Orsted Onshore Ireland Midco Limited

12: MEMORANDUM RESPONSE TO SUBMISSIONS RECEIVED

TRAFFIC AND TRANSPORT

Proposed Oatfield Wind Farm Project, Co. Clare: ABP Case No. ABP-318782-24

June 2024

CONTENTS

1 TRAFFIC AND TRANSPORT

1.1 Introduction

The following memorandum has been prepared to address submissions received during the observations and submissions period associated with the Oatfield Wind Farm Planning Application. The planning application for the aforementioned Proposed Development was submitted to An Bord Pleanála on 22nd December 2023 (ABP Case Number: ABP-318782-24). The period for 3rd party submissions and observations was 22nd December 2023 to 19th February 2024.

This is memorandum number 12 in the Oatfield Wind Farm submission response documentation, which addresses common themes identified within the discipline of Traffic and Transport (corresponding to **Chapter 16 of the EIAR**, submitted as part of the planning application made to An Bord Pleanála).

Responses to submissions received from regulatory & prescribed bodies are presented in Section 2 and responses to common themes in submissions received from the general public are presented in Section 3.

Where relevant, additional information is included in the appendices section.

1.2 Statement of authority

This memorandum was prepared by Ronan Kearns (BA, BAI, MSc, MBA, CEng MIEI).

Ronan is a Chartered Engineer with 19 years' post graduate experience. Projects worked on include roads, drainage and civil infrastructure design and project management for residential, retail, data centres, commercial and wind farm developments from feasibility through to construction. He has led numerous planning applications and infrastructure designs for a variety of developments. These developments have ranged from small scale residential projects to multimillion Euro retail, data centre and wind farm projects.

Ronan specialises in transportation planning and site assessment, preliminary design and detailed design of development. Ronan has completed a number of Traffic and Transport EIAR chapters on sites throughout Ireland.

2 REGULATORY & PRESCRIBED BODIES

2.1 Transport Infrastructure Ireland

In their submission to An Bord Pleanála, Transport Infrastructure Ireland (TII) raised three areas of concern:

1. Turbine Delivery Route
2. Abnormal Loads
3. Greenways

These are addressed below.

2.1.1 Turbine delivery route

It is noted that the route chosen for the Turbine Delivery Route is not managed by the Local Authority as it is managed under Motorway Maintenance and Renewals Contracts (MMaRC) Area B by DirectRoute.

DirectRoute were contacted on the 9th of May 2024 via email and phone. A response was received from Direct Route on the 14th of May. An extract from the response is outlined below:

'In principal we can accommodate the movement of equipment through our project road'

The full correspondence with Direct Route is contained in Appendix 4.

As noted in TII's submission, part of the Turbine Delivery Route uses the N69 which is managed by Limerick City and County Council on behalf of TII.

In a meeting held with Limerick City and County Council on the 24th of April 2024 (See Appendix 1 for the Minutes of this meeting), it was confirmed that the route from the Port of Foynes to the junction of the N18 has been upgraded to accommodate the transportation of turbine components including turbine blades.

Limerick City and County Council has invested in the socketing of street furniture and the laying of Grasscrete to allow blade transportation.

Limerick City and County Council have no concerns with the transportation of turbine components along this route subject to confirmation of blade length upon receipt of planning permission. Limerick City and County Council has suggested that the following should be considered after planning has been granted:

- Any works to facilitate the transportation of wind turbine components will be responsibility of Applicant.
- All relevant procedures to be followed including giving advance notice of works / deliveries.
- A Traffic Management Plan is required.
- Breakdown assistance is required on site with a backup team available if the breakdown cannot be fixed in a reasonable time period.

The Foynes to Limerick Road is currently under construction by way of enabling works. The route maybe used as an alternative to the N69 but would be subject to program and agreement with Limerick City and County Council and TII.

The route outlined in the submitted documentation is one that can be delivered now, subject to any mitigation measures proposed, and is not subject to programme.

2.1.2 Abnormal loads

Limerick City and County Council outlined a 14 tonne per axle weight restriction along the N69. Any loads approach/exceeding these limits, such as transformers, will require sign off by TII.

It is anticipated that all such loads will be transported via Dublin Port, but should it be required, an application will be made to TII/Limerick City and County Council to allow the Port of Foynes to be used.

2.1.3 Greenways

No greenways are proposed along the Turbine Delivery Route within Limerick.

At the time of preparing this memorandum, no plans have been published by Clare County Council for future greenways along the Turbine Delivery Route.

Conditions

Based on their submission, TII are broadly receptive of the proposal, and they provided recommendations for conditions to be attached to the Proposed Development, if planning is approved. Tll recommends the following conditions:

- *"Any proposed works to the N69, N69, M18, N18 and M7 national road network to facilitate turbine component delivery to site shall comply with Tll Publications and shall be subject to Road Safety Audit as appropriate."*
- *"Any operator who wants to transport a vehicle or load whose weight falls outside the limits allowed by the Road Traffic (Construction Equipment & Use of Vehicles) Regulations 2003* Sl 5 of 2003, must obtain a permit for its movement from each Local Authority through whose jurisdiction the vehicle shall travel. Tll considers that it is critical a full assessment by the applicant/developer of all structures on the national road network along the haul route should be undertaken, where relevant, and all road authorities along the haul routes should confirm their acceptance of proposals by the applicant."*
- *"Any proposed works to the national road network to facilitate turbine component delivery to site shall comply with Tll Publications and shall be subject to Road Safety Audit as appropriate. Works should ensure the ongoing safety for all road users and prior to any development necessary licenses, approvals or agreements with PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) Companies and local road authorities, as necessary, shall be in place. Referral of all proposals agreed between the road authority, PPP Concessions and MMaRC Companies and the applicant impacting on national roads shall be submitted to Tll."*
- *"Where temporary works within any MMaRC Contract Boundary are required to facilitate the transport of any abnormal loads to site, the applicant/developer shall*

contact thirdpartyworks@tii.ie in advance, as a works specific Deed of Indemnity will be needed by Tll before the works can take place."

- *"Any damage caused to the pavement of the existing national road due to the turning movement of abnormal 'length' loads (e.g. tearing of the surface course) shall be rectified in accordance with TEI Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development on site."*

The Applicant accepts these conditions and will include them as part of the construction contract if the planning application is approved.

3 GENERAL PUBLIC

3.1 Theme 1: Road safety

Road safety is a concern of many of the observations submitted. These observations focus on the potential negative impact of additional Heavy Goods Vehicle (HGVs) on the safety of vulnerable road users, who include pedestrians, cyclists and horse riders, and their continued use of roads affected by the Turbine Delivery Route and the haulage route.

The Proposed Development will be in line with the following recommendations by Transport Infrastructure Ireland (TII), outlined below:

- "*Any proposed works to the N69, N69, M18, N18 and M7 national road network to facilitate turbine component delivery to site shall comply with TII Publications and shall be subject to Road Safety Audit as appropriate*."
- "*Any operator who wants to transport a vehicle or load whose weight falls outside the limits allowed by the Road Traffic (Construction Equipment & Use of Vehicles) Regulations 2003* SI 5 of 2003, must obtain a permit for its movement from each Local Authority through whose jurisdiction the vehicle shall travel. TII considers that it is critical a full assessment by the Applicant/Developer of all structures on the national road network along the haul route should be undertaken, where relevant, and all road authorities along the haul routes should confirm their acceptance of proposals by the applicant*."
- "*Any proposed works to the national road network to facilitate turbine component delivery to site shall comply with TII Publications and shall be subject to Road Safety Audit as appropriate. Works should ensure the ongoing safety for all road users and prior to any development necessary licenses, approvals or agreements with PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) Companies and local road authorities, as necessary, shall be in place. Referral of all proposals agreed between the road authority, PPP Concessions and MMaRC Companies and the applicant impacting on national roads shall be submitted to TII*."

The Applicant will carry out various road safety audits, as detailed in TII GE-STY-01024 - Road Safety Audit, at the various stages of project development.

A Road Safety Audit (RSA) involves the evaluation of road schemes during design and construction to identify potential hazards to all road users. While RSA is required under the EU Directive on Road Infrastructure Safety Management (EU RISM), it has been incorporated into TII Publications since 2001. RSA is to be carried out on all new national road infrastructure projects and on all schemes which result in a permanent change to the existing road or roadside layout. RSA is also recommended for similar changes to the local and regional road network.

The RSA stages are described below. Some RSA stages may be omitted or combined for minor schemes or temporary works, or may not be necessary where changes to the road layout are only temporary.

Stage F (Feasibility): Route selection stage

Stage F is carried out before the route is chosen. RSA at this stage will identify safety features associated with each route option.

Stage 1: Completion of preliminary design, prior to land acquisition

The RSA team members examine the plans and additional information provided. A site visit is required at this stage. Stage 1 RSA notes safety related features within the design.

Stage 2: Completion of detailed design, prior to construction

The detailed designs and additional information are studied by each RSA team member. A site visit is also required at this stage.

For smaller schemes, Stages 1 and 2 may be combined and presented in one report.

Stage 3: Completion of construction (generally, this takes place prior to opening to traffic).

The RSA team must visit the site for a Stage 3 audit in daylight and darkness. The RSA team walks, drives and, where appropriate, cycles the scheme to identify potential hazards to all road users.

Stage 4: Early operation at 2-4 months after road opening.

The site must be visited again in daylight and darkness during the Stage 4 audit. At stage 4 the RSA team check for road safety issues in light of the behaviour of road users.

Should the development be granted planning permission, Stage 1 and Stage 2 RSA will be carried out on the proposed Turbine Delivery Route and Haulage Route where required.

The recommendations at Stage 1 and 2 RSA will be fully implemented by Orsted. After this, a Stage 3 RSA will be carried out prior to the first delivery to the site.

A Stage 4 Road Safety Audit will be carried out 2- 4 months after the first delivery to the site to ensure that previous recommendations are enhanced safety for all road users.

3.2 Theme 2: Public transport

It was outlined in the observations that the Haul Route and Turbine Delivery Route coincide with the primary bus routes used to bring children to both local primary and secondary schools. The observation suggests that these school bus routes will be disrupted severely by the proposed construction works.

Section 3.6.3 ‘Construction Haul Routes’ in the Construction Traffic Management Plan (hereafter referred to as CTMP) in **EIAR Volume III**, **Appendix 5.2** to **EIAR Chapter 5 Project Description**, outlines the strategy for determining the proposed haul routes and how it is designed taking into account local schools.

An updated Outline CTMP is contained in Appendix 3 of this report.

Where reasonably practicable, all construction traffic will be required to adhere to the haul routes identified in Figure 11 of the Outline CTMP (**EIAR Volume III Appendix 5.2**). HGV deliveries will avoid passing schools at opening and closing times where it is reasonably practicable which will reduce the potential impact that the construction activities will have on the primary bus routes used to bring children to both local primary and secondary schools.

Furthermore, Section 5.7 of the Outline CTMP (**EIAR Volume III**, **Appendix 5.2**) outlines special speed limits of 30 km/h which shall be implemented for construction traffic in sensitive areas such as school locations. An additional special speed limit of 25km/h will be applicable to abnormal load deliveries.

These speed limits will only apply to construction traffic and will not be enforced on local traffic. This stipulation will be included in the contract of the yet to be appointed haulage contractor and other suppliers.

The construction phase of the wind farm will require the delivery of turbine components, concrete, steel and aggregate to the site via the public road network. The key timing periods when use of the public road network will be at its peak for residents is between 8.30am and 10am when school and commuter related traffic is at its peak.

It is proposed to allow routine deliveries such as aggregate into the site between 8.00am and 8.30am. The initial early morning delivery trucks will exit the wind farm site empty with the run of traffic, but they will be prohibited from delivering again until 10am. These mitigation measures are outline in Section 5.22 'Mitigation Measures' of the Outline CTMP (**EIAR Volume III**, **Appendix 5.2**)

3.3 Theme 3: Geometric constraints / swept path analysis

Many observations note that the proposed Haul Route and Turbine Delivery Route would be using rural roads not designed for the transportation of large volumes of construction materials.

As part of the response to An Bord Pleanála, a desktop study was subsequently undertaken in May 2024 to locate potential pinch points along the proposed haul route that may require mitigation measures. This desk top study was based on the haul route identified in Figure 10 of the Outline CTMP. An updated Outline CTMP is included in Appendix 3 of this report.

The desktop study was based on available OS mapping and utilised AutoCAD Vehicle Tracking to simulate two HGVs traveling in the opposite direction along the anticipated haulage route. This is likely to be the worst-case scenario.

A number of pinch points were identified along the proposed haulage route. These pinch points are illustrated in **Appendix C** of the Outline CTMP in **EIAR Volume III**, **Appendix 5.2**. A sample of these pinch points are replicated in Figure 3.1 – Figure 3.4.

Figure 3.1 below shows a typical narrowing in the road where two vehicles may find it difficult to pass, while Figure 3.2 shows a sample of where the road narrows to a point where only one vehicle can pass at a time. Also, Figure 3.3 shows a sample of where the road narrows to a point on approach to a bridge where only one vehicle can pass at a time.

Where it is not possible for two HGVs to pass, a stop/yield system will be introduced. Based on a line of site, a vehicle must stop to allow an oncoming vehicle to pass where the road is not wide enough for two vehicles to pass.

This principle is illustrated in Figure 3.4.

Figure 3.1: Pinch point in road

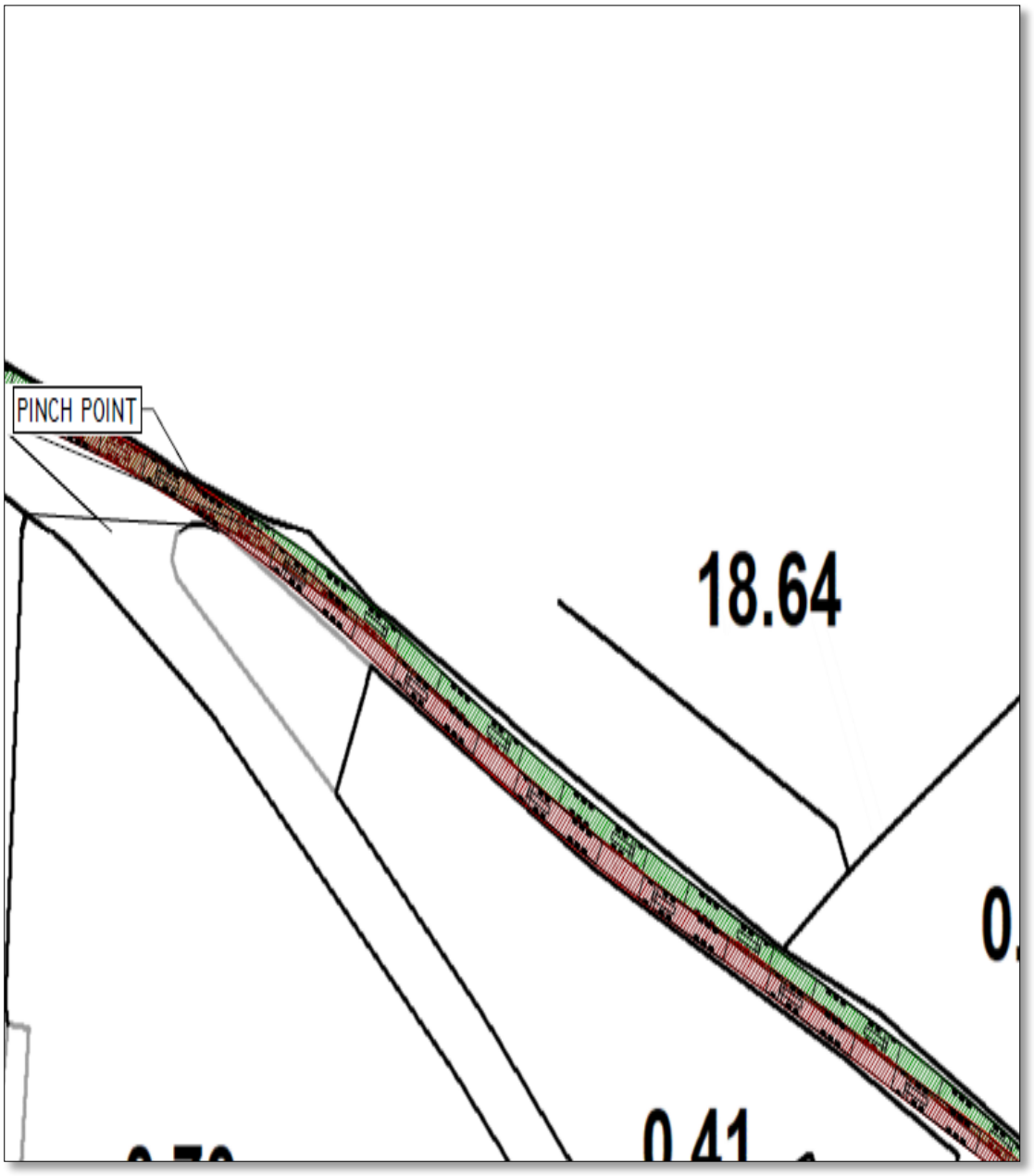
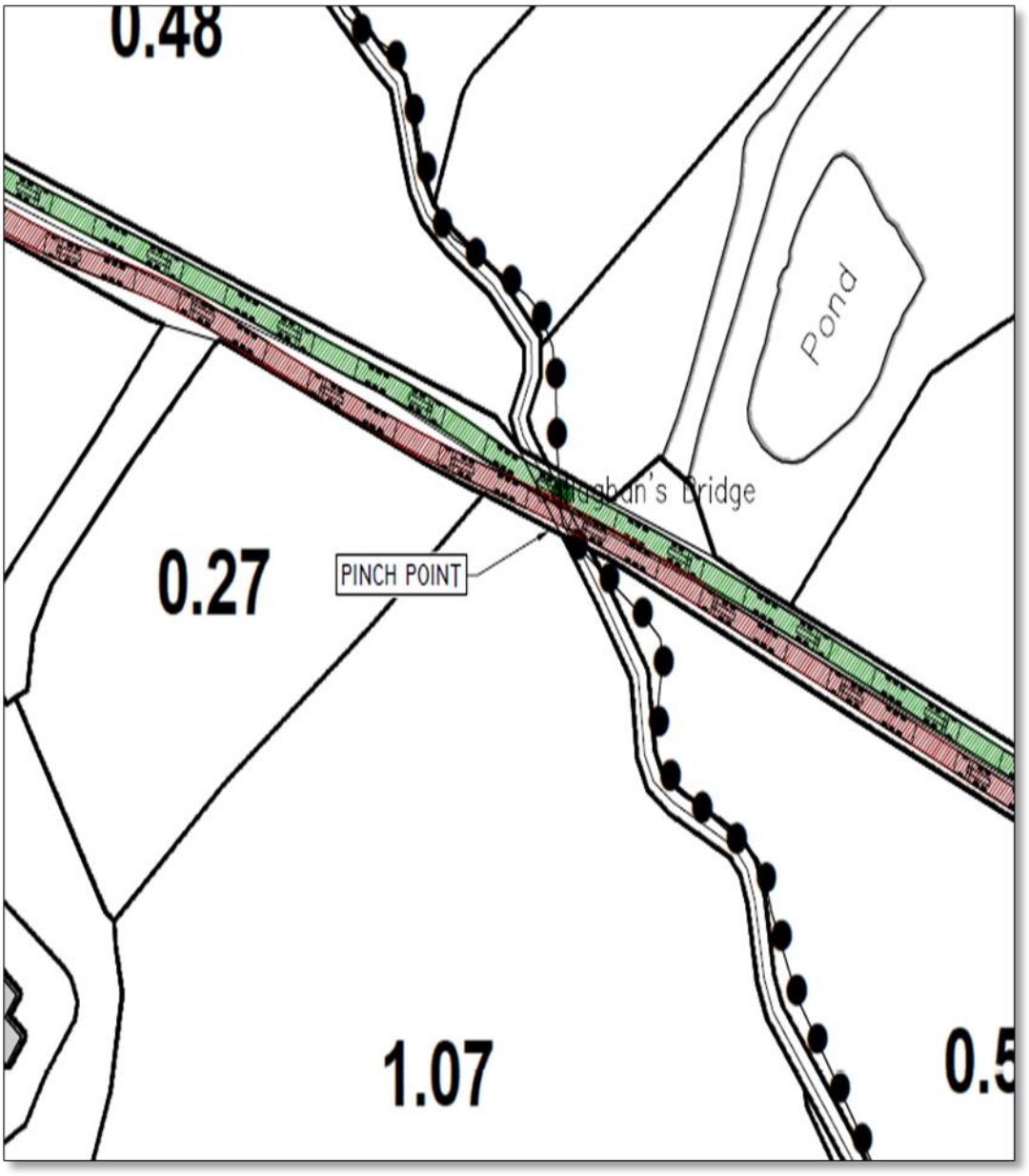


Figure 3.2: Narrowing in road

Figure 3.3: Narrow bridge



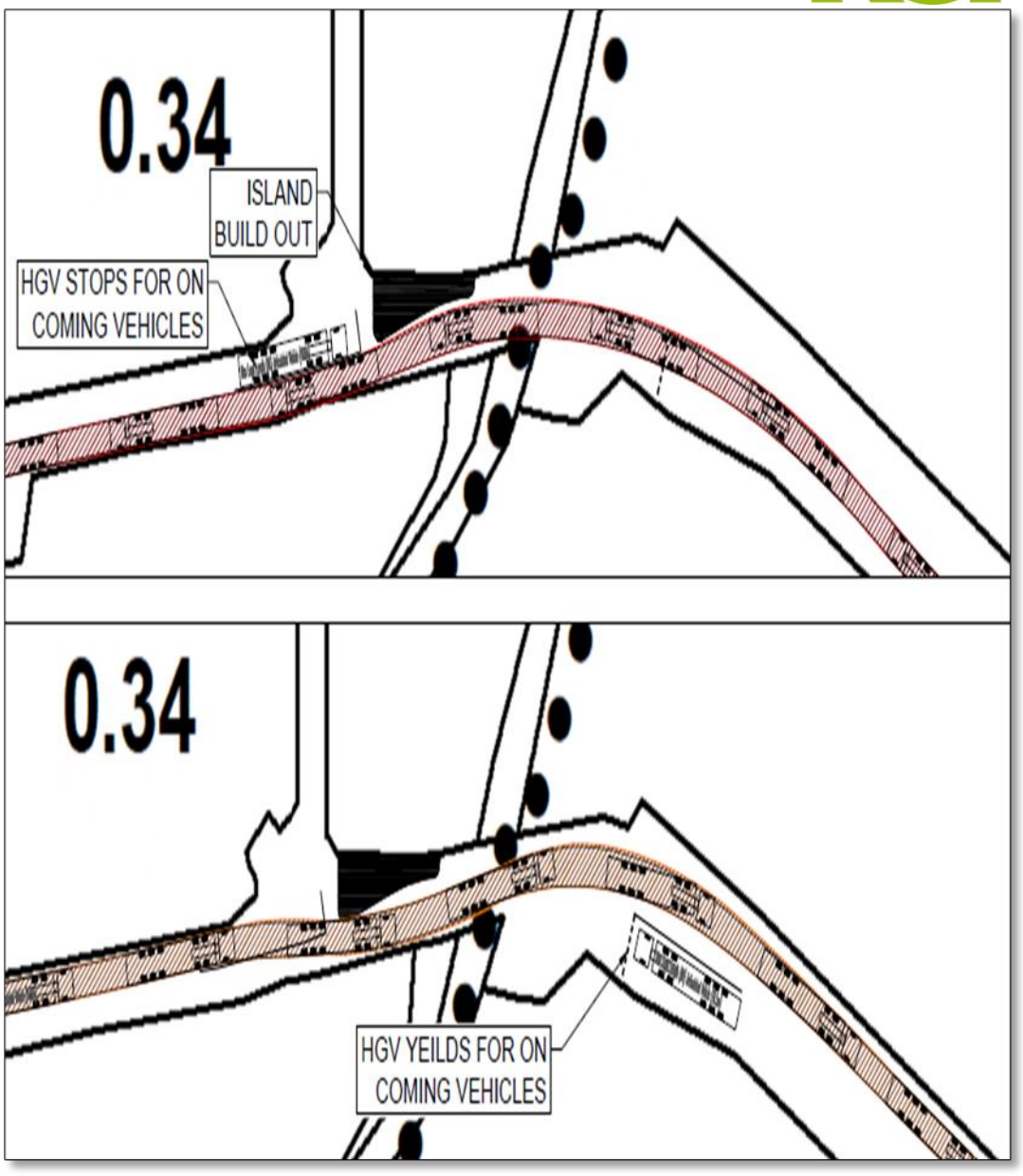


Figure 3.4: Stop/yield system

Upon grant of planning permission, the haul routes will be agreed with the relevant Local Authorities. Once agreed, the haul routes will be subject to a topographical survey to identify potential pinch point in more detail.

Proposed mitigation measures for the Haul Route will be agreed upon with the Local Authority. These mitigation measures are outlined in Section 7.3 of the Outline CTMP in **EIAR Volume III**, **Appendix 5.2**.

3.4 Theme 4: Trip generation

The quantum of trips generated by the development is a concern raised in the observations. The accuracy of the trip generation figures will have a significant impact on how communities will be affected locally by the Proposed Development.

A Construction Environmental Management Plan (hereafter referred to as CEMP), refer to **EIAR Volume III**, **Appendix 5.1** was prepared by RSK as part of the EIAR submission.

Section 5.2 'Site Clearance and Earthworks' of **EIAR Volume III**, **Appendix 5.1 CEMP** outlines the anticipated volumes of materials that will be required for site clearance/earthworks and for the construction of foundations, access tracks and substation. These will be the main trip generation activities on the site which will be supported by various site operative.

The volumes presented in Figure 5.1 of **EIAR Volume III**, **Appendix 5.1** were the basis for the trips that would be generated by the Proposed Development. There is a correlation between the volume of materials that will be exported and imported into the site and the number of HGV movements that will be required to move that volume of materials.

The CEMP estimates that construction phase for the entire Proposed Development will lead to 18,190 additional large goods vehicle (LGV) and HGV trips (two- way) over the duration of the construction works. This consists of 12,545 HGV trips and 5,645 LGV trips. This results in an average increase of 44 vehicles per day with a maximum increase of 96 vehicles during the busiest month.

Calculations of HGV movements associated with the construction of the Proposed Development indicate an average daily increase of 28 HGV trips per day over a construction period of 18 months. This increases to an average of 60 HGV trips per day during the peak month which occurs in Month 2 of the programme for HGV traffic.

Calculations of LGV movements associated with the construction of the Proposed Development indicate an average daily increase of 16 LGV trips per day over a construction period of 18 months. This increases to an average of 36 LGV trips per day during the peak month which occurs in Month 2 of the programme for LGV traffic.

It is considered that the values presented above is wholly accurate and a true presentation of the anticipated levels of vehicle movements that the development is likely to generate.

When considered in the context of IEMA's Environmental Assessment for Road Traffic, 2023 the proposed trips generated by the Proposed Development will have moderate and short-term effect on Pedestrians /Cyclists, driver delay, accidents and safety as outlined in Section 16.10.2 of **EIAR Chapter 16 Traffic and Transport** (hereafter referred to as **EIAR Chapter 16**).

3.5 Theme 5: Traffic analysis/traffic impact

Observations raised concerns about the traffic analysis carried out within **EIAR Chapter 16**. An overview of this analysis is outlined in this section of the report.

Methodologies for carrying out traffic analysis is outlined in the following publications:

- IEMA Impact Assessment Guide to Delivering Quality Development (2016);
- Transport Infrastructure Ireland (TII) Traffic and Transportation Assessment Guidelines (2014);
- 'Guidelines for Traffic Impact Assessments' The Institution of Highways and Transportation (1994);

These publications outline procedures for establishing where in the local road network there is likely to be impact by the Proposed Development, establishing baseline traffic conditions and ultimately how the traffic generated by the development should be assessed to determine the potential impact on the local road network.

EIAR Chapter 16, Section 16.5.1 outlines the criteria for determining where the Proposed Development is likely to impact on the surrounding road network. In accordance with the IEMA Guidelines (2016), the study area has been defined by identifying any link or location where it is considered that significant environmental effects could occur as a result of the Proposed Development.

To quantify the volumes of traffic movements at key points on the road network adjacent to the site, a set of classified turning movement traffic counts were commissioned.

Accordingly, classified counts were carried out on the 17th of October 2023 at locations shown in **EIAR Chapter 16**, illustrated in Figure 16.1 and described in Table 16.2.

Fifteen sites were chosen to establish baseline data. Baseline traffic data was based on traffic surveys or Transport Infrastructure Ireland (TII) traffic count data.

Where it was deemed that the proximity of two count locations in close proximity to each other did not warrant a second count location, it was assumed that the traffic volumes would be similar. This assumption was made for Site 5 and Site 5A which coincided with the access points to the Proposed Development.

As noted in the observations, this may not give a true reflection of actual traffic volumes at Site 5A. Therefore, additional traffic surveys were carried out on the 30th of April 2024. The count locations are shown in Figure 3.5 below. The red circles in Figure 3.5 represent Site 5 and Site 5a, while the yellow circle represents Carmody's Cross, an additional node that was not initially considered in the assessment as it was an isolated junction with limited pedestrian/cycle activity and unlikely to experience significant driver delay. It should be noted that Carmody's Cross was included in the updated assessment for completeness.

The supplementary traffic counts are included in Appendix 2 of this report.

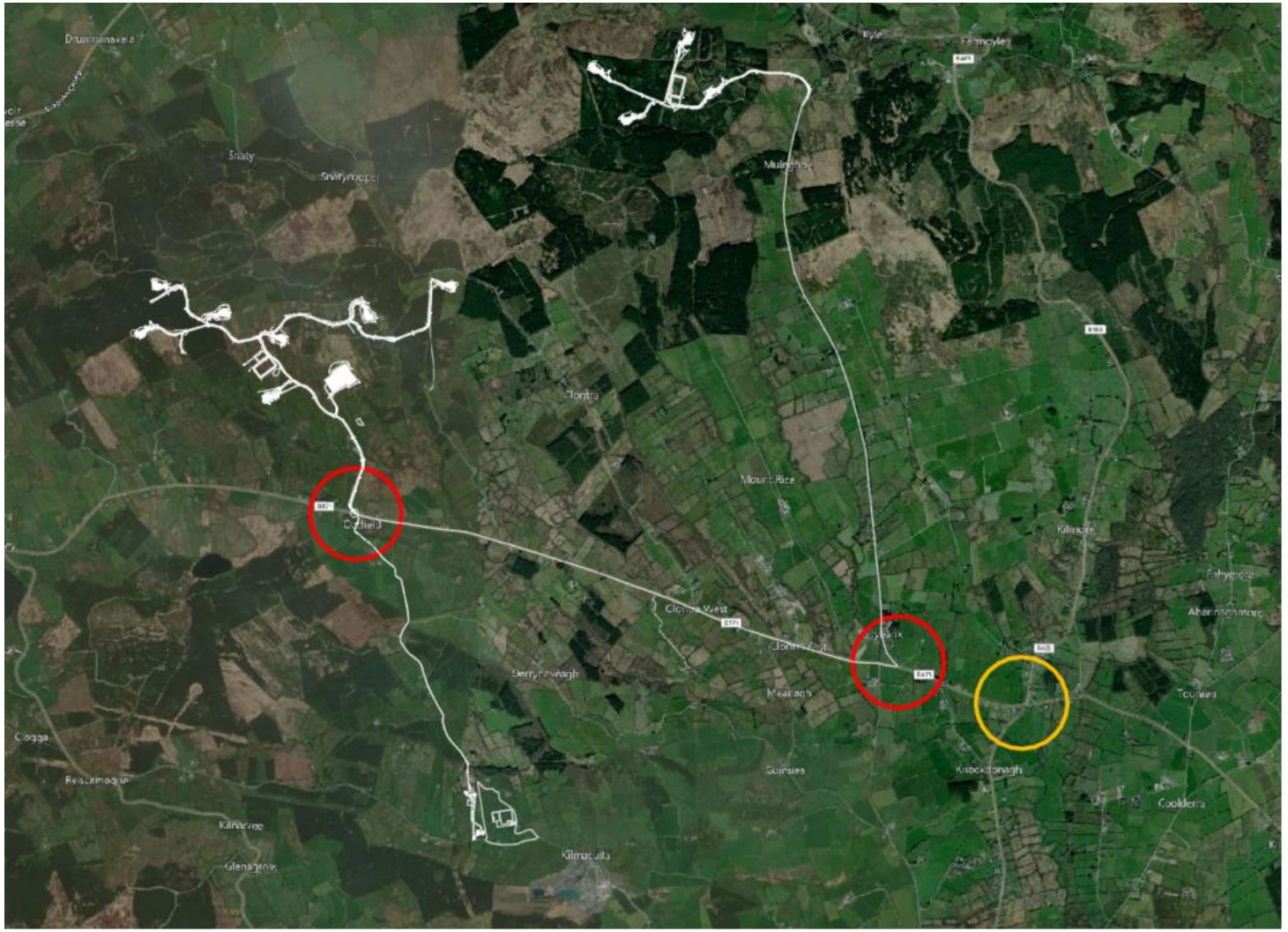


Figure 3.5: Count locations

The recorded data, measured in vehicles, is illustrated in the Table 3.1 along with the expansion factor and corresponding estimate of the Annual Average Daily Traffic (AADT).

Table 3.1: Revised AADT figures

Location	Total Two-Way Movements	Factor	AADT (Vehicles)
Site 1	1478	0.449	3292
Site 2	1406	0.449	3131
Site 3	4444	0.440	10100
Site 4	3110	0.440	7068
Site 5a – Original	574	0.440	1305
Site 5a – Actual	343	0.440	780
Site 5 – Original	574	0.440	1305
Site 5 – 2024	682	0.440	1550
Site 5 b – Carmody's Cross	1145	0.440	2602
Site 6	2584	0.440	5873
Site 7	4073	0.440	9257
Site 8	2776	0.440	6309
Site 9	2431	0.440	5525
Site 10	3940	0.440	8955
Site 11 & 12	1032	0.449	2298
Site 13	5164	0.440	11736
Site 14	6308	0.449	14049
Site 15*	29642	0.449	66018
Site 16*	N/A	N/A	37095

The proposed trips associated with the development of have been added to the existing AADT to determine the potential uplift in traffic. This is shown in Table 3.2.

Table 3.2: Revised percentage increase between 'Do Nothing' and construction phase

Percentage Increase between Do Nothing and Construction Phase			
Location	**Construction Phase**		
	Survey Flows	**Development Flows**	**% Impact**
Site 1	3292	8	0.24%
Site 2	3131	8	0.25%
Site 3	10100	25	0.24%
Site 4	7068	17	0.80%
Site 5a	780	57	9.84%
Site 5	1550	77	5.88%
Site 5b – Carmody's Cross	2602	77	2.95%
Site 6	5873	64	1.10%
Site 7	9257	64	0.70%
Site 8	6309	2	0.03%
Site 9	5525	2	0.04%
Site 10	8955	2	0.02%
Site 11 & 12	2298	62	2.70%
Site 13	11736	62	0.53%
Site 14	14049	62	0.44%
Site 15	66018	62	0.09%
Site 15*	37095	62	0.17%

There were no highway links identified in Table 16.9 of **EIAR Chapter 16**, with an increase over 10% in construction vehicle movements.

In accordance with IEMA Environmental Assessment for Road Traffic, 2023, the assessment would focus on the highway network where a potential increase in traffic of greater than 30% has been identified.

In accordance with the 2023 IEMA Guidelines, projected changes in traffic flows of less than 10% create no discernible environmental effect. Therefore, the effects to transport

and access during construction would be temporary, slight and adverse in EIAR terms for:

- Pedestrian Severance, Delay, Amenity, Fear and Intimidation; and
- Driver Delay;

For Accidents and Safety, the effects to transport and access during construction would be temporary, moderate-significant, adverse and not significant in EIAR.

Summary

Based on the feedback from the submissions, revised traffic counts were done on Site 5, Site 5A and the Carmody Cross. The traffic volumes recorded at Site 5A was less than what was assumed in the EIAR.

The updated traffic flows were redistributed across the network. As a result, the uplift in traffic in Site 5A went from 5.02% to 9.84%. This is based on the lower-than-expected counts and the higher trip generation numbers. The overall impact is less than 10% and I am satisfied that the statements made in the EIAR is still valid.

The uplift in traffic in Site 5 went from 5.02% to 5.88%. Again, the overall impact is less than 10% and I am satisfied that the statements made in the EIAR is still valid.

3.6 Theme 6: Construction traffic impact

Concerns are noted about the potential disruption that maybe caused during the construction of the proposed windfarm. These concerns focus on the following key areas:

- Suitability of local roads
- Traffic congestion
- Road Safety
- Pedestrian Safety

3.6.1 Suitability of local roads

The suitability of local roads to accommodate construction traffic has been set out in the Outline CTMP in **EIAR Volume III**, **Appendix 5.2**.

The suitability has been assessed on two criteria:

1. Access Location
2. Pavement Condition Surveys
3. Swept Path Analysis

3.6.1.1 Access location

Access to the development will be provided via the L3016 (WDA Access Road) and an unnamed road (EDA Access Road) both of which are accessed via the R471. These access roads were chosen as the provide direct access to the development lands.

Figure 3.6: WDA access road (L3016)

Figure 3.7: EDA access road (unnamed road)

In its current form, the L3016 is a narrow single track road providing access to agricultural lands and a number of standalone houses/farmyards. Based on the geometric layout of the road, the road gradient, road condition, etc, the 85th percentile speed was estimated to be between 40 km/h and 50km/h. This is based on site observations carried out in person on the 15th of September 2023.

Figure 3.8: Image from dash cam of WDA access road (L3016)

Similarly, the unnamed road is a single carriageway road providing access to agricultural lands and a number of standalone houses/farmyards. Based on the geometric layout of the road, the road gradient, road condition, etc, the 85th percentile speed was estimated to be between 20 km/h and 30km/h. This is based on site observations carried out in person on the 15th of September 2023.

Figure 3.9: Image from dash cam of EDA access road (unnamed road)

It is noted that the estimated speed is less than the permitted speed limit. The 85th percentile speed is the speed at or below which 85 percent of the drivers travel on a road segment. As stated above, this can be affected by the geometric layout of the road, the gradient, weather conditions, road conditions etc.

3.6.1.2 Pavement condition surveys

Orsted have given a commitment to maintain the roads used for the Haul Route or Turbine Delivery Route in accordance with their current state in (see Section 5.9 of **EIAR Volume III**, **Appendix 5.2 Outline CTMP**).

The roads forming part of the Haul Route and Turbine Delivery Route will be monitored visually throughout the construction period and a truck mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required.

In addition, the Main Contractor shall, in conjunction with the local authority:

- Undertake additional inspections and reviews of the roads forming the haul routes one month prior to the construction phase to record the condition of these roads at that particular time.
- Such surveys shall comprise, as a minimum, a review of video footage taken at that time, which shall confirm the condition of the road corridor immediately prior to commencement of construction. This shall include video footage of the road wearing course, the appearance and condition of boundary treatments and the

condition of any overhead services that will be crossed. Visual inspections and photographic surveys will be undertaken of bridges and culverts that are along the haul roads.

- Where requested by the local authority prior to the commencement of construction operations, pavement condition surveys will also be carried out along roads forming part of the haul route. These will record the baseline structural condition of the road being surveyed immediately prior to construction.
- Throughout the course of the construction of the Proposed Development, on-going visual inspections and monitoring of the haul roads will be undertaken to ensure any damage caused by construction traffic is recorded and that the relevant local authority is notified. Arrangements will be made to repair any such damage to an appropriate standard in a timely manner such that any disruption is minimised.

Pavement Condition Surveys will be carried out in accordance with Machine Road Condition Survey Specification for Regional and Local Roads as specified by the Road Management Office.

In addition to the Pavement condition surveys, structural bridge surveys will be carried out to confirm any bridge used as part of the Haul Route or Turbine Delivery Route has sufficient structural capacity to bear anticipated loads. A suitably qualified structural engineer will undertake these evaluations. All surveys will adhere to the guidelines set out in "*The Assessment of Road Bridges and Structures (including Erratum No. 1, dated December 2014) AM-STR-06026 June 2014*" as specified by Transport Infrastructure Ireland.

Upon completion of the construction phase of the Proposed Development, the preconstruction surveys will be repeated and a comparison of the pre and post-construction surveys will be conducted. Where such comparative assessments show that a section of road has been damaged or deteriorated as a result of construction traffic, the construction related damage will be repaired.

3.6.1.3 Swept path analysis

As noted above in Theme 3, in response to the submissions raised, a desktop study was undertaken to locate potential pinch points along the proposed haul route that may require mitigation measures.

The desktop study was based on available OS mapping and utilised AutoCAD Vehicle Tracking to simulate two HGVs traveling in the opposite direction along the anticipated haulage route. This is likely to be the 'worst case' scenario.

Upon grant of planning permission, the haul routes will be agreed with the relevant Local Authorities. Once agreed, the haul routes will be subject to a topographical survey to identify potential pinch point in more detail.

Mitigation measures will be agreed upon with the Local Authority, as outlined in Section 7.3 of the Outline CTMP (**EIAR Volume III**, **Appendix 5.2**) and in Appendix 3 below.

3.6.2 Traffic congestion

The Outline CTMP sets out the anticipated number of trips that will be associated with the construction phase of the Proposed Development.

The construction phase for the entire Proposed Development will lead to 18,392 additional LGV & HGV trips (two- way) over the duration of the construction works. This consists of 12,684 HGV trips and 5,708 LGV trips. This results in an average increase of 44 vehicles per day with a maximum increase of 96 vehicles during the busiest month.

Calculations of HGV movements associated with the construction of the Proposed Development indicate an average daily increase of 28 HGV trips per day over a construction period of 18 months. This increases to an average of 47 HGV trips per day during the peak month which occurs in Month 2 of the programme for HGV traffic.

Calculations of LGV movements associated with the construction of the Proposed Development indicate an average daily increase of 16 LGV trips per day over a construction period of 18 months. This increases to an average of 20 LGV trips per day during the peak month which occurs in Month 2 of the programme for LGV traffic.

As outlined in Table 3.2, above, this equates to a maximum up lift of *ca*. 6.22% in traffic volumes. This maximum uplift is recorded at the WDA Road. The impact of the development reduces to a maximum of 2.5% as construction traffic passes through the network.

During the construction phase of the Proposed Development, it is predicted that the additional traffic that will appear on the delivery routes indicated in Figure 10 of **EIAR Volume III**, **Appendix 5.2 Outline CTMP** will have a moderate and short-term effect on existing road users, which will be minimised with the implementation of the mitigation measures outlined in Section 16.9.2 of **EIAR Chapter 16** and the Outline CTMP (**EIAR Volume III**, **Appendix 5.2**).

This conclusion is based on the guidance provided in IEMA's Environmental Assessment for Road Traffic, 2023.

Effects on Pedestrians /Cyclists

During the construction phase of the Proposed Development, it is predicted that a maximum of 96 vehicles trips per day will appear on the delivery routes as indicated in Figure 10 of **EIAR Volume III**, **Appendix 5.2 Outline CTMP**, as updated. Refer to Appendix 3 of this report for the updated Outline CTMP. The impact of these 96 additional is illustrated Table 3.2 above, which will have a moderate and short-term effect on pedestrian and cyclists, which will be minimised with the implementation of the mitigation measures outlined in **EIAR Chapter 16**, Section 16.9.2.

This conclusion is based on the guidance provided in IEMA's Environmental Assessment for Road Traffic, 2023.

Driver Delay

During the construction phase, it is predicted that driver delay will increase as additional traffic enters the road network locally as a result of construction activities at the development site.

These delays will peak during the installation of the grid connections.

Driver delay will be moderate and short-term during the Construction Phase, which will be minimised with the implementation of the mitigation measures outlined in Section 16.9.2 of **EIAR Chapter 16**.

This conclusion is based on the guidance provided in IEMA's Environmental Assessment for Road Traffic, 2023.

Accidents and Safety

During the construction phase, it is predicated that risk of an accident occurring will increase along with the potential severity in injury due to the increase in HGV activity.

At accident 'black spots', conservation areas, hospitals or links with high levels of vulnerable road user activity the impact of accidents and safety will be significant and short-term during the Construction Phase, which will be minimised with the implementation of the mitigation measures outlined in Section 16.9.2 of **EIAR Chapter 16**.

Based on the implementation of mitigation measures outlined in **EIAR Chapter 16,** the residual construction effects are as follows:

- Not significant, adverse effects and short-term duration for Pedestrian Severance, Delay, Amenity, Fear and Intimidation that are not significant in EIA terms.
- Not significant, adverse effects and short-term duration for Driver Delay that are not significant EIA terms.
- Slight adverse effects for Accidents and Safety that are not significant EIA terms.

This conclusion is based on the guidance provided in IEMA's Environmental Assessment for Road Traffic, 2023.

3.6.3 Road Safety

Road Safety and safety in general is Orsted's number one priority. All activities carried out by Orsted or on their behalf will be carried out to the highest safety standard.

In terms of road safety, a suite of Road Safety Audits, as outlined in Section 3.1 of this memorandum, will be carried out as required. The recommendations of the Road Safety Audits will be carried out by Orsted, at their own cost, in agreement with the relevant Local Authority and/or Roads Authority.

It is Orsted's intention to develop, in conjunction with the Main Contractor, a 'Considerate Constructors Policy' whose aim is to ensure that construction vehicles share the roads safely with local traffic and vulnerable road users such as pedestrians, cyclists and horse riders.

Section 5.21 of the Outline CTMP includes information on an outline Considerate Constructions Policy. The Main Contractor will conduct regular toolbox talks with the contractors to ensure they are fully aware of the requirements which will help foster a culture of road safety.

The practical implications of delivering to the site will be highlighted when approaching suppliers and will be included in the final contractor for the delivery of materials and equipment. This includes the mitigation measures contained within the Outline CTMP.

Disciplinary action will be taken with any contractor who does not comply with the procedures.

Disciplinary action will be taken with any contractor who does not comply with the procedures. This may result in a yellow card being issued and possibly a red card depending on the severity of the offence. A red card meaning that they will no longer be able to deliver to the site in future.

An updated Outline CTMP is contained in Appendix 3 of this report.

3.6.4 Pedestrian Safety

The observations noted that that there are walking trails in the vicinity of the Proposed Development. The observations noted that 12 O'Clock Hills purple walking trail is ca. 85m away from the closest proposed wind turbine (T1).

In the submitted Outline CTMP (**EIAR Volume III**, **Appendix 5.2**) it stated that no local pedestrian facilities located along the haulage route in the vicinity of the Proposed Development.

For clarity, this statement was made in the context of the potential of interaction of pedestrians, and other vulnerable road users, coming into conflict along the haulage route. The lack of pedestrian footpath may suggest low pedestrian activity locally. Where there are trails, the expectation is that this would be the area of highest pedestrian activity.

The 12 O'Clock Hills purple walking trail is an offline trail and unlikely to be affected by the proposed haul routes. There are no proposed construction works North of the Proposed Development area in the vicinity of the 12 O'Clock Hills Trails and all construction activities will take place within the red line boundary of the Proposed Development.