Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 1

Chapter 11: Traffic and Transport

Document prepared by SYSTRA Ltd and Envams Ltd for Beinneun 2 Ltd

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11 TRAFFIC AND TRANSPORT

11.1 INTRODUCTION

SYSTRA Ltd was commissioned to assess the potential effects of the proposed Beinneun 2 Wind Farm on the existing transport network and on sensitive receptors as a result of the construction, operation and decommissioning phases, on behalf of Beinneun 2 Ltd.

The key objectives of this chapter are to:

- Describe the assessment methodology and significance criteria used in completing the assessment;
- Describe the current access, traffic and transport conditions;
- Identify and assess the likely environmental effects associated with increased traffic;
- Identify and describe the mitigation measures proposed to address potential significant effects; and
- Assess residual effects post mitigation implementation.

11.1.1 Assessment Scenarios

The Site is solely within the planning authority area of The Highland Council. The wind turbines and the associated infrastructure are collectively known as the Beinneun 2 Wind Farm ("the Development"). The Site and turbine layout are shown on Figure 4.1 and the Development is described in Chapter 4, Development Description. The Development will be operated for up to 40 years and then decommissioned.

The Development will comprise:

- Up to 19 wind turbines, with a maximum tip height of up to 200 m;
- Associated foundations and crane hard standings at each wind turbine location;
- Access tracks linking the turbine locations comprising of 17.5 km of new tracks;
- Battery Energy Storage System (BESS) compound containing approximately 27 no. 40-ft (or equivalent) battery containers;
- One meteorological mast;
- Network of underground cabling;
- New substation compound; and
- Two construction and storage compounds, one of which will be at the BESS/substation compounds.

Areas of search within the Site for borrow pits are proposed, however this assessment has been carried out on a worst-case basis for traffic and transport effects, assuming that all stone requirements for the Development are met from off-site sources and transported to the Site on the road network.

11.1.2 Supporting Information

This chapter is supported by the following figures as contained within Volume 2: Figures:

- Figure 11.1: Study Area;
- Figure 11.2: Traffic Counter Locations; and
- Figure 11.3: Abnormal Loads Route.

The chapter is supported by a Technical Appendix (provided within Volume 3: Technical Appendices) comprising:

- Technical Appendix A11.1: Abnormal Loads Assessment.

11.1.3 Competence

This chapter has been prepared by SYSTRA Ltd (SYSTRA), who have extensive experience in the preparation of Traffic and Transport EIA Report Chapters. SYSTRA's EIA team has produced Traffic and Transport EIA Report Chapters and Abnormal Loads Assessment reports for numerous wind farm developments across Scotland and for several wind farm developments within The Highland Council administrative area.

This Chapter has been reviewed by Alan DeVenny BEng, PhD, CEng, MICE, a Projects Director of SYSTRA. Alan has over 25 years' experience working in traffic and transport consultancy and over 17 years' experience of working on renewable energy projects. Alan has advised on over 200 energy developments delivering EIA chapters, access assessments, Abnormal Load Assessments (ALA), infrastructure design and traffic management plans.

11.1.4 Consultation

The assessment process has been informed by a consultation exercise coordinated through the ECU leading to the issue of a formal Scoping Opinion (February 2024), and by pre-application consultation with The Highland Council. A summary of the key consultation responses is described in Table 11.1.

Table 11.1 Consultation Responses

Consultee	Scoping Comment	Response to Consultee	Section within EIA Report where comment has been addressed
The Highland Council (THC)	A Transport Assessment (TA), Construction Traffic Management Plan (CTMP) and an Abnormal Load Assessment will be required within the EIAR.	This chapter addresses the elements of a TA in terms of baseline conditions, trip generation and potential effects. A CTMP will be prepared before any construction of the Development commences. It is anticipated that a condition will be attached to any consent granted for the provision of the CTMP. An abnormal loads assessment is provided as a Technical Appendix to this EIA Chapter.	Section 11.4 Baseline conditions. Section 11.5 Assessment of Effects. Section 11.7 Mitigation Measures. Technical Appendix A11.1 Abnormal Loads Assessment.
	When establishing a scope for the assessment consideration should be given to the use of the public roads in this area can be influenced significantly by tourist traffic. Transport Planning would expect a Transport Assessment to be submitted with any future planning application and a High National Traffic Forecast be applied. 1.Identify all public roads affected by the development. 2.Establish current condition of the roads. This work which should be undertaken by a consulting engineer acceptable to the Council and will involve an engineering appraisal of the routes. 3.Determine the traffic generation and distribution of the proposals throughout the construction and operation periods to provide accurate data resulting from the proposed development. 4.Current traffic flows including use by public transport services, school buses, refuse vehicles, commercial users, pedestrians, cyclists and equestrians. 5.Impacts of proposed traffic including: • impacts on carriageway, structures, verges etc.; • impacts on other road users; • impacts on adjacent communities;	Noted. Noted, NRTF High Growth has been applied. 1. The Study Area comprises all public roads which may be affected by the development. 2. A roads condition survey would be prepared prior to commencement of construction and would include the requested information. It is anticipated that this would form a planning condition. 3. Traffic generation and distribution information is provided in this chapter.	 Section 11.3.7 Desk Based Research and Data Sources. Section 11.3.6 Study Area. Section 11.5 Assessment of Effects.

Consultee	Scoping Comment	Response to Consultee	Section within EIA Report where comment has been addressed
	• swept path and gradient analysis where it is envisaged that transportation of traffic could be problematic; and • provision of Trial Runs to be carried out in order to prove the route is achievable and/or to establish the extent of works required to facilitate transportation. 6.Cumulative impacts with other developments in progress and committed developments including other Renewable Energy projects, of which there are several which require to be accessed via the A82 and through Fort Augustus. 7.Proposed mitigation measures to address impacts identified in 5 above. Detailed junction design- Details of any new site access should be clearly set out on dimensioned drawings.	4. Baseline traffic flows are provided in this chapter. 5. The impact of proposed traffic on roads within the Study Area are presented in this chapter, The Study Area road links are part of the trunk road network and are constructed to accommodate significant HGV traffic. The abnormal loads (AL) assessment appended to this chapter provides swept paths and outlines any pinch points along the AL delivery route where mitigation would be required. 6. Cumulative effects with other developments are considered in this chapter. 7. Details of proposed mitigation measures are provided in this chapter.	Section 11.4.3 Baseline Traffic Flows. Section 11.5 Assessment of Effects. Technical Appendix A11.1 Abnormal Loads Assessment. Section 11.6.1 Cumulative Effects. Section 11.7 Mitigation Measures.
Transport Scotland (TS)	Transport Scotland would advise that the road links assessed must be clearly defined, with the points beyond which the effects of development traffic would be diluted clearly specified. A plan should be provided to illustrate the study area extents.	Road links which form the Study Area are defined in this chapter.	Section 11.3.6 Study Area. Figure 11.1 Study Area.
	It is acknowledged that an Abnormal Loads Assessment (ALA) for the blade components and for the tower components will be submitted as a technical appendix to the EIA Report chapter. The ALA shall consider the full extent of the proposed abnormal loads route between the ports of entry and the proposed development.	Noted.	Technical Appendix A11.1 Abnormal Loads Assessment.

Consultee	Scoping Comment	Response to Consultee	Section within EIA Report where comment has been addressed
	Where alterations to the trunk road are proposed, a Stage 1 Road Safety Audit, undertaken in accordance with Design Manual for Roads and Bridges GG 119, will be required before Transport Scotland can formally respond on the application.	Noted.	
	Any existing trunk road traffic data that may inform the traffic and transport assessment must be requested via traffic.data@mobiie.co.uk. Transport Scotland would highlight that Department for Transport (DfT) traffic count data is not an appropriate source of information for the assessment of trunk road traffic impacts.	Noted.	
	Accident data must be requested from accidentdatarequests@transport.gov.scot. The extents of the accident assessment study area must be clearly defined in the traffic and transport assessment, with the end points of the study area specified.	Noted.	Section 11.4.4 Road Safety.
	The proposed hours of operation for the development during the construction phase should be specified.	Noted.	Section 11.5.1 Construction Phase.
	A detailed construction programme must be provided, which sets out anticipated construction traffic volumes by month throughout the construction period. The maximum daily and hourly trip generation should be calculated, and details of construction staff trip generation should be provided.	Detailed construction programme is provided in this chapter.	Section 11.5.1 Construction Phase.
	Full details of cumulative impacts should be set out, including a detailed programme indicating the worst-case scenario of combined trip generation and associated percentage impact relative to baseline traffic levels, both in terms of total traffic and the percentage increase in HGVs. Should impacts exceed assessment thresholds, full assessment of effects should be undertaken.	Cumulative effects with other developments are considered in this chapter.	Section 11.6.1 Cumulative Effects.
	The Traffic and Transport assessment should address any mitigation measures that may be employed to address any negative impact of the proposed development and subsequently assess residual impacts.	Details of proposed mitigation measures and residual impacts are provided in this chapter.	Section 11.7 Mitigation Measures and Residual Effects.

11.2 METHODOLOGY AND APROACH

11.2.1 Legislation, Planning Policy and Guidance

This assessment is informed by the following additional policy documents, data sources and guidelines:

- National Planning Framework 4 (NPF4, Scottish Government 2023)[1];
- Guidelines for Traffic Impact Assessment (Chartered Institution of Highways & Transport CIHT 1998);
- Institute of Environmental Management and Assessment (IEMA) publication - "Environmental Assessment of Traffic and Movement", 2023 ("the IEMA Guidelines")[2]; and
- Department for Transport (DfT) publication "Design Manual for Roads and Bridges" (DMRB, DfT 2013)[3].

11.2.2 Assessment Methodology

The following section sets out the methodology used to assess the significance of effects at locations along the proposed routes within the Study Area where total traffic levels or the level of HGV traffic exceed the screening thresholds set out by the IEMA Guidelines.

11.2.2.1 Sensitivity

The sensitivity to change in traffic levels of any given road segment and the receptors located along that road segment are generally assessed by considering the residual capacity of the network under existing conditions.

Where there is a high degree of residual capacity, the network may readily accept and absorb an increase in traffic and therefore, the sensitivity may be said to be low. Conversely, where the existing traffic levels are high compared to the road capacity, there is little spare capacity, and the sensitivity to change in traffic levels will be considered to be high.

The criteria that have been used to make judgements on the sensitivity of the receptor(s) and the magnitude of change are presented in Table 11.2.

Table 11.2 Framework for Determining Sensitivity of Receptors

Sensitivity	Description
High	Receptors of high importance and value on international or national scales. Designated or heritage areas of unique value. Large settlements with a large number of public services and facilities, traffic control measures and regular use by pedestrians and cyclists. Minor and historic roads not generally suitable for frequent HGV traffic.
Medium	Receptors of some regional importance. Medium-sized settlements with some public services facilities and infrastructure and some traffic control measures, including some accommodation for pedestrians and cyclists. Roads generally capable of supporting regular HGV traffic.
Low	Receptors with low regional importance. Typically, small settlements with few facilities and no traffic control measures and with nearby trunk or A-class roads that are able to accommodate HGV traffic.
Negligible	Users not sensitive to transport effects. Includes very small settlements and roads with no significant settlements including new strategic trunk roads or motorways.

[1] Scottish Government (2023). National Policy Framework 4. Available at:
https://www.gov.scot/publications/national-planning-framework-4/ [accessed on 14/07/2025].

[2] IEMA (2023). Environmental Assessment of Traffic and Movement. Available at:
https://www.iema.net/media/5mrmquib/iema-report-environmental-assessment-of-traffic-and-movement-rev07-july-2023.pdf [accessed on 14/07/2023].

[3] DfT (2013). Design Manual for Roads and Bridges. Available at:
https://www.standardsforhighways.co.uk/dmrb [accessed on 14/07/2025].

11.2.2.1 Magnitude

The magnitude of change is a function of the existing traffic volumes, the percentage increase and change due to the Development, changes in the type of traffic and the temporal distribution of traffic (day of week, time of day).

The determination of magnitude has been undertaken by reviewing the Development, establishing the parameters of the receptors that may be affected and quantifying these effects utilising the IEMA Guidelines and professional judgement.

Consideration is given to the composition of the traffic on the road network, under both existing and proposed conditions. For example, Light Goods Vehicles (LGVs) have less effect on traffic and the road system than HGVs. Similarly, Heavy Goods Vehicles (HGVs) can have less effect than abnormal load vehicles, depending on the frequency of the abnormal loads.

The criteria that have been used to make judgement on the magnitude of change on the receptor(s) is presented in Table 11.3.

Table 11.3: Framework for Determining Magnitude of Change

Magnitude	Description
Major	Total loss of, or major/substantial alteration to, key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed. Generally, a rule of >90% (or >70% at sensitive receptors) change in traffic is considered to be a major magnitude.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed. Generally, a rule of 60% - 90% (or 40% - 70% at sensitive receptors) change in traffic is considered to be a moderate magnitude.
Minor	A minor shift away from baseline conditions. Change arising from the loss / alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation. Generally, a rule of 30 – 60% (or 10% - 40% at sensitive receptors) change in traffic is considered to be a minor magnitude.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. Generally, a rule of <30% (or <10% at sensitive receptors) change in traffic is considered to be a negligible magnitude.

11.2.2.2 Significance

As a guide to inform the assessment, but not as a substitute for professional judgement, criteria for determining the significance of traffic related effects are set out in Table 11.4. This is based on combining the magnitude of the effect with the receptor sensitivity.

Table 11.4 Significance Criteria Matrix

Sensitivity of Receptors	Magnitude of Change			
	Major	**Moderate**	**Minor**	**Negligible**
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Negligible
Negligible	Minor	Minor	Negligible	Negligible

Significance is categorised as major, moderate, minor or negligible. The effects recorded in grey highlighted cells are considered to be **Significant**. Effects judged to be of minor or negligible significance are considered **Not Significant**.

11.3 SCOPE OF ASSESSMENT

11.3.1 Abnormal Loads

The most identifiable transport and access characteristic associated with wind farm developments is the need to transport the wind turbine components to the Site. Turbine components will be delivered to an appropriate Port of Entry (PoE) and then transported as abnormal loads, given their size and weight, from the selected PoE via the public road network.

The National Highways website[4] defines an abnormal load as a vehicle that is;

"a weight of more than 44,000 kilograms; an axle load of more than 10,000 kg for a single non-driving axle and 11,500 kilograms for a single driving axle, a width of more than 2.9m; a rigid length of more than 18.65m."

Kyle of Lochalsh has been identified as the most suitable PoE for shipping of the blade components which are the worst case in terms of the length and width combination. The preferred abnormal loads route assessed is as follows:

- From harbour at Kyle of Lochalsh to the A87 via the Kyle Prospect Road;
- Turning left the vehicles would travel west on the A87 for approximately 2.5 km (crossing Skye Bridge) to Kyleakin Roundabout, where the transporters will turn right and continue west for approximately 300 m to a turning area before returning to Kyleakin Roundabout;
- The vehicles will then route generally south-east on the A87 for approximately 60 km, where the A87(T) becomes the A887(T);
- The blade transporters will then continue south over the River Moriston to a new site access junction on the A87(T).

Operational wind farms in the area around the Development (including the Beinneun Wind Farm and Millennium Wind Farm) have used Kyle of Lochalsh port and have brought abnormal loads in via the A87(T) and A887(T).

In addition to the blade components, the tower components would be brought into a port of entry which is likely to be either Kyle of Lochalsh or Corpach, to the south of the Site. If starting from Corpach, the loads would be brought to Site via the A82(T) and A87(T).

An Abnormal Loads Assessment complete with swept path plans for pinch points along both routes to the Site access point has been undertaken and is contained within Technical Appendix A11.1 and is indicated in Figure 11.3.

11.3.2 General HGVs

There is also a need to bring general construction materials (concrete, aggregates, pipes, cabling, etc.) to the Site in standard HGVs. As noted in Section 11.1.1, above, much of this traffic will be avoided if suitable stone is sourced from onsite borrow pits, which is expected, however, as a worst-case approach in this chapter the stone has been assumed to be brought to Site from elsewhere by road. During the construction stage there is a temporary intensification of HGV traffic on the road network. This intensification varies depending on the scale of the development, the construction stage and operational requirements.

All general construction traffic (HGVs, abnormal loads, cars, and LGVs) would access the Site via a new access junction on the A87(T), approximately 4.1 km south of the A87(T)/A887(T) junction at Bunloyne. General construction traffic will mainly utilise the trunk road network with the exception of traffic coming from established quarries etc which may use the local road network before accessing the trunk road network.

[4] National Highways Website – Abnormal Loads and the Esdal System, available at: https://nationalhighways.co.uk/road-safety/abnormal-loads-and-the-esdal-system/ (accessed 16/06/2025)

General construction HGVs, cars, and LGV traffic will use three main potential access routes to the Site. The first route is from the A82(T) south of Invergarry, then northwest via the A87(T) to the Site access taken directly from the A87(T). The second route is from the A82(T) north of Invermoriston, then southwest via the A887(T) and south on the A87(T) to the Site access. The third route is from the west, travelling eastbound along the A87(T), to the Site access.

It is expected that the three construction access routes will be used for the delivery of various materials and machinery to the Site during the construction phase. The specific routes will be determined following confirmation of the Principal Contractor for the Site and will be based on a number of factors including supply and depot locations.

11.3.3 Staff Vehicles

A small amount of traffic will be generated by construction workers commuting to/from the Site during the construction stage in private car or works minibus.

11.3.4 Potential Environmental Effects

The assessment is made with reference to the Development, as described in Chapter 4: "Development Description" of this EIA Report.

This assessment is structured around the consideration of potential environmental effects relating to transport and access, as identified by the IEMA Guidelines and including the following:

- Severance of communities;
- Road vehicle driver and passenger delay;
- Non-motorised user delay and amenity;
- Fear and intimidation on and by road users;
- Road user and pedestrian safety; and
- Hazardous and large loads.

Guidance for the assessment of the environmental effects of traffic is provided in the IEMA document, "Environmental Assessment of Traffic and Movement"[5]. The document is the only guidance document currently available that sets out a methodology for assessing potentially significant environmental effects where a proposed development is likely to give rise to changes in traffic flows.

The guidance suggests that in order to determine the scale and extent of the assessment and the level of effect the Development will have on the surrounding road network, the following two 'rules' should be followed:

- Rule 1 – Include road links where flows are predicted to increase by more than 30% or where the number of HGVs is predicted to increase by more than 30%; and
- Rule 2 – Include any other specifically sensitive area where traffic flows are predicted to increase by 10% or more.

These rules are used to identify the road links within the Study Area where a full assessment of environmental effects associated with an intensification in road traffic may be required.

Paragraph 1.30 of the IEMA Guidelines identifies groups, locations and special interests which may be sensitive to changes in traffic conditions as follows:

- People at home;
- People at work;
- Sensitive and/or vulnerable groups (including young age; older age; income; health status; social disadvantage; and access and geographic factors);
- Locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools);
- Retail areas;
- Recreational areas;

[5]Available at: https://www.iema.net/media/5mrmquib/iema-report-environmental-assessment-of-traffic-and-movement-rev07-july-2023.pdf (accessed 27/06/25)

- Tourist attractions;
- Collision clusters and routes with road safety concerns; and
- Junctions and highway links at (or over) capacity.

11.3.5 Potential Effects Scoped Out

On the basis of a detailed desktop study, the professional judgement of the Environmental Impact Assessment (EIA) team and experience from other relevant projects and policy guidance, the following characteristics have been scoped out of this Traffic and Transport Chapter.

11.3.5.1 Operational Stage

Once the Development is operational, the amount of traffic generated would be minimal (typically approximately 1 vehicle per week on average), relating to maintenance only. Operational site inspections will be undertaken on a regular basis and the servicing of turbines will be undertaken as per the turbine manufacturer requirements, usually once per year, but with monthly visits by the manufacturer's servicing team.

Ongoing track maintenance will be undertaken to ensure safe access is maintained to all parts of the Development all year round

Therefore, the effect of vehicle movements during the operational phase will be negligible. In respect of transport, the operational phase of the Development is therefore not assessed further.

11.3.5.2 Decommissioning Stage

Consent for the Development is sought for a 40-year period, after which time the Development will be decommissioned unless a further application is submitted for an operational extension. Traffic associated with the decommissioning stage is anticipated to be significantly less than that generated during construction as access tracks, underground cabling, and lower depths of turbine bases would be left in-situ, therefore, the transport and access effects of decommissioning are not assessed explicitly, however, as a worst case, effects during decommissioning are assumed to be the same as those during construction.

11.3.5.3 Peak Hour Congestion

The effect of construction-related vehicles on the road network is considered unlikely to be significant in terms of peak hour congestion as deliveries will be spread out across the day. Therefore, detailed junction capacity assessments have not been undertaken.

11.3.5.4 Access Tracks & Beyond the Study Area

The effect of increased traffic associated with the Development on existing access tracks is not anticipated to have a discernible environmental effect and is, therefore not appraised in this report. The effects of the Development on the public road network are included.

It is anticipated that the volume of traffic associated with the construction of the Development will not have a discernible effect on roads and sensitive receptors outwith the Study Area (see below for definition of the Study Area) as the effects of traffic are diluted with increasing distance from the point of origin.

11.3.6 Study Area

The Study Area has been based on the location of the Development access point and the public road routes that will be used to reach the access point. A comprehensive desk-based study has been undertaken to understand the surrounding road network.

The Study Area (as shown in Figure 11.1) is therefore as follows:

- A87(T) west of Bunloyne to 500 m beyond the Kyleakin Roundabout;
- A87(T) south of Bunloyne to its junction with the A82(T);
- A82(T) between Spean Bridge and Drumnadrochit; and
- A887(T) between the A87(T) and A82(T).

11.3.7 Desk Based Research and Data Sources

Traffic count information has been obtained to represent the baseline traffic flows for the road links within the Study Area.

Traffic count information along the A87(T), A887(T), and A82(T) has been obtained to represent the baseline traffic flows for the road links within the Study Area from 24-hour ATC surveys obtained from the Transport Scotland National Traffic Data System (NTDS) survey database for 2024, with the exception of counter 4 which utilises measured data from 2018.

The traffic flows have been factored up to represent the anticipated year of construction (2030) flows using the National Road Traffic Forecast (NRTF) “high growth” factors to represent the current and opening future year baseline flows respectively.

11.4 BASELINE CONDITIONS

11.4.1 Study Area Road Network

The following paragraphs detail the baseline conditions of the road links identified as being within the Study Area.

11.4.1.1 A887(T)

The A887(T) is a short 24 km section of the trunk road network connecting the A87(T) to the A82(T) for traffic going to and from the north (Inverness).

Access junctions for Millennium Wind Farm and Bhlaraidh Wind are located on the A887(T). There are no settlements on this road but there are several private accesses for isolated residential properties, a handful of businesses, and access to Dundreggan Dam. The settlement of Invermoriston lies at the junction of the A887(T) and A82(T). Invermoriston is a small village located on the Great Glen Way and as such is popular with walkers and cyclists. The village has a hotel, shops and a café.

The road is a single carriageway which is subject to the national speed limit. The road is generally rural in nature with grass verges either side of the road and a width of approximately 7.3 m.

Construction traffic travelling south from the A82(T) in the north will use the A887(T) to route south west to the A87(T) and the site access.

11.4.1.2 A87(T)

The A87(T) routes from Invergarry in the south-east, over the Skye Bridge to Skye, terminating at Uig. There are no major settlements between Invergarry and Shiel Bridge, a distance of 55 km which includes the access to the Development Site.

The road is a single carriageway which is subject to the national speed limit except for sections through villages and settlements where the speed limit reduces to 30 or 40 mph. The road is generally rural in nature with grass verges either side of the road and a width of approximately 7.3 m, except where it passes through settlements. As the only route to the Skye the road is also used by cyclists.

The village of Invergarry is located along the A87(T) and features a primary school, hotel, petrol station, bus stops and public toilets.

A new access junction would be formed on the A87(T) approximately 4.1km south of the A87(T) junction with the A887(T). All construction traffic would access the Development Site from this junction.

Abnormal loads transporting turbine blades will use the A87(T) between Kyleakin and the new site access junction. It is unlikely that other major origins of materials would come from Kyle of Lochalsh or from the west.

11.4.1.1 A82(T)

The A82(T) routes from just west of Glasgow to Fort William, then north along the Great Glen to Inverness. Invergarry and Invermoriston lie at the two junctions of the A82(T) where construction traffic would turn west to travel to the Development Site.

For the majority of its length, the road is a single carriageway which is subject to the national speed limit except for sections through villages and settlements where the speed limit

reduces to 30 or 40 mph. The road is generally rural in nature with grass verges either side of the road and a width of approximately 7.3 m, except where it passes through settlements.

A high percentage of general construction traffic will use the A82(T) with potential major origins of materials either to the north of the A887(T) at Invermoriston or south of the A87(T) at Invergarry. It is unlikely any construction traffic would route between Invermoriston and Invergarry.

11.4.2 Sensitive Receptors

All road links within the Study Area are subject to IEMA Rule 1, whereby a 30% increase in HGV levels or total traffic triggers the requirement for a detailed assessment of the potential environmental effects.

In reference to the indicators outlined in the IEMA Guidelines, the settlements of Invergarry and Invermoriston are considered as sensitive receptors and are also subject to IEMA Rule 2; whereby a 10% increase in total or HGV traffic will trigger the requirement for a full assessment of environmental effects associated with increased traffic.

11.4.3 Baseline Traffic Flows

Table 11.5 indicates the two-way Average Annual Daily Traffic Flow (AADF) in the Study Area and the percentage of traffic which is classified as HGVs. The source of the data is also stated. It is noted that this area can be affected by high seasonal variations due to tourist traffic.

Traffic flows have been factored up where necessary to represent the current baseline year (2025) and the anticipated year of construction (2030) using the National Road Traffic Forecast (NRTF) 'high growth' factors.

No percentage HGV was available for Counter 4, A87(T) Invergarry to Bunloyne. The percentage HGV calculated for use in the Tomchrasky chapter (based on an average of the last five years of HGV proportions on the A87(T) West and A82(T) South) has been applied.

Table 11.5 Study Area Baseline Traffic Flows

Counter Location	Source	2025 AADF	2025 HGV	2030 AADF	2030 HGV	Percentage HGVs
1. A887(T) ATC01166	NTDS 2022	888	256	911	262	28.8%
2. A82(T) - Spean Bridge to Invergarry ATC01036	NTDS 2024	4,930	991	5054	1016	20.1%
3. A82(T) – Invermoriston to Drumnadrochit JTC00145	NTDS 2024	3,909	840	4007	862	21.5%
4. A87(T) Invergarry to Bunloyne ATC01053	NTDS 2018	1,765	342	1809	351	19.4%
5. A87(T) - Dornie to Auchtertyre ATCNW003	NTDS 2024	4,459	825	4571	846	18.5%
6. A87(T) - Skye Bridge JCC00147	NTDS 2024	5,356	948	5491	972	17.7%

11.4.4 Road Safety

Accident data has been obtained from Transport Scotland for the trunk roads within the Study Area, the A887(T), A87(T) and A82(T) for the five year period November 2019 to November 2024.

The results of this investigation are indicated by Table 11.6 with additional commentary provided on serious and fatal accidents where applicable.

Table 11.6: Accident Statistics

Counter Location	Slight	Serious	Fatal	Comments on Fatal Accidents
A887(T)	2	2	1	One fatal accident approximately 1.2 km west of Invermoriston in 2022 involving one vehicle and one casualty.
A87(T) West between A887(T) and Kyleakin	12	10	3	Fatal accident in 2023 involving a motorcycle and other vehicle and one casualty, approximately 1.5 km south of Shiel Bridge. Fatal accident in 2023 near Balmacara involving a car and a goods vehicle, and four casualties. Fatal accident in 2021 involving two cars and 5 casualties just east of Kyle of Lochalsh.
A87(T) South – between A887(T) and A82(T)	6	10	0	n/a
A82(T) North – between Invermoriston and Drumnadrochit	6	3	2	Fatal accident in 2022 involving a car and a motorcycle with one casualty just east of Invermoriston. Fatal accident in 2020 involving 2 vehicles and 3 casualties just outside Drumnadrochit.
A82(T) South – between Invergarry and Spean Bridge	17	8	2	Fatal accident in 2024 involving one vehicle and two casualties at the A82(T) / A87(T) junction. Fatal accident in 2020 involving two vehicles and one casualty just south of Invergloy.
A82(T) Mid – between Invermoriston and Invergarry	8	6	0	n/a

Table 11.6 indicates there was one fatal accident plus two slight and two serious on the A887(T) in the previous five year period.

On the A87(T) within the Study Area there were a total of 12 slight accidents, 20 serious and three fatal.

On the A82(T) within the Study Area, a total of 31 slight, 17 serious and four fatal accidents were recorded in the five year period.

The Study Area road links are all designated trunk roads serving the north east of Scotland. The accidents recorded are spread out across the road network and no accident ‘hotspots’ are identifiable. There are no identified locations where it would be considered that special consideration would be required in relation to this application.

11.5 ASSESSMENT OF EFFECTS

11.5.1 Construction Phase

The construction traffic associated with the Development would comprise construction workers, HGVs / LGVs carrying construction materials and plant and abnormal loads carrying the main wind turbine components.

Construction of the Development is estimated to take 18 months. General working hours are expected to be between 07:00 and 19:00 on weekdays and 07:00 and 13:00 on Saturdays which means that staff would predominantly arrive and depart outside the peak hours associated with the surrounding road network.

Turbine delivery, erection and commissioning activities may also take place outwith these hours depending on weather conditions.

Estimates of traffic generation associated with the construction phase of the Development have been calculated from first principles and consider the following activities:

- Site mobilisation, establishment of the construction compound area and pegging out of new tracks;
- Upgrade of existing access tracks and construction of new access tracks, including watercourse crossing points;
- Construction of the meteorological mast;
- Installation of temporary and permanent drainage;
- Construction of turbine foundations;
- Construction of crane hardstanding areas;
- Remedial works to the public highway to accommodate turbine deliveries;
- Construction of the substation building;
- Excavation of shallow cable trenches approximately 1 m off the edge of the track and cable laying adjacent to the access tracks and crane hardstandings for drainage;
- Delivery, erection and commissioning of wind turbines;
- Connection of onsite electrical distribution cables;
- Construction of the substation compound;
- Construction of the BESS compound;
- Commissioning of the site equipment; and
- Site restoration, including any proposed tree planting.

The potential number of traffic movements that would result from construction of the Development are set out in Table 11.7 whilst Table 11.8 indicates the distribution of traffic movements across the construction programme. This assumes that 100% of stone would be imported to Site. Areas of search for borrow pits are shown on Figure 4.1 but, as a worst-case scenario in this assessment, all stone has been assumed to be imported to Site from elsewhere. It has been assumed that concrete would be imported rather than any form of on-site batching.

Estimated movements include HGV and abnormal loads. The movements are noted in line with general assumptions around the composition and dimensions of associated infrastructure and an approximate 18-month construction programme which would be the worst case in terms of traffic impact.

Table 11.7 Construction HGV Movements

Construction Task	Vehicle Type	Approximate no. of Loads
Site establishment	Low Loader and Dump Truck	120
Plant, fuel & general site deliveries	Low Loader, Dump Truck, Fuel & Misc wagons	600
Misc material deliveries	Various	190
Imported stone*	Stone wagons	19,750
Reinforcement	Low Loader	115
Foundations	Concrete Wagon	4,770
Cable deliveries and sand	Various	1,037
Construction of Sub-station	Various	50
Delivery of BESS components	Various	100
Cranes and related lifting equipment	Crane vehicles plus escorts	20
Delivery of turbine components	Abnormal Loads	247
Site reinstatement and restoration	Various	120
Total (one-way trips)		**27,119**
Total (two-way trips)		**54,238**

*Assuming that at a worst case, 100% of stone will be imported to Site

Table 11.8: Construction HGV Movements per Month

Task / Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
Site establishment	40	40	40																120
Plant, fuel & general deliveries	36	36	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	600
Misc material deliveries	10	10	10	10	15	15	15	15	15	15	15	15	5	5	5	5	5	5	190
Imported stone*	3,400	3,400	3,400	3,400	3,400	2,750													19,750
Reinforcement						20	20	20	20	20	15								115
Foundations						800	800	800	800	800	770								4,770
Cable deliveries and sand							209	207	207	207	207								1,037
Construction of Sub-station									20	15	15								50
Delivery of BESS components													25	25	25	25			100
Cranes and related lifting equipment												10					10		20
Abnormal loads deliveries												50	50	50	50	47			247
Site reinstatement and restoration																40	40	40	120
Total (one-way trips)	**3,486**	**3,486**	**3,483**	**3,443**	**3,448**	**3,618**	**1,077**	**1,075**	**1,095**	**1,090**	**1,055**	**108**	**113**	**113**	**113**	**150**	**88**	**78**	**27,119**
Total (two-way trips)	**6,972**	**6,972**	**6,966**	**6,886**	**6,896**	**7,236**	**2,154**	**2,150**	**2,190**	**2,180**	**2,110**	**216**	**226**	**226**	**226**	**300**	**176**	**156**	**54,238**

*Assuming 100% of stone imported

It should be noted that over 70% of predicted HGV movements are associated with the import of stone to the Site, which would be avoided if the on site borrow pits are used, as is intended.

As Table 11.8 indicates, the predicted peak of HGV movements to and from the Development Site will be during month six of the delivery programme, with a total of 7,236 two-way HGV movements.

If an average four-week month is considered, this will equate to 1,809 two-way weekly HGV movements. If a 5.5 working day week is considered, this will equate to a total of 329 two-way daily HGV movements during month six of the construction programme.

With regards to staff movements, it is estimated that there will be approximately 30 staff members on Site on an average day. This will result in an average daily movement of 60 cars/LGVs (30 trips in, and 30 trips out daily) in addition to the daily HGV movements indicated in Table 11.8.

Table 11.9 indicates the daily percentage increases on the road links within the Study Area for the busiest month of the construction period (month six) in the assumed year of construction (2030).

At this stage, the source of the construction materials is unknown, although it is anticipated that the majority of construction vehicles would travel via the A82(T) (south from Inverness or north from Fort William), with significantly less construction traffic (mainly abnormal loads vehicles) travelling to Site from the west (Skye/Kyle of Lochalsh) via the A87(T).

Based on these assumptions, to assess a robust scenario, 100% of construction traffic and staff trips has been applied to the A82(T) from the north and south, and the A887, and 20% has been applied to the A87(T) from the west.

It is important to note that this represents a worst-case scenario for each road link in isolation and this impact would not occur in reality as the total traffic distribution between all links could not exceed 100%.

Table 11.9: Construction Traffic Effect on Routes within the Study Area

Scenario	1.A887 (T)	2.A82(T) Spean Bridge	3.A82(T) Drumnadrochit	4.A87(T) Bunloyne	5.A87(T) Auchtertyre	6.A87(T) Skye Bridge
2030 AADF	911	5,054	4,007	1,809	4,571	5,491
2030 HGV Count	262	1,016	862	351	846	972
2030 HGV %	28.8%	20.1%	21.5%	19.4%	18.5%	17.7%
Month 6 worst-case dev daily total traffic (HGVs + staff vehicle movements)	389	389	389	389	78	78
Month 6 worst-case dev daily HGV traffic	329	329	329	329	66	66
% Increase in Total Traffic	43%	8%	10%	21%	2%	1%
% Increase in HGV Traffic	125%	32%	38%	94%	8%	7%

As stated previously, IEMA Guidelines Rules 1 and 2 are used as thresholds to determine the requirement for a full assessment of effects in relation to an increase in traffic flows associated with the construction of the Development.

Table 11.9 indicates that for Count Locations 1 to 4, the temporary increase in HGV traffic levels associated with the Development would be over 10% therefore a full assessment of

effects is required for these road links in accordance with the IEMA Guidelines, considering these four links as 'sensitive' due to the settlements of Invergarry and Invermoriston.

Table 11.9 indicates that for Count Locations 5 and 6, the temporary increase in total and HGV levels associated with construction of the Development would be less than 10% which is below the stricter 'Rule 2' threshold for roads considered as sensitive receptors, therefore a full assessment of effects is not required for these road links in accordance with the IEMA Guidelines.

11.5.2 Detailed Assessment of A887(T), A82(T) and A87(T)

11.5.2.1 Severance of Communities

The IEMA Guidelines advise that "*Severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure*".

The potential for traffic associated with a development to cause severance is assessed on a case by case basis using professional judgement where non-negligible traffic increases are predicted on roads through residential settlements.

Increased severance can result in the isolation of areas of a settlement or individual properties. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure. Severance effects could equally be applied to residents, motorists or pedestrians. Table 11.10 provides an assessment of the effect of construction traffic on severance of communities for each road link.

Table 11.10: Assessment of Severance of Communities

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1.A887(T)	Major	Medium	There are a few isolated properties along the A887(T), although it is acknowledged that the section of A887(T) within Invermoriston provides access to a few residential cul-de-sacs and public houses/shops which are likely to generate pedestrian activity. Residents and pedestrians in the village may be sensitive to an increased severance effect. The high percentage increase in construction HGV traffic on this link is mainly due to the low baseline levels of HGV traffic using this road.	Major – **Significant**
2.A82(T) (south) **3.A82(T) (north)**	Minor	Medium	The A82(T) is a trunk road suitable for accommodating HGV traffic. The total traffic increase during the peak of construction is anticipated to be 10% or less which is unlikely to cause a significant severance effect.	Moderate/Minor – **Not Significant**
4.A87(T) Invergarry to Bunloyne	Major	Medium	Residents and pedestrians in the village of Invergarry may be susceptible to an increased severance effect, particularly in the vicinity of the primary school which is likely to generate pedestrian activity involving crossing the road, although it is noted that the A87(T) has a relatively low baseline level of traffic at 1,809 total vehicles per day, which is anticipated to reach a maximum of 2198 vehicles per day during the peak of the construction phase.	Major – **Significant**

11.5.2.2 Road Vehicle Driver and Passenger Delay

Some driver delay may be experienced when construction traffic is accessing the Site. The IEMA Guidelines advise that, *"delays are only likely to be significant when the traffic on the network surrounding the Site is already at, or close to, the capacity of the system"*.

Traffic delay to non-Development traffic may occur at several points on the network surrounding the Site including:

- At the Site entrance where there will be additional turning movements;
- At intersections along the local road network which might be affected by increased traffic; and
- At side roads where the ability to find gaps in traffic may be reduced, thereby lengthening delays.

Table 11.11 provides an assessment of the effect of construction traffic on road vehicle driver and passenger delay for each road link.

Table 11.11: Assessment of Road Vehicle Driver and Passenger Delay

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1.A887(T)	Major	Low	The A887(T) is a trunk road with relatively low baseline traffic levels and therefore considerable residual capacity to accommodate additional traffic without causing delay to existing road users and without becoming close to capacity.	Moderate – **Significant**
2.A82(T) (south) **3.A82(T) (north)**	Minor	Low	As a trunk road, the A82(T) is capable of accommodating the anticipated additional HGV traffic without nearing capacity and without significant impact on existing road vehicle drivers. The minor volume of additional daily traffic is unlikely to result in increased general delay to existing road vehicle users.	Minor – **Not Significant**
4.A87(T) Invergarry to Bunloyne	Major	Low	The site access point would be located on this section of the A87(T) therefore delay may be experienced by existing road users in the vicinity of the access junction due to turning construction vehicles accessing the Site. An increased road vehicle driver delay effect would be most likely during the summer season when tourist traffic is at a peak. Although the increase in HGV traffic represents a major (94%) increase, the increase in total traffic on this link is only 21% during the peak of the construction period.	Moderate – **Significant**

11.5.2.1 Non-Motorised User Delay and Amenity

The IEMA Guidelines advise that, "*The assessment of pedestrian delay serves as a proxy for the delay that other modes of non-motorised users may experience when crossing roads*".

Traffic volumes, traffic composition, traffic speed, the existence of pedestrian footways and the existence of pedestrian crossings all contribute to the level of general pleasantness experienced by pedestrians and other vulnerable road users. Table 11.12 provides an assessment of the effect of construction traffic on non-motorised user delay and amenity for each road link.

Table 11.12: Assessment of Non-Motorised User Delay and Amenity

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1.A887(T)	Major	Medium	For the majority of the A887(T) between Bunloyne and Invermoriston there are no footways or settlements, and it is not expected that there would be any notable pedestrian activity in the area outwith the village of Invermoriston. Delay and loss of amenity could be experienced by cyclists on the route, particularly due to the increased proportion of HGV traffic during the construction phase.	Major – **Significant**
2.A82(T) (south) **3.A82(T) (north)**	Minor	Low	The A82(T) is a trunk road suitable for accommodating HGV traffic. Pedestrians within Invermoriston, Invergarry and Spean Bridge are unlikely to experience an increased delay effect as the increase in total traffic is not expected to exceed 10%.	Minor – **Not Significant**
4.A87(T) Invergarry to Bunloyne	Major	Medium	Pedestrian activity on this section of the A87(T) would mainly be limited to the village of Invergarry, Footways of a good standard are provided on both sides of the A87(T) throughout Invergarry therefore loss of amenity is unlikely however delay may be experienced by pedestrians crossing the road for example in the vicinity of the primary school. Non-motorised user delay on this route could also apply to cyclists using the route.	Major – **Significant**

11.5.2.2 Fear and Intimidation on and by Road Users

IEMA guidelines state that "*a further environmental impact that affects people is the fear and intimidation created by all moving objects*", with the extent of fear and intimidation dependent upon:

- The total volume of traffic;
- The heavy vehicle composition;
- The speed these vehicles are passing; and
- The proximity of traffic to people.

The 2023 IEMA guidelines provide a weighting system to help quantify the likelihood and level of pedestrian fear and intimidation, based on average traffic flows and vehicle speeds.

Table 11.13 presents the IEMA guidelines thresholds for defining the baseline degree of hazard to non-motorised users.

Table 11.13: Fear and Intimidation Degree of Hazard

Average Vehicles per Hour (a)	Total 18-hour HGV Flows (b)	Average Speed (mph) (c)	Degree of Hazard
>1,800	>3,000	>40	30
1,200 to 1,800	2,000 to 3,000	30 to 40	20
600 to 1,200	1,000 to 2,000	20 to 30	10
<600	<1,000	<20	0

IEMA guidelines state that the score from each of the three individual elements is combined to give an overall 'level' of fear and intimidation as defined in Table 11.14.

Table 11.14: Levels of Fear and Intimidation

Level of Fear and Intimidation	Total Hazard Score (a) + (b) + (c)
Extreme	>70
Great	41 to 70
Moderate	21 to 40
Small	0 to 20

The magnitude of impact is then approximated with references to the changes of level of fear and intimidation between the baseline conditions and the increase associated with the construction traffic, as described in Table 11.15.

Table 11.15: Levels of Fear and Intimidation

Magnitude of Impact	Change in Step/Traffic Flows (AADT) from Baseline Conditions
High	Two step changes in level
Medium	One step change in level, with: >400 vehicles increase in average 18hr all vehicle two-way flow; and/or >500 heavy vehicles increase in total 18hr heavy vehicle flow.
Low	One step change in level, with: <400 vehicles increase in average 18hr all vehicle two-way flow; and/or <500 heavy vehicles increase in total 18hr heavy vehicle flow
Negligible	No step changes

For all three assessed road links, the baseline level of fear and intimidation is calculated as 'moderate' and the magnitude of impact of Development traffic is considered as 'negligible'. Therefore, the effect of fear and intimidation on and by road users is considered **Not Significant**.

11.5.2.3 Road User and Pedestrian Safety

Accident data for the road links within the Study Area has been summarised in Table 11.6. The data indicates that a total of 51 slight, 39 serious and seven fatal accidents have been recorded on the road links within the Study Area, based on the most recent five year period of available data for each road link.

An approximate calculation has been undertaken to quantify the level of accident risk that could be expected due to an increase in traffic associated with the Development. The likelihood of an accident occurring is commonly expressed in accidents per million vehicle-km. Accidents that are appraised in relation to transport are predominantly those in which personal injury is sustained by those involved (personal injury accidents (PIAs).

For the purpose of this calculation, it has been assumed that the length of road is 20.6 km for the A87(T)(Bunloyne to Invergarry), 64 km for the A82(T) and 24.2 km for the A887(T) making a total of approximately 108.8 km, which can be generally classified as 'rural typical single carriageway' in accordance with the criteria set out within DMRB.

Accident rates from the DMRB for this standard of road are:

- Rural typical single carriageway: 0.381 Personal Injury Accidents (PIA) per million vehicle-km.

Assuming a two-way trip on the 108.8 km route for each of the 27,119 vehicles during the construction period (as set out in Table 11.8), a total distance of 5,901,094 km is obtained. It should be noted that construction traffic associated with the Development would only travel on a proportion of the network for any one trip so the actual distance travelled would be much less. For assessment purposes, we have assumed that each trip would cover 40% of the Study Area network distance which equates to a distance of 43.5 km.

Based on the rate above; this suggests 0.8993 accidents during the construction period associated with the additional traffic.

It is considered that the magnitude of this effect is negligible but receptor sensitivity to this effect is always considered as high. When combined, the effect can be classified as minor and **Not Significant**.

11.5.2.4 Hazardous and Large Loads

There are no hazardous loads associated with the Development.

IEMA guidelines state that, "*The movement of large (abnormal) loads is regulated by National Highways and will be subject to separate agreement with the relevant highway authorities and police*". The number and schedule of abnormal load trips associated with the Development is detailed in Table 11.8 and equates to approximately 13 abnormal loads per week over months 12 to 16 of the construction programme. This impact is considered to be negligible and **Not Significant**.

11.5.3 Use of On-Site Borrow Pits

The assessment above has assumed, as a worst case scenario, that 100% of stone would be imported to Site however it is likely that a significant quantity of stone may be sourced from on-site borrow pits. Table 11.16 provides an indication of the likely traffic impact on each road link if 100%, 50% or 0% of stone was imported.

Table 11.16: Use of On-Site Borrow Pits- Traffic Impact

Scenario	% Increase in Traffic	1.A887 (T)	2.A82(T) Spean Bridge	3.A82(T) Drumna-drochit	4.A87(T) Bunloyne	5.A87(T) Auchter-tyre	6.A87(T) Skye Bridge
100% Stone Imported	Total	43%	8%	10%	21%	2%	1%
	HGV	125%	32%	38%	94%	8%	7%
50% Stone Imported	Total	29%	5%	7%	15%	1%	1%
	HGV	78%	20%	24%	58%	5%	4%
0% Stone Imported	Total	15%	3%	3%	8%	1%	1%
	HGV	30%	8%	9%	22%	2%	2%

If 100% of stone was imported to Site this would require 19,750 HGV deliveries over the construction phase. If reduced to 50% this would equate to 9,875 deliveries.

Table 11.16 indicates that if 50% of stone requirements were sourced from on-site borrow pits, the percentage increase in HGV traffic on the A87(T) (from which the Site would be accessed) would reduce from 94% to 58%. If all stone was sourced on-site this would reduce further to 22%.

11.6 CUMULATIVE EFFECTS

Cumulative effects have been considered for other wind farm developments in the vicinity of the Development. These developments either have planning consent but are yet to be constructed / or are awaiting a decision and could utilise a common access route for general construction traffic. The potential for cumulative effects has been assessed by reviewing data available from the Traffic and Transport chapters within the respective EIA Reports for the relevant developments.

Whilst the wind farm developments identified may share a similar route for abnormal load vehicles, abnormal load deliveries would not be permitted to occur at the same time so there is no scope for a cumulative effect of abnormal load movements.

Consented Bhlaraidh Extension

An application for a wind farm of up to 15 wind turbines gained consent in August 2022. Information on the proposals has been made publicly available on The Highland Council planning portal. Access would be via the existing access point to the Bhlaraidh Wind Farm, approximately 2.8 km west of Invermoriston on the A887(T).

The worst-case traffic generating month for Bhlaraidh Extension will occur during months seven-to-nine of the 18-month construction programme. This would equate to approximately 34 two-way HGV trips per day and 46 car and LGV trips per day. The EIA indicates that a robust distribution of 50% of HGVs along the A82(T) from the south and 50% along the A82(T) from the north of the Site had been adopted through the assessment.

This would equate to 17 daily two way HGV trips on the A887(T) and A82(T) north and south, which would not result in any significant cumulative effect with the Development as the A887(T) and A82(T) are good standard trunk roads with low baseline levels of traffic and therefore have considerable residual capacity to accommodate additional traffic without impact on existing road users.

A scoping report was submitted in May 2025 seeking a variation to increase the tip height of the turbines from 180 m to 230 m.

Consented Bunloinn Wind Farm

Permission was granted in April 2024 for a wind farm of up to 10 wind turbines approximately 14.5 km north-west of Invergarry and 13 km south-west of the hamlet of Dalchreichart.

The Traffic and Transport EIA Report chapter states that the worst-case traffic generating month will occur during month eight of the construction programme, with 85 two-way HGV and 39 two-way car/lights movements per day. The chapter indicates that a robust distribution of 50% of HGVs will bring material from a quarry at Fort William, all timber will travel south via the A87(T) and A82(T) to Corpach Port. Staff will route 10% from the A87(T) west, 10% from A887(T), 20% from Fort Augustus and 60% from the south via A87(T) and A82(T).

The anticipated construction year for the development is 2026 and therefore no overlap in peak traffic generating months is expected, and there would be **no effect**.

Consented – Cloiche Wind Farm

The Cloiche development initially proposed a total of 36 turbines with a maximum tip height of 149.9 metres but was amended to 29 turbines in July 2022 with same tip height of 149.9 metres. The wind farm would be located adjacent to the operational Stronelairg Wind Farm and Glendoe Hydroelectric Scheme, approximately 11 km to the south east of Fort Augustus and 14 km west of Newtonmore. The development gained consent in November 2023 and the anticipated peak year of construction provided in the EIA Report chapter was 2024 (with construction commencing in 2023) however at this time construction has not yet begun.

Access to the development would be taken from the B862 to the east of the A82 and information in the Traffic and Transport EIA Report chapter indicates that the development would share proposed Development construction routes on the A82(T) and A87(T) however the Cloiche development would not utilise the A887(T).

Information in the Traffic and Transport EIA Report chapter indicates that peak traffic generating months are expected to be months 16 to 27 of the 36 month construction programme during which time there are expected to be an average of 18 daily HGV movements and a further 87 car/ light vehicle daily movements. The resultant daily impact on routes shared with the Development is stated as 1.65% increase in HGV traffic on the A82 south of Invergarry and 1.55% increase in HGV traffic on the A87 south of the A887 which are considered negligible increases and therefore cumulative effects would be **Not Significant**.

Consented - Tomchrasky Wind Farm

Consent was granted in May 2025 for a wind farm of 14 turbines to the north of the Development (on the northern side of the A887(T).

The Traffic and Transport EIA Report chapter states that the worst-case traffic generating month will occur during month six of the construction programme, with 86 two-way HGV and 60 two-way car/lights movements per day. Access to the development would be taken from

the A887(T) therefore the development shares potential construction traffic routes with the Development, however the proposed year of construction is 2026 therefore it is highly unlikely that peak traffic generating months would coincide with the Development, and there would be **no cumulative effect**.

Consented – Chrathaich Wind Farm

Consent was granted in May 2025 for a wind farm of 14 turbines situated approximately 7 km southeast of Cannich, 7 km northwest of Invermoriston, 12 km north of Fort Augustus, and 13 km southwest of Drumnadrochit.

Information from the Traffic and Transport EIA Report chapter indicates that the primary route for construction traffic would be from Inverness via the A82 then west on the A831 from Drumnadrochit to the Site access, therefore the only potential overlap would be the A82(T) north of Drumnadrochit which falls outwith the Development Study Area. As such it is assumed there will be **no cumulative effect** with Chrathiach Wind Farm.

Application – Loch Liath Wind Farm

The application for Loch Liath Wind Farm was submitted in April 2023. Loch Liath Wind Farm is a 13-turbine wind farm development, to the west of the Great Glen and Loch Ness, and with the closest turbine being located approximately 13 kilometres south-west of Drumnadrochit.

Access for the development would be taken from the existing Bhlaraidh Wind Farm access on the A887(T) near Invermoriston and therefore the development shares all potential construction traffic routes with the Development.

The peak traffic generating month is expected to be month 8 with 78 daily HGV trips on the A887(T) east of the development, and 77 daily HGV trips travelling from Inverness on the A82(T). No significant traffic generation is attributed to the A87(T), therefore potential cumulative effects are possible on the A887(T) and A82(T). In the unlikely event that the peak traffic generating months of construction were to coincide with the Development, any potential cumulative effects on these routes would be managed and mitigated through the use of CTMPs for both developments. Residual effects, following application of these CTMPs, would be **Not Significant** in terms of the EIA Regulations.

Application – Dell 2 Wind Farm

An application was submitted in March 2024 for the Dell 2 Wind Farm, which comprises 9 turbines located approximately 11 km east of Fort Augustus within the Dell Estate. Construction traffic routes to Site as indicated in the Traffic and Transport EIA Report chapter would be via the A9, B851 and B862 therefore **no cumulative effects** are expected.

Appeal – Culachy Wind Farm

An application for Culachy Wind Farm was submitted in November 2023 and the application has been referred to the Planning and Environmental Appeals Division (DPEA). The development comprises up to 8 wind turbines with a maximum blade tip height of up to 200 m.

Access to the development would be taken via a new simple priority junction on the U1667 Ardachy Road, located approximately 520 metres to the north-east of its junction with the A82(T).

The maximum traffic associated with construction of the development is predicted to occur in Month 10 of the construction programme. During this month, an average of 72 HGV movements is predicted per day, arriving via the A82(T) from the south, and it is estimated that there would be a further 46 car and light van movements per day to transport construction workers to and from the Site.

As the Culachy development also states 2030 as a potential year of construction this may result in a potential cumulative effect on the A82(T) south of Invergarry, which would be managed and mitigated through the use of CTMPs for both developments. Residual effects, following application of these CTMPs, would be **Not Significant** in terms of the EIA Regulations.

Scoping - Millenium East Wind Farm

An application is currently at scoping stage for 8 turbines with a maximum blade tip height of 200m to be located as an extension to the existing Millennium Wind Farm in the hills north of Invergarry southwest of Fort Augustus and Invermoriston, in the Scottish Highlands.

It is assumed that access would be taken from the A887(T) via the existing access tracks for the operational Millenium Wind Farm and would therefore potentially share construction routes with the Development and therefore result in a potential cumulative effect on the A887(T), A82(T) and A87(T)In the highly unlikely event that the peak traffic generating months were to coincide with the Development, traffic would be managed through CTMPs for both developments. Residual effects, following application of these CTMPs, would be **Not Significant** in terms of the EIA Regulations.

11.6.1 Cumulative Summary

Table 11.17 summarises the cumulative developments considered and indicates whether a cumulative effect is likely.

Table 11.17: Cumulative Development Summary

Development Name	Status	Turbine Count	Anticipated Year of Construction	Potential Overlap of Construction Route	Potential Cumulative Effect
Bhlaraidh Extension	Consented	15	Not Provided	A887(T) and A82(T)	No
Bunloinn Wind Farm	Consented	10	2026	A887(T), A87(T) and A82(T)	No
Cloiche Wind Farm	Consented	29	2023	A87(T) and A82(T)	No
Tomchrasky Wind Farm	Consented	14	2026	A887(T), A87(T) and A82(T)	No
Chrathaich Wind Farm	Consented	14	2027	None	No
Loch Liath Wind Farm	Referred to Planning and Environmental Appeals Division (DPEA)	13	2027	A887(T) and A82(T)	Yes
Dell 2 Wind farm	Application	9	2025	None	No
Culachy Wind Farm	Referred to DPEA	8	2030	A82(T) south of Invergarry	Yes
Millenium East Wind farm	Scoping	8	Not Provided	A887(T), A87(T) and A82(T)	Yes

In summary, it is highly unlikely that the peak construction period associated with another wind farm development in the area would overlap with the peak construction period of the Development as the applications are at different stages in the planning process and each development has varying lengths of construction periods.

The high traffic generating activities, such as the importation of stone and concrete, only occur over a few months of the whole construction period for each development. It is unlikely that the local capacity for concrete and stone production could supply several developments at once, therefore, high traffic generating activities would naturally be staggered.

The three road links considered as potential routes to Site are trunk roads of a good standard with sufficient residual capacity to accommodate the temporary increases in construction traffic associated with construction.

Furthermore, implementation of a CTMP (further details contained within the Mitigation Measures section below) for each development would ensure that there are open lines of communication with the Highland Council, Police Scotland, Transport Scotland, other stakeholders, and wind farm developers to monitor the progress of the construction stages. This process would flag whether construction HGV traffic is reaching unacceptable levels and would ensure that action is taken accordingly to minimise effects.

11.7 MITIGATION MEASURES AND RESIDUAL EFFECTS

The assessment predicts that, prior to mitigation measures, the effects of severance, road vehicle driver and passenger delay and non-motorised user delay and amenity, as a result of increased levels of HGVs associated with construction of the Development would be Significant along the A887(T) and A87(T) within the Study Area. Therefore mitigation is proposed to address these likely potential significant effects.

11.7.1 Mitigation Measures

It is proposed to prepare and implement a comprehensive Construction Traffic Management (CTMP), which is intended to mitigate the identified effects by ensuring that they are minimised as far as possible within the Study Area to a level which is considered to be Not Significant.

The final CTMP would identify measures to reduce the number of construction vehicles as well as identifying measures to mitigate the impact of vehicles. The CTMP would identify the programme of works, the agreed routes to Site and details of a Site Liaison who would have responsibilities for managing traffic and transport impacts and effects. The CTMP would also identify measures to reduce and manage construction staff travel by private car, particularly single occupancy trips. Potential measures could include (but are not limited to):

- Immediately upon commencement, all deliveries, operatives and visitors to the Site would report to the security gate. This would be communicated to all early works contractors at their pre-start meeting;
- The main contractor would develop a logistics plan highlighting the access point for the project, loading bays(s), pedestrian / vehicular segregation, welfare, storage, security and material handling that would be enforced following full Site establishment;
- Approved haul routes would be identified to the Site and protocols put in place to ensure that HGVs adhere to these routes;
- All contractors would be provided with a site induction pack containing information on delivery routes, any restrictions on routes and maximum load capacity for the internal access tracks;
- Temporary construction site signage would be erected along the identified construction traffic routes to warn other road users of construction activities and associated construction vehicles;
- A temporary construction traffic speed limit could be imposed where considered appropriate;
- The construction material ‘lay down’ areas would allow for a staggered delivery schedule throughout the day, avoiding peak periods and unsociable hours (i.e., before 06:00 and after 22:00;

- An integral part of the progress meetings held with all trade contractors is the delivery schedule pro-forma. All contractors would be required to give details of proposed timing of material deliveries to the Site;
- The CTMP and the control measures therein would be included within all trade contractor tender enquiries to ensure early understanding and acceptance / compliance with the rules that would be enforced on this project;
- Under no circumstances would HGVs be allowed to lay-up in surrounding roads. All personnel in the team would be in contact with each other and with Site management, who in turn would have mobile and telephone contact with the subcontractors.
- Roads would be maintained in a clean and safe condition; and
- A wheel washing / wheel cleaning facility would be installed on-site during the construction period in order to reduce mud and debris being deposited onto the local road network.

The CTMP would ensure that there is signage along the construction routes to make residents aware of the additional HGV traffic and to provide the opportunity to plan ahead.

The CTMP would ensure that construction HGVs do not travel during peak periods or at the start/end of the school day and that they adhere to a lowered speed limit.

Each of these measures would contribute to minimising the level of effect experienced by residents and road users within the Study Area.

11.7.2 Residual Effects

The assessment has been carried out considering the peak in construction traffic and any high percentage increase in HGV traffic, particularly on the A887(T) and A87(T) between Bunloyne and Invergarry, is reflective of the low baseline HGV volumes on these roads.

Furthermore, it is important to recognise that all effects associated with increased construction traffic will would be temporary and local in nature, and that this assessment has considered the worst-case possible impact at each location.

The assessment predicts that, prior to mitigation measures, the effects of severance, road vehicle driver and passenger delay and non-motorised user delay and amenity, as a result of increased levels of HGVs associated with construction of the Development would be significant along the A887(T) and A87(T) within the Study Area. The following included in the CTMP would aim to mitigate these effects:

- The CTMP would aim to spread construction traffic throughout the day (avoiding peak periods) to avoid convoys to mitigate against increased severance, increased pedestrian/ non-motorised user delay and increased driver delay;
- The CTMP would minimise the number of HGV trips required in order to reduce overall construction traffic and minimise severance and road vehicle driver and passenger delay;
- The CTMP would ensure that construction HGVs do not travel during peak periods or at the start/end of the school day and that they adhere to a lowered speed limit in the vicinity of schools in order to minimise severance, pedestrian delay and driver delay during school drop off and pick up times; and
- The CTMP would monitor driver behaviour to maintain road safety for example acting on any reports of speeding in order to improve non-motorised road user amenity.

The residual effects after implementation of the CTMP are therefore considered to be temporary, minor and **Not Significant**.

11.8 SUMMARY AND STATEMENT OF SIGNIFICANCE

This assessment has considered the effects on the local road network of HGV traffic associated with the construction phase of the Development.

The construction programme associated with the Development is anticipated to cover an 18-month period, during which 27,119 HGVs would access the Site equating to 329 daily total HGV trips (approximately 165 inbound plus 165 outbound) during the busiest construction month (Month 6).

The movement of abnormal loads is not anticipated to exceed 13 trips per week over the course of five months (with no overlap during the busiest construction months).

A robust assessment was undertaken based on a conservative approach for the total construction traffic movements and the worst-case scenario for each link. The impact of construction traffic could increase total traffic flows along the road links within the Study Area by the following:

- 43% on the A887(T);
- 8% on the A82(T) south Invergarry;
- 10% on the A82(T) north of Invermoriston:
- 21% on the A87(T) south of Bunloyne:
- 2% on the A87(T) near Auchtertyre: and
- 1% on the A87(T) on the Skye Bridge.

The percentage increase in HGVs associated with the worst-case month of the construction programme for the Development could increase HGV levels by the following:

- 125% on the A887(T);
- 32% on the A82(T) south Invergarry;
- 38% on the A82(T) north of Invermoriston:
- 94% on the A87(T) south of Bunloyne:
- 8% on the A87(T) near Auchtertyre: and
- 7% on the A87(T) on the Skye Bridge.

The assessment of likely significant effects of the Development represent a conservative approach assuming that 100% stone requirements are imported to the Site, and these represent over 70% of predicted HGV movements. This would be avoided if the stone is instead sourced from the on site borrow pits as proposed.

As stated previously, the high percentage increases in HGV volumes on the A887(T) and A87(T) are mainly attributable to the low baseline levels of HGV traffic on these routes. Furthermore, these increased traffic levels are temporary in nature and are likely to be lower during the other 17 months of construction, with a significant decrease in construction traffic from Month 12 to 18 (completion). The assessment predicts that, prior to mitigation measures, the effects of severance, road vehicle driver and passenger delay, non-motorised user delay and amenity and, as a result of increased levels of HGVs associated with construction of the Development would be Significant along the A887(T) and A87(T) within the Study Area during the worst-case month of construction.

A Construction Traffic Management Plan is proposed that will include measures that will reduce these effects.

This Chapter concludes that the environmental effects associated with increased traffic as a result of the Development are assessed as **Not Significant** following implementation of the proposed Construction Traffic Management Plan.