

Appendix 15C

Traffic and Transport Report

2023

Traffic and Transport Assessment



Prepared by: D. Johnstone, A. Kalatha



Traffic and Transport Assessment

Windfarm Project, Ballycar, Co. Clare

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Executive Summary

ORS have been commissioned by MWP to carry out a Traffic and Transport Assessment (TTA) relating to a proposed wind farm adjacent to Ballycar in Co. Clare. This document forms part of the planning application and should be read in conjunction with all drawings, reports, specifications, and particulars associated with the planning application.

This TTA will examine existing and proposed traffic conditions and transport activity to determine the effects on the surrounding network by the proposed development.

For developments of this nature, the construction phase holds the most significant influence on the surrounding road network. This involves short-term increases in traffic volume and specific requirements for the transportation of large turbine components. As such, this report will address the construction stage traffic associated with the development. In contrast, the traffic generated by the operation and maintenance of the wind farm is projected to be minimal, with no significant long-term impact on the surrounding traffic. This traffic is considered negligible within this assessment.

The site is situated on an existing greenfield area between the townlands of Ballycar in the north and Cappanteemore in the south, within Co. Clare approximately 3km north of Limerick City and suburbs. The planning boundary covers an area of 104.7 hectares.

Subject to planning permission, it is envisaged that work will commence at the site once the relevant permits, grid connection agreements, funding and all permits are in place in 2026, with a construction duration of approximately 18 months. Accordingly, the proposed development is scheduled to be fully complete by 2028. Peak construction is expected to occur during eight months of the 18 months construction programme, in 2027. The 18 months construction programme will require the importation of up to 14,010 loads of construction materials as well as 120 loads for the turbine deliveries. The construction traffic with the largest daily impact is the concrete pours for the turbine foundations.

During the peak construction period, it is expected that approximately 126No. HGV deliveries of construction materials will be made to the site per day at a steady rate equating to approximately 21No. deliveries per hour. These figures are again considered in conjunction with peak public traffic AM and PM hours to ensure a robust assessment.

Peak numbers employed during the construction stage of the development will be around 60No. and a worst-case scenario of 1 personnel per vehicle has been considered in the analysis within this report. It is therefore assumed that staff trips will contribute 60No. vehicular AM trips into the development and 60No. vehicular PM trips out of the development. Although staff are expected to arrive outside peak traffic hours, in line with the precautionary principle and to ensure a robust assessment, these trips have been considered to occur at peak public traffic AM and PM hours.

The wind turbine loads will be delivered in consultation with Clare County Council and An Garda Síochána, during off-peak traffic periods. As mentioned above, there is expected to be approximately 120No. HGV deliveries associated with the 12No. wind turbine blades, towers

and nacelles spread across 3 months and equating to approximately 2No. HGV deliveries per working day.

Transport Infrastructure Ireland (TII) were consulted through the EIAR scoping process. In a response dated 23rd of December 2021, TII provided recommendations on consultation, potential traffic effects and effects (including any damage caused by abnormal 'weight' loads) on national roads for consideration in the EIAR and the TTA.

Clare County Council was also engaged in the EIAR scoping process through a pre-planning consultation in January 2022. Key points highlighted during this scoping process encompassed reaching an agreement on construction haul routes in collaboration with the Local Authority, safeguarding the integrity of the existing road network and its structures, and assessing the effects of the grid connection route on the road network.

Additionally, a pre-application consultation was held with ABP on 23rd February 2022 which featured no concerns in terms of traffic.

ORS have used their judgement and experience on similar projects to select the junction most likely to be impacted by construction traffic associated with the development. This report will focus on the priority T-junction where the L3056 meets the R464 at Parteen, approximately 5km south of the development site. It is assumed that all HGV traffic associated with the site will pass through this junction, as the single lane road to the north of the site is deemed unsuitable for HGV traffic. To ensure a conservative assessment, it is also assumed that all construction stage staff trips will pass through this junction. The long-term performance of the junction will be assessed.

Traffic counts were commissioned by ORS to obtain up-to-date traffic data at the relevant junction. This was carried out on Tuesday 24th May 2022. TII growth factors were applied to the 2022 traffic count data to quantify the predicted increase in traffic from 2022 to the current year, 2023.

The traffic profiles likely to be generated by the proposed development were obtained from MWP. There are two planned site entrances: one temporary, designated for the construction phase, and one permanent. Given that both entry points are located off the L7062, this local road will serve as the sole access to the development.

For a robust assessment, it is assumed that 100% of the development traffic will use the analysed junction to travel onto the local access road to the site for turbine deliveries, construction materials and operations and maintenance vehicles. It is noted that materials sourced from the local quarry to the north of the proposed development will not use the analysed junction to reach the site as they will access directly from the L7062 and therefore, the assessment is conservative.

From the analysed junction it is assumed that 80% of the development traffic will travel to/from the south-west direction on the R464 and 20% will travel to/from the north-east direction on the R464. This is based on the 2022 traffic count data patterns at the assessed junction.

In order to prove that the proposed development will not negatively influence the functionality of the junction, the junction was tested using the TII (Transport Infrastructure Ireland) approved

software Junctions 10 for the year of opening (2026), 5-year (2031) and the 15-year (2041) future design scenarios. Appropriate TII Traffic Growth Factors have been applied to the existing traffic flows to ensure that future traffic growth on the road network has been considered in the analysis.

Upon building the traffic model for the proposed development, adjacent ongoing and future developments were considered to ensure the potential worst-case scenario is considered. The Clare Co. Council planning files were consulted to determine whether cumulative impact should be incorporated into the figures to account for additional traffic not accounted for in the traffic count data.

Following the results of the traffic analysis and the trip generation associated with the new development, it can be confirmed that the proposed development will not negatively affect the functionality of the surrounding road network for all future design year scenarios.

1 Introduction

The purpose of this Traffic & Transport Assessment (TTA) is to address traffic issues which may arise in relation to the proposal to construct a new wind farm at a greenfield site between Ballycar and Cappanteemore in Co. Clare, approximately 3km north of Limerick City and suburbs. This report will discuss how the proposed development will integrate with the existing traffic flow in the vicinity of the site. This document forms part of the planning application for the development.

This report will follow the principles set out in:

- TII Publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines';
- TII Design Manual for Roads and Bridges;
- Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) (TII DN-GEO-03060 May 2023);
- Rural Road Link Design (TII DN-GEO-03031 May 2023);
- Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (TII PE-PAG-02017 October 2021);
- Clare County Development Plan 2023 – 2029.

1.1 Objectives of this TTA

The primary objective of the Ballycar Windfarm is to harness the power of wind to generate electricity, which will be exported to the National Grid for sale in the Irish electricity market.

While windfarms offer numerous advantages in terms of renewable energy generation and environmental sustainability, one notable challenge is the transportation of large wind turbines. These turbines, due to their size and weight, require careful planning and coordination to ensure safe and efficient transport from manufacturing sites to the windfarm location. The transportation of wind turbine components can impose temporary disruptions and increased traffic volumes on local road networks.

Therefore, a comprehensive traffic and transport assessment is crucial to identify potential impacts, evaluate the existing road infrastructure's capacity to accommodate the transportation requirements, and recommend appropriate mitigation measures.

By considering factors such as the existing road network, traffic volumes and vehicle characteristics the assessment focuses its attention on the local road network, with particular emphasis on the key regional roads and one critical junction that the majority of traffic will utilise during the construction and operational phase.

Consequently, this report aims to assess the impact the proposed development will have on the main junction to the local access road between the L3056 and the R464.

The selected location is shown in **Figure 1.1** overleaf.

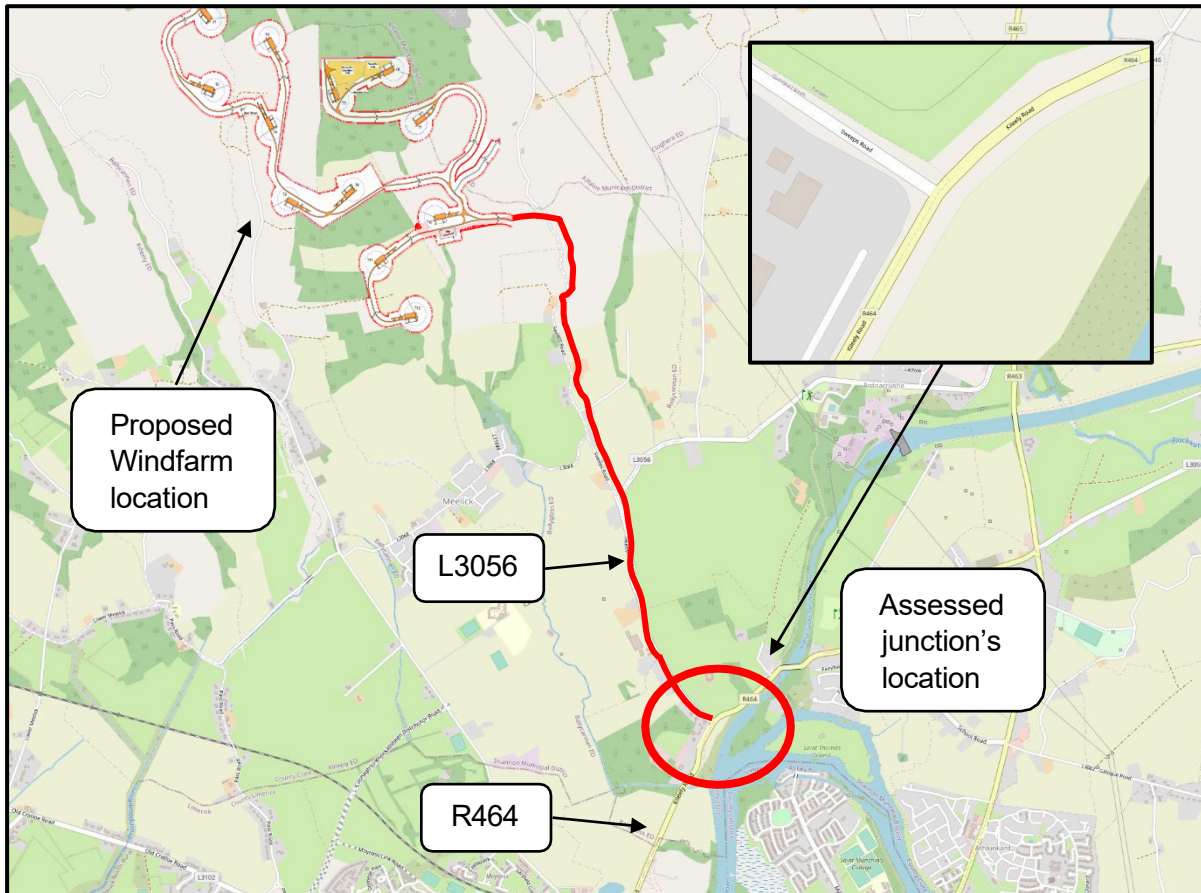


Figure 1.1 – Map indicating the location of the assessed junction vs subject site (Source: OpenStreetMap)

The objectives of this report are to assess:

- The prevailing traffic conditions on the public road network in the vicinity of the proposed development.
- The potential effect on the surrounding road network due to the anticipated traffic generated by the proposed development.

1.2 Methodology

The TII Publication PE-PDV-02045 sets out the methodology to be followed in any given Traffic and Transport Assessment. The methodology that will be used in this assessment follows the guidelines set out in this document and can be outlined as follows:

- Traffic counts for a location relevant to this scheme were obtained by IDASO on 24th May 2022.
- TII growth factors were then employed, on the 2022 traffic count data to align with the current year, 2023.
- The predicted traffic generated by the proposed development was provided by the client based on the expected number of staff on site during peak construction stage and the anticipated daily peak number of HGV movements for delivery of materials.
- The analysed junction was modelled using the software *Junctions 10* for future design years using Central Sensitivity Growth Factors for Co. Clare to obtain the existing and proposed traffic profiles at the junction analysed for the year of construction, 5 and 15 years after the completion of the development. The year of construction is set to 2026.
- The construction stage of the project will have the most significant traffic impact. Traffic associated with the operational phase will be minimal and the impact on the traffic will be negligible in the long term. It's worth noting that the analysis for the 5 and 15-year post-completion scenarios is considered conservative, as it is anticipated that the construction phase will be completed before these timeframes are reached.
- Traffic incoming to the development represents approximately 50% of the total traffic generated by the development. It is assumed that this traffic coincides with the morning peak hour. However, it is likely that incoming HGV traffic will be distributed through the working day and therefore the analysis is conservative.
- Traffic outgoing from the development represents approximately 50% of the total traffic generated by the development. It is assumed that this traffic coincides with the evening peak hour however, as above, it is likely the traffic will be distributed through the working day and therefore the analysis is conservative.
- The traffic distribution splits (south-west and north-east to/from the R464) upon entering or exiting the analysed junction were assessed as 80/20 respectively. This was based on patterns in the traffic count data.
- As this is a greenfield site temporary parking provision will be made during construction of the windfarm for the site personnel. There is no requirement for permanent parking provision as there will be no permanent on-site staff and visits for operation and maintenance will be minimal.
- Due to the rural location and nature of the development, trips by bicycle are neither practical nor expected. There are no bicycle lanes on the local access road and no means of accessing the site by bicycle.

1.3 Liaison with Clare County Council

ORS sent correspondence to Clare County Council to scope the traffic modelling and counts required to analyse traffic conditions around the proposed site. ORS received no reply thus far and used their own judgement and experience on other similar developments to determine the critical junction to be analysed within this report.

A review was also carried out of the TTA conducted for the neighbouring planning application P18/818 site in 2018 to select the critical junction.

1.4 Development Site Location

The development site is situated off the L7062, the local access road between Parteen/Ballycannan and Ballycar as seen in Figure 1.2 below. The site is bounded by forestry to the north and north-east and open greenfield space to the east and south. It is bounded to the southwest by a single lane unpaved local agricultural access road. The total planning application area is 104.7 hectares.

The L7062 is a local access road of 80km/h speed limit consisting of a 2-lane carriageway. This road is approximately 6m wide at the stretch between the proposed entrance and the junction at Parteen, narrowing to 4.5m wide in local areas.



Figure 1.2 – Site Location. Red line outlines the planning application boundary. (Source: Google Earth)

1.5 Existing Premises and Land Use

The Clare County Development Plan 2023-2029 includes a volume which comprises a detailed county-wide Wind Energy Strategy, supplemented by maps, for informing wind energy development having regard to economic, environmental and visual issues. The development site is assigned within a ‘Strategic Area’ on the Wind Energy Designations map set out in Volume 6: Wind Energy Strategy, as shown in **Figure 1.3**. The document describes a potential wind energy yield from the Sliabh Bernagh Range and Broadford Hills of 150MW.

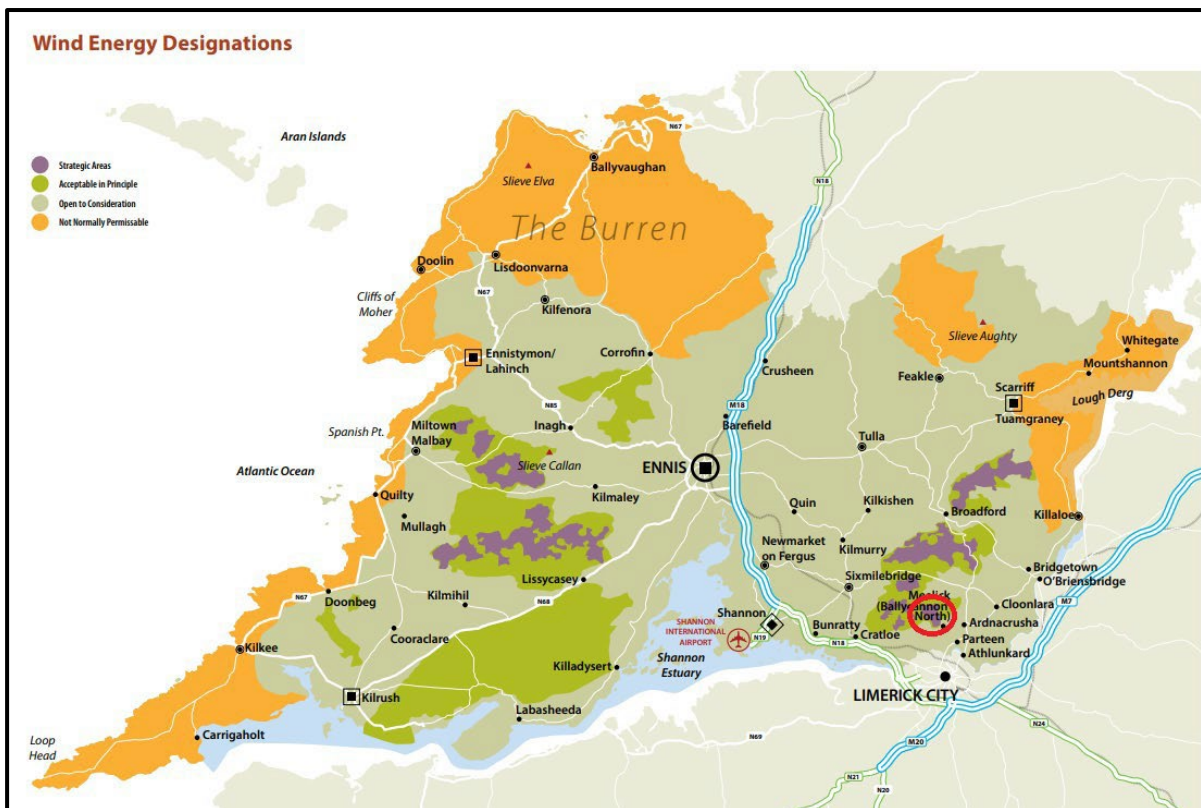


Figure 1.3 – Volume 5: Wind Energy Designations Map (Source: CDDP 2023-2029)

CDP6.17 sets out a number of development plan objectives surrounding energy supply and facilitating the development of self-sustaining, efficient renewable energy projects. CDP11.47 also sets out a series of objectives regarding renewable energy. One such objective is ‘to encourage and to favourably consider proposals for renewable energy developments and ancillary facilities in order to meet national, regional and County renewable energy targets, and to facilitate a reduction in CO2 emissions and the promotion of a low carbon economy’.

The site currently comprises a mix of coniferous forestry and agricultural farmland.

1.6 Description of the Proposed Development

The proposed development entails the construction of a 12-turbine wind farm, grid connection and an on-site substation. This site is situated adjacent to the townland of Ballycar, north of Meelick in East Clare, as depicted in **Figure 1.4** below. Please refer to EIAR **Chapter 2 - Description** for a full description of the proposed development. A large commercial quarry lies beyond the north-eastern boundary of the site. Two local roads, running in a north-south direction on either side of the proposed windfarm, serve as routes with a notable concentration of one-off housing, particularly in the low-lying areas to the south of the site.

Internal circulation tracks will be constructed within the development for the maintenance of the wind turbines. Maintenance visits will be sparse and there will be no permanent on-site staff.

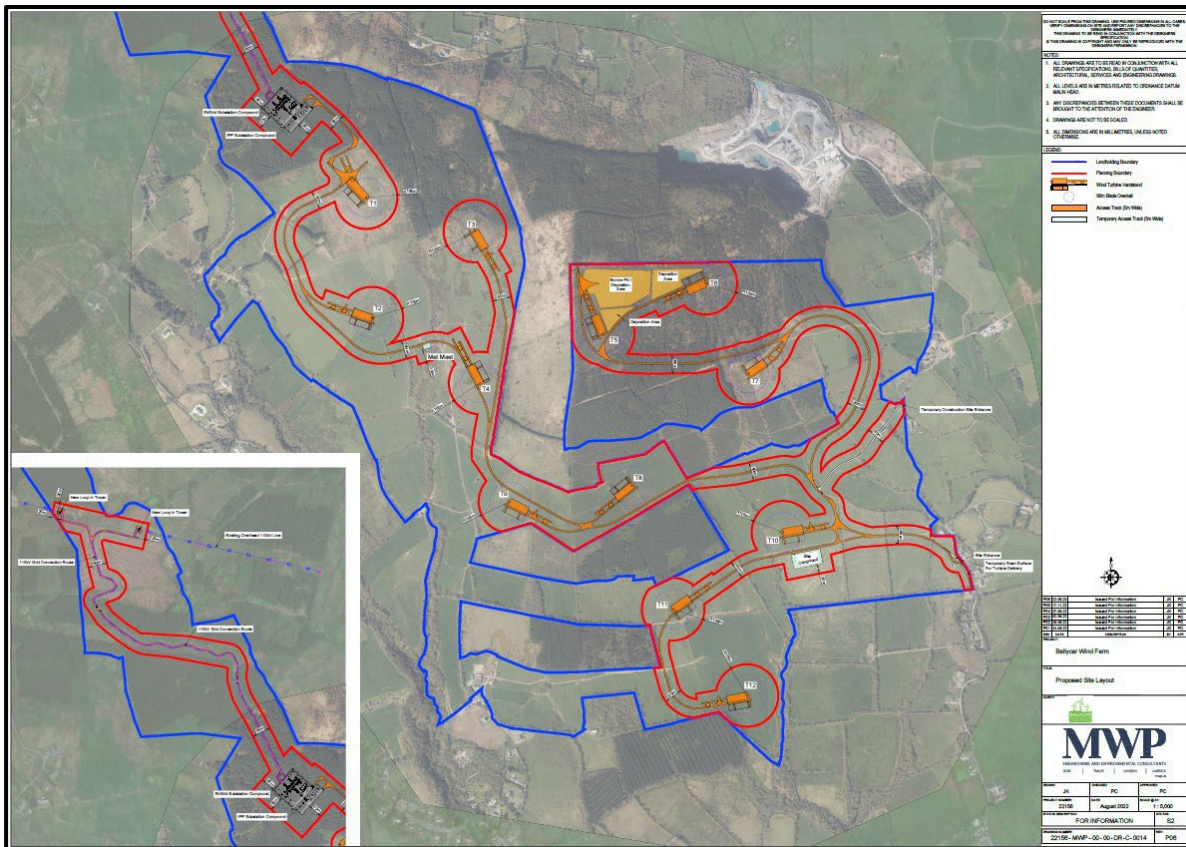


Figure 1.4 – Site Layout Plan (Source: MWP)

One temporary construction compound will be set up upon commencement of the construction phase including site offices, parking, material laydown and storage areas, etc. It will be accessed through the permanent gate. Staff parking and a laydown area will also be located at the temporary compound. Upon completion of the project the compound will be decommissioned by backfilling the area with the material arising during excavation and landscaping with topsoil.

The proposed 110kV substation will include an outdoor electrical yard and two single-storey

buildings, with parking designated within the compound area for each building. Additionally, there is a planned underground connection between T1 and the proposed 110kV substation, situated northwest of T1. The proposed 110kV grid route spans approximately 1.5km, and it will intersect a 3-metre-wide local public road, as indicated in **Figure 1.5** below.

It's important to note that there will be no construction traffic utilising the local road north of the substation. All construction traffic for both the substation and grid will access the windfarm site entrances and pass through the windfarm to reach the substation. This is detailed further in the **Figure 1.5**, which illustrates the final grid route, substation, and tie-in to the existing overhead line in the far north.

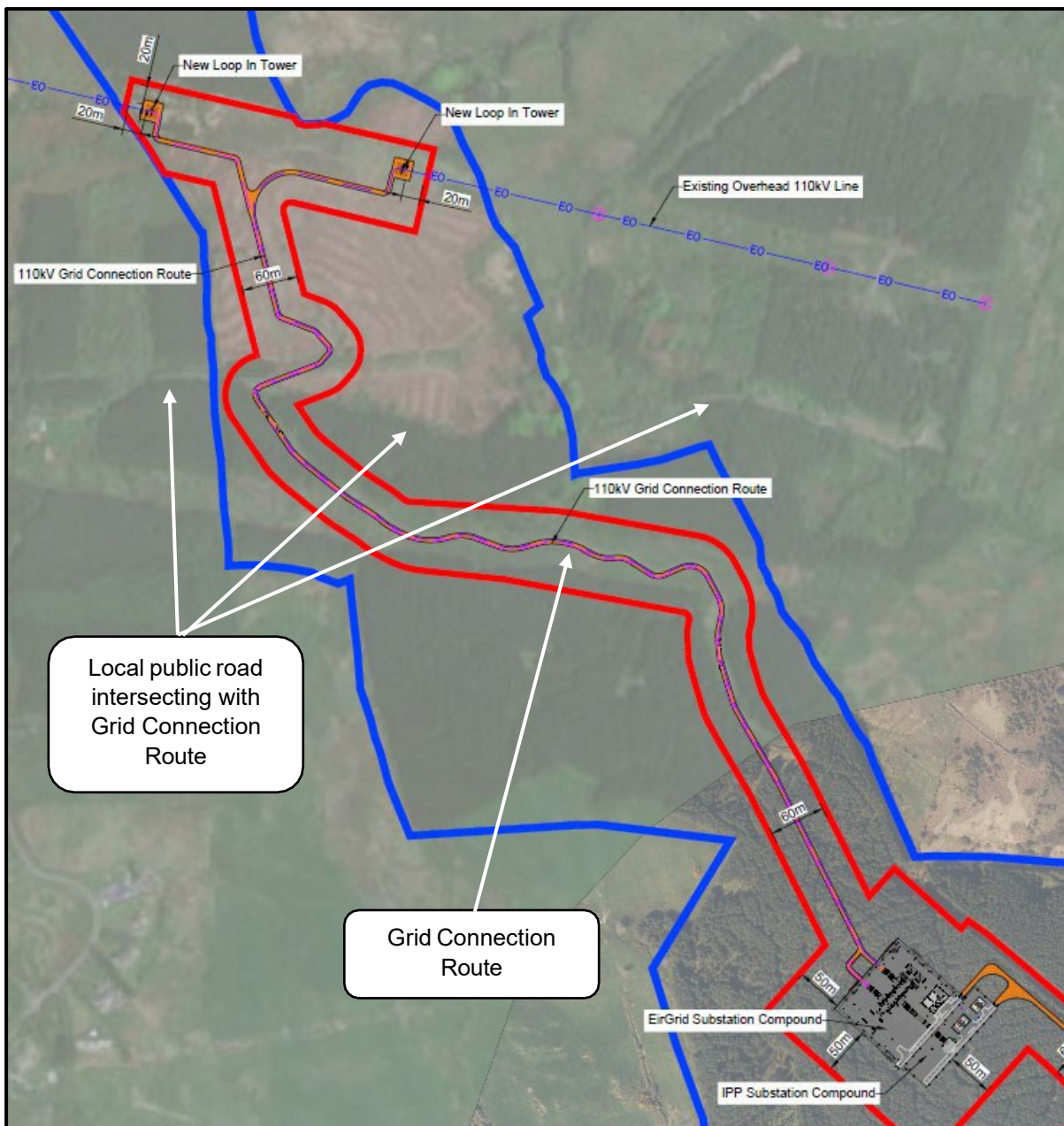


Figure 1.5 – Substation and Grid Connection Route (Source: MWP)



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In accordance with the project requirements, a range of construction materials will be delivered to the site throughout the construction program. These deliveries will be facilitated by a variety of heavy goods vehicles (HGVs), each serving a specific purpose.

The construction stage of the project will have the most significant traffic impact. Traffic associated with the operational phase will be minimal and the impact on the traffic will be negligible in the long term.

1.7 Site Access

The primary entrance to the proposed development will be from a junction off the public local road L7062. There will be two distinct entrances: one temporary to accommodate construction traffic bringing in materials from the nearby quarry, and another permanent entrance for turbine deliveries, materials sourced from alternative quarries, as well as operations and maintenance vehicles.

Entrance Point A (temporary site entrance), located in the north-eastern area of the site, is intended as a temporary access point solely for use during the construction phase. Its purpose is to facilitate the delivery of construction materials from a local quarry situated approximately 1 km to the north of the entrance. This design minimises the impact of additional construction traffic on the L7062 and the residents along this road. Once the construction phase concludes, Entrance Point A will be reinstated to its original condition.

Entrance Point B (permanent site entrance), located to the south-east of the site and accessible from the L7062, will be dedicated to turbine deliveries, materials other than those from the local quarry, and operations and maintenance vehicles. While Entrance Point B will serve as a permanent access point, it will undergo modifications including scaling back, landscaping, and the installation of fencing and gating as the wind farm transitions into operational status. Please refer to **Figure 1.6** for site entrances.

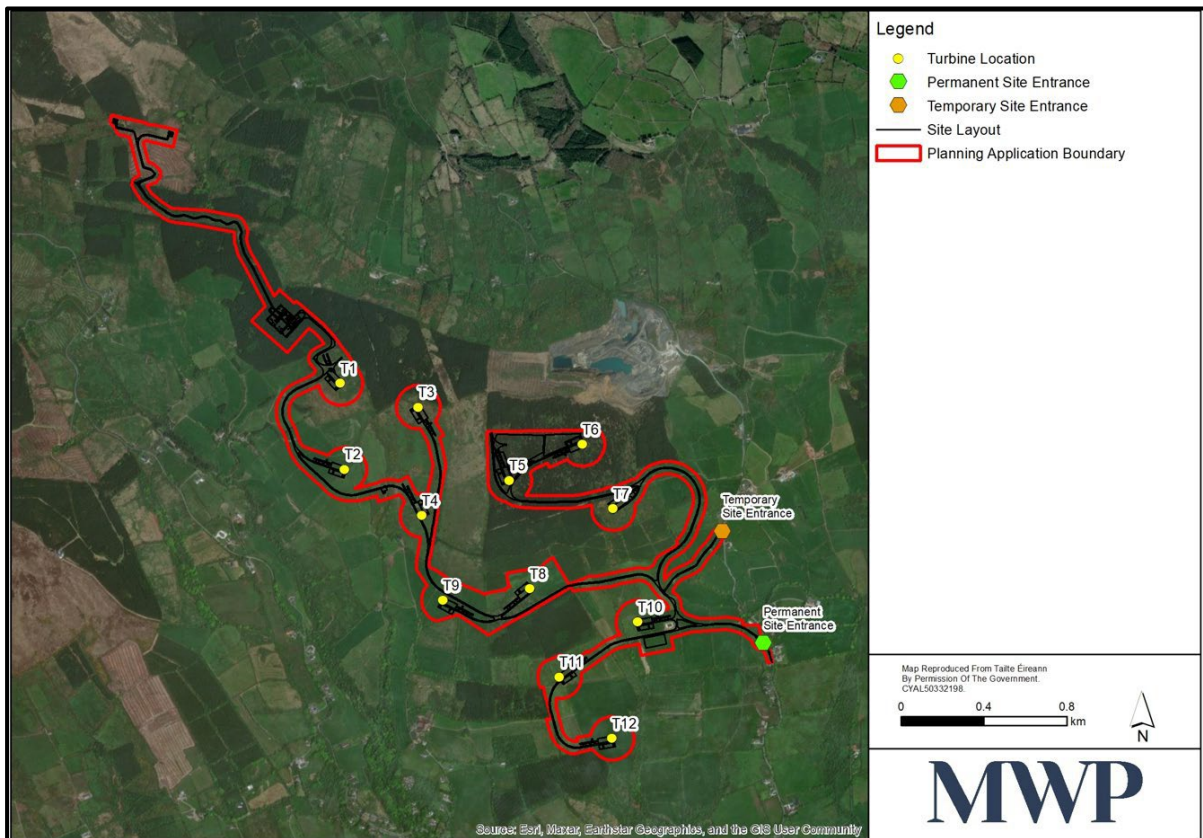


Figure 1.6 – Site Access Points and Internal Access Track Layout. (Source: MWP)

Additionally, a new unbound stone access track will be constructed over the 110kV grid route at the northwest of the site to allow access for future maintenance.

1.8 Construction Programme

It is envisaged that the proposed development will commence in 2026 with an 18-month construction period. The start date is dependent on planning being granted, receipt of a grid connection offer from EirGrid, funding and all permits being in place.

The Windfarm construction programme can be broken down into 10No. main phases as follows:

- Prepare site, temporary construction 1 months
- Access Track construction 3 months
- Hard standing construction 2 months
- Turbine foundation construction 4 months
- Trenching and ducting 2 months
- Substation construction 4 months
- Permanent meteorological mast erection 1 month
- Turbine delivery 3 months
- Turbine erection 4 months
- Windfarm commissioning 4 months (approx.)

A number of these phases will however run concurrently as outlined as follows:

- As the internal site access tracks are constructed up to each turbine, hardstanding areas for the crane, turbine foundations and building foundations will be prepared.
- Once the tracks are completed, the trenching and laying of underground cables will begin.
- Construction of the site sub-station and control houses will commence so that they will be ready to export power as turbines are commissioned.

Construction Hours

Construction activities for the project are scheduled to take place during the following hours: 7:00 a.m. to 7:00 p.m. from Monday to Friday, and 8:00 a.m. to 2:00 p.m. on Saturdays. These working hours are subject to confirmation at the beginning of the project, and any potential changes to the hours will be discussed and agreed upon with the Local Authority.

Works along 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 Saturdays. A permit for moving abnormal loads will be sought from An Garda Síochána for the delivery of oversized wind turbine components (i.e. blades, nacelles and towers).

Construction Staff

During different phases of the construction activities, the number of construction staff involved will vary. At the peak construction period of the Wind Farm site, an estimated maximum of approximately 60 personnel will be present.

Site personnel will arrive at the site prior to 7:00 a.m. and depart after 7:00 p.m. on weekdays, avoiding peak traffic hours. Assuming an average vehicle occupancy rate of 1.00 personnel per vehicle (representing a conservative scenario), the estimated peak staff of 60 will generate 60 No. car and van trips to and from the site each working day. Since on-site canteen facilities will be provided, there will be no need for staff to leave the site during working hours.

For assessing the typical impact of the development on the road network, the average construction traffic has been developed based on material quantities and the proposed construction programme for the Windfarm development. The proposed trip generations by the Windfarm Project construction are summarised in **Table 1.1** overleaf.

Notes:

The largest traffic volumes are associated with the concrete pours for the turbine foundations. Due to the requirement for the concrete pours to be continuous, the working day may extend outside normal working hours in order to limit the traffic impact on other road users, particularly peak period school and work commuter traffic. Such activities are limited to the day of turbine foundation concrete pours, which are normally complete in a single day per turbine.

This construction traffic table is a simplified traffic volume table against staff programme. As mentioned before staff will arrive at the site prior to 7:00 a.m. and depart after 7:00 p.m. on weekdays, avoiding network's peak traffic hours.

This construction traffic table is a simplified traffic volume table against programme and a more detailed delivery schedule will be developed by the appointed contractor.

Table 1.1 – Proposed Construction Programme

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Clearfelling (prior construction)																		
Prepare site, pre-construction			120															
Access road construction			782	782	782													
Hard standing construction				520	520													
Turbine foundation					428	428	428	428										
Trenching and ducting						815	815											
Substation construction							1773	1773	1773	1773								
Mast erection										70								
Turbine delivery											40	40	40					
Turbine erection																		
Windfarm commissioning																		
Total HGV Trips per month (1-way)			902	1302	1730	1243	3016	2201	1773	1843	40	40	40					
Total HGV Trips per month (2-way)			1804	2604	3460	2486	6032	4402	3546	3686	80	80	80					
Total HGV Trips per day (1-way)			38	54	72	52	126	92	74	77	2	2	2					
Total HGV Trips per day (2-way)			76	108	144	104	252	184	148	154	4	4	4					
Total HGV Trips per hour			6	9	12	9	21	15	12	13	2	2	2					

2 Existing Traffic Conditions

2.1 Committed Developments in the Surrounding Area

In order to assess the existing and proposed traffic associated with the junction in the vicinity of the proposed development, the Clare County Council planning website was consulted to review adjacent planning applications, the cumulative impact with other wind farm developments in the region and associated TTAs.

Wind turbine developments identified within 25km of the proposed Ballycar development are listed below and shown in **Figure 2.1**.

- Limerick Blow Moulding (permission for retention and changing of position granted);
- Vistakon (single turbine) (existing);
- Castlewaller (Permitted but not constructed);
- Carrownagowan Wind Farm (Permitted under judicial review);
- Carrownagowan Wind Farm Grid Connection (Submitted);
- Fahy Beg (Refused by Clare County Council, Appealed to An Bord Pleanála).

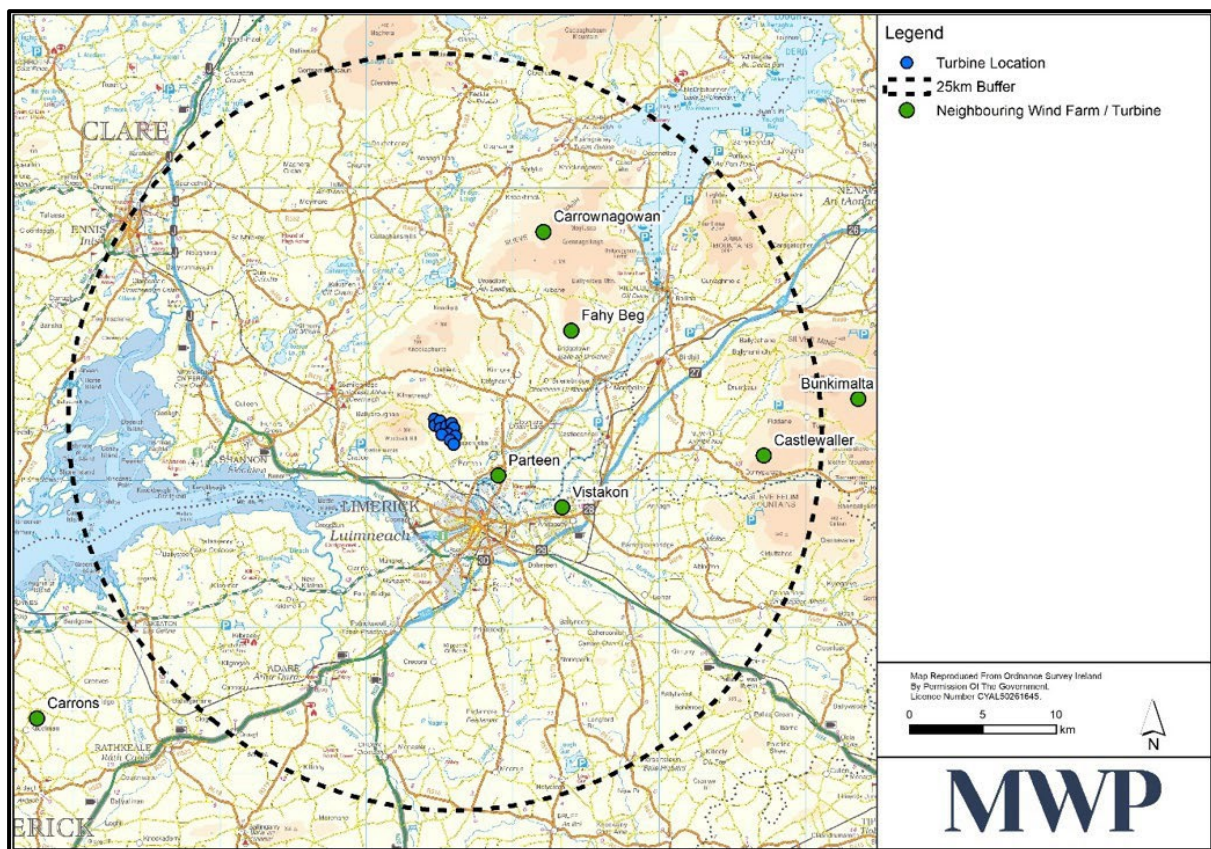


Figure 2.1 – Wind Farm developments in the region. (Source: MWP)

The only potential point of interaction, even though current permission is denied, is the Fahy Beg development. Fahy Beg primarily encompasses an 8-turbine wind farm, a substation

compound, and associated civil and electrical infrastructure in Ardnacrusha, Co. Clare. The proposed delivery route suggests using the western boundary of the Ballyquinn quarry site (a local road) to link the quarry site with the main wind farm site. During the construction phase, aggregate materials will be transported via O'Connell Quarries, Ballycar, Ardnacrusha, Co. Clare, situated northeast of the proposed Ballycar Windfarm.

The proposed Fahy Beg wind farm was refused planning permission by Clare County Council. The developer has appealed the decision to An Bord Pleanála and a decision was due to be published in October 2023. At the time of writing this report, this decision is outstanding.

As illustrated in **Figure 2.2** below, there is a brief stretch along the local road L7062 where traffic from both developments might coincide. In the event that projects overlap, it is worth noting that there will be no significant cumulative impact. While the likelihood of both developments operating at peak construction simultaneously is low, this local road typically experiences very light traffic and has the capacity to accommodate a temporary increase if necessary.

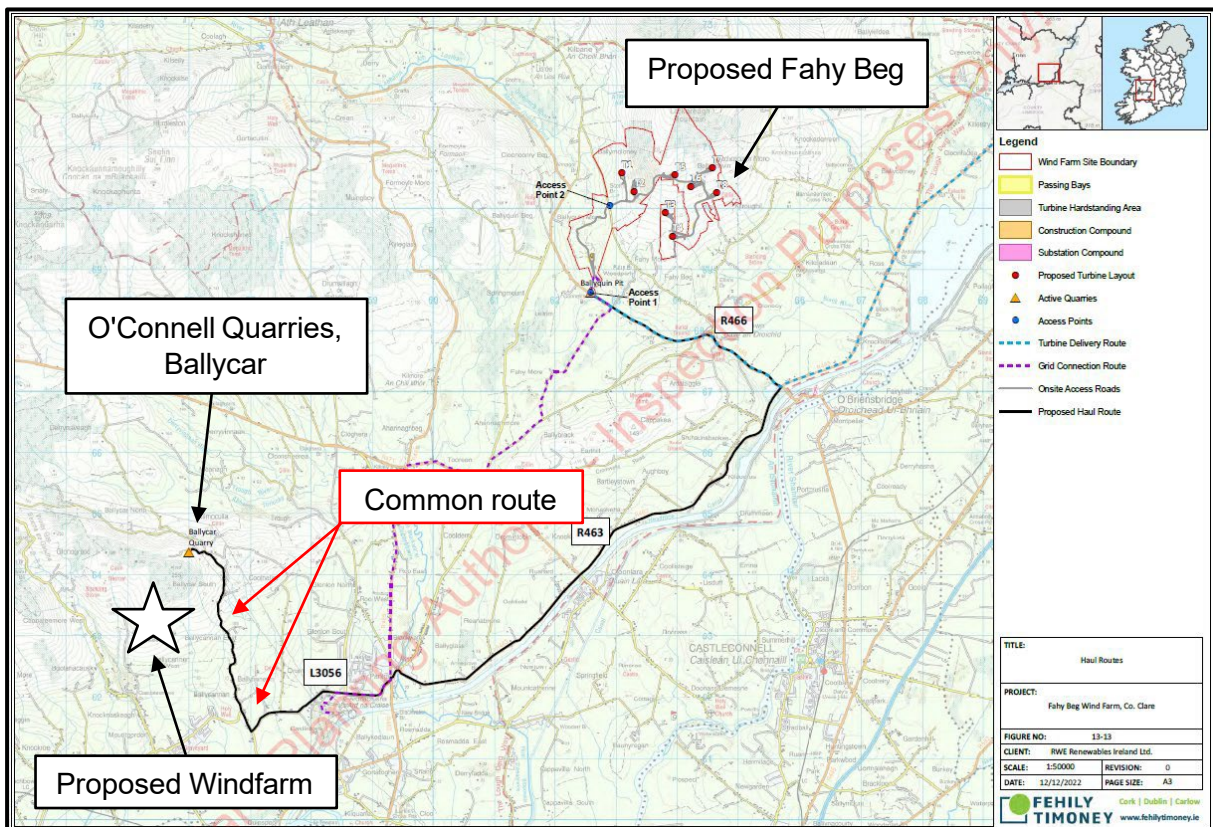


Figure 2.2 – Fahy Beg Windfarm and haul routes. (Source: F. Timoney)

Several other projects were identified in the surrounding areas pertaining to agricultural sheds and shed extensions, dwelling houses, and extensions to dwelling houses, attic conversions, domestic wastewater treatment systems, installation of photovoltaic for domestic purposes, garages, demolitions, and retention permission applications etc.

Such minor domestic and agricultural development will not introduce cumulative effects. However, the most relevant applications relate to O’Connell’s Quarry expansion in Ballycar South. The following relevant planning applications were lodged and granted permission: ‘P12/256’ and ‘P18/818’. Both are associated with the operations of the adjacent quarry.

- Permission was granted in September 2012 under planning application P12/256 for the construction of a concrete batching plant and associated ancillary facilities at the adjacent quarry, Bobby O’Connell & Sons Ltd. As part of the planning process the applicant provided the planning department with an estimate of increased traffic amounting to approximately 20 HGV movements per day. According to County Councils’ Online Planning Registers, the application expired on the 31st of August 2017.
- Permission was granted by ABP in August 2019 under planning application P18/818 for a 10-hectare extension to the existing quarry development and all associated ancillary facilities/works. According to the ABP decision, traffic impacts were a major cause of concern in the grounds of appeal. However, traffic levels are not anticipated to increase as a result of the extension, subject to the inclusion of a condition limiting the intensification of activities envisaged under the application. The location is shown in **Figure 2.3** below. Additionally, a TTA was carried out to assess the impact the existing quarry has and will have on the existing road network. This TTA considered only the existing traffic generated by the development and its impact on the under-study junction. ORS have reviewed the project EIAR and ABP report for this project and note that the proposed extension works will not generate additional traffic above and beyond the level of operational traffic associated with the quarry at that time. It can be reasonably assumed that the traffic associated with the quarry is therefore represented within the 2022 traffic counts and no additional cumulative impact has been considered from same.

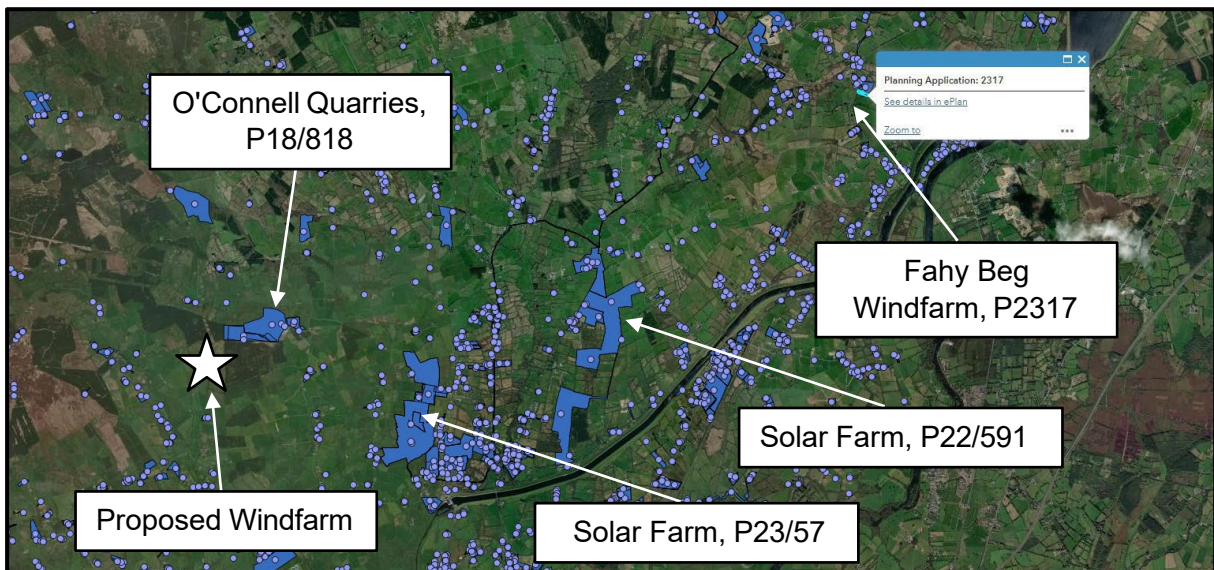


Figure 2.3 – Locations of adjacent applications relative to the development site (Source: Clare Co. Co.)

Another pertinent application concerns a solar farm development located southeast of the proposed project, identified under planning application P23/57. The site is positioned just west of Ardnacrusha village, adjacent to Drummin Road. This development was granted permission on September 6, 2023. The EIAR's traffic chapter states that construction materials will be transported to the site via the N69 and the access road of Lackyle Heights, with the commencement of works anticipated in 2024.

Additionally, another solar farm development has received planning permission under application P22/591. This project, situated at Ballyglass, Coolderry, Dromintobin North, Reanabrone, and Oakfield townlands in Ardnacrusha, has been appealed to An Bord Pleanála as of March 14 of this year. According to the traffic assessment provided, the site will utilise the local roads R463, L3046, and L70382 for access. Given the low operational visitation, any potential traffic impacts are anticipated to be confined to the temporary construction phase, with vehicular movements during this period estimated at approximately 13 trips per day.

Given that the activities of both solar developments do not coincide with traffic generated by the proposed Windfarm, these are not expected to have a cumulative impact on the proposed development.

2.2 Existing Road Network

The traffic generated by the new development will access the site from the R464 via the L3056 which leads north approximately 2.5km to the local access road L7062. It is assumed that all development traffic will use the assessed junction, as the road to the north beyond the existing quarry narrows to a single lane local access road which is deemed unsuitable for HGV traffic. For a robust assessment it is also assumed that all staff vehicles will approach the site from the south i.e. using the assessed junction.

Turbine components will be delivered to the port at Foynes, Co. Limerick. The vehicles will travel along the N69, joining the N18 ring road around Limerick, routing through north Limerick City on its regional roads to reach the assessed junction, as shown in **Figure 2.4** below.

The N18 connects Shannon to Limerick city and is approximately 8km south of the proposed wind farm site. The AADT for the N18 in 2023 according to TII automatic traffic counter data was approximately 35,170, with approximately 4% of this total comprised of HGV traffic.

The N69 is a national primary route which connects Tralee to Limerick and is located approximately 9km to the southwest of the proposed wind farm site. The AADT for the N69 in 2023 according to TII automatic traffic counter data was approximately 6,378, with approximately 8% of this total comprised of HGV traffic.



Figure 2.4 – Turbine delivery route. (Source: MWP)

Aside from the turbine components, the majority of construction materials are anticipated to be sourced from the adjacent quarry. Due to the proximity of the quarry to the development site, the impact on the local and regional road network is likely to be minimal. In the interests of a robust assessment, all movements associated with HGV deliveries of construction materials have nonetheless been incorporated into the junction analysis and the traffic volumes are assessed as arriving from one direction only as a worst-case scenario (R464/L3056/L7062).

The L7062 is a local access road in the north-south orientation of approximately 6m width, narrowing to 4.5m in local spots. The L3056 is a local access road on the north-south orientation of approximately 6m width. The R464 is a regional road linking O'Connor's Cross in the north-east of Parteen routing south-west to the R527 in Limerick City Centre where it terminates. The R464 is a 2-lane carriageway of approximately 7m width at the location of assessed junction. A pedestrian footpath is situated on the southern edge of this carriageway which has public street lighting.

The speed limit on the R464 is 50km/h at the location of the junction and increases to 60km/h approximately 15m beyond the mouth of the junction to the south-west.

Figure 2.5 below provides an overview of the road network in the vicinity of the proposed development. For a detailed presentation of the assessed T-junction, please refer to **Figures 2.6 to 2.9**.

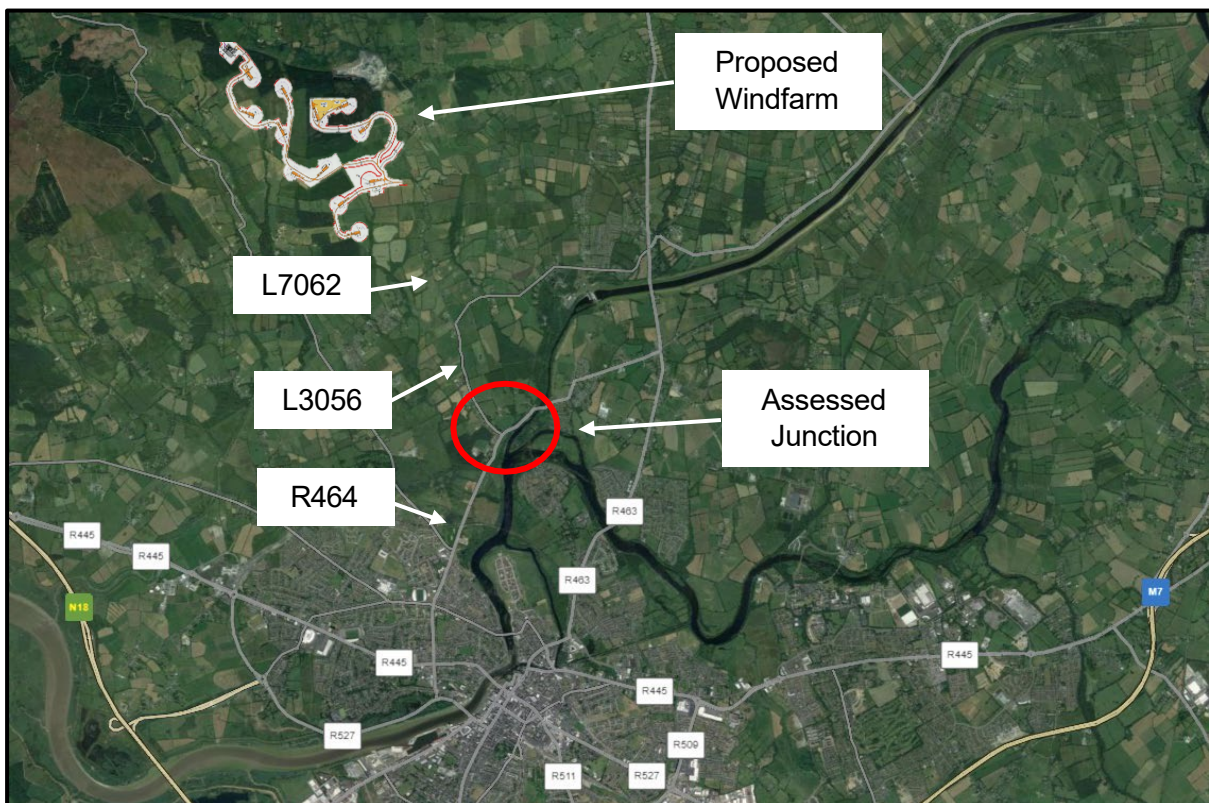


Figure 2.5 – Overview of the road network in the vicinity of the development (Source: Google Earth)



Figure 2.6 – View of assessed junction looking directly north-west from R464 onto L3056 (Source: Google Maps)



Figure 2.7 – View of assessed junction looking south-east at priority T-junction onto R464 (Source: Google Maps)



Figure 2.8 – View of assessed junction looking south-west on R464 at priority T-junction between L3056 and R464 (Source: Google Maps)



Figure 2.9 – View of assessed junction looking north-east on R464 at priority T-junction between L3056 and R464 (Source: Google Maps)

2.3 Existing Traffic Flows

Traffic counts were carried out at the location of the assessed T-junction between the R464 and the L3056 on a typical weekday in May 2022. The AM and PM peak traffic was noted to be between 07:45-08:45 and 16:45-17:45.

The traffic counts encompass all traffic movements at the assessed location, shown in **Figure 1.1**.

Principal features of May 2022 traffic flows are as follows:

- AM peak traffic occurs between 07:45 to 08:45 and a total of 778 PCU travelled through the junction during that time.
- HGV’s comprised 4% of the vehicles in the AM peak hour.
- PM peak traffic occurs between 16:45 to 17:45 and a total of 717 PCU travelled through the junction during that time.
- HGV’s comprised 2% of the vehicles in the PM peak hour.
- There is a central white line road marking on the L3056 which becomes solid at the junction to the R464.
- There are no cycle lanes present.
- There are no pedestrian footpaths either side of the L3056.

Table 2.1 provides the AADT figures for the N69, N18 and the regional R464. Traffic count data was obtained from open-source TII Traffic Count Data Website for the baseline year 2023. AADT figures for the regional road were projected to the baseline year 2023 from the 2022 traffic counts in accordance with TII Project Appraisal Guidelines for National Roads: Unit 16.1 - Expansion Factors for Short Period Traffic Counts.

Table 2.1 – Baseline 2023 Traffic Volumes		
Road	Baseline AADT	
	HGV	AADT
N69 Between Askeaton and Foynes, Clondrinagh, Co. Limerick	8.4%	6,376
N18 Between Jn4 Cratloemoyle and Jn5 Cratloe, Cratloe, Co Clare	4.2%	35,230
R464	4.3%	7,200

Table 2.2 overleaf shows the forecasted traffic for the commencement year 2026 based on Central Growth Rates for Clare County in accordance with TII Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (October 2021).

Table 2.2 – Commencement Year 2026 Traffic Volumes

Road	Baseline AADT	
	HGV	AADT
N69 Between Askeaton and Foynes, Clondrinagh, Co. Limerick	9.0%	6,679
N18 Between Jn4 Cratloemoyle and Jn5 Cratloe, Cratloe, Co Clare	4.5%	36,904
R464	5.0%	7,540

3 Impact of Proposed Development on Existing Road Network

3.1 Traffic Generation and Distribution Slips

3.1.1 Development Traffic Generation

The busiest period during the construction programme is expected to occur during the 9th and 10th month when multiple construction activities take place concurrently.

The proposed development will have 60No. construction personnel on site during the peak of construction activity. It is conservatively assumed that staff will arrive and depart at a rate of 1 vehicle per person, will all travel through the junction towards the site in the AM peak hour and will all travel through the junction onto the R464 from the site in the PM peak hour. It is assumed that 80% will arrive/depart to and from the south-west arm of the R464 and 20% will arrive/depart to and from the north-east arm of the R464. In addition to the 60No. daily incoming LGV trips and 60No. daily outgoing trips associated with staff travelling to site, HGV movements have been supplied by the client based on the quantity of materials which will be delivered to site during the construction of the wind farm.

120No. HGV deliveries will be associated with the delivery of the turbines, nacelles and blades. These will be spread across 3 months i.e. ~60 working days will be isolated from other daily traffic movements. 2No. HGV movements per day are therefore associated with the delivery of the turbines, nacelles and blades. These movements will all access the site from the south-west direction off the R464 and exit the junction towards the south-west direction upon return.

Approximately 126No. HGV movements per day are associated with the delivery of other construction materials during the peak construction period. This level of traffic, primarily associated with the turbine foundation pours, is expected for a period of approximately 2 weeks during the construction stage. These movements are not expected to impact the local road network due to the proximity of the source quarry to the development site, however it is conservatively assumed that these movements will pass through the assessed junction. Material deliveries will be spread across the working day and the peak hourly traffic will be 18No. HGV deliveries to and from the site. It will be assumed that 80% will come from/depart to the south-west direction on the R464 and 20% will come from/depart to the north-east direction on the R464.

A breakdown of daily trips generated by the development is provided in **Table 3.1** overleaf. The turbine deliveries will occur during night-time with traffic management and garda escort. As this traffic will be isolated from other daily traffic movements, it has not been added into the daily traffic volumes in this table.

Table 3.1 – Anticipated trip rates – weekday during full operation

Traffic type	AM (to)	AM (from)	PM (to)	PM (from)	Total
Staff vehicles	60	0	0	60	120
HGV Materials	21	21	21	21	84

Construction stage activity will take place between the hours of 07:00 to 19:00, Monday to Friday. It is anticipated that site personnel will travel to site prior to 07:00 and depart from site from 19:00 on weekdays, avoiding the peak AM and peak PM public traffic hours. For the purpose of this analysis, all traffic mentioned in Table 3.1, is assumed to coincide with the peak hours noted in the traffic counts, and therefore is highly conservative.

The trip generations for the proposed development are based on the estimated construction programme and material deliveries to the site as outlined in Section 1.8. Therefore:

A total of 81No. vehicles (or 91.5 PCUs) will enter the facility in the peak AM hour and 21No. vehicles (or 31.5 PCUs) will exit. A total of 81No. vehicles (or 91.5 PCUs) will exit the facility in the peak PM hour and 21No. vehicles (or 31.5 PCUs) will enter.

HGV movements comprise approximately 40% of the total generated traffic during peak construction.

3.2 Future Year Traffic Growth

Transport Infrastructure Ireland (TII) issues a range of forecasts: low growth, central growth, and high growth. The implementation of policies relating to the National Sustainable Mobility Policy will act as a deterrent to high growth in car-based travel. Low growth factors are however likely to be equally unrealistic at present, therefore, this assessment has used central growth factors, which was extracted from the TII Publication PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, published in October 2021, outlined in **Table 3.2**, **Table 3.3** and **Table 3.4**.

Table 3.2 – Development Location Information	
Location of Development	Clare
Sensitivity Area	Central
Year of Traffic Counts	2022
Year of Assessment	2023
Year of Development Construction	2026

Table 3.3 – TII Annual Growth Rates (Central Growth) For Co. Clare		
	LGV	HGV
2016 – 2030	1.0156	1.0417
2030 – 2040	1.0038	1.0157
2040 – 2050	1.0029	1.0197

Table 3.4 – Growth Factors for Future Design Years					
	Counts	Baseline	Opening	Opening +5	Opening +15
	2022	2023	2026	2031	2041
LGV	1.000	1.016	1.064	1.136	1.179
HGV	1.000	1.042	1.178	1.408	1.652

3.3 Generated Traffic Splits at Assessed Junction

Based on an assessment of the traffic counts at the existing junction the traffic appears to travel approximately 80% to/from the south-westwards arm of the R464 and 20% to/from the north-eastwards arm of the R464. With the exception of the wind turbine equipment deliveries which are 100% incoming/outgoing to the south-westwards arm of the R464, the development traffic has been split accordingly and is consistent with traffic count data patterns.

For reference and indicative purposes, the estimation of rural road link capacity for the R464 was conducted using the TII Rural Road Link Design DN-GEO-03031 June 2017 (updated in May 2023), taking into account typical road carriageway widths. The R464 is a 2-lane carriageway of approximately 7m width at the location of the assessed junction corresponding to a capacity of 8,600 AADT. On the basis of the TII Rural Road Link Design, for predicted 2026 AADT volumes with the TII central growth scenario, with the cumulative proposed development, the estimated rural road link AADT volume/capacity ratio for the R464 in the vicinity of the proposed development site is provided in **Table 3.5**.

Table 3.5 – Predicted 2026 R464 TII Rural Road Link AADT Volume/Capacity Ratio			
Road	AADT Vehicles	AADT Capacity (Vehicles)	AADT Volume/Capacity Ratio
R464	7,791	8,600	90,5%

The R401 would continue to operate within its estimated rural road link AADT capacity, for the predicted 2026 AADT volumes. However, 100% of the generated development traffic will make use of the junction between the R464 and the L3056. TII guidance does not provide specific rural road link capacities in any of the aforementioned documents for road carriageway widths less than 6.0 metres. Therefore, a capacity assessment is deemed necessary to evaluate the impact of the changes in traffic during peak construction stage.

As the proposed development is expected to commence construction in 2026, the projected 2026 traffic flows can be calculated using TII’s Central Growth Factor for Co. Clare. Based on the traffic levels expected from the proposed development, the impact on the junction can be determined, as shown in **Table 3.6**. This considers figures for anticipated traffic from the scheme during the public network peak, in conjunction with peak hour traffic counts.

Based on the 2022 traffic data obtained and the trip data associated with the site during peak construction phase, the proposed development will affect the functionality of the junction. This road currently experiences no congestion, and the below figures indicate that the increase in traffic at the junction exceeds the TII threshold of 10% where congestion does not exist.

However, it should be noted that this analysis is based on the assumption that 100% of all construction traffic will utilise the assessed junction. It is crucial to emphasise that this represents a worst-case scenario.

In reality, the traffic impact will likely be less significant, as materials are anticipated to be sourced primarily from the local quarry, minimising the need for construction traffic to use the assessed junction.

While there will be some traffic accessing the Wind Farm from the quarry road, its contribution is expected to be minimal due to the very close location to the site. This geographic advantage allows for direct and convenient access to construction materials, minimising the need for vehicles to traverse significant distances through the road network. The strategic location of the quarry in close vicinity to the site not only supports operational efficiency but also aligns with the developments dedication to reducing the overall impact on the surrounding road network.

Junction modelling was carried out for the existing T-junction in order to assess the traffic impact generated by the proposed development for future scenarios.

Table 3.6 – Traffic Impact on Assessed Junction (PCUs)							
2026 Projected Traffic		Traffic from Development		Increase in Traffic		TII Threshold of 10%	
AM	PM	AM	PM	AM	PM	AM	PM
827	763	123	123	13.9%	11.8%	Above	Above

4 Capacity Analysis

4.1 Traffic and Transport Assessment Thresholds

TII recommends that junction modelling should be carried out where new traffic exceeds 5% of existing flows if congestion already exists and if traffic generated by the development exceeds 10% where no traffic congestion is present, as outlined in **Table 4.1** below. As indicated in **Table 3.5**, the development is conservatively anticipated to generate a temporary increase of more than 10% of traffic at the junction as a result of the development, during peak construction phase.

Table 4.1 below provides the thresholds for a Traffic and Transport Assessment.

Table 4.1 – Traffic Management Guidelines Thresholds for Transport Assessments (TII)	
YES	Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.
N/A	Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive
N/A	Residential development in excess of 200 dwellings
N/A	Retail and leisure development in excess of 100m ²
N/A	Office, education and hospital development in excess of 2,500m ²
N/A	Industrial development in excess of 5,000m ²
N/A	Distribution and warehousing in excess of 10,000m ²

Within the TII document, if any of the criteria in **Table 4.1** is exceeded a Traffic Assessment is automatically required. The development could be considered to meet the thresholds for a TTA on 1 count as shown above, therefore modelling is required.

4.2 Capacity Analysis Introduction

A capacity assessment was carried out on the existing priority T-junction between the R464 and the L3056, as shown in **Figure 4.1**. This analysis demonstrates that the increased traffic during the peak construction phase of the development will not negatively impact the junction. It's worth noting that this analysis takes a conservative approach. As the development will transition into the operational phase within the 5-year and 15-year design scenarios, traffic generation is expected to be significantly lower. The performance of the AM and PM peak hours were assessed in the junction for the following design years:

- 2022, counted traffic;
- 2023, current traffic conditions;
- 2026, the opening year;
- 2031, 5-year future design scenario;
- 2041, 15-year future design scenario.

Figure 4.1 below shows the junction for which a traffic simulation was undertaken in order to obtain the Ratio of Flow to Capacity (RFC). This allows assessment of whether the junction will cater for the predicted levels of traffic, which will be increased by the proposed development.

The Ratio of Flow to Capacity (RFC) describes the capacity of each approach to a junction. An RFC below 0.85 (85%) implies that an approach road is operating satisfactorily well within capacity, between 0.85 to 1.0 RFC means the approach operates well within capacity but at less optimal efficiency; an RFC above 1.0 is deemed to be above capacity.

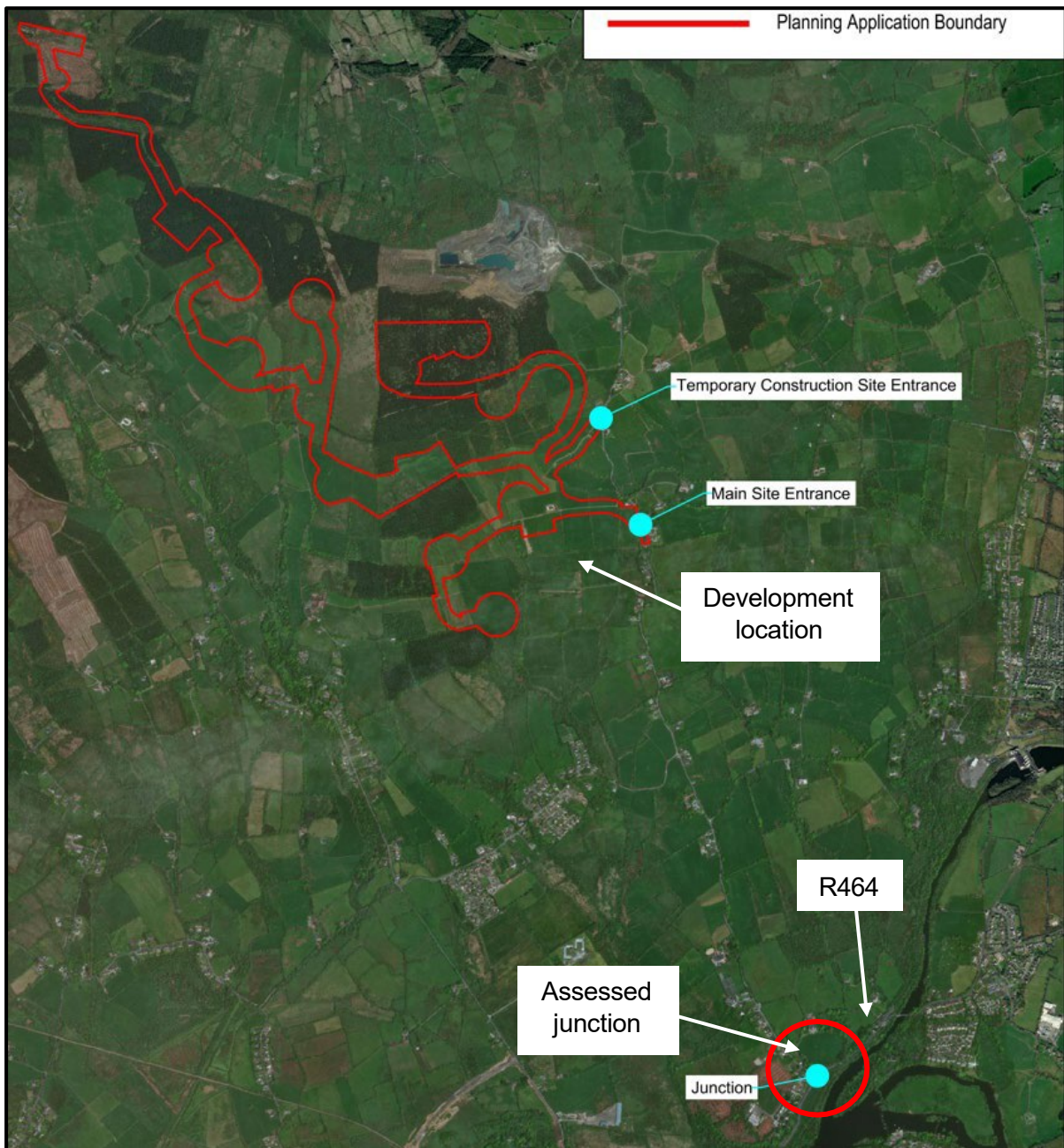


Figure 4.1 – Location of Junction Analysed (Source: MWP)

4.3 Traffic Impacts of the Proposed Development on Local Road Network

Traffic data from May 2022 was incorporated into the software and adjusted using the TII 2023 growth factor to establish a baseline dataset. Traffic growth rates were applied to existing background traffic only and were not applied to development traffic, since traffic associated with the site will be temporary during the construction phase and will not continue long term. For this analysis, Central Sensitivity Growth Factors were employed, and the junction was simulated using PICADY software.

The capacity assessments were modelled for three different scenarios:

- Base-year: 2022 traffic flows modelled according to traffic counts obtained in May 2022.
- Do-nothing: modelled without the intervention of the proposed development. For this analysis, the traffic counts were factored up using TII's Growth Factor for the design years 2023 (current year), 2026, 2031 and 2041.
- Do-something: the impact of the traffic generated by the proposed development was added to the design years of 2026, 2031 and 2041. This analysis will enable the comparison with the 'Do-nothing' scenario.

The development traffic is unlikely to coincide entirely with the peak hour traffic on the public network, however, in order to provide a robust assessment, it has been considered that all traffic to and from the proposed development travels during the peak hours. In the following analysis of the priority T-junction, the junction was assessed for the AM and PM peak period and the arms were labelled as follows:

- Arm A: south-west arm R464;
- Arm B: L3056;
- Arm C: north-east arm R464.

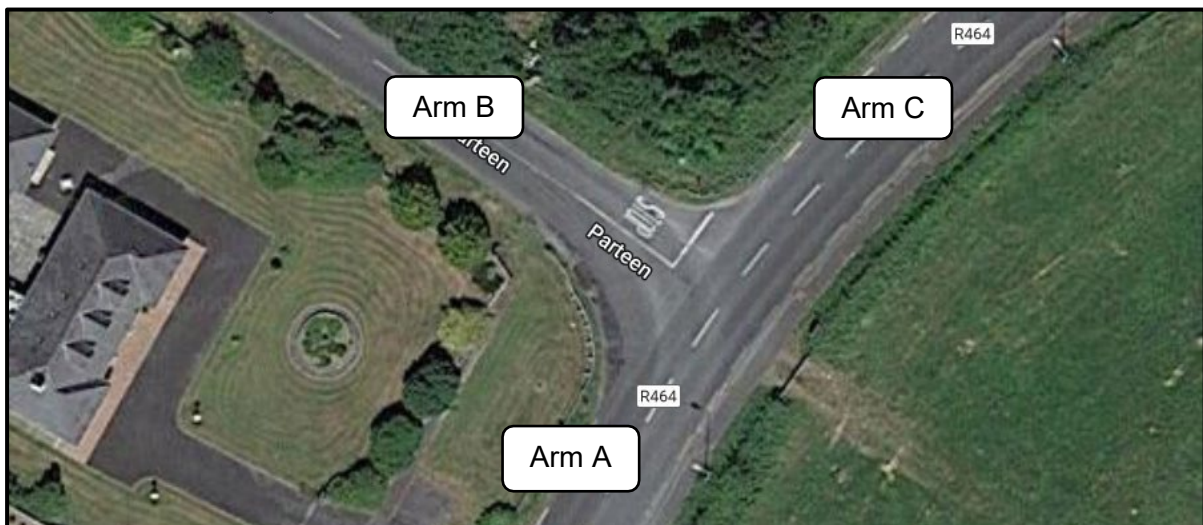


Figure 4.2 – Arm Labels of Junction Analysed (Source: Google Maps)

Table 4.2 below shows the maximum RFC and queue formed in at this T-junction, for the 2023 base year, 2026 year of development construction, 2031, 5 years after the conclusion and 2041, 15 years after the conclusion of construction.

Table 4.2 – PICADY Results for Analysis at assessed junction					
Analysis	Arm	AM		PM	
		Queue (PCU)	RFC	Queue (PCU)	RFC
1 – 2023, base year	B-AC	1.0	0.48	0.3	0.20
	C-AB	0.0	0.03	0.0	0.03
2 – 2026, do-nothing	B-AC	1.1	0.51	0.3	0.21
	C-AB	0.0	0.03	0.0	0.03
3 – 2026, do-something	B-AC	1.7	0.62	1.1	0.49
	C-AB	0.2	0.08	0.1	0.05
4 – 2031, do-nothing	B-AC	1.3	0.55	0.3	0.23
	C-AB	0.0	0.03	0.1	0.04
5 – 2031, do-something	B-AC	2.1	0.66	1.3	0.52
	C-AB	0.2	0.09	0.1	0.06
6 – 2041, do-nothing	B-AC	1.5	0.58	0.3	0.24
	C-AB	0.1	0.04	0.1	0.04
7 – 2041, do-something	B-AC	2.4	0.69	1.3	0.53
	C-AB	0.2	0.09	0.1	0.06

Based on the results obtained from the PICADY software analysis for the junction, the performance of each arm during different scenarios was evaluated. In the base year scenario of 2023, Arm B exhibited a queue of 1.0 PCU (corresponding to 5.75m) during the AM peak period and 0.3 PCU during the PM peak period with a maximum RFC 0.48 in the morning.

In the do-something scenario for the year 2026, which considered the impact of additional traffic generated during peak construction, results indicated an increase in queues compared to the base year scenario. Arm B had a queue of 1.7 PCU (9.8 metres) in the AM and 1.1 (6.3 metres) PCU in the PM, while Arm C had a queue of 0.2 PCU in the AM and 0.1 PCU in the PM.

As can be seen in **Table 4.2** above, the junction will be operating satisfactorily well within capacity in the long term. The junction RFC increases to 0.69 in the 2041 ‘do something’ scenario as compared to 0.58 in the 2041 ‘do nothing’ scenario. In the do-something scenario for the year 2041 Arm B had a queue of 2.4 PCU (13.8 metres) in the AM and 1.3 (7.5 metres) PCU in the PM, while Arm C had a queue of 0.2 PCU in the AM and 0.1 PCU in the PM. This value relates to additional traffic from the proposed development with relevant growth factors applied to existing traffic conditions. However, it should be noted that construction stage traffic will have ceased after 14 months on site.

Therefore, it can be concluded that the priority T-junction off the R464 will perform satisfactorily in the future and the development traffic will have minimal impact on the surrounding road network.

Additionally, the findings suggest that the local road, L3056, is expected to operate within capacity, adequately accommodating the projected traffic volumes during peak construction phase.

During the construction phase, due to the increased construction traffic and potential changes in traffic patterns, there may be a temporary impact on road safety. However, mitigation measures, such as proper traffic management planning, adherence to safety protocols, and coordination with local authorities, are designed to minimise these potential risks.

Any potential damage caused to structures or road pavements along construction haul routes as a result of windfarm deliveries will be promptly repaired to at least the same condition as before the works. No additional mitigation measures are proposed, as no significant adverse impacts are anticipated.

5 Road and Safety

5.1 Site Access

Primary access to the proposed development site will be provided from the local public road off the L7062. There will be two site entrances, one temporary to facilitate construction traffic delivering material from the local quarry and one permanent entrance to facilitate turbine deliveries, materials from other sources and operations and maintenance vehicles. Entrance point A will be used during the construction phase only. As part of the site preparation works the contractor will be required to submit a Construction Traffic Management Plan to describe the site access point and all safety measures put in place to avoid hazards on the local access road, e.g. signage at regular intervals.

5.2 Pedestrians and Cyclists

At present there is no direct access to the site for pedestrians or cyclists. The L7062 is an 80km/h road lined with tall hedging in parts, narrow sections and is of a winding nature. There are no dedicated cycle lanes or pedestrian footpaths either side of the road. Due to the 6m width of the road it is unfeasible to anticipate pedestrian or cyclist access to the site without significant active travel development in the area.

As this development site, and much of the wider area, is earmarked primarily for renewable and wind energy production, this rural setting is unlikely to attract a significant number of on-site employees. It is therefore improbable that the local authorities will seek to implement active travel measures in this rural setting in the short to medium term.

Figure 5.1 overleaf shows the travel time from the development. A 30-minute cycle covers the villages of Meelick and Parteen and the northern and central areas of Limerick City.

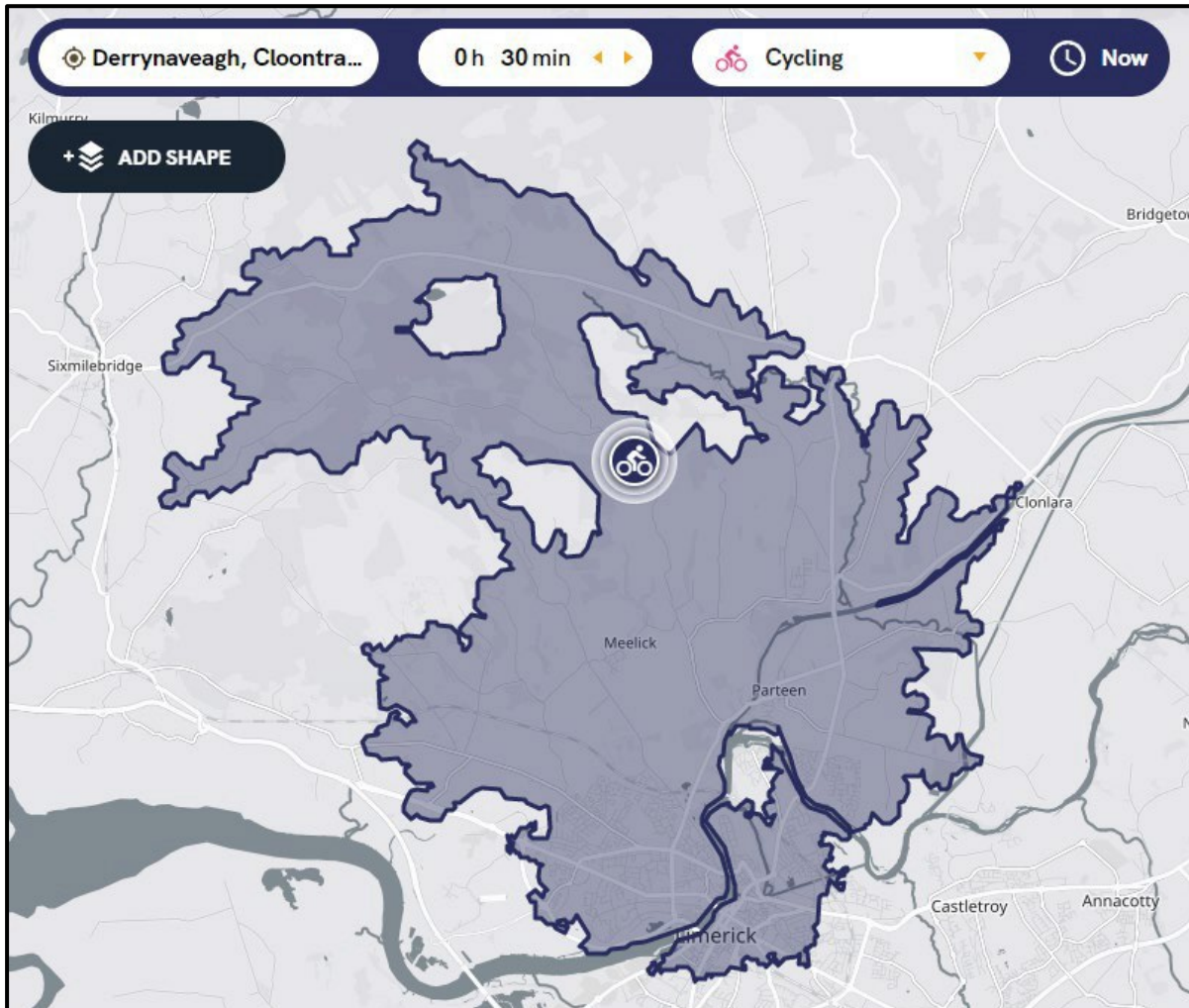


Figure 5.1 – Cycling Distance from the development (Source: Travelttime.com)

5.3 Sustainable Transport and Public Transport Provision

Given the nature and location of the development, it is not anticipated that trips will be made via walking, cycling or public transport and there are limited public transport options at present.

To the south there are local bus stops on the L3068 (Knockalisheen Rd) through Meelick and Parteen, approximately 4km from the development site. These bus stops service route 313 between Limerick Arthur’s Quay and Ardnacrusha. The bus runs five times daily however only the 13:00 from Limerick and the 09:25 from Ardnacrusha stop at the intermediate bus stops mentioned above.

From Limerick Arthur’s Quay it is a 900m walking distance to Limerick train station on Parnell Street which provides a direct link via train to most major towns and cities in Ireland.

Table 5.1 overleaf shows the available public services in the vicinity of the proposed development.

Figure 5.2 shows the available bus stop locations.

Table 5.1 – Bus Services Available in the Ballycar Area (Source: TFI)

Route	Distance	Origin	Destination	Availability
313	4km	Limerick	Ardnacrusha	1 each way

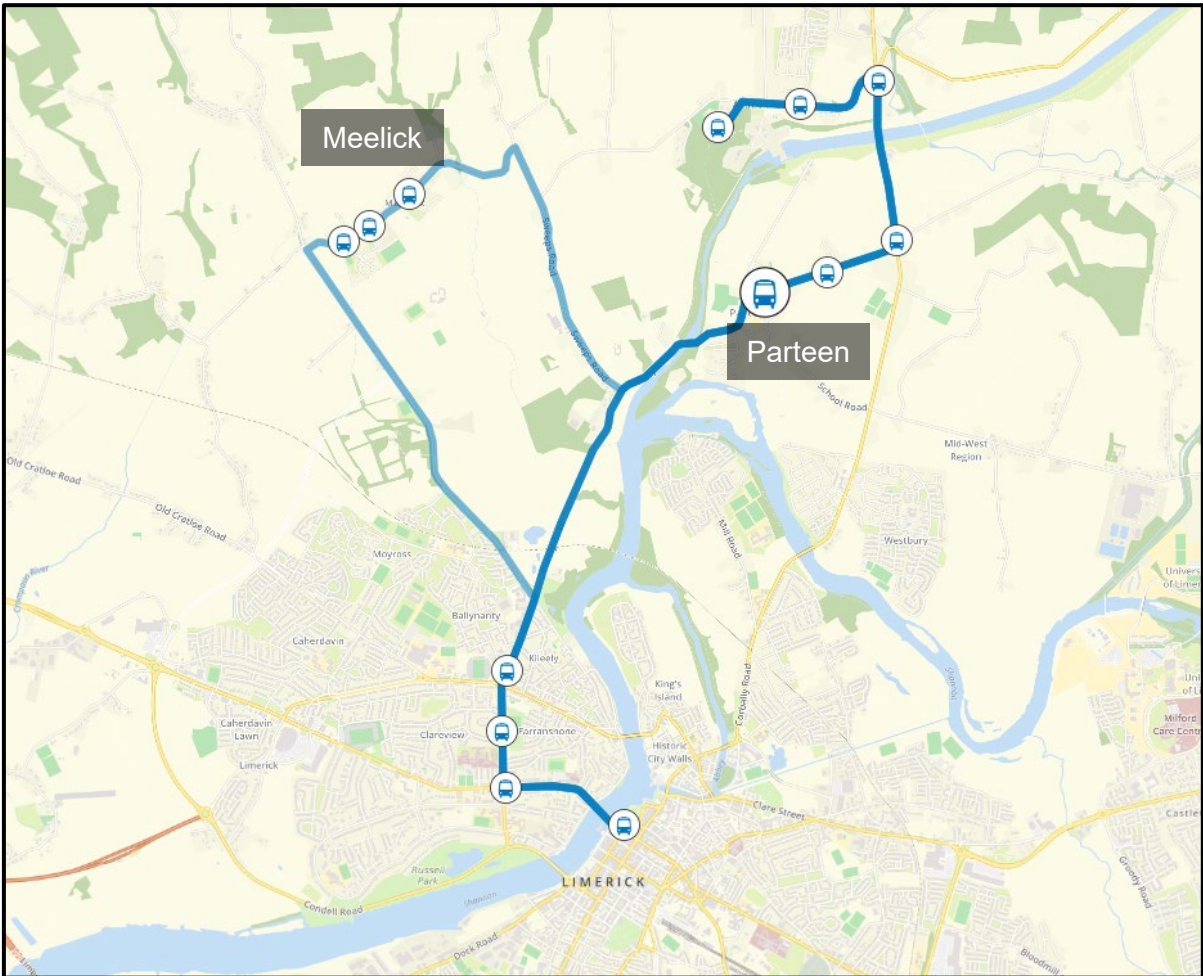


Figure 5.2 – Available bus stop locations in the vicinity of the site (Source: TFI)

6 Conclusions

The main conclusions of this study are summarised as follows:

- This Traffic and Transport Assessment report was conducted as part of the planning application for a proposed 12No. turbine windfarm located on a 104.7-hectare site neighbouring the townland of Ballycar, north of Meelick in East Clare.
- The construction phase of the project will generate traffic due to site personnel trips and material deliveries. This traffic will be short-term in nature and will travel along regional and local access roads as outlined in this report. The operation and maintenance phase of this development will attract negligible traffic.
- It is anticipated that the peak daily construction stage traffic to the site will be 252No. HGV movements (please refer to **Table 1.1**) and trips associated with 60No. full time construction staff (60 to, 60 from). Note that this level of construction traffic will only be associated with a 2-week period over the peak construction stage of the project.
- ORS corresponded with Clare County Council to scope the requirements for the traffic assessment associated with this site. ORS did not yet receive a response and used judgment to determine the assessable junction which would be most impacted by the increased traffic. It was deemed appropriate that this Traffic and Transport Assessment would focus on the existing priority T-junction between the R464 and the L3056.
- Traffic counts were obtained in May 2022. TII growth factors were applied to the 2022 traffic count data to quantify the predicted increase in traffic from 2022 to the current year, 2023.
- TTAs for adjacent sites with granted planning permissions were thoroughly examined to encompass the worst-case scenario in future traffic projections.
- This assessment calculated the traffic impact which the proposed development will have on the relevant junction, and it was found that the construction stage traffic for the proposed wind farm development exceeds the 10% threshold for non-congested roads, and therefore the junction was modelled. Current traffic levels along the R464 indicate a low stress situation with the road working well within capacity.
- The junction was subjected to capacity analysis modelling to examine the potential traffic levels generated by the development. The junction was examined using the PICADY software for priority T-junction, for the AM and the PM peak conditions under conservative future projections and central background traffic growth.
- The traffic split upon entering/exiting the site could be assessed based on traffic counts and it is expected that the additional traffic from the development will follow the same trend, with the exception of turbine deliveries which will come from the south-west only.
- The data was then added to *Junctions 10* software to ascertain the traffic impact that the development will have on the surrounding road network.

- The junction was examined for peak conditions, and it was assumed that all additional traffic associated with the development will arrive and depart during the peak hour of the public network, in order to provide a robust worst-case scenario.
- The utilisation of the proposed junction increased by only 16% when considering traffic from 2023 (base year) vs the 2026 scenario (peak construction phase).
- From a transportation planning perspective and on the basis of the EPA Guidelines, the construction phase of the proposed development will have slight, short-term negative effect, over the 18-month construction programme with isolated, localised peaks of brief but moderate impact. However, the proposed development will not significantly impact the future operational capacity of the assessed junction. It should also be reiterated that the peak development traffic is not anticipated to coincide with the peak hour of the public network and that the development traffic is considered at the peak construction activity throughout an 18-month programme. Furthermore, when considering the long-term effects of the development on the local road network during the operational and decommissioning stages, they are deemed negligible.
- The development appears to be aligned with the intention of the council set out in the Clare County Development Plan 2023-2029, which earmarks the Ballycar area as a strategic area of wind energy potential.
- In summary, it is deemed that the construction stage traffic associated with the proposed development will not adversely impact the functionality of the surrounding road network or the existing T-junction in the long term.

Appendix A – *Junctions 10* Modelling Data

Full data available upon request.