & Landscaping																								
Turbine Delivery and Erection																								
Substation Commissioning																								
Turbine Commissioning																								
Total HGV 1-way/day	3	14	14	14	8	15	**27**	**27**	**27**	18	18	16	18	18	18	18	18	9	3	3	3	3	3	3
Total HGV 2-way/day	6	28	28	28	16	30	**54**	**54**	**54**	36	36	32	36	36	36	36	36	18	6	6	6	6	6	6
Average HGV 1-way	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Average HGV 2-way	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

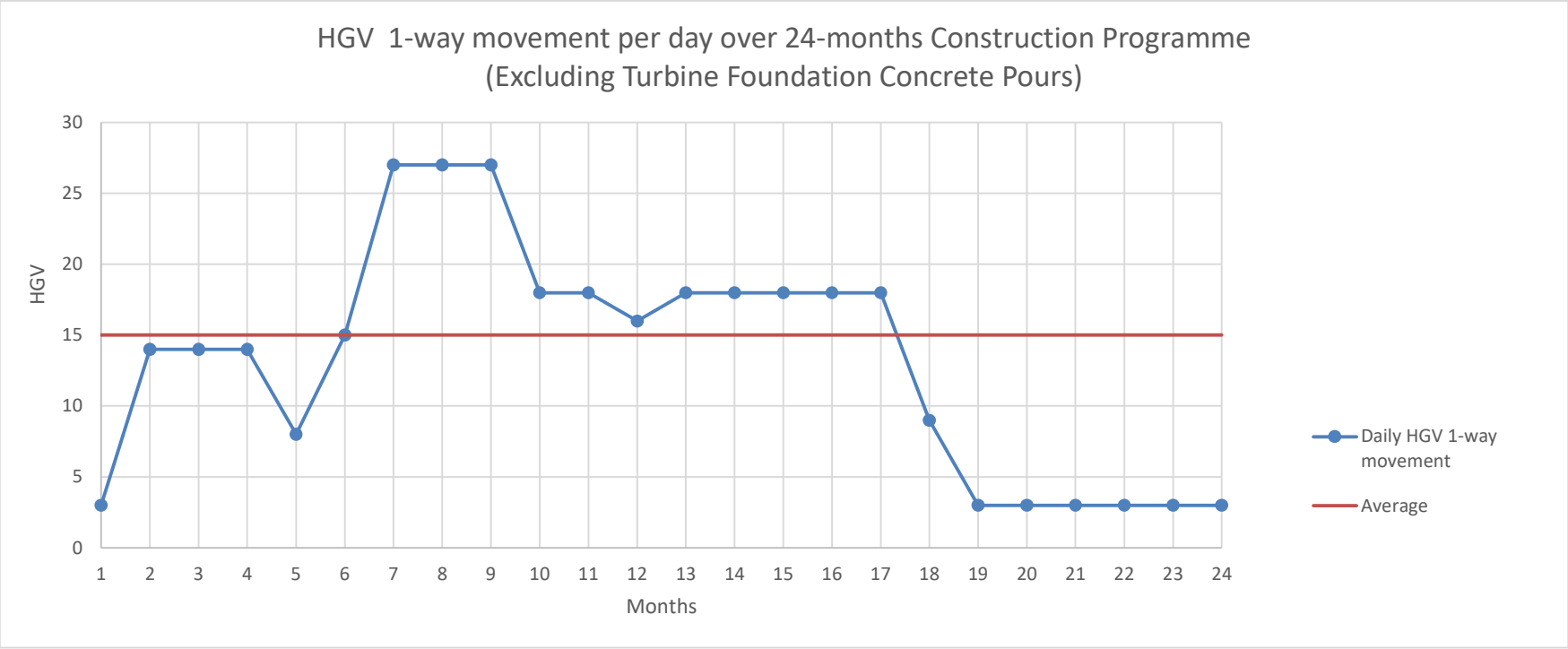

Figure 14-7: Graphical representation of the Construction Traffic over Construction Programme, representing 1-way movement per Day - Excluding Concrete Pour HV

14.6.2 Construction Trip Generation-Staff (LV)

At the peak construction, approximately 120 staff are estimated, during off-peak activities 76 people are estimated on site. For 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 240 trips (two-way) can be expected during peak construction and 252 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 along the haul route for the proposed project is assessed based on peak traffic generation.

14.6.3 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). No traffic will be generated during the operational phase for the GCR.

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 Offaly and Tipperary County Council, and the relevant consents will be obtained.

14.6.4 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. The BESS units will be removed and the area allows to revegetate.

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.

14.7 TRAFFIC IMPACT ASSESSMENT

14.7.1 Assessment Scope

The following junctions have been considered in the assessment presented in this section:

- Site 1 - N62/R492 crossroads junction
- Site 2 - R492 site access location

See **Error! Reference source not found.** for the location of these junctions in relation to the proposed project. The R492 access point will be the only site access/egress point for the construction phase, as this is the only suitable access point to the existing road network to accommodate construction vehicles. Therefore, the access point on L1071 has not been considered as part of this assessment.

14.7.2 Assessment Years and Time Periods

Given that the operational trip generation associated with the proposed project is expected to be minimal, it was considered appropriate to assess the traffic impacts exclusively during the peak construction phase. As such, the four (4) assessment years generally assessed, under *TII's TTA Guidelines*, i.e., Year of Opening (YoO), YoO+5, and YoO+15, have not been considered.

The assessment years are initially based on the programme:

- Construction Years: 2027-2028.
- Peak Construction Period: 2027 (3 months only) (*Assessment Year)*
- Operational Year: 2029 – 2064.
- Decommissioning: Year 2065.

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 project (see Table 14-1 for relevant peak periods at each junction).

14.7.3 Assessment Scenarios

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

- **Do-Nothing/Future Baseline Scenario**: To assess the traffic impact of the proposed project on the local road network, it is first necessary to establish background traffic conditions without the proposed project, also referred to as the 'do-nothing' scenario. Such background traffic flows have been determined from the traffic survey detailed in section 14.3.3 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 proposed project at peak construction stage.

14.7.4 Traffic Assessment Criteria

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

14.7.5 Committed Development Traffic

A review of the planning applications submitted in the area in proximity to the proposed project, with information available within the Offaly and Tipperary County Councils' planning websites, has been undertaken to identify committed developments (i.e. developments with planning permission but not yet delivered).

A small number of developments were identified within the wider study area. The construction traffic associated with these developments is expected to be minimal and/or is unlikely to coincide temporally with the construction phase of the proposed project. Consequently, these developments have not been included in the traffic impact assessment, as no cumulative construction traffic effects are anticipated.

Section 14.11 summarises the committed developments identified in the local area. Chapter 4 Policy, Planning and Development Context outlines all the relevant planning applications within the vicinity of the site.

14.7.6 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., 2027. 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 Offaly 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 14-5: Construction TII Growth Factors (Extract from PE-PAG-02017, October 2021)

Years	Growth Factor for LVs	Growth Factor for HVs
Annual growth factor	**1.0118 (2016-2030)**	**1.0323 (2016-2030)**
2024 to 2027 (3 years)	1.0358	1.1001

14.7.7 Do-Nothing Traffic Flows

Table 14-6 presents the estimated 'do-nothing' traffic volumes at the relevant junctions for each assessment period.

Table 14-6: Do-Nothing Traffic Flows

Junction	Peak Periods	Baseline Approach Flows (2024)	Background Flows at Peak Construction (2027)
	AM: 08:15-09:15	685	714

Site 1 N62/R492 Crossroads	PM: 17:00-18:00	747	777
Site 2 R492 Site Access	AM: 07:30-08:30	124	129
	PM: 17:00-18:00	132	137

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

14.7.8 Summary Peak Construction Trip Generation

The methodology used to determine the peak construction trip generation for the proposed project is presented in Section 14.6 of this chapter.

As outlined in section 14.4, there are two types of haul traffic, 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 14.5.2, 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 proposed windfarm is likely to occur outside the network peak hours, i.e., peak hours see table 14-6. For the purposes of this assessment, a worst-case scenario has been assumed, in which 20% of the traffic access and leave the site during peak periods. Table 14-7 summarises the anticipated daily and assumed peak traffic generated by the proposed project.

Table 14-7: Summary Peak Construction Daily Trip Generation

	IN		OUT		TWO-WAYS
	LV	HGV	LV	HGV	
Daily Peak Construction Traffic	120	27	120	27	324
Assumed Traffic During Peak Periods	27	5	27	5	64
Daily Off-Peak Construction Traffic	76	15	76	15	190
Assumed Traffic During Off-Peak Periods	16	3	16	3	38

14.7.9 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 both assessment junctions, via the N62 and R492. HGV 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.

Construction materials will be sourced from established regional suppliers, with the majority of materials anticipated to originate from Dowling Quarries, located to the south of the proposed wind farm site. Accordingly, it is expected that the predominant HGV trip generation associated with material deliveries will approach the development from the south via the N62 and R492, thereby avoiding Birr Town Centre.

For the purpose of this assessment, it has been assumed that 100% of the proposed wind farm peak construction traffic will transit both assessment junctions, via the N62 and R492. HGV traffic is 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 and departures in the PM peak and therefore are not double-counted in the assessment.

14.7.10 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 14-8.

Table 14-8: Do-Something Traffic Flows

	Peak Periods	Baseline Approach Flows (2024)	Do-Nothing Traffic Flows (2028)	Peak Construction	Off-Peak Construction
				Do-Something Traffic Flows (2027)	Do-Something Traffic Flows (2027)
Site 1 N62/R492 Crossroads	AM: 08:15-09:15	685	714	751	736
	PM: 17:00-18:00	747	777	814	799
Site 2 R492 Site Access	AM: 07:30-08:30	124	129	166	151
	PM: 17:00-18:00	132	137	174	159

14.8 Assessment of Effects

14.8.1 Do Nothing / Future Baseline Scenario

If the proposed project 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.

14.8.2 Likely Significant Effects – Construction Phase

This section outlines the likely significant effects 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.

14.8.2.1 Construction Haul Route

This section assesses the Likely Significant 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 Likely Significant 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 junctions were analysed according to assessment criteria outlined in Section 14.7.4.

Table 14-9: Construction Haul Route– Potential Impact

	Peak Periods	Peak Construction		Off-Peak Construction	
		Additional Traffic	Traffic Percentage (%) Increase	Additional Traffic	Traffic Percentage (%) Increase
Site 1 N62/R492 Crossroads	AM: 08:15-09:15	+37	5%	+22	3%
	PM: 17:00-18:00	+37	5%	+22	3%
Site 2 R492 Site Access	AM: 07:30-08:30	+37	29%	+22	17%
	PM: 17:00-18:00	+37	27%	+22	16%

As presented in Table 14-9, with the assumption of 20% of construction traffic accessing the site during the peak hours, a maximum increase of 29% has been estimated at Site 2 R492 Site Access . 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 low, it can reasonably be assumed that the junctions have sufficient capacity to accommodate the additional traffic associated with the proposed project

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 17%. 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.

14.8.2.2 Description of Effects-Construction Traffic

The effects associated with the construction phase, according to EPA's guidelines, are presented Table 14-10.

Table 14-10: Construction Haul Route – EPA Criteria Effect

Extent	Scenario	Significance	Duration
Assessment Junctions as per Section 14.7.1	Peak Traffic	Moderate Negative	Temporary (3 months)
	Average Traffic	Slight Negative	Short-term (21 months)

14.8.2.3 AIL Haul Route Impact

This section is assessed on the 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 Appendix 2-1. 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 has been assessed from Foynes Port to the proposed wind farm site access. 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 Offaly and Tipperary County Council and will be undertaken for a short period of time. Table 14-11 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 14-11: 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
-	Port Exit Gate	-	-	P1*	-	-
SK01	N69 Junction	P3	P3	-	P3	P3
SK02	N69 Left Bend at Shrylane	P4	-	-	P4	P4
SK03	N69 Left Bend Southwest of Robertstown Creek	-	-	-	-	P5
SK04	N69 Left Bend West of Borrigone	-	P6	-	P6	P6
-	N69 Right Bend West of Borrigone	-	-	-	P7	P7
-	N69 North of Wallace's Cross	P8	-	-	-	-
-	N69 West of Toreen	-	-	-	P9	-
SK06	N69 Right Bend Northeast of Toreen	P10	-	-	-	P10
-	N69 Right Bend Southeast of Glenameade	-	-	-	-	P11
SK07	N69 Bends Northwest of Knockbrack West	-	-	P12	-	P12
SK08	N69 Ferry Bridge	-	-	-	-	-

Dwg No.	Title	Demount Signage	Public Lighting /Electric pole Removal	Hardstanding area	Prune Vegetation	Oversail
SK09	N69 Roundabout West of Clarina	P14	-	-	P14	P14
-	N69 Left Bend at Mungret Village	-	-	-	-	-
SK10	N69 / N18 Slip Road Roundabout 1	-	-	-	P16	P16
SK11	N69 / N18 Slip Road Roundabout 2	P17	P17	-	P17	P17
SK12	M7 Junction 21 / R435	P18	P18	P18	P18	P18
SK13	R435 Mountain View Roundabout	P19	-	P19	P19	P19
SK14	R435 / R445 Roundabout	P20	P20	-	P20	P20
SK15	R445 / Dublin Road Roundabout	P21	P21	P21		P21
SK16	Dublin Road / N62 Junction	P22	P22	P22	P22	P22
SK17	Dublin Road Roscrea	-	-	P24	P24	P24
-	N62 Right Bend North of Gloster House	-	-	-	-	P25
SK18	N62 / R492 Junction	-	-	P26	-	-

Dwg No.	Title	Demount Signage	Public Lighting /Electric pole Removal	Hardstanding area	Prune Vegetation	Oversail
SK19	Proposed Site Entrance	-	-	-	-	-

At Construction Stage, the appointed Contractor and Haulage Company will be responsible for the temporary traffic management, agreements, and licensing with the Offaly and Tipperary County Council 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 temporary 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 temporary 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 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 temporary 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 over-sail works are primarily hedgerow and vegetation cutting performed by a single tractor with minimal traffic management. These works will be undertaken simultaneously with offsite works in advance of the AIL deliveries.

14.8.2.3.1 Description of Effects- AIL Haul Route

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

Table 14-12: AIL Haul Route – EPA Criteria Effect

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

14.8.2.4 Grid Connection Route Impact

The proposed GCR is approximately 12.23 km in length and will travel in a northerly direction from the proposed project substation to the existing Dallow 110 kV substation, with most of the GCR situated in the public road network. The first 8.54 km of the GCR will be in County Tipperary, with the final 3.66 km of the GCR located in County Offaly.

The GCR then follows the R439 (Birr–Banagher Road) north for approximately 2.44 km, before turning east near the R439 / L70152 junction, transitioning from the regional road onto private lands leading to the Dallow 110 kV Substation.

The progress of the construction of the grid connection is approximately 250 m per week, with no more than 100 m of trench open at any one time. The cabling works will require a temporary road closure of local roads and a temporary lane closure of regional road R439 for trenched crossings.

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 for by the appointed 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.

14.8.2.4.1 Description of Effects

The effects associated with the proposed GCR, according to the EPA's guidelines, are presented below.

Table 14-13: Grid Connection Route – EPA Criteria Effect

Extent	Scenario	Significance	Duration
Grid Connection Route	Advanced Works	**Moderate Negative (Not Significant)**	Temporary
	Operational Phase	**Imperceptible (Not Significant)**	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.

14.8.3 Likely Significant Effects – Operational Phase

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

14.8.3.1 Site Entrance and Internal Access Tracks

For the operational phase, the site will be accessed via R492 and L1071. The works to construct the access points 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). Both the forestry and agricultural activities are existing operations and have a neutral effect.

14.8.3.2 Operational 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 proposed project. 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 operational traffic volumes were assessed against the *TII TTA Guidelines thresholds.* This assessment indicates that the operational phase of the proposed project will be sub-threshold based on the following:

- Proposed project 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.

14.8.3.2.1 Description of Effects-Operational Phase

The effects associated with the operational phase, according to the EPA's guidelines, are presented in Table 14-14.

Table 14-14: Operational Phase – EPA Criteria Effect

Extent	Scenario	Significance	Duration
R492 and L1071	Site Entrance and Internal Access - Maintenance Traffic	**Imperceptible**	Long-term (35 years)
R492 and L1071	Site Entrance and Internal Access - Safety	**Significant Positive**	Long-term (35 years)
R492 and L1071	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 consequences on the road network over the 35 years of operation.

14.8.4 Likely Significant Effects – 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 BESS, turbine components will be separated and removed off-site. These components will be transported by HVs.

The on-site substation and 110kV 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 period of the proposed project, a detailed assessment of the decommissioning phase of the proposed project is not included as part of this assessment. It is proposed that in advance of the decommissioning process a Traffic Management Plan would be prepared to ensure that traffic impacts are minimised during this phase.

14.8.4.1 Decommissioning 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, negative, temporary effect.

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

14.8.4.1.1 Description of Effects- Decommissioning Phase

The 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 14-15.

Table 14-15:Decommissioning Traffic – EPA Criteria Effect

Extent	Scenario	Significance	Duration
N62, R492 and L1071	Decommissioning Phase	**Slight Negative (not significant)**	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.

14.9 MITIGATION MEASURES

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

14.9.1 Construction Phase

To mitigate the impact of the construction traffic, the proposed project 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 proposed wind farm site to provide construction material will reduce the HV volumes and contribute to the circular economy.

The greatest traffic volume impact is associated with the haulage of the materials for the combined construction activities from July to September 2027. 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.

14.9.1.1 Traffic 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 proposed project to minimise its effects. The TMP proposed for the proposed project is included in Appendix 2-2.

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 Offaly and Tipperary County Councils.
- HGV movements will be restricted during peak road network hours (including school hours – see table 14-6) Monday to Friday, unless otherwise agreed in writing with Offaly and Tipperary County Councils.
- HGV movements for the proposed project shall be directed away from sensitive areas (i.e., schools, urban centres).
- No parking shall 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 HGVs will be provided within the proposed project site.
- Wheel wash equipment will be used onsite to prevent mud and stones from being transferred from the proposed wind farm 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 proposed wind farm 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 on the proposed wind farm site and slower-moving vehicles making turning manoeuvres.
- Access to the construction site of the proposed wind farm will be controlled by onsite personnel and all visitors will be asked to sign in and out of the proposed wind farm site by security/site personnel, and site visitors will all receive a suitable Health and Safety site induction.
- A detailed programme of deliveries, particularly for turbine components, will be submitted to Offaly and Tipperary County Councils prior to commencement.
- Local residents will be informed in advance of any traffic-related impacts, such as temporary lane or road closures or night-time deliveries, via local notices and public postings.
    - Notices will include the developer's representative contact details for the public and both the Offaly and Tipperary County Council's details for any queries during working hours.
    - An out-of-hours emergency contact number will also be provided.
- Pre- and Post-Construction Road Surveys:
    - A pre-construction condition survey will be carried out on approach roads to document their condition before works commence.
    - A post-construction survey will be completed upon completion of works.
    - The timing and scope of these surveys will be agreed in advance with both the Offaly and Tipperary County.
- Continuous liaison will occur with Offaly and Tipperary County Councils, their Roads and Transportation Sections, and An Garda Síochána during the delivery phase of Abnormal Indivisible Loads (AILs) to coordinate escorts, timing, and local traffic controls.
- The following temporary modifications will be undertaken along the haul route to accommodate turbine component deliveries:
- Temporary removal of road marker poles at the Foynes Port exit gate.
- Temporary demounting of signage and vegetation trimming at key bends and junctions along the N69, including:
    - N69 junction;
    - N69 left bend at Shrylane;
    - Left bend west of Borrigone;
    - N69 west of Toreen (tree canopy trimming);
    - N69 bend northwest of Knockbrack West; and
    - N69 roundabout west of Clarina.
- Temporary demounting of signage, removal of lighting columns, vegetation clearance, and installation of temporary load-bearing surfaces at the following locations**:**
    - N69/N18 Slip Road Roundabout 1;
    - M7 Junction 21/R435;

- R435 Mountain View Roundabout;
- R435/R445 Roundabout;
- R445/Dublin Road Roundabout;
- Dublin Road/N62 Junction;
- Dublin Road (Roscrea); and
- N62 right bend north of Gloster House.

- A new temporary offline access track will be constructed in advance of the junction to provide adequate turning radii for abnormal loads accessing the R492.
- A review of overhead line clearances will be undertaken with statutory providers along the entire haul route. A minimum clearance height of 5 metres (plus flashover protection) will be maintained.
- Delivery Times of Large Turbine Components – TMP will include the option to deliver the large wind turbine plant components at night to minimise disruption to general traffic during the construction stage.

14.9.1.2 Traffic Impact

To mitigate the impact of the construction traffic, the TMP in Appendix 2-2 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 three 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. To mitigate this impact, liaison with local authorities and the community in advance of the foundation pours will occur.

14.9.1.3 Junction Visibility

Adequate visibility is available from the site access onto the Local Road L1071 and Regional Road R492 of 3 m 'x- distance' and 'y-distance' of 215 m. Visibility sightlines are in accordance with Offaly County Development Plan 2021-2027 and TII DN-GEO-03060 (May 2023).

The R492 will be used during the construction phase, during which a temporary advisory speed limit will be implemented on the R492. 85th% speeds will be monitored here prior to opening the construction access. Additional temporary traffic calming will be implemented if necessary to ensure 85th% speeds are no greater than 80kph. In addition, a Traffic Management Operative (TMO) will be stationed at the entrance to ensure safe egress onto the R492, as set out in the Traffic Management Plan (TMP).

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, see Drawings No. 11474-2050 to 11474-2051 (full set of planning drawings are available as part of this planning application).

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

14.9.1.4 Junction 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 14-11. The swept path of the maximum legal articulated vehicle accessing/departing the site are available in Drawings No. 11474-2050 to 11474-2051.

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 drawings. The swept path analysis used an 81 m 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 collisions between a passing vehicle and one stopped to open the gates at the site access.

Internal roads will have a running width of approximately 5–7 metres, with wider sections at corners and near turbine locations.

14.9.1.5 Haul 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 where possible 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 the 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.

14.9.1.6 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.

14.9.1.7 Trench Reinstatement

The proposed project includes works along the public road for a 12.23 km grid connection to the existing Dallow 110 kV substation. 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.

14.9.1.8 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.

14.9.2 Operational Phase

As outlined in Section 14.8.3, due to the relatively low operational traffic of the proposed project, 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 proposed project.

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.

14.9.3 Decommissioning Phase

On the decommissioning of the proposed project, 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.

14.10 RESIDUAL EFFECTS

14.10.1 Construction Phase

During the 24-month construction phase of the proposed 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 14-4, 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 effect will remain a ***short-term, slight. negative effect*** **(not significant)** on the road network. The worst-case residual construction traffic impact is equivalent to the peak potential impact on the local road network (i.e., L1071, R492). A short-term negative effect is expected over the 10 days associated with the turbine foundation concrete pours. On the TDR 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 temporary effect (depending on the location), which is not significant.

The cabling works will have a moderate negative temporary effect (not significant) on the local road network. temporary 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.

14.10.2 Operational Phase

As the traffic impact of the proposed project will be imperceptible, long-term, negative during the operational phase, there will be no significant residual effects during this phase of the proposed project.

14.10.3 Decommissioning Phase

As stated above, when the proposed project 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.

14.10.4 Description of Effects-Residual

The residual effects associated with the project, according to the EPA's guidelines, are presented in Table 14-16.

Table 14-16: Residual Effect - EPA Criteria Effect

Extent	Scenario	Significance
N62, R492 and L1071	Construction Phase	**Not Significant**
	Operational Phase	**Imperceptible (Not Significant)**
	Decommissioning Phase	**Not significant**

14.11 CUMULATIVE EFFECTS

14.11.1 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 wind farm site. This includes sites which have previously been granted planning permission and have not been constructed.

Information on the relevant projects within 5 km of the proposed project is described in Chapter 1 – Introduction. The information was sourced from a search of the local authorities planning registers (Tipperary and Offaly County Council, August 2025), the EIA portal (EIA, August 2025), planning applications (My Plan, August 2025), EIAR documents and planning drawings which facilitated the identification of past and future projects, their activities and their potential environmental effects. 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 4 Policy, Planning and Development Context outlines all the relevant planning applications within the vicinity of the site to be considered as part of this cumulative assessment. These planning applications are considered in the cumulative assessment if they have a current planning application and have not been constructed.

The following is a list of cumulative developments identified in Chapter 4. All projects listed in Chapter 4 of this EIAR were reviewed as part of the cumulative effects assessment. Key projects with the potential for cumulative effects are described further below.

14.11.1.1 Proposed/Granted Projects

Carrig Wind Farm - Tipperary County Council Ref 2360763, ACP Ref. 318689 (Granted by ACP in June 2025) and 2360140 (granted by Offaly County Council in October 2024)

The proposed turbines for Carrig Wind Farm are located 3.9 km to 5.3 km northwest of the T1 and T3. The Carrig (AIR)[1] wind farm includes a 38 kV substation and 38 kV cable to Dallow 110 kV substation via an underground cable. The site was granted in June 2025. The cable route utilises a similar route to Dallow 110 kV substation along the N52, R489. As the proposed wind farm is located >3.9 km west of the proposed wind farm, there is no potential for significant cumulative effects on the local road network. A separate application was made to Offaly County Council (Ref 2360140) for the 38kV grid connection in Offaly. The routing of the Carrig 38kV was considered as part of the proposed project. Due to the presence of the existing cables and the proposed Carrig 38kV within the L70152 local road, the GCR for the proposed project is located parallel to the L70152 local road. Based on a review of the cable route, there are no likely significant cumulative effects.

Clondallow BESS- Planning Ref 2560367

Birr Renewable Ltd. have applied for a 100 MW Battery Energy Storage Station with 53 battery containers and associated equipment, with a control room container, site entrance, and all associated works. The application was submitted in August 2025 and is located 50m to the southwest of Dallow 110 kV substation. Based on a review of the cable route, there are no likely significant cumulative effects.

Water Supply Pipeline – Planning reference PA92.323980

Uisce Eireann have applied for a 172 km pipeline and associated infrastructure between Parteen Basin, Co. Tipperary and Peamount, Co. Dublin. The development will generate construction phase traffic requiring the use of agreed Haul Roads across Limerick, Clare, Tipperary, Offaly, Laois, Kildare, and South Dublin. A total of 57 junctions along these roads have been identified for the traffic assessment. The construction phase of the proposed pipeline in Offaly and Tipperary is anticipated to be undertaken mainly in 2029 (subject to planning approval). Based on a review of the traffic assessment and Traffic management plan, no

[1] Atlantic Infrastructure Renewables

significant cumulative effects are anticipated on the R492 or N62. Based on a review of the cable route, there are no likely significant cumulative effects.

Other Smaller Developments

A review of the Offaly and Tipperary County Council planning portal revealed a number of small scale residential and rural developments (e.g., residential one-off housing and agriculturally based developments) proposed in areas between Carrig, Birr and Riverstown in proximity to the proposed project. 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.

Considering the fact that they are small scale residential and rural developments, there is no potential for significant effects. A full list of planning applications within the wider area of the proposed project is provided in Chapter 4 (Policy, Planning & Development Context) Appendix 4-1 of this EIAR.

A peak of 8 deliveries over 1 or 2 days at the locations of the identified cumulative developments is predicted. This additional traffic will have an imperceptible effect on the road network in conjunction with the proposed project traffic.

14.11.2 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 14.8.3, the traffic volumes associated with these activities will be low and will likely have a slight negative long-term effect (not significant) on the road network in the vicinity of the proposed project.

14.11.3 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 forestry traffic will generate low levels of traffic. The overall decommissioning phase traffic will be slight and temporary.

14.11.4 Description of Effects-Cumulative Impact

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

Table 14-17: Cumulative Effect - EPA Criteria Effect

Extent	Scenario	Significance	Duration
N62, R492	Construction Phase	**Slight/moderate negative (Not Significant)**	Temporary/Short-term

Extent	Scenario	Significance	Duration
and L1071	Operational Phase	**Not significant**	Long-term (35 years)
	Decommissioning Phase	**Not significant**	Temporary

14.12 ROAD SAFETY AUDIT

A Stage 1 Road Safety Audit was undertaken at the following locations:

- R492 main (southern) wind farm site access
- L1071 northern entrance

The Road Safety Audit report is provided in Appendix 14-1, 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.

14.13 CONCLUSION

This chapter assesses the likely significant effects 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 project 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 proposed project 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, Junctions 1 and 2 were assessed during the construction phase. The operational phase does not meet the threshold criteria, and there is no need for it 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 assessment has concluded that the residual effects on the road network will be imperceptible / not significant.

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 project 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 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. The overall traffic impact will be not significant. Overall, the operational phase traffic impact is likely to have an imperceptible long-term effect (not significant) on the road network in the vicinity of the project.

14.14 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)
- Offaly County Development Plan 2021-2027
- Tipperary County Development Plan 2022- 2028
- 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); and
- 'Purple Book' – Guidelines for Managing Openings in Public Roads (Second Editions April 2017 DoTTS).