



## 9. TRAFFIC AND TRANSPORTATION

This Section describes the existing transportation network in the vicinity of the Proposed Development and the potential traffic and transportation impacts on same as a result of the project during construction, operation and decommissioning.

### 9.1 Sources of Information

- Open-source TII traffic counter information and private traffic count data carried out for historical impact assessments, accessed in July 2024.
- Ordinance survey, Google aerial and street view mapping, accessed in June and July 2024.
- Donegal County Council Planning Enquiry website, accessed July, 2024.
- Consultation with Donegal County Council Roads Engineer, 28 June, 2024.
- Donegal County Council VRS Installation along the R238 Part VIII Report, 21 November, 2023.<sup>33</sup>

### 9.2 Consultation with Donegal County Council Roads Engineer

FT introduced the Ballynahone long duration battery energy storage (LDES) project providing a background of the project, the applicant, the site location and layout, site selection process along with a presentation of the existing environmental constraints in the area. The need for the project was explained, highlighting existing energy projects within 20km which the project could support as part of grid constraint/stabilisation infrastructure. A brief explanation of the proposed Iron Air technology and the benefits when compared to lithium ion was provided.

The anticipated no. of HGV trips per day was queried during the construction phase for the roads department to gain an understanding of the scale of the project. FT advised the average no. of HGV trips per day would be in the range of 10 – 20 assuming a 10MW configuration based on a construction program of 12 – 16 months.

Site Accesses for the development were presented, one existing entrance to be upgraded, the creation of a new access for the construction and operation of the facility and a temporary access for the construction compound. The roads engineer was satisfied with the locations presented and agreed there were no safety concerns with the access locations as the temporary access for the construction compound is appropriately setback from the L7221/L7231 junction and the L7231 local road is lightly trafficked with the primary use being access to farmland and residential dwellings.

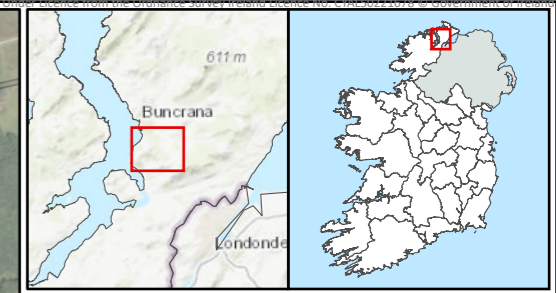
The maximum laden weights of HGV loads were queried. FT advised the loads for battery containers would comply with RSA max laden weights per axel. Containers arrive empty, the electrolyte and water components are added onsite which reduces axel load during transportation.

The haul and delivery routes presented from McDaid's quarry and the R238. The road's engineer advised that transport route B, which showed loads exiting the quarry to the northeast along the L7261 to the site, is not suitable for construction traffic and all HGV's associated with the project should utilise transport route A, which shows loads travelling southwest along the L7411 and joining the R238 and Gransha Roads. FT confirmed that transport route B would be removed from consideration.

The final agreed routes following consultation are shown in Figures 1-2 and 1-3.

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<sup>33</sup> [Part 8 Report - R238 VRS, Quigleys Point.pdf \(donegal.ie\)](#)



**Legend**

Site Boundary

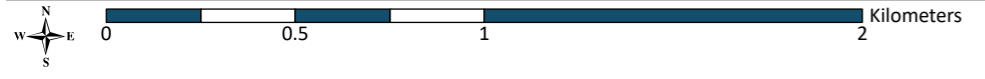
**Transport Route Options**

Transport Route A

Transport Route B

<b>TITLE:</b>	Transport Route Options
<b>PROJECT:</b>	Ballynahone Long Duration Battery Storage
<b>FIGURE NO:</b>	INFO
<b>CLIENT:</b>	FuturEnergy Ireland
<b>SCALE:</b>	1:20,000
<b>REVISION:</b>	0
<b>DATE:</b>	22/04/2024
<b>PAGE SIZE:</b>	

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### 9.3 Receiving Environment

Roads in the Republic of Ireland are classified as motorways, national (primary and secondary), regional and local roads. Transport Infrastructure Ireland (TII) has overall responsibility for the planning and supervision of the construction and maintenance of motorways, national primary and secondary roads. The local authorities have responsibility for all non-national roads. The hierarchy of roads throughout Ireland is outlined in Table 9-1:

**Table 9-1: Road Categories**

Road Category	Description
Motorways	These are high quality multiple lane roads with limited grade separated junctions. They are high speed (120km/per hour) road predominantly provided to facilitate strategic traffic with reduced journey times.
National Primary Roads	These are predominantly single carriageways, with some that are dual carriageways. Generally high speed (100km/per hour) roads that facilitate strategic traffic, with reduced journey times.
National Secondary Roads	These are medium distance through-routes connecting towns, serving medium to large geographical areas and link to primary routes to form a homogeneous arterial network.
Regional Roads	Predominantly single carriageway roads of regional and local importance. These roads generally receive more frequent maintenance criteria than Local Roads and therefore tend to be structurally sound.
Local Roads (Primary, Secondary and Tertiary)	The local road system is operated in three tiers defining local importance, usage and maintenance priorities. They form a network of single carriageway roads of varying quality.

The existing road network surrounding the Proposed Development is outlined hereunder. The Ballynahone Long Duration Energy Storage (LDES) Development will be accessed by two proposed entrances on the Drum Road (L-7231). The road network in the vicinity of the proposed entrance is shown on the Transport Route map, Figure 9-1.

#### 9.3.1 National Roads

The closest national route to the Site is the N13 which is c. 7.6km (straight line distance) south of the site. The N13 is a national primary road in County Donegal running from Stranorlar to just outside Derry. The road connects Letterkenny to Sligo, Derry and onwards to other destinations.

The N13 forms part of the battery module delivery route but does not form part of the construction haul route or grid connection for the Proposed Development.

The closest national secondary route to the Site is the A2 which is c. 10.2km (straight line distance) southwest of the site. The A2 national road follow the coasts in Counties Down and Derry. The A2 doesn't not form part of the haul route or grid connection for the Proposed Development.



### 9.3.2 Regional Roads

The closest regional road to the Site is the R238 which is c. 3km (straight line distance) east of the site. The R238 forms part of the main route from Derry to Buncrana. The R238 will form part of the proposed haul route.

Other regional roads in the vicinity of the Proposed Development include the R239 which does not form part of the construction haul route or grid connection route for the Proposed Development.

### 9.3.3 Local Roads

The closest local roads to the Proposed Development are the L-7231 local road which runs between the LDES compound and the transformer compound and the L-7221 local road at Boyne Hill which runs West-East, west of the site.

These roads will form part of the haulage and delivery routes to the Site. The L-7231 will be crossed by the grid connection cable from the battery compound entrance to the transformer compound entrance. The crossing will be less than 10m of trenching.



## 9.4 Delivery Route, Haul Route and Site Access

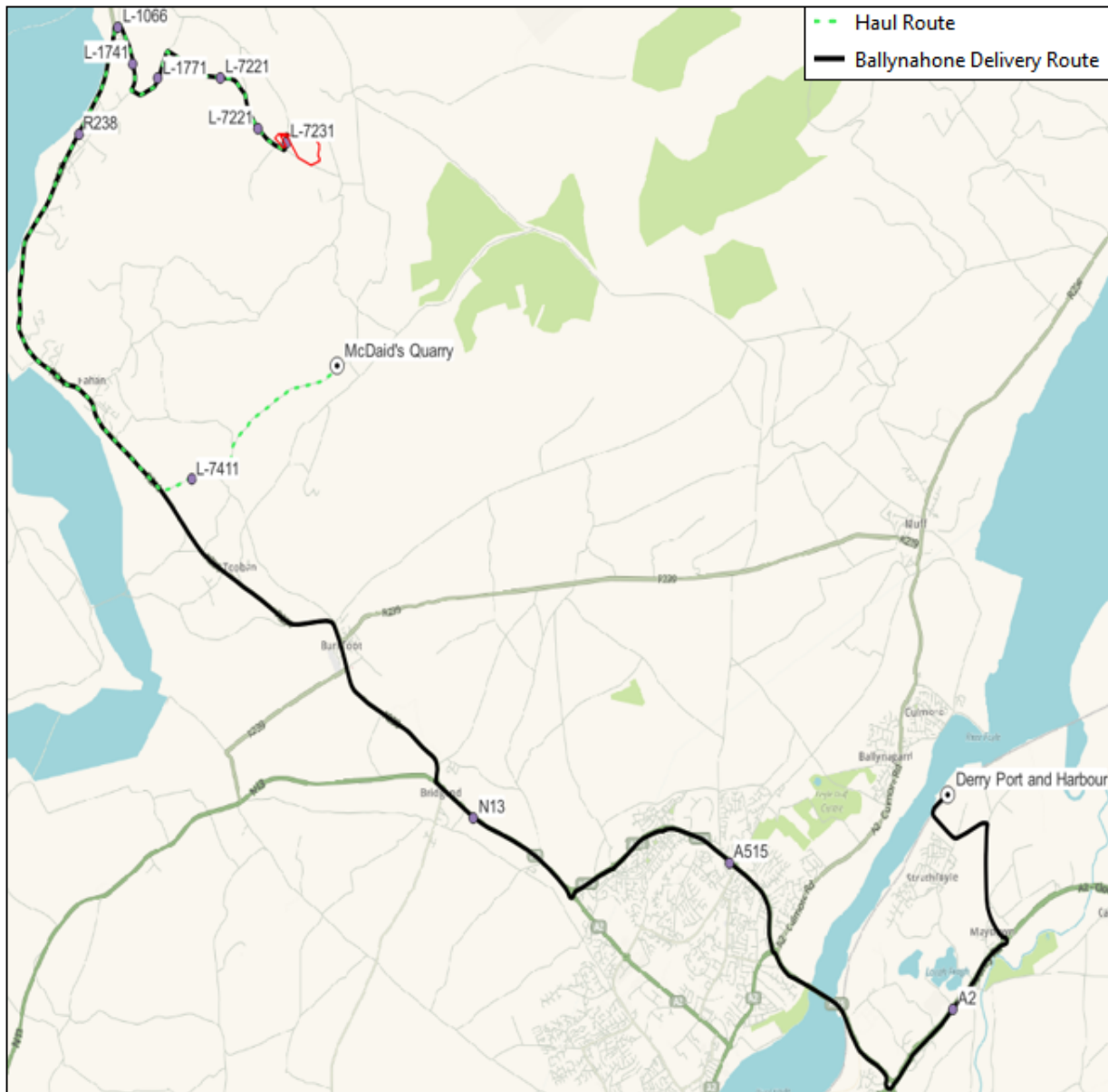


Figure 9-2: Ballynahone Delivery and Haul Route Map

### 9.4.1 Delivery Route

Most equipment loads associated with this project are standard size and can navigate from any port to the national road network without transport issues.

### 9.4.2 Abnormal Loads

There are only two abnormal loads required for the project consisting of the 33 kV/110 kV Power Transformer and the modular control building which are abnormal in terms of width, height and length. The likely port of entry will be Foyle Port, Co. Derry.



The electrical transformer component is classified as an abnormal load due to its height, width and length. A vehicle or load is considered abnormal when the total length of the vehicle exceeds 12m (16.5m in the case of an articulated vehicle), or the overall width exceeds 2.55m, or the overall height exceeds 4.65m (subject to Regulation 2(2) of S.I. The modular control building component of the UTF compound is also classed as an abnormal load due to its width and height.

A permit for moving abnormal loads to the Site will be sought from An Garda Síochána and the applicable local authorities on the selected route with a transportation plan for the time of delivery established prior to construction stage.

An abnormal load vehicle, Mercedes Actros Low Boy Loader (or similar), will proceed along the internal access roads and cross the local roads at speeds less than 25km/h for safety purposes. Traffic management measures will be in place to assist with abnormal load manoeuvres including flag men and advanced warning signage on approach to the Site. A swept path analysis of the loaded transformer delivery vehicle has been completed at the L7221/L7231 junction and at the entrance to the transformer compound. Temporary accommodation works including vegetation removal and tree trimming will be required at the L7221/L7231 junction and at the entrance to the transformer compound to allow the vehicle to safely negotiate the turn.

From the port of entry, it is proposed that the site shall be accessed via the following delivery route:

1. Loads will depart the port of entry and navigate to the N13;
2. Continue west along the N13 at Coshquin for 5.5km;
3. Take the 2<sup>nd</sup> exit at the Bridge End roundabout turning onto the R238, exiting the N13 towards Lisfannon;
4. Continue on the R238 for 12.5km;
5. At the Roundabout take the 2<sup>nd</sup> exit onto the L-1066 towards Gransha, followed by a right turn onto the Lower Main Street Road (L-1076);
6. Continue straight for 850m and turn left onto The Moyle (L-1771);
7. Continue for 850m and turn right onto Gransha Road (L-7221);
8. Continue straight for 2.3km and turn left onto The Drum (L-7231);
9. Continue straight for 190m and;
  - a) Loads will turn right for the LDES compound main entrance.
  - b) Loads will turn left for the UTF transformer compound entrance.



### 9.4.3 Haul Route



Figure 9-3: Haul Route Map

It is proposed that the site shall be accessed via the following haul route from McDaid's Quarry:

1. Loads will depart the quarry by turning right onto the L-7411;
2. At the R238/L-7411 junction turn right onto the R238;
3. Continue on the R238 for approximately 7km;
4. At the Roundabout take the 2<sup>nd</sup> exit onto the L-1066 towards Gransha, followed by a right turn onto the L-1076;
5. Continue for 850m and turn left onto The Moyle (L-1771);
6. Continue for 850m and turn right onto Gransha Road (L-7221);
7. Continue straight for 2.3km and turn left onto The Drum (L-7231);



8. Continue straight for 190m and;
  - a. Loads will turn right for the LDES compound main entrance.
  - b. Loads will turn left for the UTF transformer compound entrance.

There are opportunities for oncoming vehicles to pull in along the public road at existing verges and widenings associated with private dwelling houses along the local roads associated with these routes. The construction and operation of the development can be adequately served by the existing road network without the need for upgrades. When necessary, banksmen will be stationed at the critical junctions and the site entrances to ensure that construction traffic from the Proposed Development are managed accordingly so to minimise conflict with public traffic.

#### 9.4.4 Site Accesses

The Proposed Development shall be accessed via new field accesses constructed along the L-7231 local road. These accesses will serve as the main site entrances for the respective land parcel for construction and maintenance vehicles. The coordinates of the site entrance are shown in Table 8-2:

**Table 9-2: Proposed Main Site Access Location**

Location Coordinates (ITM)		Local Road	Description	Purpose
X	Y			
637274	929598	L-7231	Access location A	Main LDES Compound Entrance
637267	929600	L-7231	Access location B	Main UTF Transformer Compound Entrance
637245	929462	L-7231	Access location C	Temporary Construction Compound Entrance

Swept Path Analysis (SPA) was completed using a 16.5 metre articulated HGV for the main LDES compound entrance, the Main UTF transformer entrance, and at the L7221/L7231 junction leading to the site to facilitate loads navigating around bends and ensure the entrances are adequately designed and fit for purpose. Vehicle tracking figures are presented in section 1.4.5 of this report.

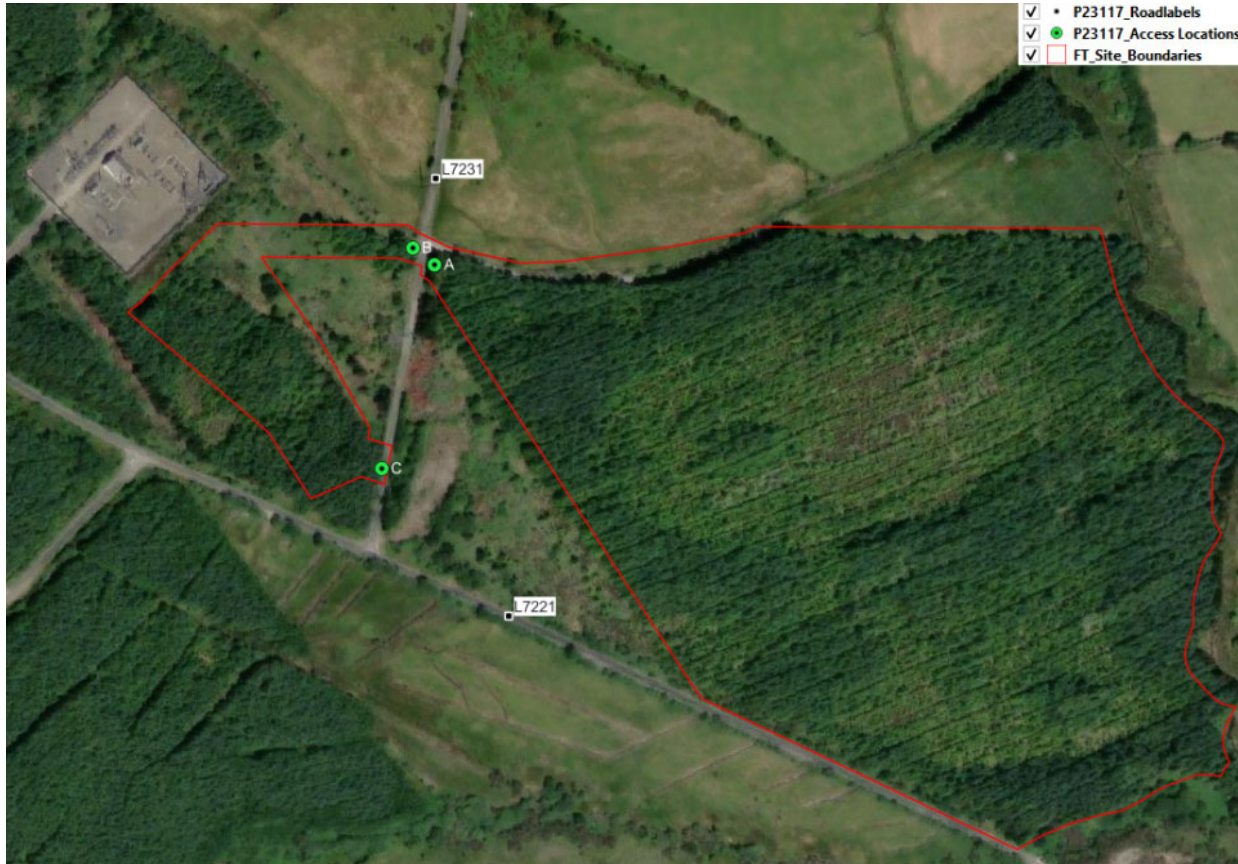


Figure 9-4: Ballynahone LDES Site Entrance Locations

#### 9.4.5 Entrance Assessment

A site visit took place on the 27th of November 2023 to assess potential site access locations along the public road network that could facilitate site entrances. Entrance sightlines are required to be designed and constructed in accordance with the TII guidelines, TII Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) DN-GEO-03060. To comply with the TII access design standards, a sightline distance of 160m is required in both directions for roads with 80km/hr speed limits. Roadside visibility in both directions was assessed for the proposed entrance and alternative options with results presented in Table 9-3:

Table 9-3: Sightlines at Proposed Entrance Locations

Survey Location	Location Coordinates (ITM)		Y (m) at x=0m		Y (m) at x=2m		Y (m) at x=3m	
	X	Y	To Right	To Left	To Right	To Left	To Right	To Left
Access location A	637274	929598	160	160	160	142	160	61
Access location B	637267	929600	160	160	34	160	19	127



Survey Location	Location Coordinates (ITM)		Y (m) at x=0m		Y (m) at x=2m		Y (m) at x=3m	
	X	Y	To Right	To Left	To Right	To Left	To Right	To Left
Access C - Temporary Compound	637248	929466	50 <sup>34</sup>	160	NA	NA	NA	NA

Alternative access options were also assessed including locations along the L7221 local road. The temporary construction compound entrance was presented to the roads engineer during consultation, it was considered to be safely sited and located at an appropriate distance from the L7221/L7231 junction.

Following the site visit and a review of the assessment results presented in Table 9-3 above, it was noted that there was low traffic volumes observed during the visit and the traffic travelling along the road were driving at speeds much lower than 80km/hr due to the road conditions. The entrance locations and sightline distances for the main entrances were presented to the DCC roads engineer and were considered appropriate for the scale of the development proposed.

9.4.5.1 Access Location A

Existing visibility in both directions is currently very good and achieves 160m to the right and left at 'X' = 0m. Visibility at 'X'=3m is at 61m to the left and 160m to the right. Vegetation is the main constraint limiting visibility at 'X'=3m. The road width at this location is 3.5m. The major road speed limit is 80 kph. There are MV overhead lines and support poles directly southwest of this entrance. Site entrance clearing does not require the felling of mature trees at this location.



Figure 9-5: View of Left of Entrance A

<sup>34</sup> Forward Visibility/SSD to L7221/L7231 Junction



Figure 9-6: View of Right of Entrance A

#### 9.4.5.2 Access Location B

Existing visibility in both directions is currently very good at this point and achieves 160m to the right and left at 'X' = 0m. Visibility at 'X'= 3m is at 127m to the left and 19m to the right. Vegetation is the main constraint limiting visibility at 'X'=3m. The road width at this location is 3.5m. Hedgerows on both sides of the entrance are sufficiently set back out of visibility splays. The major road speed limit is 80 kph. Site entrance clearing does not require the felling of mature trees at this location but will require hedgerow removal.

Following the above accommodation works, hedgerow maintenance may be required periodically in both directions to ensure the desired sightlines are maintained.



Figure 9-7: View of Left of Entrance B



**Figure 9-8: View of Right of Entrance B**

#### 9.4.6 Temporary Construction Access

Swept path analysis using Autodesk AutoTrack 2022 software was carried out using a 16.5m articulated HGV on the proposed site entrance. The results of the swept path analysis provided the wheelbase tracking shown in red and the chassis tracking shown in green to produce a practical design for the proposed access.

The proposed access points are considered safe and suitable for the proposed traffic movement and no public safety or obstruction to traffic flow is anticipated.

### 9.5 Grid Connection

The grid connection for this project will consist of an MV underground cable running from an electrical skid in the battery compound connecting to the Trillick 110kV substation located adjacent to the Site. The overall cable length measures approximately 500m.

The proposed grid connection requires trenching across the L-7231 for a width of 4m.

#### 9.5.1 MV Infrastructure and Cable

The construction of the on-site transformer compound will involve the installation of ducting, joint-bays, drainage and ancillary infrastructure and the subsequent running of cables parallel to the existing access tracks. This will require delivery of plant and construction materials, followed by excavation, laying of cables and subsequent reinstatement of trenches.

The collector cable for this project will consist of MV underground cable circuits running from electrical skids located within the LDES Compound.



The L-7231 local road will require a temporary closure for approximately one-half day during the trenching, ducting, and reinstatement works. This will enable the work to be completed as quickly and as safely as possible, with minimal disruption time for residents of the area. This work will be undertaken during off-peak traffic hours to ensure minimal impact on residents and businesses.

A careful approach will be taken to planning the works to ensure minimal impacts on road users and the public. The cable trenching will be carried out as expeditiously as possible.

## 9.6 Construction and Operational Phase Traffic Movement

### 9.6.1 Construction Phase

To assess the impact of the additional construction related traffic on the existing road network it is first required to estimate the amount of construction traffic that will be generated (trip generation) as a result of the proposed project.

This assessment was done by estimating the amount of traffic, in the form of heavy goods vehicles (HGV) and light goods vehicles (LGV) that will be generated during the construction phase and then distributing it over the duration of the construction programme. In determining the number of 'trips' the estimated number of HGV vehicles was multiplied by a factor of 2 to account for a single trip 'in' and a corresponding single trip 'out'. The full traffic calculations for the project are presented in Appendix 9.1.

In the case of LGVs, the estimated number of vehicles was multiplied by 2.5 to account for some additional LGV movements e.g. some workers taking lunch breaks in the local area. The analysis allowed for a total number of trips per month to be calculated. This is translated to annual average trips per day (AADT).

Some key assumptions taken when preparing the trip generation estimates include:

- An average ready mix concrete truck carries a load of approximately 8m<sup>3</sup> of concrete.
- An average tipper truck carries approximately 10m<sup>3</sup> of soil/rock/aggregate.
- A construction period of 12 months is expected based on the nature and scale of the proposed works. This construction program is indicative pending grant of permission and detailed design. Any alterations to the construction program will be agreed in advance with the Local Authority.

The transport routes have been reviewed and inspected on site and are considered suitable to accommodate delivery vehicles in terms of alignment, condition and width. The equipment for the site, comprising containerised battery modules, electrical skids, cables, fencing and site offices will be delivered to site on HGVs. These will be similar in size and nature to those which already use this local road network for the purposes of agricultural deliveries (such as fertilizer and feedstocks) to the local farms in the area.



The construction phase for the Proposed Development will result in additional traffic on the roads travelling to the development, in particular the N13, R238, L1076, L1771, L7221, and the L7231. This additional traffic will include the following:

- Construction worker vehicles.
- Vehicles carrying conventional earthworks equipment such as an excavator, roller, road paving equipment, heavy goods vehicles (HGVs), forklifts and a petrol/diesel powered generator.
- Delivery vehicles carrying conventional construction materials, e.g. aggregate.
- HGVs carrying battery modules ; and
- Delivery vehicles carrying electrical cabling, Electrical skids (containing inverters, transformers and switchgear) and electrical equipment for the on-site transformer compound.

It is estimated that the installation phase for the Ballynahone LDES compound will lead to 9,364 additional HGV trips (two-way) over the duration of the installation works which is estimated to last 12 months. Calculations of vehicle movements indicate an average daily increase of 30 HGV trips per day and rising to 42 HGV trips per day during peak construction month 6.

An average workforce of 15 no. site staff is anticipated, increasing to 20 during peak periods. This is estimated to give rise to an average increase in LGV traffic of 23 no. trips per working day and rising to 29 no. during peak construction periods during months 10 and 11. The combined HGV and LGV average daily increase are 53 vehicles per day and rising to 62 vehicles per day during peak construction periods occurring in month 6.

The results of traffic calculations for the proposed Ballynahone LDES project are shown in the Tables and Figures below.

The predicted baseline AADT during the estimated construction year of 2027 for the surrounding road network is presented in Tables 1-5 and 1-6 show the HGV and LGV average and peak construction traffic impacts respectively.



**Table 9-4: Predicted Baseline AADT Volumes with Combined HGV and LGV Construction Traffic**

Location	Predicted Baseline AADT During Construction Start 2027	Average Daily Trips Generated by Development (Combined)	Predicted Combined LGV & HGV Average AADT During Construction	% Increase	Average Daily Trips Generated by Development (Combined) Peak Construction Months	Predicted Combined LGV & HGV Peak AADT During Construction	% Increase
N13	9,139	53	9,192	0.58%	50	9,190	0.55%
R238	9706	53	9,759	0.54%	50	9,756	0.52%

**Table 9-5: Predicted AADT Volumes with Average HGV and LGV Construction Traffic**

Location	HGV AADT Pre-Development	Average Daily HGV Trips Generated by Development	Predicted HGV AADT and Development HGV's During Construction Year (2027)	% Increase	LGV AADT Pre-Development	Average Daily LGV Trips Generated by Development	Predicted LGV AADT and Development LGV's During Construction Year (2027)	% Increase
N13	470	30	557	18.37%	8241	23	8635	4.79%
R238	500	30	589	17.99%	8751	23	9169	4.77%

**Table 9-6: Predicted AADT Volumes with Peak HGV and LGV Construction Traffic**

Location	HGV AADT Pre-Development	Peak Daily HGV Trips Generated by Development	Predicted HGV AADT and Development Peak HGV's During Construction Year (2027)	% Increase	LGV AADT Pre-Development	Peak Daily LGV Trips Generated by Development	Predicted LGV AADT and Development Peak LGV's During Construction Year (2027)	% Increase
N13	470	37	563	19.73%	8241	69	8682	5.35%
R238	500	37	596	19.27%	8751	69	9216	5.30%

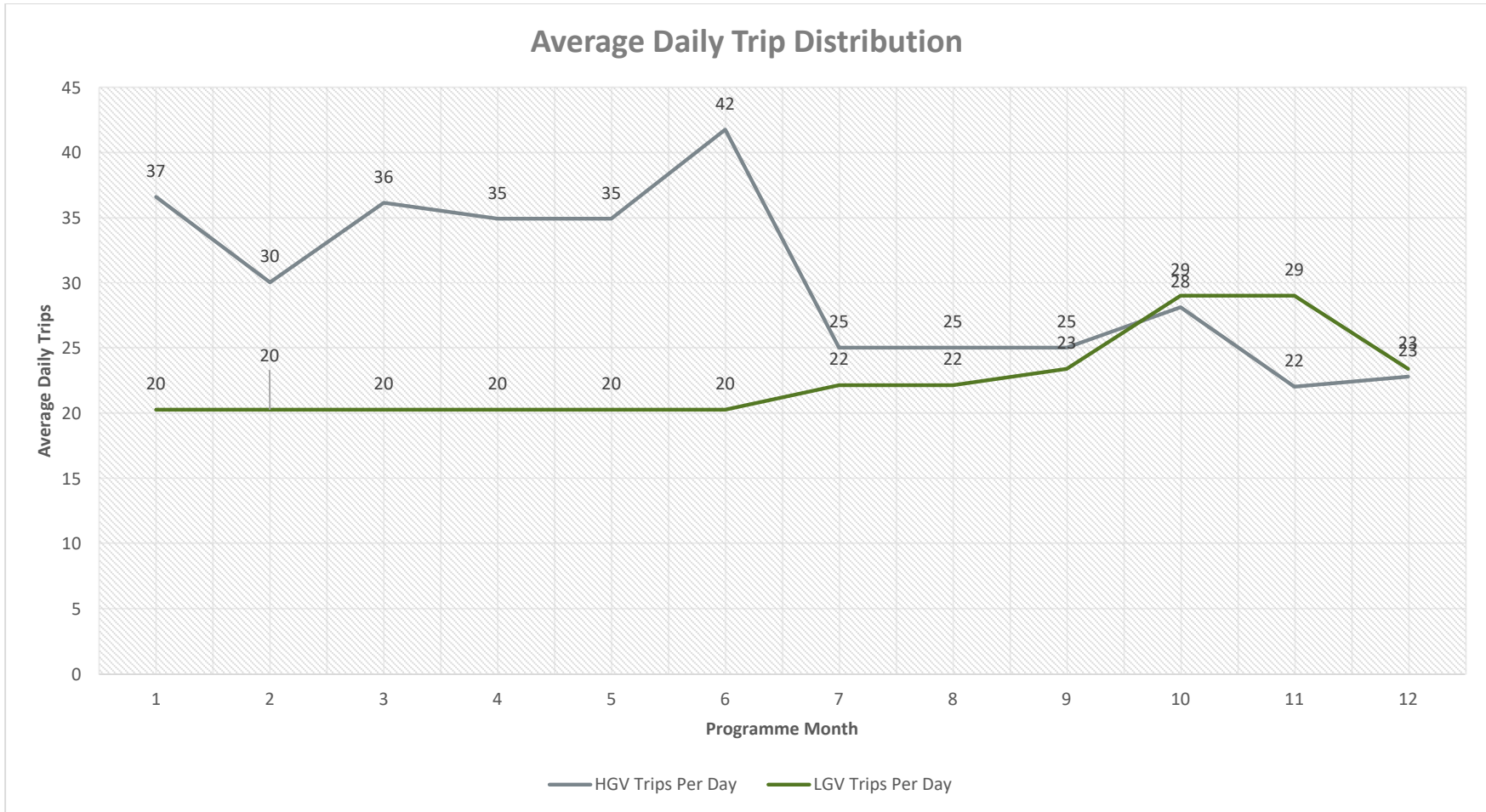
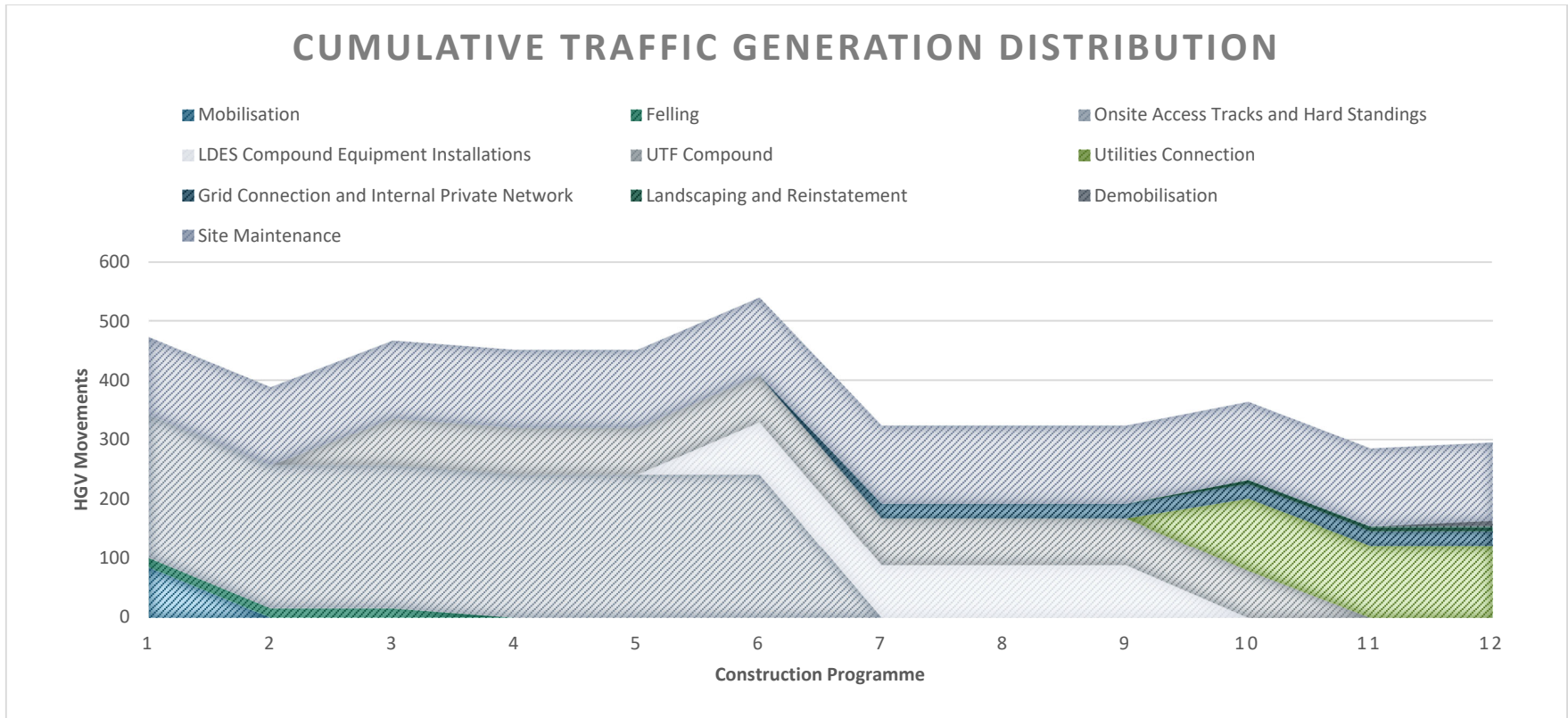


Figure 9-9: Estimated Average Daily Trip Distribution



**Figure 9-10: Estimated Cumulative HGV Traffic Distribution**

For all traffic count data presented in the assessment, full yearly data available for 2023 was applied. It was noted that the traffic count data for 2020 and 2021 decreased significantly on the previous years. During these years, emergency Covid 19 restrictions were put in place by the Irish government restricting traffic movements to reduce the spread of Covid 19.



A traffic growth factor is applied to the AADT data to arrive at a predicted AADT for the time of construction. For the purposes of this assessment the construction start date is set as 2027. The AADT based on automated traffic counter data provided in Tables 9-5, 9-6 and 9-7, include the Donegal Central growth rate factor based on this estimated construction start date. The projected yearly growth factors are taken from Table 3 of the TII document “Project Appraisal Guidelines Unit 5.5 Link-Based Traffic Growth Forecasting”.

It is important to note during the interpretation of the data presented in Tables 9-5 to 9-7 that although the percentage increases in traffic volumes due to construction traffic are high, these figures are distorted due to the very low existing traffic volumes travelling on these roads. When considering the local roads, pre-development, there are only 2 HGV's travelling on these roads on average per day.

#### 9.6.2 Operational Phase

The operational LDES compound will be monitored remotely. Should remote monitoring observe that the LDES system is performing sub-optimally, a maintenance technician will be deployed to the site in an LGV.

Maintenance work on the LDES is anticipated to be required from time to time but generally three times a year.

Maintenance work on the hedgerows and treelines near the site entrance will take place twice per year in accordance with Section 40 of the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the Heritage Act 2018. Hedgerow maintenance will not take place from March 1st to August 31st.

It is therefore estimated that traffic to the site during the operational phase would average 1 to 2 visits per month and the impact on the public road network is considered negligible.

After approximately 10 years of operation, it is anticipated that the battery components will require replacement. This maintenance activity is expected to generate several heavy goods vehicle (HGV) movements over a 6 to 12 month period. Specifically, the number of HGV loads is not expected to exceed 706 over the reinstallation program, with a daily maximum of 7 HGVs.

#### 9.6.3 Decommissioning Phase

Although there will be vehicle movements associated with the removal of components during decommissioning, the number of vehicles will be significantly lower than that estimated for the construction phase. Relevant mitigation measures implemented during the construction phase should be employed at decommissioning phase as part of a dedicated decommissioning plan.

Project related traffic generated during the decommissioning phase will be significantly less than that associated with the construction phase. The temporary negative impact on the public road network is considered to be not significant.

Details relating to the Decommissioning phase of the Proposed Development can be found in the Appendix of the CEMP.

#### 9.6.4 Pre-mitigation Impact Assessment

Based on the above, negative or adverse effects on the receiving environment associated with the construction works at the site are considered to be short-term in duration and slight in significance without appropriate mitigation.



## 9.7 Mitigation Measures

### 9.7.1 Construction

To mitigate against the potential impacts of traffic associated with the Proposed Development, a detailed Traffic Management Plan (TMP) will be prepared prior to commencement of construction. This plan will address construction traffic, road safety signage, phasing of the deliveries, and emergency access.

The contractor will be responsible for the implementation of all agreements between the developer and Donegal County Council with the objective that the transportation needs for the Proposed Development will have a minimal impact on the road network and local communities. Outline traffic measures are set out in the accompanying Construction Environmental Management Plan.

All vehicles hauling materials to and from the Site will only use agreed transport routes as illustrated on the Transport Route Figure 9-2.

The proposed accesses will be created allowing adequate visibility sightlines in accordance with TII Standards DN-GEO-03060: Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions), May 2023, DN-GEO-03031: Rural Road Link Design, May 2023, and in accordance with County Development Plan. Required sightlines will be maintained in both directions at the site entrance and existing hedgerows will be trimmed and removed as necessary.

Public roads shall be kept free of mud, dust, spillages and debris from the construction site, construction plant or haulage vehicles. Any necessary measures shall be put in place at the Site entry/exit points.

Adequate signage shall be installed on approach to the proposed site entrance advising of the presence of a 'site access ahead' and 'construction traffic ahead'. The above signage shall be removed following completion of the construction phase.

All construction related parking shall be accommodated within the site. Construction related vehicles will not be permitted to park on public roads. Turning space will be provided in the temporary site compound and within the LDES compound hardstanding areas.

Traffic movements for the construction of the development will be discussed with local community representatives and where necessary and off-peak deliveries will be accommodated where possible.

### 9.7.2 Operation

No mitigation measures are required for the operational phase with the exception of maintaining visibility splays at the site entrance. The operational LDES facility will be monitored remotely which will remove the need for site access on a frequent basis.

### 9.7.3 Decommissioning

Mitigation measures applied during decommissioning activities will be similar to those applied during construction where relevant.



## 9.8 Residual Impacts

The construction of the Proposed Development will lead to additional construction traffic, including HGV's, during the construction phase. The construction programme will take place over approximately 12 months with the peak period for construction traffic occurring in month 2.

By adopting the mitigation measures proposed above and through the implementation of an adequately designed TMP, it is envisaged that the negative impact construction related traffic will have on the local road network will be 'temporary' to 'short-term' in duration, and 'slight' in significance.

## 9.9 Cumulative Effects

All known existing and proposed projects within the cumulative study area of 20km that could potentially generate a cumulative impact with the Proposed Development in relation to traffic and transportation during construction, operation and decommissioning were identified and examined as part of this assessment. Table 9-8 provides details of the projects within the study area that were considered for cumulative impacts.

**Table 9-7: Existing and Proposed Projects Assessed for Cumulative Impacts**

Development Name	DCC Planning Reference	Distance and Direction from proposed site	Status
Glenard Wind Farm, Co. Donegal	ABP Ref: 312659	~3.6km east of Proposed Eastern Site Boundary	Lodged (04.02.2022)
Sorne Wind Farm Extension	1650335	~4.2km northeast of Proposed Northern Site Boundary	Granted (09.03.2017)
Carrowglen Wind Farm, Quigley's Point, Inishowen, Co. Donegal.	1851230	~9.85km east of Proposed Eastern Site Boundary	Granted (20.04.2021)

The existing energy developments and planning applications listed in Table 9-8 above were obtained from a planning search on the Donegal County Council Planning Website, accessed in August 2024. The search included developments lodged within the last 10 years within 20km of the Site.

### 9.9.1 Glenard Wind Farm

The Glenard Wind Farm is located approximately 3.6km northeast (straight line distance) of the Proposed Development. The development, consisting of 15 no. wind turbines and associated hardstand areas is located on a site in Glenard, Co. Donegal.

It is understood from the submitted planning application documents that the construction period for the Wind Farm will take approximately 18-24 months and generate a maximum of 150 HGVs per day during concrete foundation pours and an average of 15 vehicles per day for the duration of the construction program.

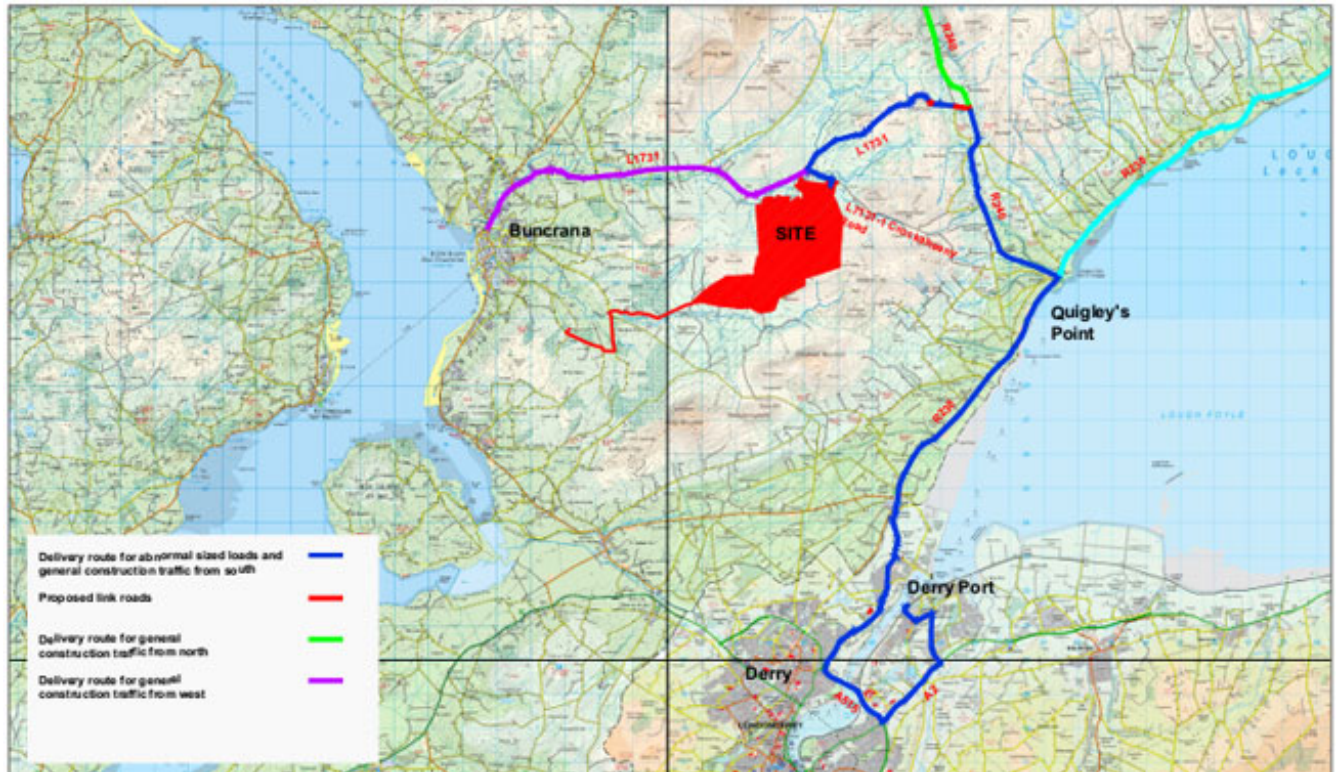


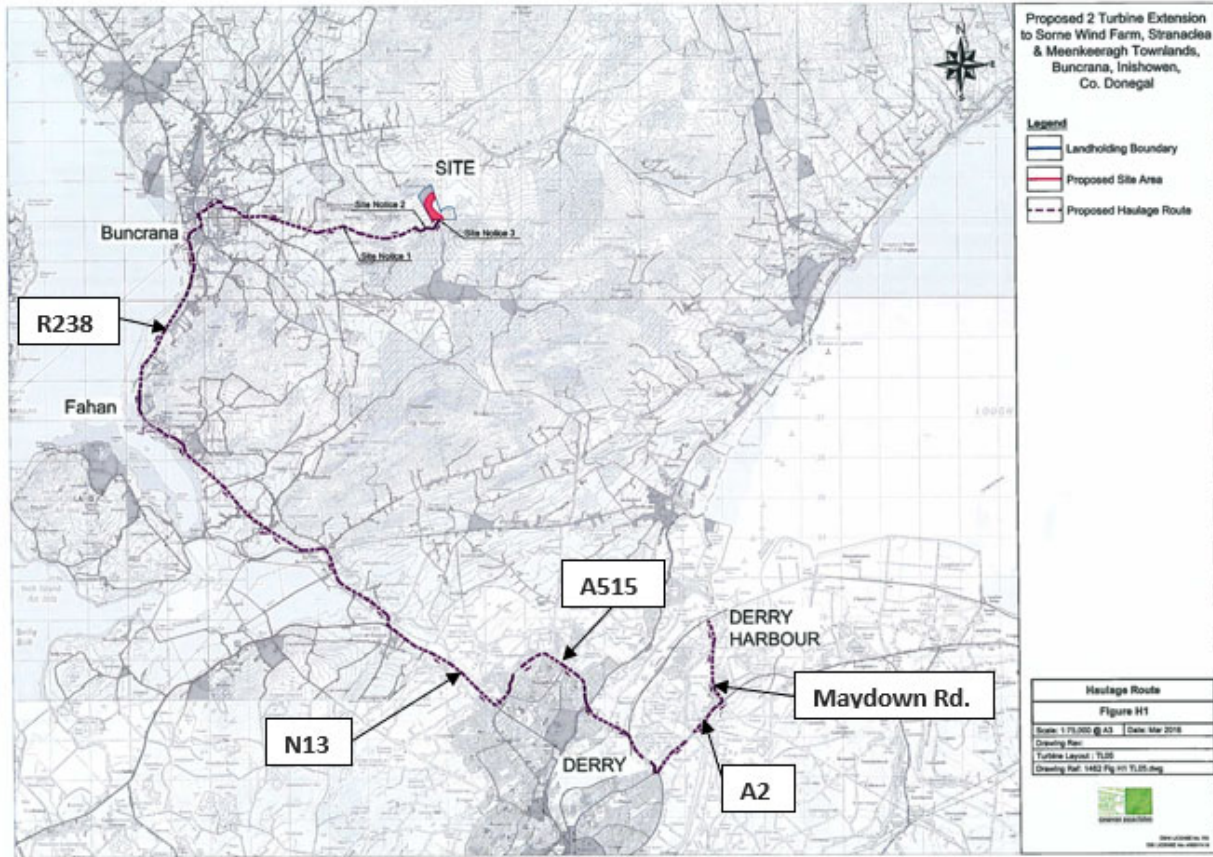
Figure 9-11: Glenard Wind Farm Potential Haul and Delivery Routes

It is considered that the cumulative impact of this development will be negligible during the operation and decommissioning phases of the Ballynahone LDES development.

### 9.9.2 Sorne Wind Farm Extension

The Sorne Wind Farm extension site is located approximately 4.2km northeast of the Proposed Development along the L-71213 local tertiary road. The development will involve the installation of two wind turbines, construction of 3200m<sup>2</sup> of hardstanding and approximately 850m of access tracks. The site will be accessed via the existing Sorne Hill Wind Farm entrance. All the roads along the haul route are of suitable size and strength to accommodate construction vehicles, therefore no off-site road improvements are required.

It is understood from the submitted planning application documents that the construction phase for the Wind Turbines will only take 6 months and generate a total of 824 HGV movements for the duration of the construction programme. It is estimated that this will result in an average daily increase in of 5 HGV/day. During concrete pours for the foundations the Sorne Wind Farm extension will generate an estimated maximum of 38 HGVs per day for 2 no. days to complete the two foundation bases.



**Figure 9-12: Proposed TDR for 2 Turbine Extension to Sorne Wind Farm**

It is considered that no material cumulative impact will be created as a result of this development during the operation or decommissioning phases of the Ballynahone LDES Development.

### 9.9.3 Carrowglen Wind Farm

The Carrowglen Wind Farm development is located 9.85km east of the Proposed Development. The development will involve the installation of six wind turbines, and all associated infrastructure including a 17.6km grid connection route to the Trillick 110kV ESB substation.

The submitted planning application documents state that the construction period for the development will last between 9 and 12 months and generate a total of 8,760 HGV movements for the duration of the construction programme. This will result in approximately 28 HGV movements per day.

It is considered that no material cumulative impact will be created as a result of this development during the operation or decommissioning phases of the Ballynahone LDES development.