# GORTLOUGHRA WIND FARM LIMITED

# GORTLOUGHRA WIND FARM

# COUNTY CORK

# APPENDIX 14.1

# TRAFFIC AND TRANSPORT ASSESSMENT

**March 2025**

**Job No. 6460**

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# ***DOCUMENT APPROVAL***

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**6460/703/JD**

# GORTLOUGHRA WIND FARM

# TRAFFIC AND TRANSPORT ASSESSMENT

## CONTENTS

# 1 INTRODUCTION

## 1.1 Brief

Jennings O'Donovan & Partners Limited has been appointed by Gortloughra Wind Farm Limited to prepare a Traffic Management Plan ("TMP") for the proposed Gortloughra Wind Farm, Co. Cork. The Site is located 9.7 km north-west of Dunmanway, Co. Cork and 19 km south-east of the county boundary between Cork and Kerry. The Site is located within the townlands of an tSeithe Bheag (Shehy Beg), (Muscraí Gaeltacht), Gortloughra, Cloghboola and Inchinroe. Planning Permission is being sought by the Developer for the construction of eight wind turbines, permanent met mast, on-site 110 kV substation and all ancillary works.

## 1.2 Statement of Authority

The Traffic and Transport Assessment has been prepared by John Doogan of Jennings O'Donovan & Partners Limited, Finisklin, Sligo. Established in Sligo in 1950, Jennings O'Donovan & Partners Limited is a Clean Tech Company providing consulting engineering services in the areas of road design, renewable energy, civil and structural engineering, water supply, wastewater collection and treatment, environmental resource management and impact assessment and in the area of industrial and commercial development.

## 1.3 Design References / Standards

The TTA for the proposed Development has been based on the following technical documents:

- Cork County Development Plan.
- Transport Infrastructure Ireland publications.

  PE-PDV-02045 Traffic and Transport Assessment Guidelines.

  PE-PAG-02017 Travel Demand Projections.

  PE-PAG-02039, Expansion Factors for Short Period Traffic Counts.

  Spatial Planning and National Roads.

  Design Manual for Roads and Bridges.

  Specification for Road Works.
- Design Manual for Urban Roads and Streets - DMURS
- Junctions 9 Traffic Analysis Software.

## 1.4 Methodology

The methodology adopted for this Traffic and Transport Assessment involved:

A site visit was undertaken on Wednesday 20th November 2024 to record traffic volumes and turning movements of vehicles at the R584/L4607 junction, R585/L4607 junction and at the L4607/L4608 junction. The traffic counts were carried out between 7.30am and 10.00am in the morning to capture peak traffic flows during the morning period.

A traffic analysis was carried out at the R584/L4607 junction, R585/L4607 junction and at the L4607/L4608 junction using the 2024 existing traffic flows to determine if capacity problems exist at the junctions in the vicinity of the proposed Development.

Future year traffic assessments were then carried out at the R584/L4607 junction, R585/L4607 junction and at the L4607/L4608 junctions for the following scenarios to determine if capacity problems would arise at the junctions with and without the proposed Development in place.

- 2025 Projected traffic flows without the proposed Development (Planning Approval)
- 2035 Projected traffic flows without the proposed Development (Planning Period / Windfarm Construction)
- 2075 Projected traffic flows without the proposed Development (Operations Period)
- 2035 Projected traffic flows with the proposed Development (Wind Farm Construction Traffic)
- 2075 Projected traffic flows with the proposed Development (Wind Farm Decommissioning Traffic)
- A traffic assessment was carried out at the L4607/L4608 junction with the Proposed Development under construction in 2035 with additional traffic from unrelated planned and consented developments to determine if capacity problems would arise at the junction due to combined traffic volumes in the vicinity of the development.
- A traffic assessment was carried out at the L4607/L4608 junction with decommissioning traffic in 2075 with additional traffic from unrelated planned and consented developments to determine

if capacity problems would arise at the junction due to combined traffic volumes in the vicinity of the Proposed Development.

- Temporary traffic lights will be required for short periods on the R585 and on the local roads leading to the site entrance for traffic management during the construction of the Proposed Development. A traffic analysis has been carried out to assess the impact of the temporary traffic lights on the R585 and the L4608.

- A traffic analysis has been carried out to assess the impact of projected traffic flows combined with peak construction traffic on L2034 existing accesses and local road junctions.

## 1.5 Consultation With Local authority

The design team for the proposed Development consulted Cork County Council Transportation Department in December 2021 to provide details of the Proposed Development.

## 1.6 Site Location, Context and Proposed Development

The Site is located 9.7 km north-west of Dunmanway, to the north of the R585 regional road and to the south of the R584 regional road. Access to the proposed development will be from an existing priority junction on the L584 local road. A detailed description of the Proposed Development is given in **EIA Chapter 2 – Project Description**, the Proposed Development will consist of the following main components:

- Erection of eight wind turbines with an overall ground to blade tip height of 175 m consisting of a rotor diameter of 150 m; and a hub height of 100 m.

- Construction of permanent Turbine Hardstands and Turbine Foundations.

- Construction of one Temporary Construction Compound with associated temporary site offices, parking areas and security fencing.

- Installation of a Meteorological Mast with a height of 100m.

- Development of one on-site Borrow pit.

- Construction of new permanent internal site access tracks and upgrade of existing internal site access roads to include passing bays and all associated drainage infrastructure.

- Development of a permanent internal site drainage network and sediment control systems.

- All associated underground electrical power and communications cabling connecting the wind turbines to the on-site substation.

- Biodiversity enhancement measures.

- Recreational community improvements including the erection of 4 No. permanent information boards relating to cultural heritage and upgrades to amenity tracks across the site.

- All associated site development works.

This EIAR also assesses the construction of an 110 kV On-site Substation and Control Building and 2 no. GCR Options along public roads:

- Option A: Dunmanway 110 kV substation or

- Option B: Carrigdangan 110 kV substation

- While not part of the planning consent for this planning application, this EIA also assesses the works at 18 No. locations along the TDR from Port of Cork to Site and the underground Grid Connection Route Options from the Site to either the Dunmanway or Carrigdangan 110 kV Substations.

The Location and layout of The Proposed Development is shown on **Figure 1**. The Grid Connection route options are shown on **Figure 2**.

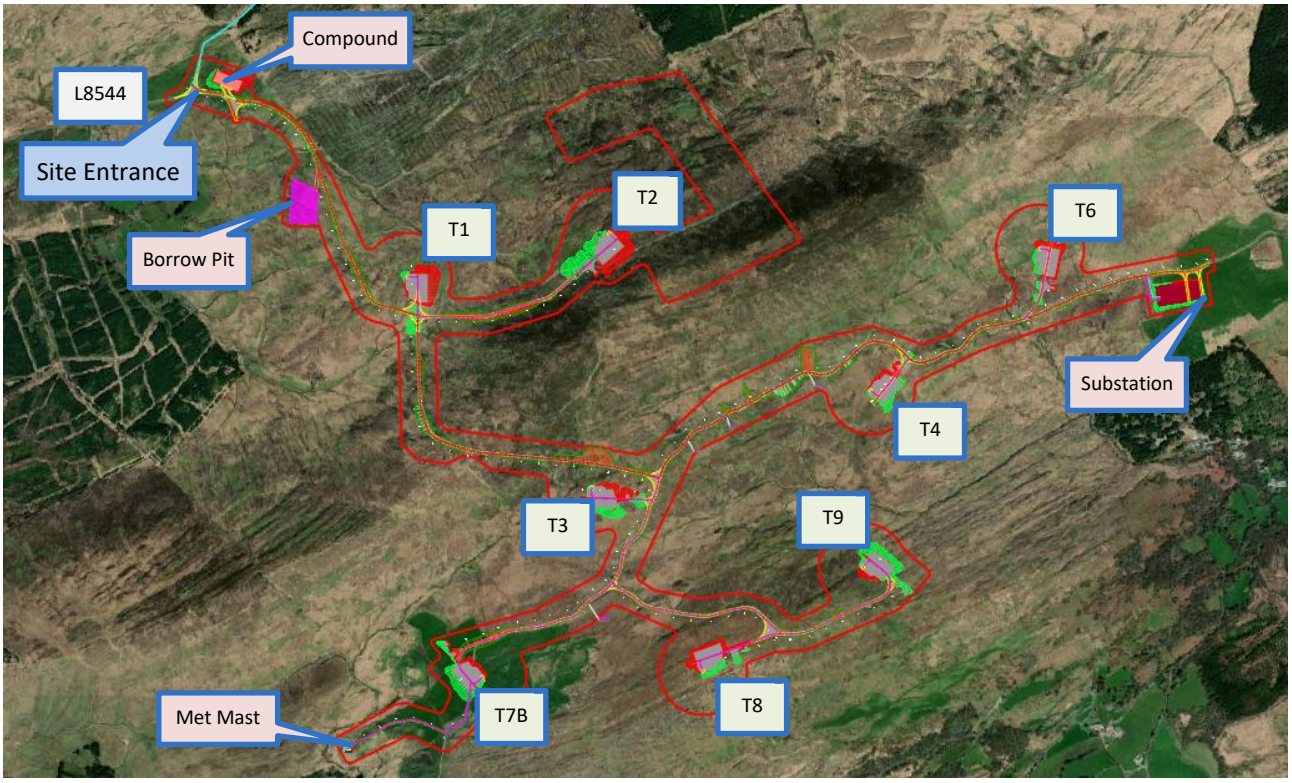


**Figure 1 – Site Layout**

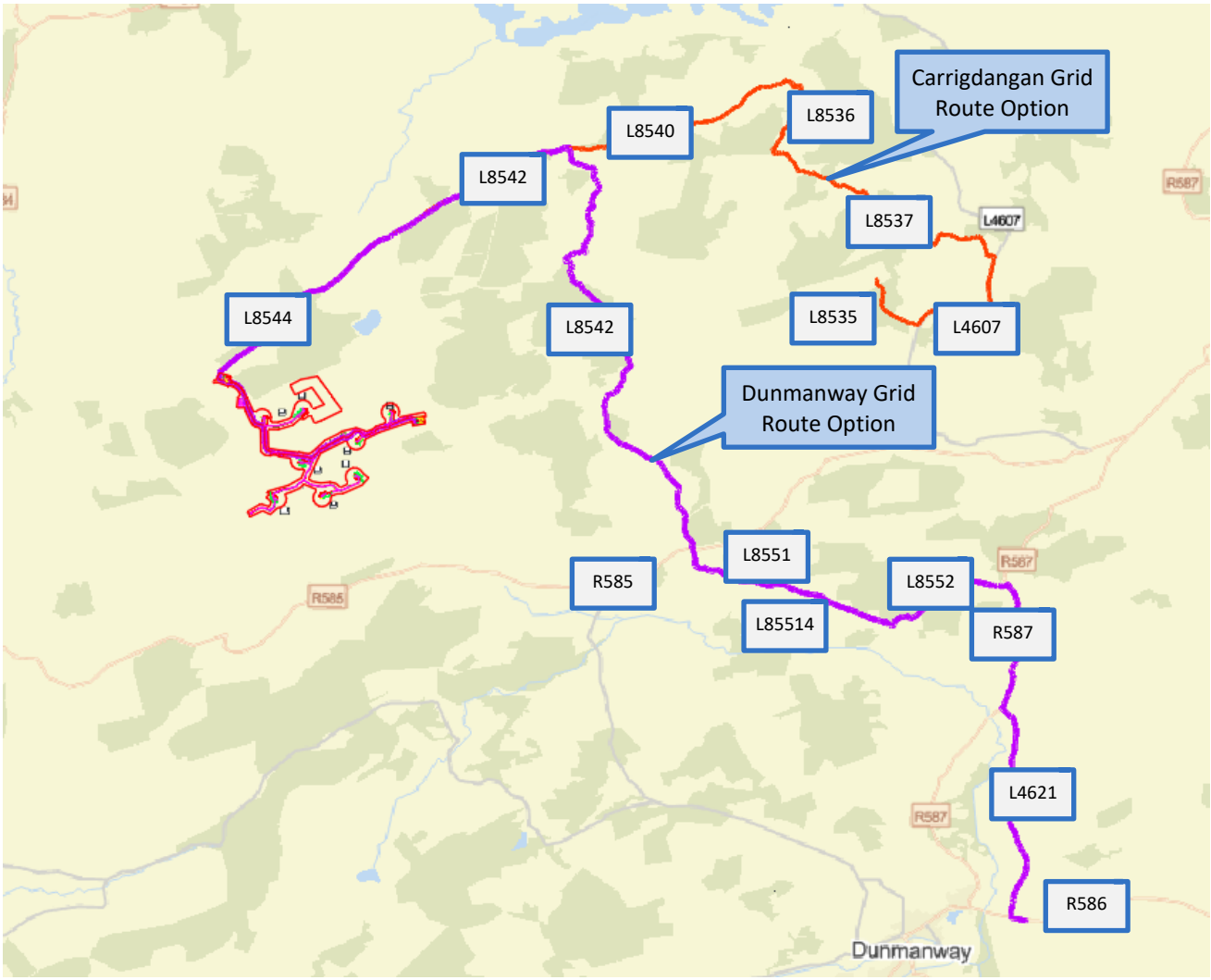


**Figure 2 – Grid Connection Routes**

# 2 EXISTING PUBLIC ROAD NETWORK AND TRAFFIC

## 2.1 Existing Traffic Volumes

To assess the impact of the Proposed Development on the existing road network when the Proposed Development is constructed and fully occupied, baseline traffic volumes in the area are required. Jennings O'Donovan carried out classified traffic counts Wednesday 20th November 2024 to record traffic volumes and turning movements of vehicles at the R584/L4607 junction, R585/L4607 junction and at the L4607/L4608 junction.

The morning peak hour traffic period on the public road network in the vicinity of the Proposed Development are obtained from the traffic counts. The Traffic counts show that peak traffic occurs

between 8.00am and 9.00am in the morning. The peak hour period shown in **Table 1** is used to carry out capacity analysis for the Proposed Development.

| | |
|---|---|
| AM Peak Hour | 8.15 – 9.15 |

**Table 1 –Peak Hour Traffic Period**

## 2.2 Access to the Proposed Development

The location of the site entrance to The Proposed Development is shown on **Figure 1.** The site entrance will be constructed on the L8544 local road at an existing field entrance which will be upgraded as part of the Proposed Development. The site entrance will consist of a simple T-Junction with priority for L8544 traffic. The junction will be constructed to accommodate HGV vehicles and will have an extended overrun area to accommodate the swept path of abnormal load vehicles delivering turbine components during the turbine erection phase of the project. During the construction wind farm infrastructure such as roads and hardstands, the overrun area at the junctions for abnormal load vehicles will not be in use and access to the overrun areas will be restricted using temporary traffic barriers. The temporary traffic barriers will be used to channelise traffic at the junctions and to prevent parking in the vicinity of the L8544. The overrun area at the junction will be reinstated following the delivery of turbine components. The site entrance junction will have a dwell area with a gradient of 2.5% at its intersection with the L8544 with drainage falling towards the wind farm site and away from the L8544 carriageway. The site entrance junction will be gated and fenced with stock proof fencing during the construction period, the access gates will be set back 20m from the L8544 carriageway edge to accommodate HGV vehicles entering the wind farm site and to eliminate the possibility of vehicles blocking the L8544. Wheel cleaning facilities will be provided at site access to prevent the spread of mud and debris onto the L8544 carriageway. The Layout of the site entrance is shown on **Figure 3**. Visibility at the Proposed Development entrance will be available at a distance of 90m in both directions measured from a 3.0m setback.

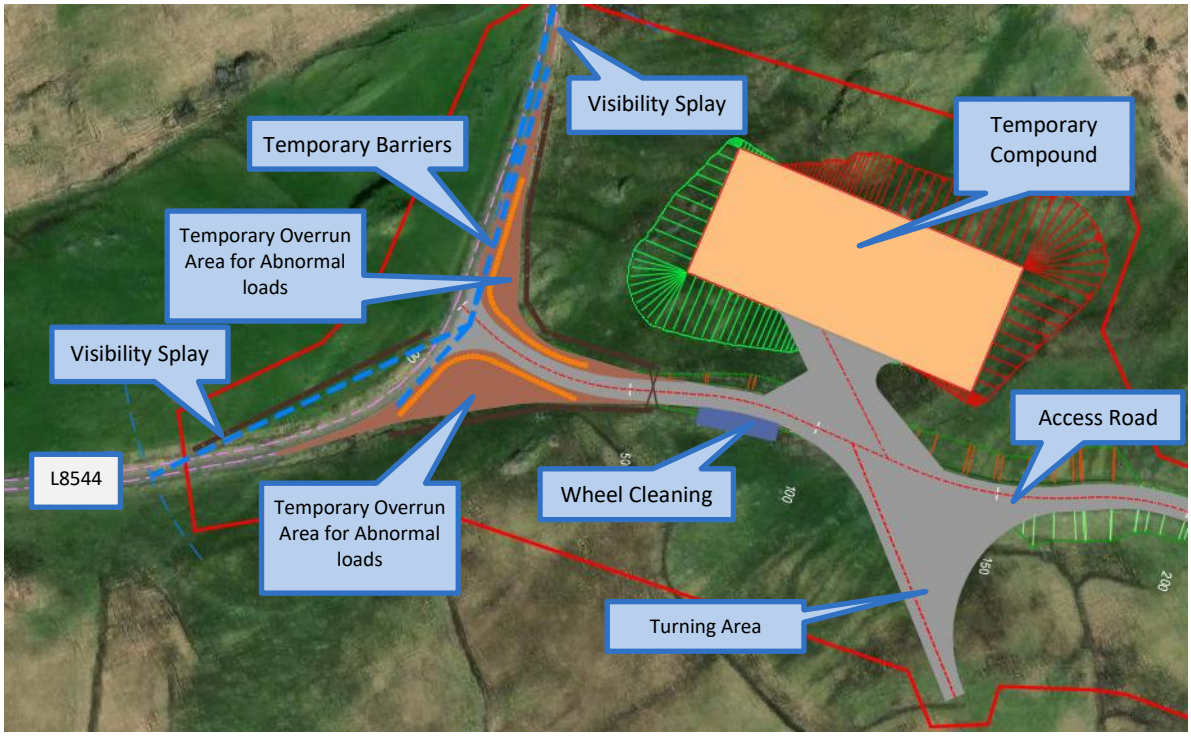


**Figure 3 – Site Entrance**

## 2.3 Existing Roads in the Vicinity of the Site

The site entrance to the proposed development is located on the L8544 local road (Reference Plate 1). The L8544 is a 3.0m wide single carriageway with grass verges. The L8544 runs between the R585 regional road and the L8542 local road and has an 80km/h speed limit classification. The L8544 combined with the L8542, L8540, L4608 and the L4607 will be the primary access roads to the site from the R584 and the R585 regional roads during the construction, operation and decommissioning of the Proposed Development.

**Plate 1 – L8544 Local Road**

The L8542 local road (Reference Plate 2). The L8542 is a 3.0m wide single carriageway with grass verges and has an 80km/h speed limit classification. The L8542 runs between the L8544 and the L8540. The L8542 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development.

**Plate 2 – L8542 Local Road**

The L8540 local road (Reference Plate 3) is a 3.0m wide single carriageway with grass verges and an 80km/h speed limit classification. The L8540 runs between the L8542 and the L4608. The L8540 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development.

**Plate 3 – L8540 Local Road**

The L4608 local road (Reference Plate 4) is a 4.0m wide single carriageway with grass verges and an 80km/h speed limit classification. The L4608 runs between the L8540 and the L4607. The L4608 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development.

**Plate 4 – L4608 Local Road**

The L4607 local road (Reference Plate 5) is a 5.0m wide single carriageway with grass verges and an 80km/h speed limit classification. The L4607 runs between the R584 in the village of Inchigeelagh and the R585. The L4607 will be used by wind farm construction, operations and decommissioning traffic to access the Proposed Development.


**Plate 5 – L4607 Local Road**

The R584 regional road (Reference Plate 6) runs in an east / west direction through the village of Inchigeelagh and links the development to the N22 national primary road to the south of Macroom. The R584 is a 6.0m wide single carriageway with two lanes, hard strips and grass verges. The R584 has an 80km/h speed limit classification with regulatory and directional signs and roadmarkings.

**Plate 6 – R584 Regional Road**

The R585 regional road (Reference Plate 7) runs in an east / west direction from the R584 in the village of Kealkill to the N22 between Ballincollig and Macroom. The R585 has a 6.0m wide single carriageway with two lanes, hard strips and grass verges. The R584 has an 80km/h speed limit classification with regulatory and directional signs and roadmarkings.

**Plate 7 – R585 Regional Road**

## 2.4 Existing Junctions in the Vicinity of the Site

The site entrance to the Proposed Development is located on the L8544 local road (Reference Plate 8) at an existing field entrance. The existing entrance will be upgraded as part of the Proposed Development. Observations during the traffic counts show that there are no capacity problems at the junction under current traffic conditions. The junction is currently operating at free flow conditions with a level of service = A. The results of the analysis are included in **Section 4**.


**Plate 8 – L8544**

The existing junction between the L4608 and the L4607 local roads (Reference Plate 9) is a simple T-junction with priority for L4607 traffic. The junction is located to the south of Inchigeelagh village in a 50km/h speed limit zone. The junction is lit by public lighting.


**Plate 9 – L4607 / L4608 Priority Junction**

The existing junction between the L4607 and the R584 / L3403 (Reference Plate 10) is a staggered cross roads junction with priority for R584 traffic. The junction is located in the village of Inchigeelagh within a 50km/h speed limit zone. The junction is lit by public lighting.


**Plate 10 – L4607 / R584 Junction**

The existing junction between the L4607 and the R585 (Reference Plate 11) is a simple T-junction with priority for R585 traffic. The junction is located within an 80km/h speed limit zone with regulatory and directional signage. The junction is not lit by public lighting.


**Plate 11 – L4607 / R585 Junction**

## 2.5 Accident Data

Mapped statistics for accident data in the area were not available from the RSA website in October 2024.

## 2.6 Parking Facilities

Parking facilities are provided within the Proposed Development Site.

# 3 TRAFFIC GENERATION AND TRIP DISTRIBUTION

## 3.1 Trip Generation associated with the Proposed Development

During the construction of the wind farm, the maximum daily traffic generated by the development will occur during concrete pours for turbine foundations. The concrete pours will occur on three separate days during the 10 month construction period. During the concrete pours the Proposed Development will generate 153 HGV trips and 40 LGV trips on the public road network. When concrete pours are not taking place on site, the Proposed Development will generate a maximum of 78 HGV trips and 30 LGV trips on a daily basis. The traffic profile for the Proposed Development during turbine foundation concrete pours is shown in **Table 2.** Full details of the traffic generated by the Proposed Development is included in the project Traffic Management Plan (TMP).

| Time | Arrivals | | Departures | |
|---|---|---|---|---|
| | HGV | LGV | HGV | LGV |
| 06.00 – 07.00 | | 20 | | |
| 07.00 – 08.00 | 18 | 15 | 18 | |
| 08.00 – 09.00 | 14 | 5 | 14 | 2 |
| 09.00 – 10.00 | 14 | | 14 | |
| 10.00 – 11.00 | 14 | | 14 | |
| 11.00 – 12.00 | 17 | | 17 | |
| 12.00 – 13.00 | 14 | | 14 | |
| 13.00 – 14.00 | 10 | 5 | 10 | 5 |
| 14.00 – 15.00 | 17 | | 17 | |
| 15.00 – 16.00 | 12 | | 12 | |
| 16.00 – 17.00 | 10 | | 10 | |

| Time | Arrivals | | Departures | |
|---|---|---|---|---|
| | HGV | LGV | HGV | LGV |
| 17.00 – 18.00 | 8 | 2 | 8 | 5 |
| 18.00 – 19.00 | 5 | | 5 | 15 |
| 19.00 – 20.00 | | | | 20 |

**Table 2 Development Traffic Profile**

## 3.2 Traffic Distribution

For the purpose of analysis all traffic generated by the Proposed Development will arrive and depart at the site entrances on the L8544 from the L4607 / L4608 junction.

## 3.3 Future Traffic Growth on the Public Road Network

Traffic Infrastructure Ireland (TII) forecasts for future traffic growth on the public road network are published in PE-PAG-02017 "Travel Demand Projections". The growth factors are applied to the 2024 baseline traffic flows to approximate the traffic flows on the public road network in the future if the Proposed Development is granted planning in 2025, 10 year planning grant and construction in 2035 and a 40 year operational period and decommissioning in 2075. The growth factors for the relevant assessment years using the central-growth scenario for County Cork are shown in **Table 3**.

| Year | LGV Growth Factor | HGV Growth Factor |
|---|---|---|
| 2024 | 1.000 | 1.000 |
| 2025 | 1.018 | 1.037 |
| 2035 | 1.168 | 1.351 |
| 2075 | 1.600 | 2.938 |

**Table 3 – Traffic Growth Factors for Public Roads**

# 4 TRAFFIC ANALYSIS

## 4.1 Traffic Analysis at the R585 / L4607 Junction

A traffic analysis has been carried out to determine if the R585 / L4607 junction will operate within capacity for the following scenarios;

- 2024 Baseline traffic counts
- 2025 Projected traffic flows without the Proposed Development (Planning Approval)
- 2035 Projected traffic flows without the Proposed Development (Planning Period)

- 2075 Projected traffic flows without the Proposed Development (Operations Period)
- 2035 Projected traffic flows with the Proposed Development (Wind Farm Construction Traffic)
- 2075 Projected traffic flows with the Proposed Development (Wind Farm Decommissioning Traffic)

The results of the analysis show that the R585 / L4607 junction will not exceed the 0.85 ratio of flow to capacity (RFC) and will continue to operate with reserve capacity beyond 2075. The ratio of flow to capacity (RFC) is calculated from Junctions 9 PICADY software. An RFC value of 1.0 indicates that the junction is operating at full capacity with a value of 0.85 considered to be the maximum RFC value after which the junction will begin to experience some capacity issues. The results of the analysis are summarised in **Figure 4**.

| | AM | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCU) | 95% Queue (PCU) | Delay (s) | RFC | LOS | Junction Delay (s) | Junction LOS | Network Residual Capacity |
| | 2024 Existing Traffic Flows | | | | | | | | |
| Stream B-AC | D1 | 0.1 | 0.5 | 7.57 | 0.07 | A | 1.95 | A | 639 % |
| Stream C-AB | | 0.0 | 0.5 | 5.49 | 0.02 | A | | | [Stream B-AC] |
| | 2025 - Forecast Traffic Flows (No Development) - Planning Grant | | | | | | | | |
| Stream B-AC | D2 | 0.1 | 0.5 | 7.57 | 0.07 | A | 1.93 | A | 634 % |
| Stream C-AB | | 0.0 | 0.5 | 5.48 | 0.02 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows (No Development) - Planning Period | | | | | | | | |
| Stream B-AC | D3 | 0.1 | 0.5 | 7.73 | 0.08 | A | 1.99 | A | 534 % |
| Stream C-AB | | 0.0 | 0.5 | 5.55 | 0.02 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows (No Development) - Operational Lifespan | | | | | | | | |
| Stream B-AC | D4 | 0.1 | 0.5 | 8.23 | 0.12 | A | 2.17 | A | 345 % |
| Stream C-AB | | 0.1 | 0.5 | 5.80 | 0.04 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows - Development Construction Traffic | | | | | | | | |
| Stream B-AC | D5 | 0.2 | 0.9 | 10.39 | 0.17 | B | 3.65 | A | 262 % |
| Stream C-AB | | 0.0 | 0.5 | 5.24 | 0.04 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows - Development Decomissioning Traffic | | | | | | | | |
| Stream B-AC | D6 | 0.3 | 1.3 | 10.88 | 0.19 | B | 3.32 | A | 205 % |
| Stream C-AB | | 0.1 | 0.5 | 5.28 | 0.05 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows - Development Construction Traffic - Additional Developments | | | | | | | | |
| Stream B-AC | D7 | 0.3 | 1.4 | 11.01 | 0.19 | B | 3.84 | A | 219 % |
| Stream C-AB | | 0.1 | 0.5 | 5.27 | 0.04 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows - Development Decomissioning Traffic - Additional Developments | | | | | | | | |
| **Stream B-AC** | **D8** | **0.3** | **1.6** | **11.66** | **0.21** | **B** | **3.52** | **A** | **169 %** |
| **Stream C-AB** | | **0.1** | **0.5** | **5.30** | **0.06** | **A** | | | **[Stream B-AC]** |

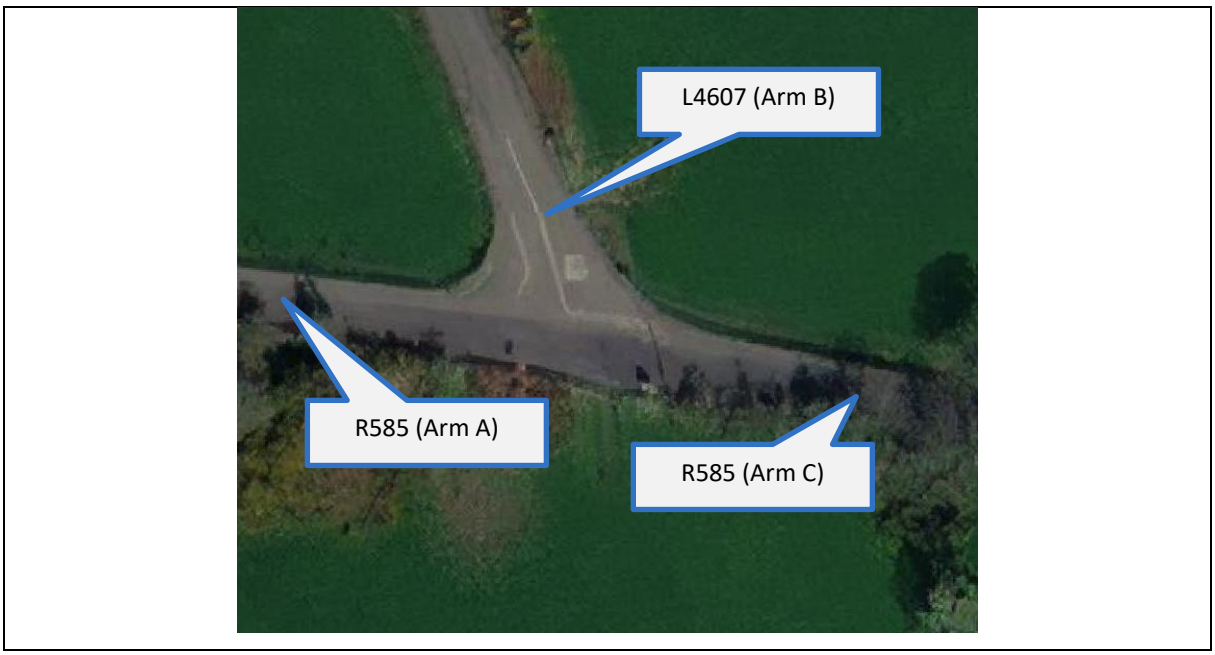


**Figure 4 – Traffic Analysis Summary for the R585 / L4607 Junction**

## 4.2 Traffic Analysis at the R584 / L4607 Junction

A traffic analysis of the junction has been carried out to determine if the R584 / L4607 junction will operate within capacity for the following senarios:

- 2024 Baseline traffic counts
- 2025 Projected traffic flows without the Proposed Development (Planning Approval)
- 2035 Projected traffic flows without the Proposed Development (Planning Period)
- 2075 Projected traffic flows without the Proposed Development (Operations Period)
- 2035 Projected traffic flows with the Proposed Development (Wind Farm Construction Traffic)
- 2075 Projected traffic flows with the Proposed Development (Wind Farm Decommissioning Traffic)

The results of the analysis show that the R584 / L4607 junction will not exceed the 0.85 ratio of flow to capacity (RFC) and will continue to operate with reserve capacity beyond 2075. The ratio of flow to capacity (RFC) is calculated from Junctions 9 PICADY software. An RFC value of 1.0 indicates that the junction is operating at full capacity with a value of 0.85 considered to be the maximum RFC value after which the junction will begin to experience some capacity issues. The results of the analysis are summarised in **Figure 5**.

| | AM | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCU) | 95% Queue (PCU) | Delay (s) | RFC | LOS | Junction Delay (s) | Junction LOS | Network Residual Capacity |
| | 2024 Existing Traffic Flows | | | | | | | | |
| Stream B-AC | D1 | 0.1 | 0.5 | 8.42 | 0.09 | A | 2.93 | A | 547 % |
| Stream C-AB | | 0.0 | 0.5 | 5.30 | 0.03 | A | | | [Stream B-AC] |
| | 2025 - Forecast Traffic Flows (No Development) - Planning Grant | | | | | | | | |
| Stream B-AC | D2 | 0.1 | 0.5 | 8.46 | 0.09 | A | 2.96 | A | 532 % |
| Stream C-AB | | 0.0 | 0.5 | 5.30 | 0.03 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows (No Development) - Planning Period | | | | | | | | |
| Stream B-AC | D3 | 0.1 | 0.5 | 8.64 | 0.10 | A | 3.02 | A | 444 % |
| Stream C-AB | | 0.1 | 0.5 | 5.37 | 0.04 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows (No Development) - Operational Lifespan | | | | | | | | |
| Stream B-AC | D4 | 0.2 | 0.5 | 9.39 | 0.15 | A | 3.29 | A | 276 % |
| Stream C-AB | | 0.1 | 0.5 | 5.55 | 0.06 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows - Development Construction Traffic | | | | | | | | |
| Stream B-AC | D5 | 0.3 | 1.4 | 11.77 | 0.19 | B | 4.79 | A | 226 % |
| Stream C-AB | | 0.1 | 0.5 | 5.25 | 0.05 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows - Development Decomissioning Traffic | | | | | | | | |
| Stream B-AC | D6 | 0.4 | 1.8 | 12.78 | 0.24 | B | 4.94 | A | 151 % |
| Stream C-AB | | 0.1 | 0.5 | 5.30 | 0.07 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows - Development Construction Traffic - Additional Developments | | | | | | | | |
| Stream B-AC | D7 | 0.3 | 1.7 | 12.36 | 0.21 | B | 4.96 | A | 192 % |
| Stream C-AB | | 0.1 | 0.5 | 5.33 | 0.06 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows - Development Decomissioning Traffic - Additional Developments | | | | | | | | |
| **Stream B-AC** | **D8** | **0.5** | **1.9** | **13.71** | **0.28** | **B** | **5.26** | **A** | **122 %** |
| **Stream C-AB** | | **0.1** | **0.5** | **5.36** | **0.09** | **A** | | | **[Stream B-AC]** |


**Figure 5 – Traffic Analysis Summary for the R584 / L4607 Junction**

## 4.3 Traffic Analysis at the L4607 / L4608 Junction

A traffic analysis of the junction has been carried out to determine if the L4607 / L4608 junction will operate within capacity for the following scenarios:

- 2024 Baseline traffic counts
- 2025 Projected traffic flows without the Proposed Development (Planning Approval)
- 2035 Projected traffic flows without the Proposed Development (Planning Period)
- 2075 Projected traffic flows without the Proposed Development (Operations Period)
- 2035 Projected traffic flows with the Proposed Development (Wind Farm Construction Traffic)
- 2075 Projected traffic flows with the Proposed Development (Wind Farm Decommissioning Traffic)

The results of the analysis show that the L4607 / L4608 junction will not exceed the 0.85 ratio of flow to capacity (RFC) and will continue to operate with reserve capacity beyond 2075. The ratio of flow to capacity (RFC) is calculated from Junctions 9 PICADY software. An RFC value of 1.0 indicates that the junction is operating at full capacity with a value of 0.85 considered to be the maximum RFC value after which the junction will begin to experience some capacity issues. The results of the analysis are summarised in **Figure 6**.

| | AM | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCU) | 95% Queue (PCU) | Delay (s) | RFC | LOS | Junction Delay (s) | Junction LOS | Network Residual Capacity |
| | 2024 Existing Traffic Flows | | | | | | | | |
| Stream B-AC | D1 | 0.1 | 0.7 | 9.52 | 0.08 | A | 5.15 | A | 738 % |
| Stream C-AB | | 0.1 | 0.7 | 7.11 | 0.05 | A | | | [Stream B-AC] |
| | 2025 - Forecast Traffic Flows (No Development) - Planning Grant | | | | | | | | |
| Stream B-AC | D2 | 0.1 | 0.7 | 9.55 | 0.08 | A | 5.21 | A | 716 % |
| Stream C-AB | | 0.1 | 0.7 | 7.11 | 0.05 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows (No Development) - Planning Period | | | | | | | | |
| Stream B-AC | D3 | 0.1 | 0.5 | 6.83 | 0.07 | A | 3.72 | A | 900 % |
| Stream C-AB | | 0.1 | 0.5 | 5.49 | 0.04 | A | | | [] |
| | 2075 - Forecast Traffic Flows (No Development) - Operational Lifespan | | | | | | | | |
| Stream B-AC | D4 | 0.1 | 0.5 | 7.06 | 0.10 | A | 3.92 | A | 618 % |
| Stream C-AB | | 0.1 | 0.5 | 5.74 | 0.06 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows - Development Construction Traffic | | | | | | | | |
| Stream B-AC | D5 | 0.3 | 1.0 | 10.43 | 0.17 | B | 5.85 | A | 302 % |
| Stream C-AB | | 0.1 | 0.5 | 5.35 | 0.06 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows - Development Decomissioning Traffic | | | | | | | | |
| Stream B-AC | D6 | 0.3 | 1.3 | 10.49 | 0.17 | B | 5.55 | A | 284 % |
| Stream C-AB | | 0.1 | 0.5 | 5.44 | 0.08 | A | | | [Stream B-AC] |
| | 2035 - Forecast Traffic Flows - Development Construction Traffic - Additional Developments | | | | | | | | |
| Stream B-AC | D7 | 0.4 | 2.0 | 13.48 | 0.24 | B | 5.32 | A | 151 % |
| Stream C-AB | | 0.1 | 0.5 | 5.45 | 0.07 | A | | | [Stream B-AC] |
| | 2075 - Forecast Traffic Flows - Development Decomissioning Traffic - Additional Developments | | | | | | | | |
| **Stream B-AC** | **D8** | **0.3** | **1.7** | **11.39** | **0.20** | **B** | **5.98** | **A** | **228 %** |
| **Stream C-AB** | | **0.1** | **0.5** | **5.55** | **0.08** | **A** | | | **[Stream B-AC]** |


**Figure 6 – Traffic Analysis Summary for the L4607 / L4608 Junction**

## 4.4 Traffic Analysis with Unrelated Consented and Proposed Developments

A traffic assessment was carried out during the construction (2035) and decommissioning (2075) of the Proposed Development with additional traffic from unrelated planned and consented developments to determine if capacity problems would arise on the road network due to combined traffic volumes in the vicinity of the Proposed Development. There are currently no major developments planned or consented in the vicinity of the Proposed Development which would generate significant volumes of new trips on the public road network. In order to test the ability of the road network to cater for additional developments which may coincide with wind farm construction and decommissioning traffic, an analysis has been carried out with a 10% increase in public road traffic in addition to forecast traffic growth (TII) plus construction / decommissioning traffic to test the capacity of the public road network. The results of the analysis show that the L4607 / L4608 junction will not exceed the 0.85 ratio of flow to capacity (RFC) in 2035 or 2075 when wind farm construction / decommissioning traffic is combined with forecast traffic and traffic from future developments. The ratio of flow to capacity (RFC) is calculated from Junctions 9 PICADY software. An RFC value of 1.0 indicates that the junction is operating at full capacity with a value of 0.85 considered to be the maximum RFC value after which the junction will begin to experience some capacity issues. The results of the analysis are included in **Appendix A**.

## 4.5 Traffic Analysis for Temporary Traffic Lights

Temporary traffic lights will be required on the R585 and the L4607 to carry out works on the public road network during the construction of the Proposed Development. The traffic analysis shows that motorists will experience delays of approximately 75 seconds when the temporary traffic lights are installed on the road network. The location and duration of traffic management using temporary traffic lights is detailed in the Traffic Management Plan.

# 5 SUMMARY

This TMP has been undertaken to outline the management of traffic movements during the construction, operation and decommissioning phases of the Gortloughra Wind Farm.

Increased volumes of traffic will be generated by the Proposed Development during the construction and decommissioning periods. Traffic analysis carried out in the Traffic and Transport Assessment (TTA) report for the project shows that traffic generated by the Proposed Development during the construction, operation and decommissioning phases of the Gortloughra Wind Farm can be accommodated on the existing public road network.

# APPENDIX A

# TRAFFIC ANALYSIS – L4067 / L4068 Junction