

## **Appendix 15-1**

# **Traffic and Transportation Assessment**



## TRAFFIC AND TRANSPORTATION ASSESSMENT

### 1 INTRODUCTION

This Traffic and Transportation report quantifies and assesses the impact of construction, operational and decommissioning traffic generated by the proposed Shronowen Wind Farm project on the existing local road network, and recommends mitigation measures, as appropriate. A full description of the proposed development, development lands and all associated project elements is provided in Chapter 2 of this EIAR.

#### 1.1 SCOPE OF ASSESSMENT

The scope of the Assessment includes the following:

- Existing and expected future road and transport network;
- Existing and predicted future baseline traffic volumes on the surrounding local road network;
- Predicted proposed development construction, operational and decommissioning traffic volumes and likely impacts; and
- Proposed mitigation measures.

#### 1.2 METHODOLOGY

This Traffic and Transportation Assessment has been prepared in the context of the following:

- Kerry County Council's Kerry County Development Plan 2015-2021;
- Kerry County Council's Listowel/Ballybunion Functional Areas Local Area Plan 2013-2019;
- The Transport Infrastructure Ireland (TII) Traffic and Transport Assessment (TTA) Guidelines PE-PDV-02045 May 2014;
- TII's Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections PE-PAG-02017 May 2019;
- TII's Rural Road Link Design DN-GEO-03031 June 2017;
- The UK Traffic Capacity of Urban Roads TA 79/99; and
- The Environmental Protection Agency (EPA) Guidelines on The Information To Be Contained In Environmental Impact Assessment Reports Draft August 2017 (EPA EIAR Guidelines).

#### 1.3 ASSESSMENT CRITERIA

Baseline traffic volumes on the surrounding local road network have been established on the basis of a review of previous traffic volumes submitted as part of planning applications to Kerry County Council. Annual Average Daily Traffic (AADT) volumes have been estimated on the basis of TII automatic traffic counter data.

The significance and duration of predicted impacts have been defined in accordance with the EPA EIAR Guidelines.

#### 1.4 STATEMENT OF LIMITATIONS AND DIFFICULTIES ENCOUNTERED

This Traffic and Transportation report was prepared in late October 2020, during which time Ireland was experiencing travel restrictions due to Covid-19 (Coronavirus), and travel was restricted for essential work only. This meant that typical baseline traffic volumes in the Shronowen Wind Farm site area and along delivery routes could not be established. Accordingly, existing baseline traffic volumes

have been determined on the basis of a review of previous traffic volumes submitted as part of planning applications to Kerry County Council and TII's automatic traffic counter data.

### 1.5 COMPETENCY OF ASSESSOR

This Traffic and Transportation Assessment was prepared by Seamus Quigley BE CEng MIEI MCIHT of Malachy Walsh and Partners.

Seamus Quigley has 30 years' experience in transport planning and traffic engineering projects, including EIS/EIAR traffic and transportation chapters, traffic impact assessments, traffic management studies, mobility management plans, traffic modelling studies, feasibility studies and road safety audits. He is a Chartered Engineer with Engineers Ireland, and also a member of the Chartered Institution of Highways and Transportation. He joined Malachy Walsh and Partners in 2007, having spent over 16 years with Atkins.

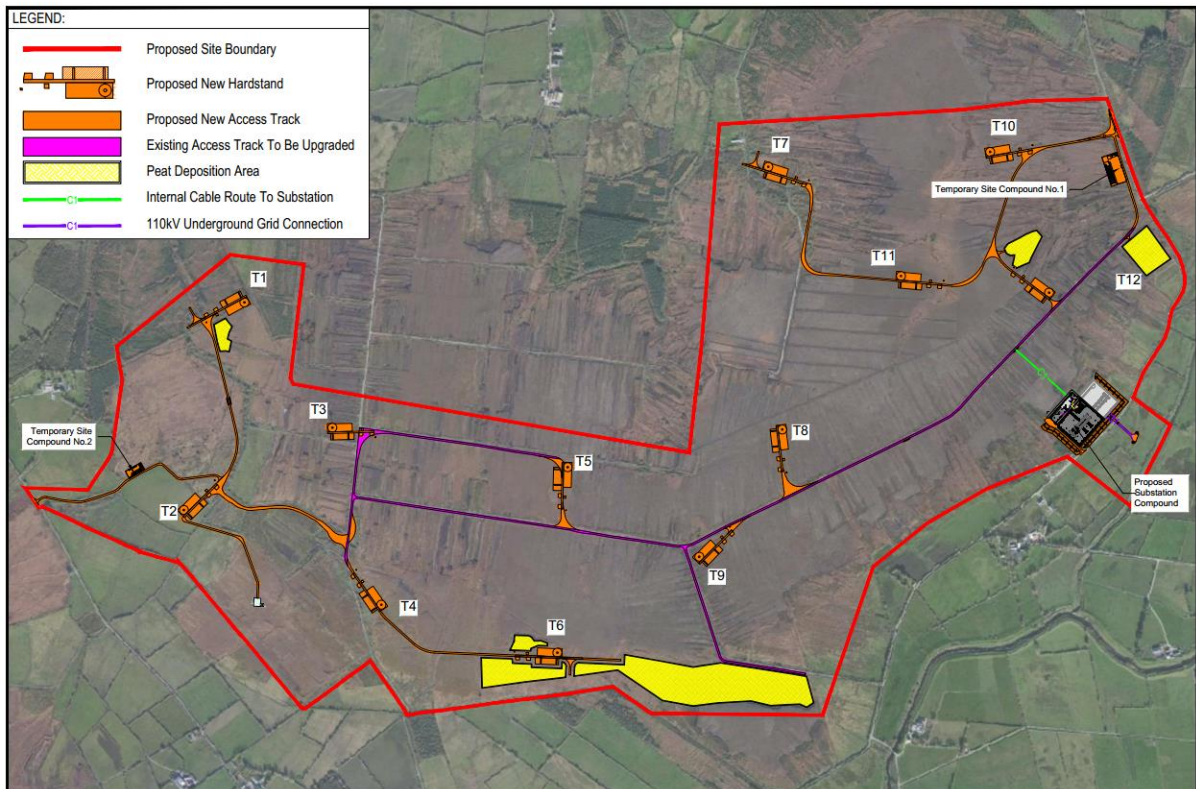
### 1.6 PROPOSED PROJECT

**EIAR Volume 2 Chapter 2: Project Description** provides a detailed overview of the proposed project. The proposed development consists of 12 wind turbines and all associated infrastructure including an on-site substation and grid connection of renewable electricity to the National Electricity Grid (NEG).

Subject to planning permission, it is envisaged that work would commence at the site once the relevant permits, grid connection agreements and funding are in place in 2022, with a construction duration of approximately 18 months. Accordingly, the proposed development is scheduled to be fully complete and operational by 2024. Peak construction would occur during the eight months of the 18 months construction programme, in 2023. The TII Traffic and Transport Assessment Guidelines recommend that the operational opening year of a development proposal and plan years, five and 15 years after the opening year, should be considered for assessing a development proposal. In this case, the operational opening year is 2024 and the plan years are 2029 and 2039.

## 2 EXISTING ENVIRONMENT

The proposed development is located within a rural area of north Kerry, approximately 4.0 kms southeast of Ballylongford village and 6.0 kms north of Listowel town. The proposed development site can be accessed via the L6021 Local Road L6021 on the northwest of the site, and via the L1009 on the west of the site, as shown in **Figure 1**.



**Figure 1 Proposed Development Site Access**

The area surrounding the proposed Shronowen Wind Farm site is well connected through a series of local roads and regional roads. The following sections summarise the existing and proposed Shronowen Wind Farm site access, the wind farm local road network, and the proposed haulage routes road network.

### 2.1.1 L6021 Local Road

The L6021 forms a priority crossroads junction with the L1012, approximately 2.0 kms north of the proposed site. South of its L1012 crossroads junction, the L6021 has a typical road carriageway width of 3.2 metres, widening to circa 3.7 metres, locally, at the crossroads junction. North of its L1012 crossroads junction, the L6021 has a typical road carriageway width of 4.2 metres and forms a priority T-junction with the L1021, approximately 60 metres east of the R551/L1021 T-junction.

### 2.1.2 L1021 Local Road

The R551/L1021 junction is at The Cross of The Wood, located approximately 3.9 kms southwest of Tarbert. This junction has already been upgraded and widened to accommodate turbine delivery and the delivery of construction equipment and materials for neighbouring wind farms. The L1021, links the R551 to the northwest with the N69, at Tarmon, approximately 2.7 kms to the southeast. The L1013 has a typical road carriageway width of approximately 5.0 metres.

### 2.1.3 L1009 Local Road

The L1009 forms a priority T-junction with the R552, approximately 1.1 kms northwest of the proposed site. The L1009 has a typical road carriageway width of 3.2 metres, widening to circa 4.0 metres, locally, at its R552 junction.

#### **2.1.4 R551 Regional Road**

The R551 links Tarbert with Ballylongford. The R551 links with the N67 National Secondary Road in Tarbert. The R551, in the vicinity of the proposed development site, has a typical road carriageway width of 6.0 metres with centreline and road edge markings, which widens, locally, at its L1013 junction to circa 7.0 metres.

#### **2.1.5 R552 Regional Road**

The R552 extends south from its Stop controlled T-junction with the R551 in Ballylongford, to the N69 at Listowel. The R552 in the vicinity of the proposed development site has a typical road carriageway width of 5.3 metres with centreline and road edge markings.

#### **2.1.6 L1012 Local Road**

The L1012 extends south east from its Stop controlled T-junction with the R551 on the east side of Ballylongford, and links with the N69 approximately 3.4 kms south east of the L1012/L6021 crossroads junction. The R551/L1012 junction is located approximately 2.5 kms from the L1012/L6021 crossroads junction. The L1012 has a typical road carriageway width of 5.1 metres with centreline and road edge markings.

#### **2.1.7 N67 National Secondary Road**

The N67 extends from Tarbert Ferry to the N69, in Tarbert.

#### **2.1.8 N69 National Secondary Road**

The N69 links Tralee town with Limerick city, via Listowel, Tarbert, and Foynes. The N69 rural road, in the vicinity of the proposed development site, has a typical road carriageway width of 6.0 metres. The N69 has a typical road carriageway width of 7.0 metres between Tarbert and Foynes.

The foregoing local and regional rural road network have posted speed limits of 80 km/hour. The N69 rural road has a posted speed limit of 100 km/hour. Urban speed limits of 50 km/hour are posted in Ballylongford, Tarbert and Listowel.

The proposed wind farm development site surrounding road network is shown in **Figure 2** below.

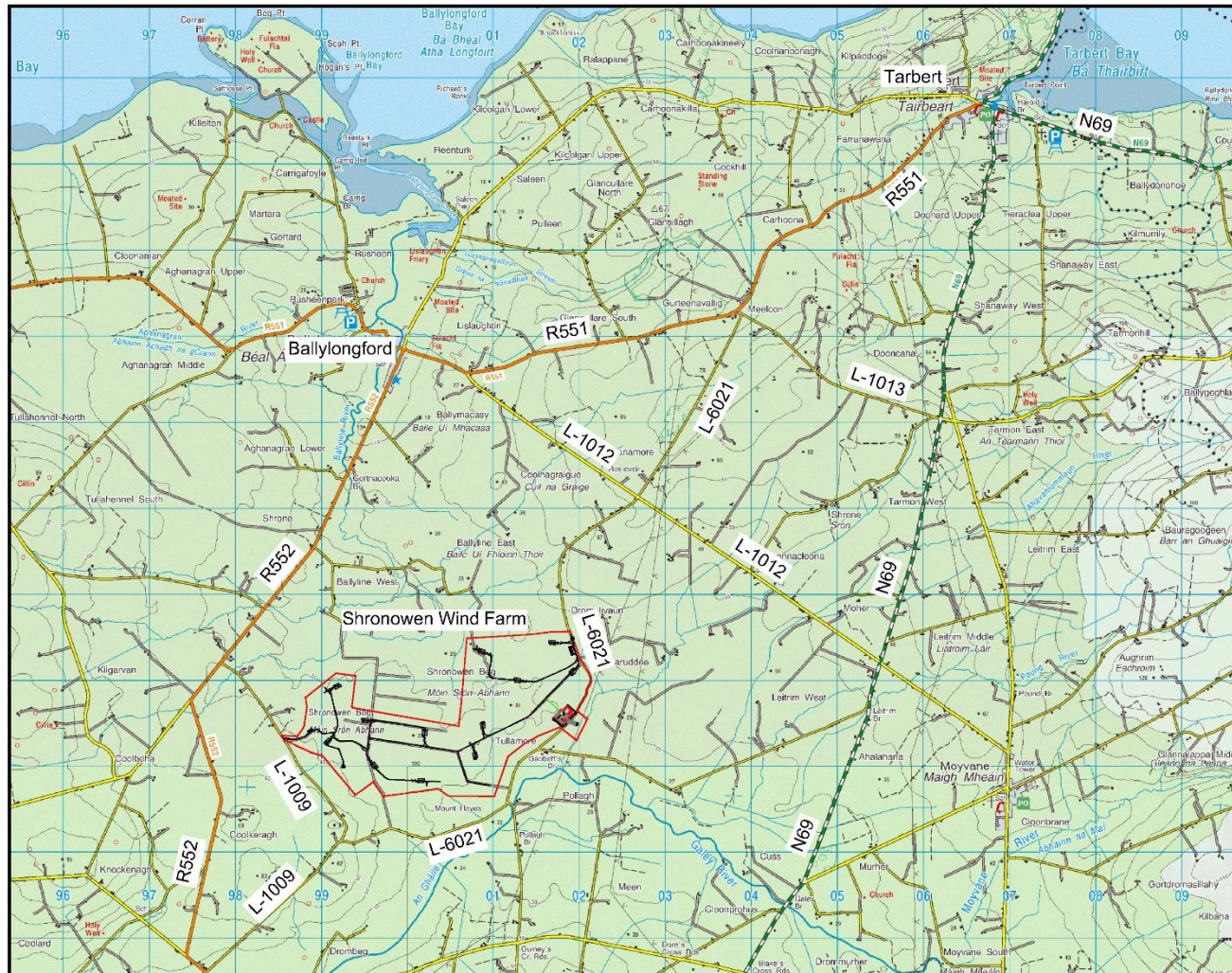


Figure 2 Local Road Network

### 2.1.9 Existing Baseline Traffic Volumes

Existing baseline traffic volumes have been determined on the basis of a review of previous traffic volumes submitted as part of planning applications to Kerry County Council. These were factored on the basis of TII's automatic traffic counter data to establish typical 2019 peak hour and Annual Average Daily Traffic (AADT) volumes for the latest full year, 2019, on the regional and local rural road network. The N69 traffic volumes are on the basis of TII's automatic traffic counter data. The 2019 typical baseline traffic volumes are provided in Table 2.1. These are total two-way vehicles at the road locations identified. The volumes of peak hour Heavy Goods Vehicles (HGVs) and the proportions (%) of AADT HGVs are also provided.

**Table 2.1: Existing Traffic Volumes**

Road Location	Total Vehicles (HGVs)	
	2019 Peak Hour (HGVs)	2019 AADT (% HGVs)
N69 between Listowel/Tarbert	451 (14)	4,119 (3.5%)
N69 between Tarbert/Foynes	435 (17)	3,468 (5.3%)
R551 between Ballylongford/Tarbert	172 (8)	1,823 (4.4%)
R552 between Listowel/Ballylongford	121 (5)	1,282 (3.6%)
L1021 between R551/N69	17 (1)	180 (1.7%)
L6021 between Site/L1021	11 (0)	117 (1.7%)
L1012 between R551/N69	27 (1)	286 (1.4%)
L1009 between R552/Site	7 (0)	74 (1.4%)

### 2.1.10 Existing Rural Road Network Capacity

The rural road link capacity of the N69 National Secondary and the R551 Regional Road, within their 100 km/hour and 80 km/hour rural speed limit zones, respectively, estimated on the basis of the TII Rural Road Link Design DN-GEO-03031 June 2017, for their typical road carriageway widths are provided in Table 2.2. The TII rural road link capacity is an AADT capacity.

**Table 2.2: Estimated National and Regional Roads TII Rural Road Link Capacity**

Road	TII Rural Road Link		
	Type	Carriageway width (m)	AADT Capacity (Vehicles)
N69 between Listowel/Tarbert	Type 2 Single	7.0	8,600
N69 between Tarbert/Foynes	Type 3 Single	6.0	5,000
R551 between Ballylongford/Tarbert	Type 3 Single	6.0	5,000

The existing rural road link AADT volume/capacity ratio for the N69 National Secondary and the R551 Regional Road, in the vicinity of the proposed development site, are provided in Table 2.3, on the basis of the TII Rural Road Link Design DN-GEO-03031 June 2017, for the latest full year 2019.

**Table 2.3: Estimated National and Regional Roads TII Rural Road Link 2019 AADT Volume/Capacity Ratios**

Road	AADT	AADT Capacity (vehicles)	AADT Volume / Capacity Ratio
N69 between Listowel/Tarbert	4,119	8,600	48%
N69 between Tarbert/Foynes	3,468	5,000	69%



R551 between Ballylongford/Tarbert	1,823	5,000	37%
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The N69 and R551 are operating within their TII rural road link AADT capacities, with highest 2019 volume/capacity ratios of 69% and 37%, respectively.

The TII guidance does not provide rural road link capacities for rural roads with typical road carriageway widths of less than 6.0 metres. The R552 typical rural road carriageway width of 5.3 metres, the L1012 typical road carriageway width of 5.1 metres and the L1021 typical road carriageway width of 5.0 metres have estimated rural road link capacities that equate to the majority proportion of the 5,000 vehicles AADT capacity identified by TII for a 6.0 metres wide carriageway width. Accordingly, the R552, L1012 and L1021 are operating well within their estimated rural road AADT link capacities, based on their 2019 AADT volumes of 1,282 vehicles, 286 vehicles and 180 vehicles, respectively.

Existing AADT volumes on other Local Roads are relatively low, and within estimated rural road AADT link capacities.

#### 2.1.11 Existing Urban Road Network Capacity

On the basis of the UK Traffic Capacity of Urban Roads TA79/99, the urban road link capacities of the N69, R551, R552 and other Regional Roads in the vicinity, are provided in Table 2.4. The urban road link capacities are per each direction per hour, based on 'Urban All-Purpose road type 4' (UAP4) – a busy high street, carrying prominently local traffic, with frontage activity including loading and unloading, with a speed limit of 50 km/hour.

**Table 2.4: Estimated National and Regional Roads Urban Road Link Capacities in Each Direction**

Road Carriageway Width (metres)	Urban Road Link		
	Type	Lanes	Capacity/Hour/Direction (Vehicles)
6.1	UAP4	2	750
6.75	UAP4	2	900

On the basis of the total two-way 2019 peak hour traffic volumes, the estimated highest peak hour traffic volumes per direction are well within their hourly urban road link capacities per direction on the N69, R551 and R552 urban roads and streets in Tarbert, Listowel, Ballylongford and on other routes and in other urban areas, in the vicinity.

### 3 LIKELY SIGNIFICANT IMPACTS

#### 3.1 DO NOTHING IMPACTS

The roads and transportation objectives and policies of Kerry County Council are set out in their Kerry County Development Plan 2015-2021 and Listowel/Ballybunion Functional Areas Local Area Plan 2013-2019.

Kerry County Council's priority roads infrastructure projects include the N69 Listowel Bypass and Tarbert Inner Relief Road. It is the objective of the Kerry County Development Plan to protect the capacity and safety of the national road and strategically important regional road network.

TII in their Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections May 2019 envisage that car and light vehicle volumes in County Kerry, would increase by an annual factor of 1.0111 during the period to 2030, and by a factor of 1.0285 for heavy vehicles, based on their central growth scenario. The equivalent factors for the period 2030 to 2040 are 1.0011 and 1.0113.

Subject to planning permission, it is envisaged that work would commence at the site once the relevant permits, grid connection agreements and funding are in place in 2022, with a construction duration of approximately 18 months. Accordingly, the proposed development is scheduled to be fully complete and operational by 2024. Peak construction would occur during the initial eight months of the 18 months construction programme, in 2023. The TII Traffic and Transport Assessment Guidelines recommend that the operational opening year of a development proposal and plan years, five and 15 years after the opening year, should be considered for assessing a development proposal. In this case, the operational opening year is 2024 and the plan years are 2029 and 2039.

The existing 2019 traffic volumes have been factored to 2023, 2024, 2029 and 2039 levels on the basis of the foregoing TII predicted central growth scenario, and are provided in Table 3.1.

Table 3.1: Predicted Traffic Volumes with TII High Growth

Road Location	Year	Total Vehicles (HGVs)	
		Peak Hour (HGVs)	AADT (% HGVs) (HGVs)
N69 between Listowel/Tarbert	2023	456 (14)	4,119 (3.5%) (144)
	2024	462 (15)	4,167 (3.6%) (148)
	2029	490 (17)	4,418 (3.8%) (170)
	2039	502 (20)	4,531 (4.3%) (194)
N69 between Tarbert/Foynes	2023	441 (18)	3,468 (5.3%) (184)
	2024	447 (19)	3,509 (5.4%) (189)
	2029	475 (22)	3,727 (5.9%) (218)
	2039	487 (25)	3,830 (6.5%) (248)
R551 between Ballylongford/Tarbert	2023	174 (8)	1,823 (4.4%) (80)
	2024	176 (9)	1,844 (4.4%) (82)
	2029	187 (10)	1,956 (4.8%) (94)
	2039	192 (12)	2,008 (5.3%) (107)
R552 between Listowel/Ballylongford	2023	122 (5)	1,282 (3.6%) (46)
	2024	123 (5)	1,297 (3.6%) (47)
	2029	131 (6)	1,375 (3.9%) (54)
	2039	142 (7)	1,411 (4.4%) (62)
L1021 between R551/N69	2023	17 (1)	180 (1.7%) (3)
	2024	17 (1)	182 (1.6%) (3)
	2029	18 (1)	193 (2.1%) (4)
	2039	18 (1)	197 (2.0%) (4)
L6021 between Site/L1021	2023	11 (0)	117 (1.7%) (2)
	2024	11 (0)	118 (1.7%) (2)
	2029	12 (0)	125 (1.6%) (2)
	2039	12 (0)	128 (2.3%) (3)
L1012 between R551/N69	2023	27 (1)	286 (1.4%) (4)
	2024	27 (1)	289 (1.4%) (4)
	2029	29 (1)	306 (1.6%) (5)
	2039	29 (1)	313 (1.6%) (5)
L1009 between R552/Site	2023	7 (0)	74 (1.4%) (1)
	2024	7 (0)	75 (1.3%) (1)
	2029	7 (0)	79 (1.3%) (1)
	2039	7 (0)	81 (1.2%) (1)

The rural road link AADT volume/capacity ratio for the N69 National Secondary and the R551 Regional Road, in the vicinity of the proposed development site, are provided in Table 2.3, on the basis of the TII Rural Road Link Design DN-GEO-03031 June 2017, for the predicted years 2023, 2024, 2029 and 2039 AADT volumes with the TII central growth scenario, without the proposed development.

**Table 3.2: Predicted National and Regional Roads TII Rural Road Link AADT Volume/Capacity Ratios**

Road	Year	AADT	AADT Capacity (vehicles)	AADT Volume / Capacity Ratio
N69 between Listowel/Tarbert	2023	4,119	8,600	48%
	2024	4,167		49%
	2029	4,418		51%
	2039	4,531		53%
N69 between Tarbert/Foynes	2023	3,468	5,000	69%
	2024	3,509		70%
	2029	3,727		75%
	2039	3,830		77%
R551 between Ballylongford/Tarbert	2023	1,823	5,000	37%
	2024	1,844		37%
	2029	1,956		39%
	2039	2,008		40%

The N69 and R551 would continue to operate within their TII rural road link AADT capacities, for the predicted years 2023, 2024, 2029 and 2039 AADT volumes with the TII central growth scenario, with highest 2039 volume/capacity ratios of 77% and 40%, respectively, in 2039. Highest ratios would be 69% and 37%, respectively, during the proposed development peak construction year 2023.

The TII guidance does not provide rural road link capacities for rural roads with typical road carriageway widths of less than 6.0 metres. The R552 typical rural road carriageway width of 5.3 metres, the L1012 typical road carriageway width of 5.1 metres and the L1021 typical road carriageway width of 5.0 metres have estimated rural road link capacities that equate to the majority proportion of the 5,000 vehicles AADT capacity identified by TII for a 6.0 metres wide carriageway width. Accordingly, the R552, L1012 and L1021 would continue to operate well within their estimated rural road AADT link capacities, based on their predicted 2023, 2024, 2029 and 2039 AADT volumes with the TII central growth scenario.

ADDT volumes on other Local Roads would remain relatively low, and within estimated rural road AADT link capacities.

On the basis of the predicted total two-way 2023, 2024, 2029 and 2039 peak hour traffic volumes, the estimated highest peak hour traffic volumes per direction would remain well within their hourly urban road link capacities per direction on the N69, R551 and R552 urban roads and streets in Tarbert, Listowel, Ballylongford and on other routes and in other urban areas, in the vicinity.

### 3.1.1 Construction Phase Impact

A detailed description of the proposed development construction is provided in EIAR Volume 2 **Chapter 2: Development Description**.

Subject to planning permission, it is envisaged that work would commence at the site once the relevant permits and funding are in place in 2022, with a duration of approximately 18 months. Peak construction would occur during the initial six to eight month of the 18 months construction programme, in 2023.

#### 3.1.1.1 Access and Vehicle Routing

Primary access to the proposed development site will be provided via a new entrance off the local public road, L6021 on the north western side of the proposed wind farm development site. This will be the main site entrance during both the construction and operational phases of the development.

A second temporary entrance to facilitate construction and access will be formed on the local public road L1009 on the western side of the site. The layout of the site stretches in an east west configuration and thus having two entrances will assist during the construction stage of the development. Once the construction phase of the project is complete the western entrance will then be closed with controlled access. The eastern entrance off the L6021 will remain as the permanent access for the operational life of the wind farm development.

The proposed site entrances will be in line with TII Rural Road Link Design DN-GEO-03031 June 2017 and TII Geometric Design of Junctions DN-GEO-03030 April 2017, ensuring that the visibility requirements are adhered to. Simple priority junctions will be provided.

The proposed Shronowen Wind Farm turbine components would be transported from Foynes Port to the proposed site via an existing route which has been previously upgraded for the delivery of abnormal loads for the construction of the neighbouring Leanamore Wind Farm. The proposed wind turbine components delivery route to site is via the N69, N67, R551, L1021 and L6021. The wind turbine component deliveries will be via the eastern entrance only. The routing for the delivery of the wind farm components is summarised in EIAR Volume 2 **Chapter 2- Project Description** and detailed in EIAR Volume 3 **Appendix B-3 Turbine Delivery Route Assessment**.

During the construction phase, it is expected that the majority of construction materials will be sourced from local quarries. These are currently four licensed quarry facilities in the surrounding 40 kms likely to be used, but not limited to, including Ardfert Quarry Products located circa 26 kms southwest of the development in Sackville, Ardfert; O' Mahoney Quarries located circa 24 kms southwest in Ballintobeenig, Tralee; P. Galwey Quarries located circa 26 kms south of the development in Fahaduff; and William McAuliffe Ltd. Sand and Gravel located circa 40 kms east/southeast in Kilmeedy, Co. Limerick. It is envisaged that approximately 60% of construction materials would be sourced from south west and south of the site, and approximately 40% sourced from the north east and east.

The construction materials' delivery vehicles routes are likely to include the R552, R557, R555, R553, R523 Regional Roads and L6021 and L1009 Local Roads. The proposed delivery routes in the vicinity of the site for general construction deliveries are shown in Figure 3.

In order to reduce two-way construction vehicle movements on local roads, it is proposed that all general construction delivery vehicles would enter the site via the eastern access on the L6021 and exit the site via the western access on the L1009. Peak construction deliveries would occur during the initial eight months of the eighteen months construction period.

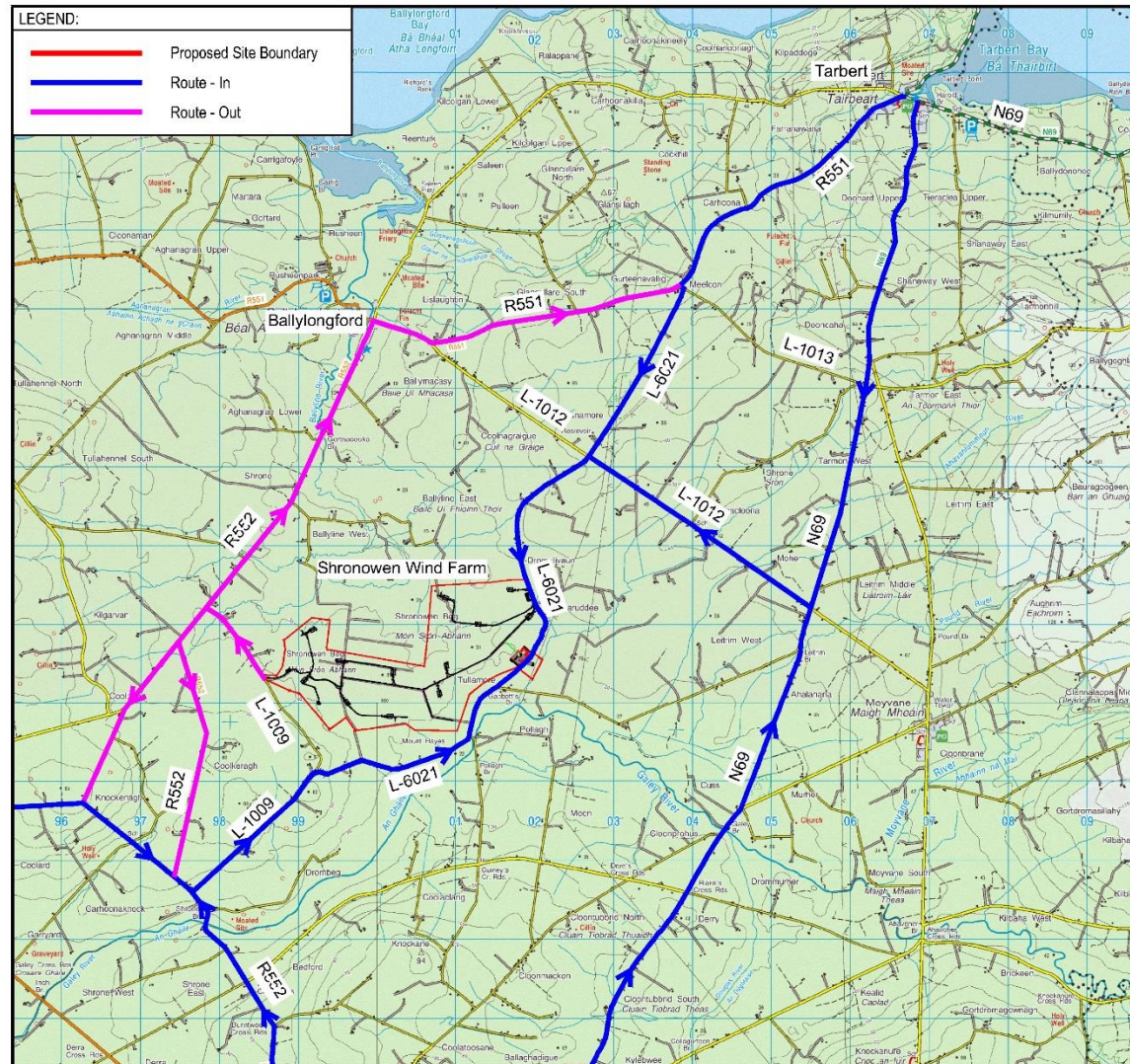


Figure 3 Proposed Delivery Routes

### **3.1.1.2 Hours and Staff**

Construction will typically occur within the hours 7.00 a.m. to 7.00 p.m., Monday to Friday, and 7.00 a.m. to 2.00 p.m. on Saturdays. During summer periods, the working day may extend at times when critical elements of work need to be advanced. Longer working days can also occur when there is a phased construction programme with some elements such as commissioning overlapping with final site construction activity. Working hours will be confirmed at the outset of the project and any changes in hours will be agreed with the Local Authority. Working hours on public roads will be from 9.00 a.m. to 5.00 p.m. Monday to Friday and 9.00 a.m. to 2.00 p.m. on Saturday. A permit for moving abnormal loads will be sought from An Garda Síochána and a transportation plan for the timing of deliveries will be established. No work on Sundays, or public holidays, unless preapproved with the relevant bodies will occur.

Site personnel will travel to site prior to 7.00 a.m. and depart from site from 7.00 p.m., on weekdays, outside the peak traffic hours. The expected peak staff will be up to 60 personnel, who will generate approximately 60 car and van trips, both to and from the site each working day, on the basis of an average worst case vehicle occupancy rate of 1.0 personnel per vehicle. Canteen facilities for personnel will be provided on-site, therefore there are no requirements for staff to leave site during the working day.

### **3.1.1.3 Delivery Vehicle Volumes**

The 18 months construction programme will require the importation of up to 30,507 loads of construction materials. This will include delivery vehicles for the 12 wind turbines including their abnormal loads. All other construction materials will be imported using standard heavy vehicle delivery trucks with capacities of 10 m<sup>3</sup> and 20 tonnes. Concrete will be imported using 8 m<sup>3</sup> capacity trucks.

The proposed construction works heavy vehicle delivery traffic volumes are provided in Table 3.2.

The wind turbine loads will be delivered in consultation with Kerry County Council and An Garda Síochána, during off-peak traffic periods. A total of 120 delivery vehicles will be required for the 12 turbines, which have been included in the number of HGV deliveries. This could result in temporary delays for other location traffic during the off-peak traffic delivery periods.



**Table 3.2: Proposed Construction Works Heavy Vehicle Delivery Traffic Volumes**

Total Number of Heavy Vehicles		
Total Construction Programme (18 months)	Peak Daily	Highest Peak Hour
30,507	158	13 <sup>(1)</sup>

Note <sup>(1)</sup>: During base concrete pours, other deliveries to site will be curtailed or stopped.

Peak heavy vehicle traffic volumes generated by the delivery of construction materials will be up to 158 heavy vehicles per day, both to and from the site. Highest peak hour heavy vehicle traffic volumes will be up to 13 heavy vehicles, both to and from the site.

#### 3.1.1.4 Traffic Volumes

The predicted AADT volumes, peak daily traffic volumes and highest peak hour traffic volumes generated by the proposed development construction are provided in Table 3.3. The predicted AADT volumes are based on all deliveries occurring during the peak construction year 2023.

**Table 3.3: Proposed Construction Works Traffic Volumes**

Total Vehicles (HGVs)		
AADT (%HGVs) (HGVs)	Peak Daily	Highest Peak Hour
270 (62%) (167)	436 (316)	26 (26)

The predicted peak construction year 2023 peak daily and peak hourly traffic volumes on the existing roads with the proposed peak construction works traffic volumes are provided in **Error! Reference source not found.** and Table 3.6 respectively.

**Table 3.4: Predicted 2023 Daily Traffic Volumes with Peak Daily Construction Traffic Volumes**

Road Location	Total Vehicles (HGVs)	Change	
		Total Vehicles (HGVs)	%
N69 between Listowel/Tarbert	4,206 (207)	+87 (63)	+2%
N69 between Tarbert/Foynes	3,555 (247)	+87 (63)	+3%
R551 between Ballylongford/Tarbert	1,910 (143)	+87 (63)	+5%
R552 between Listowel/Ballylongford	1,413 (141)	+131 (95)	+103%
L1021 between R551/N69	224 (47)	+44 (32)	+24%
L6021 between Site/L1021	204 (89)	+87 (63)	+74%
L6021 between Site/R552	248 (133)	+131 (95)	+112%
L1012 between R551/N69	373 (91)	+87 (63)	+30%
L1009 between R552/Site	292 (219)	+218 (158)	+295%

**Table 3.5 Predicted 2023 Peak Hour Traffic Volumes with Peak Construction Traffic Volumes**

Road Location	Total Vehicles (HGVs)	Change	
		Total Vehicles (HGVs)	%
N69 between Listowel/Tarbert	461 (19)	+5 (5)	+1%
N69 between Tarbert/Foynes	446 (23)	+5 (5)	+1%
R551 between Ballylongford/Tarbert	179 (13)	+5 (5)	+3%
R552 between Listowel/Ballylongford	130 (13)	+8 (8)	+7%
L1021 between R551/N69	20 (4)	+3 (3)	+18%
L6021 between Site/L1021	16 (5)	+5 (5)	+45%
L6021 between Site/R552	19 (8)	+8 (8)	+73%
L1012 between R551/N69	32 (6)	+5 (5)	+19%
L1009 between R552/Site	20 (13)	+13 (13)	+186%

### 3.1.1.5 Volume/Capacity Ratios

The rural road link AADT volume/capacity ratios for the N69 National Secondary and the R551 Regional Road, in the vicinity of the proposed development site, are provided in Table 2.3, on the basis of the TII Rural Road Link Design DN-GEO-03031 June 2017, for the predicted peak construction year 2023 peak daily volumes with the TII central growth scenario, with the proposed development peak daily construction.

**Table 3.7: Predicted National and Regional Roads TII Rural Road Link Peak Daily Volume/Capacity Ratios with Peak Construction**

Road	2023 Peak Daily Volumes	AADT Capacity (vehicles)	Peak Daily Volume/ Capacity Ratio
N69 between Listowel/Tarbert	4,206	8,600	49%
N69 between Tarbert/Foynes	3,555	5,000	71%
R551 between Ballylongford/Tarbert	1,910	5,000	38%

The N69 and R551 would continue to operate within their TII rural road link AADT capacities, for the predicted peak construction year 2023 peak daily volumes, with peak construction and the TII central growth scenario, with highest 2023 volume/capacity ratios of 71% and 38%, respectively. These compare with highest ratios of 69% and 37%, respectively, without the proposed development.

The TII guidance does not provide rural road link capacities for rural roads with typical road carriageway widths of less than 6.0 metres. The R552 typical rural road carriageway width of 5.3 metres, the L1012 typical road carriageway width of 5.1 metres and the L1021 typical road carriageway width of 5.0 metres have estimated rural road link capacities that equate to the majority proportion of the 5,000 vehicles AADT capacity identified by TII for a 6.0 metres wide carriageway width. Accordingly, the R552, L1012 and L1021 would continue to operate well within their estimated rural road AADT link capacities, based on their predicted 2023 peak daily volumes with peak construction and the TII central growth scenario.

ADDT volumes on other Local Roads would remain relatively low, and within estimated rural road AADT link capacities, subject to the provision of local road carriageway widening, in consultation with Kerry County Council, including along the L6021 and L1009.

On the basis of the predicted total two-way 2023 peak hour traffic volumes, the estimated highest peak hour traffic volumes per direction would remain well within their hourly urban road link capacities per direction on the N69, R551 and R552 urban roads and streets in Tarbert, Listowel, Ballylongford and on other routes and in other urban areas, in the vicinity, with peak construction.

#### **3.1.1.6 Traffic Management**

A detailed description of traffic management required for the proposed development is provided in the **Traffic Management Plan (EIAR Volume 3 Appendix 15-2)**.

Heavy vehicle traffic volumes generated by the proposed development construction could result in damage to existing and proposed road pavements on public roads, including at vehicle turning, accelerating and decelerating locations. All local road surfaces will be regularly monitored and will be re-instated to pre-development condition, as agreed with Kerry County Council.

### **3.1.1.7 EPA Guidelines**

On the basis of the EPA Guidelines, the proposed construction works would have slight to moderate short-term negative effects.

### **3.1.2 Operational Phase Impact**

During the operational phase, there will be periodic maintenance on site. This would generate a relatively low volume of vehicles, including occasional heavy vehicles.

On the basis of the EPA Guidelines, the proposed operational phase would have imperceptible to not significant traffic effects.

### **3.1.3 Decommissioning Phase Impacts**

The removal of the wind turbines during any decommissioning phase would be on a similar basis to the delivery of the wind turbines for the construction phase, with similar traffic volumes and impacts.

### **3.1.4 Risk of Major Accidents and Disasters**

Road traffic accidents on the public roads used by traffic volumes generated by the proposed construction works, could result in delays to traffic generated by the proposed works and to other traffic. Traffic generated by the proposed works could be involved in road traffic accidents. A road safety protocol will be implemented by the appointed contractor for the duration of the construction works to mitigate the risk of road traffic accidents. A detailed description of traffic management required for the proposed development is provided in the **Traffic Management Plan (EIAR Volume 3 Appendix H-2)**.

### **3.1.5 Cumulative Effects**

The predicted future baseline traffic volumes are on the basis of TII's central growth scenario. This growth scenario includes for other proposed development generated traffic volumes on the surrounding local road network.

The overall decommissioning impact is assumed to be of low volume with regards to traffic volumes. If the turbines are removed intact, approximately 10 No. abnormal load trips would be required per wind turbine. If the blades and turbines are cut on site for removal, it is estimated there will be 20 to 25 No. HGV loads per wind turbine. The estimated duration of these works is currently unknown.

The Construction Traffic Management Plan prepared by the appointed contractor will include mitigation of any coinciding schedule cumulative effects with any potential road improvement schemes in consultation with Kerry County Council.

## 4 MITIGATION

### 4.1.1 Construction Phase

The construction phase mitigation measures are incorporated within the construction phase design and measures, assessed in this foregoing section. No additional mitigation measures are proposed as no significant adverse impacts are envisaged.

### 4.1.2 Operational Phase

The proposed development will not have a significant operational traffic impact; therefore, no mitigation measures are proposed.

### 4.1.3 Decommissioning Phase

The decommissioning phase mitigation measures for the removal of wind turbines will be similar to the construction phase mitigation measures for the delivery of wind turbines, assessed in this foregoing section. No additional mitigation measures are proposed as no significant adverse impacts are envisaged.

## 5 RESIDUAL IMPACTS

### 5.1 CONSTRUCTION PHASE

On the basis of the EPA Guidelines, the proposed construction works will have slight to moderate short-term negative effects.

### 5.2 OPERATIONAL PHASE

The proposed development will not have an imperceptible operational traffic impact.

### 5.3 DECOMMISSIONING PHASE

On the basis of the EPA Guidelines, the decommissioning works will have slight to moderate temporary negative effects.

## 6 CONCLUSION

The proposed development would not have a significant adverse traffic impact on the surrounding road network.

**References:**

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