

10 Transport and Access

10.1 Introduction

10.1.1 This chapter considers the likely significant effects on receptors along the transport routes as a result of vehicle movements associated with the construction, operation and decommissioning of the Proposed Development. The specific objectives of the chapter are to:

- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the traffic and transport baseline conditions (including future baseline);
- describe any likely impacts and effects of the Proposed Development on the receptors identified through the baseline assessment;
- describe the mitigation measures proposed to address any likely significant adverse effects; and
- assess the residual effects remaining following the implementation of mitigation.

10.1.2 This chapter is supported by **Technical Appendix 10.1: Transport Assessment** and the following figures:

- **Figure 10.1 - Study Area;**
- **Figure 10.2 - Traffic Count Locations;**
- **Figure 10.3 - Personal Injury Accident Locations;** and
- **Figure 10.4 - Abnormal Load Delivery Route.**

10.1.3 The technical reviewer of the traffic and transport assessment is Gordon Buchan BEng (Hons), MSC, CMILT, FCIHT, Divisional Director of Pell Frischmann. He has over 27 years of undertaking the transport assessments associated with new developments and has worked on renewable energy and energy distribution projects across the UK, Ireland and Northern Europe.

10.1.4 The author is Laura Mackey, a Senior Transport Planner within the Traffic and Transport team at Pell Frischmann and has over 6 years' experience in the traffic and transportation industry and over 5 years' experience in the production of EIA

transport chapters (and associated studies) for onshore wind farms and other energy generation and distribution projects in Scotland.

10.1.5 The scope of this assessment takes account of the committed mitigation measures both incorporated into the design and the standard construction and decommissioning mitigation measures incorporated into the Proposed Development, as described in **Chapter 3: Proposed Development Description**.

10.2 Legislation, Policy and Guidance

10.2.1 The assessment has been undertaken in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. There is, however, no legislation which is specific to transport assessments, that is required to be considered as part of this assessment.

Planning Policy and Guidance

10.2.2 The following planning policy and guidance documents have been used during the preparation of this chapter:

- Institution of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005)¹;
- Institute of Environmental Assessment 'Guidelines for the Environmental Assessment of Road Traffic' (1993)²;
- IEMA 'Environmental Assessment of Traffic and Movement' (2023)³;
- LA104, Environmental assessment and monitoring, the Design Manual for Roads and Bridges (DMRB) (2020)⁴;
- National Planning Framework 4 (2024)⁵;
- Planning Advice Note (PAN) 75 (1995)⁶;
- Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008)⁷;
- Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESAs Manual" (2013)⁸;
- Transport Assessment Guidance (2012)⁹;

¹ The Institution of Environmental Management and Assessment, Guidelines for Environmental Impact Assessment (2005)

² The Institution of Environmental Management and Assessment, Guidelines for the Environmental Assessment of Road Traffic (1993)

³ The Institution of Environmental Management and Assessment, Environmental Assessment of Traffic and Movement (2023)

⁴ Highways England, Transport Scotland, Welsh Government & Department for Infrastructure, LA104, Environmental assessment and monitoring, the Design Manual for Roads and Bridges (DMRB) (2020)

⁵ National Planning Framework 4, Scottish Government, 2024

⁶ Scottish Government. Planning Advice Note (PAN) 75. Available at: <https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/>

⁷ Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008)

⁸ Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESAs Manual" (2013)

⁹ Transport Scotland (2012), Transport Assessment Guidance

- Onshore Wind Turbines, Online Renewables Planning Advice (May 2014)¹⁰;
- Scottish Government, Onshore Wind Policy Statement (December 2022)¹¹;
- Onshore Wind Energy Supplementary Guidance (2016)¹²;
- Highland-wide Local Development Plan (LDP) (2012)¹³; and
- The Inner Moray Firth Local Development Plan 2 (IMFLDP2)¹⁴.

10.3 Consultation

10.3.1 A Scoping Report, including a Transport and Access Chapter, was issued to all consultees prior to the assessment being finalised. The scoping comments received are noted in **Table 10.1**.

Table 10.1 Consultation Summary

Consultee	Response	Action
The Highland Council	Highland Council's Transport Planning Team had no comments to make at this stage. Their interests will relate largely to the impact of development traffic on the Council maintained road network and its users during the construction phase of the project. Transport Scotland's interest will relate to the impact of development on the trunk road network.	Comment noted.
The Highland Council	The Transport Planning Team would generally recommend that the route assessment process includes early consultation with the Highland Council Structures Team for implications to structures along Council maintained roads. A point of contact for that would be Simon Farrow, Principal Engineer Simon.farrow@highland.gov.uk . The assessment process should also consider the implications to vulnerable road users that could be impacted by the proposed works.	Comment noted. A Route Survey Report is included as Annex B of Technical Appendix 10.1: Transport Assessment , which includes an ESDAL (Electronic Service Delivery for Abnormal Loads) review in relation to structures on the proposed access route.
The Highland Council	For the construction stage, any submission should provide a breakdown of the anticipated vehicle movement profiles through the predicted 12-month construction programme. This should be broken down by at least Abnormal Indivisible Loads (AILs), standard large commercial goods vehicles (HGV's) and other construction-related traffic.	Noted. Full construction traffic profile, comprising 23 months, included within Technical Appendix 10.1: Transport Assessment .
The Highland Council	When compiling data on predicted traffic movements serving this development, the assessment should set out and justify all	Comment noted, the assessment has been undertaken in line with these requirements. Full information is included

¹⁰ Scottish Government (2014), Onshore Wind Turbines: Planning Advice.

¹¹ Scottish Government (2022), Onshore Wind: Policy Statement

¹² Onshore Wind Energy Supplementary Guidance, The Highland Council, (2016)

Consultee	Response	Action
	assumptions made in support of the trip levels used. This includes for example any assumptions made about the amounts of material that could be obtained from borrow pits within or close to the site. However, if insufficient information has been gathered to determine the appropriateness of any material within the site for use in the works, we'll expect the assessment process to have reviewed the worst-case scenario of no such suitable materials being found within the site.	within Technical Appendix 10.1: Transport Assessment .
The Highland Council	The implications of other committed developments in the area should be identified and determined. This should comprise other committed developments that have the potential to influence traffic levels on the proposed construction access route(s), including other energy generation and distribution schemes proposed in the area. Highland Council should be able to review and comment on any committed developments that the assessment may need to take account of. It is important to recognise that the public roads serving this site are heavily influenced by tourist traffic during the busier summer season. Any submission should recognise this and clearly set out how this has been recognised in the assessment process. Also, the predicted traffic generated by any timber extraction required in connection with this development should be recognised in the assessment	Comment noted, Technical Appendix 10.1: Transport Assessment includes a review of committed development schemes and justifies the inclusion or otherwise within the assessment. Comment noted regarding changes in traffic volumes during the summer tourist season. It is considered that any increase attributed to the baseline flows during this time would dilute the potential impact of the Proposed Development on the local road network. Therefore the assessment within the Chapter has been based on the Annual Average Daily Traffic (AADT) traffic data, which has allowed for a suitably robust assessment to be undertaken. Any specific issues in relation to impacts on tourist in the vicinity of the Site would be addressed within the full CTMP, which can be secured by an appropriately worded condition. No timber extraction is proposed.
The Highland Council	A Construction Traffic Management Plan (CTMP) may need to be provided as a form of mitigation for the predicted impacts of construction traffic.	A framework CTMP is included within the Chapter and within Technical Appendix 10.1: Transport Assessment . It is considered that the requirement for a full CTMP can be secured by an appropriately worded condition.

¹³ Highland-wide Local Development Plan, The Highland Council, (2012)

¹⁴ The Inner Moray Firth Local Development Plan 2 (IMFLDP2), The Highland Council, (2024)

Consultee	Response	Action
The Highland Council	The Transport Planning Team would expect any submission to clarify the willingness to enter into a formal “Wear & Tear” Agreement (Section 96 of the Roads (Scotland) Act 1984) with Highland Council. This is to protect The Council from any extraordinary expenses in having to repair the local public roads from any damage inflicted by the construction traffic activities of this development. As with CTMP’s, we would see this as supplementary to any physical improvements deemed necessary to make the local public roads safe and usable by all when being used for construction access to this development.	Comment noted, reference to this has been made within the Chapter and within Technical Appendix 10.1: Transport Assessment . It is considered that the requirement for a full CTMP can be secured by an appropriately worded condition.
The Highland Council	Any submission should set out the intended arrangements for surveying and recording the existing condition of the local public roads impacted by the proposed construction access route(s) prior to any works commencing at this site. It should then clarify how the condition of those roads will be reviewed during and at the end of the proposed development, along with how any repairs deemed necessary will be undertaken.	Comment noted, reference to this has been made within the Chapter and within Technical Appendix 10.1: Transport Assessment . It is considered that the requirement for a full CTMP can be secured by an appropriately worded condition.
The Highland Council	Depending on the construction routes settled on, The Council is likely to require some form of financial security/road bond that they’d be able to call on in the event of the Developer not being able to repair damage inflicted to the roads by their construction activities to the satisfaction of The Council as the Local Roads Authority. Again, any submission should clarify the Promoters willingness to consider some form of road bond or other financial security linked to a “Wear and Tear” agreement.	Repetition of previous comment above by THC. Already addressed.
The Scottish Government	When compiling data on predicted traffic movements serving this development, the assessment should set out and justify all assumptions made in support of the trip levels used. This includes for example any assumptions made about the amounts of material that could be obtained from borrow pits within or close to the site. However, if insufficient information has been gathered to determine the appropriateness of any material within the site for use in the works, we’ll expect the assessment process to have reviewed the worst-case scenario of no such suitable materials being found within the site.	Noted. Full construction trip generation detail included within Technical Appendix 10.1: Transport Assessment .

Consultee	Response	Action
The Scottish Government	The implications of other committed developments in the area should be identified and determined. This should comprise other committed developments that have the potential to influence traffic levels on the proposed construction access route(s), including other energy generation and distribution schemes proposed in the area. Highland Council should be able to review and comment on any committed developments that the assessment may need to take account of. It is important to recognise that the public roads serving this site are heavily influenced by tourist traffic during the busier summer season. Any submission should recognise this and clearly set out how this has been recognised in the assessment process. Also, the predicted traffic generated by any timber extraction required in connection with this development should be recognised in the assessment	Noted. A full review on committed developments has been undertaken and included as part of this assessment. The baseline traffic data collected from the A9 is from Jan to beginning of October 2024 and as such has taken account of tourist traffic during the summer. No timber will be exported from the Site.
The Scottish Government	A Construction Traffic Management Plan (CTMP) may need to be provided as a form of mitigation for the predicted impacts of construction traffic. The Transport Planning Team see the measures in a CTMP being supplementary and complementary to any physical road improvements deemed necessary through the above referenced assessments.	Noted. The need for a CTMP included within Mitigation section.
The Scottish Government	The Transport Planning Team would expect any submission to clarify the willingness to enter into a formal “Wear & Tear” Agreement (Section 96 of the Roads (Scotland) Act 1984) with Highland Council.	Noted and included within Mitigation section.
The Scottish Government	Any submission should set out the intended arrangements for surveying and recording the existing condition of the local public roads impacted by the proposed construction access route(s) prior to any works commencing at this site. It should then clarify how the condition of those roads will be reviewed during and at the end of the proposed development, along with how any repairs deemed necessary will be undertaken.	Noted. Survey of existing road condition undertaken as part of this assessment and future assessment information included within Mitigation section.
Moray Council	Local authority boundaries should be shown in any supporting plans/maps (e.g. ZTV)	Moray falls outwith the construction routes for all vehicles and has no inclusion in the maps within the assessment of traffic and transport.

Consultee	Response	Action	Consultee	Response	Action
Moray Council	With regards to access, the information provided identifies the proposed access route for abnormal loads being contained within the Highland Council area. In the event of any proposed changes in access arrangements to/from the site, further (pre-application) consultation with Moray Council's Transportation Service is required regarding any part of the proposal which will access and/or utilise the road network system through Moray. Consultation would also be requested should heavier loads/vehicles (e.g. aggregate) be required to use the road network in Moray. This is particularly pertinent should borrow pits on site prove to be insufficient to supply the proposed wind farm development.	Noted.		We also note that National Road Traffic Forecast (NRTF) Low Traffic Growth assumptions will be used to provide a common future year baseline to coincide with the expected construction traffic peak. This is considered appropriate.	
Network Rail	A Traffic Assessment should be included to assess the effects of construction traffic on existing traffic flows and the public road network. Preferred construction traffic routes should be indicated. This will enable Network Rail to assess the possible impacts where/if the traffic crosses over/under our infrastructure and the suitability of these crossings.	Transport Assessment included as Technical Appendix 10.1 and includes assessment of the effects of construction traffic on existing traffic flows on the public road network, along with a description of construction traffic routes.	Transport Scotland	Transport Scotland would add that the potential impact of additional traffic at the A9(T) junction should be established.	A full transport impact assessment has been undertaken on the road sections which are impacted by additional construction traffic associated with the Proposed Development.
Transport Scotland	Chapter 11 of the SR presents the proposed methodology for the assessment of Transport and Access. This states that the Transport and Access EIA Report Chapter will be supported by a Transport Assessment report, Abnormal Load Route Survey and technical figures. This indicates that the guidelines set out in the Environmental Assessment of Traffic and Movement (IEMA, 2023) will be used as a screening process for the assessment. These specify that road links should be taken forward for assessment if: <ul style="list-style-type: none"> • Traffic flows will increase by more than 30%, or • The number of HGVs will increase by more than 30%, or • Traffic flows will increase by 10% or more in sensitive areas. 	Comment noted and the chapter has been undertaken in line with these Guidelines.	Transport Scotland	We note that it is proposed to route ALLs via the A9(T) and the U2856 (Slochd - Tomatin road). While the standard of the A9(T)/U2856 priority junction is considered to be satisfactory, we note that the minor road crosses the railway a short distance from the junction, via a single-track railway bridge. Transport Scotland would request confirmation that any mitigation required at this bridge will not have an impact on the trunk road.	As part of the wider development proposals, a new bridge is proposed between the Proposed Development Site and the A9, on the U2856 road, across the Highland Main Line. This is to replace the existing bridge, which is substandard and not suitable to accommodate the predicted loads. The works in relation to the new bridge will form part of a separate planning application and will be done in full consultation with THC, TS and Network Rail.
Transport Scotland	The SR indicates that baseline traffic count data will be obtained from new Automatic Traffic Count (ATC) surveys located on the U2856 near the proposed site access junction. In addition, further traffic data for the local road network will be obtained from UK Government Department for Transport (DfT) traffic count data, the Traffic Scotland database or from specifically commissioned traffic surveys.	Comment noted, the assessment has been undertaken as per the proposals outlined in the Scoping Report.	Transport Scotland	The SR states that traffic accident data will be obtained from Crashmap UK for the study network. We would state that more up to date statistics can be obtained directly from Transport Scotland. Contact accidentdatarequests@transport.gov.scot with a request for data.	Noted, the personal injury accident review for the trunk road section of the study area has been based on accident data obtained from TS. All other locations have been based on CrashMap.
			Transport Scotland	It is noted that any impacts associated with the operational and decommissioning phases of the development are to be scoped out of the EIA. We would consider this to be acceptable in this instance.	Comment noted.
			Transport Scotland	A full Abnormal Loads Assessment report should be provided with the EIA Report that identifies key pinch points on the trunk road network. Swept path analysis should be undertaken and details provided with regard to any required changes to street furniture or structures along the route.	A Route Survey Report assessing the route followed by ALLs and identifying key pinch points, as well as including swept path analysis, is included as Annex B of Appendix 10.1 Transport Assessment .

10.4 Methodology

Scope of Assessment

Effects Scoped Into the Assessment

- 10.4.1 This assessment focusses on the effects of construction of the Proposed Development upon those receptors identified during the review of desk-based information and field surveys (the extents of the study areas are set out in the 'Study Area' section below).
- 10.4.2 The following potential effects were identified at the Scoping Stage (for consideration in this assessment):
- direct effects on road users during construction due to changes in traffic flows and transport of AIL in the surrounding study area; and
 - direct effects on local residents as a result of increased traffic during construction.
- 10.4.3 The assessment scenarios used for this topic are as follows:
- Future Baseline Flows (2028) - which are estimated by applying National Road Traffic Forecast (NRTF) low growth factors to traffic flow information obtained from the Transport Scotland (TS) database and commissioned automatic traffic count (ATC) surveys; and
 - Future Baseline + Development Flows (2028) - which are estimated by applying the distributed development trips to the future baseline traffic flow information.

Effects Scoped Out of the Assessment

- 10.4.4 On the basis of the desk based and field survey work undertaken, the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, and feedback received from consultees, the following topic areas have been 'scoped out' of detailed assessment, as proposed in the Scoping Report (February 2024):
- Operational Phase: The traffic effects during the operational phase of the Proposed Development will be low, with two to three vehicles per day for maintenance purposes, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operational phase are scoped out of the assessment.
 - Decommissioning Phase: The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 40 years on from the completion

of the Proposed Development. As elements of the Proposed Development are likely to remain in-situ (such as cable trenches, some access tracks, etc.), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst-case assessment, and as such Decommissioning effects are considered to be less than or equal to the predicted construction phase effects.

Baseline Characterisation

Study Area

- 10.4.5 The study area includes local roads that are likely to experience increased traffic flows resulting from the Proposed Development. The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.
- 10.4.6 Locally sourced material will be used where feasible and traffic will avoid impacting on local communities as far as is possible.
- 10.4.7 Strategic access to the Site will be taken from the A9 which forms part of the trunk road network. Access for construction materials would be predominantly from the north and south via the A9 (depending on what materials are being delivered and at what stage the construction programme is at). This can be accessed from the Site via the U2856.
- 10.4.8 The likely Port of Entry (POE) used for the discharging of wind turbine components will be Inverness Harbour. AILs would likely route to the Site via Longman Drive / Stadium Road, A9 and the U2856 through to the Site access junction. Full details of the AIL route are provided within **Annex B of Technical Appendix 10.1: Transport Assessment**.
- 10.4.9 Based on the above, the study area for this assessment is as follows:
- The U2856 from its junction with the A9 to the Site access;
 - The A9 from its junction with U2856 to Slochd;
 - The A9 from Slochd to Aviemore; and
 - The A9 from its junction with U2856 to Scatraig.
- 10.4.10 Effects associated with construction traffic generated by the Proposed Development would be most pronounced in close proximity to the Site access junction and on the

final approaches to the Site. As vehicles travel away from the Proposed Development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the study area identified above.

10.4.11 The study area is presented in **Figure 10.1**.

Desk Study / Field Survey

10.4.12 The following data sources have informed the assessment:

- Review of relevant transport planning policy;
- Accident data - crashmap.co.uk¹⁵;
- Traffic data - Commissioned ATC surveys and TS Traffic Database;
- Sensitive locations within study area - googlemaps.co.uk;
- Any other sensitive receptors in the area (core paths, routes, communities, etc.) - googlemaps.co.uk and relevant agency's website;
- OS plans;
- Potential origin locations of construction staff and supply locations for construction materials to inform extent of local area roads network to be included in the assessment - googlemaps.co.uk;
- Constraints to the movement of AILs through a Route Survey including swept path assessments - site visits, OS plans, video footage, and Google Streetview;
- Cumulative development information - The Highland Council (THC) planning portal¹⁶; and
- Detailed site visits to review the potential access routes and potential constraints were undertaken in August 2022.

Sensitivity Criteria

10.4.13 The Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005) notes that the separate IEMA Guidelines should be used for characterising the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments. Recent guidance published by the IEMA, namely 'Environmental Assessment of Traffic and Movement' (2023) provides an update to the previously used guidance, 'Guidelines for the Environmental Assessment of Road Traffic' (1993) document, that should be used to characterise the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments.

The guidelines intend to complement professional judgement and the experience of trained assessors.

10.4.14 In terms of traffic and transport impacts, the receptors are the users of the roads within the study area and the locations through which those roads pass.

10.4.15 The IEMA Guidelines include guidance on how the sensitivity of receptors should be determined. Using that as a starting point, a classification of sensitivity for users based on the characteristics of roads and locations has been developed. This is summarised in **Table 10.2**.

Table 10.2 Classification of Receptor Sensitivity

Receptor	Sensitivity			
	High	Medium	Low	Negligible
Users of Roads	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for AILs and new strategic trunk road junctions capable of accommodating AILs.
Users/ Residents of Locations	Where a location is a large rural settlement containing a high number of community and public services and facilities.	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Where a location is a small rural settlement, few community or public facilities or services.	Where a location includes individual dwellings or scattered settlements with no facilities.

10.4.16 It is acknowledged that there will be locations both in terms of users of roads or users / residents of locations that may not fit within one of the sensitivity classifications highlighted in **Table 10.2**. In these situations, professional judgement has been applied and justification for any changes provided.

10.4.17 Where a road passes through a location, users are considered subject to the highest level of sensitivity defined by either the road or location characteristics.

¹⁵ www.crashmap.co.uk – Accessed September 2024

¹⁶ https://www.highland.gov.uk/info/180/planning_-_applications_warrants_and_certificates/143/planning_permission/4
Accessed September 2024

Magnitude of Effect

10.4.18 The magnitude of change has been assessed in accordance with the following rules which are outlined in the IEMA Guidelines, and are used to inform a screening exercise to determine which links within the study area are to be considered for detailed analysis in the assessment:

- Rule 1 - Include highway links where traffic flows will increase by more than 30% (or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%); and
- Rule 2 - Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.

10.4.19 Examples of sensitive areas are presented in the 2023 IEMA Guidelines as hospitals, churches, schools, historical buildings and tourist attractions etc. These locations are to be assessed in relation to “Rule 2”.

10.4.20 The 2023 IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development; the impacts and levels of magnitude are discussed below:

- Severance - the IEMA Guidance advises that, “The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.” (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that “the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.” (Para 3.17).
- Driver delay - the IEMA Guidelines note that these delays are only likely to be “significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system” (Para 3.20).
- Pedestrian delay (incorporating delay to all non-motorised users) - the IEMA Guidance advises that “pedestrian delay and severance are closely related

effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.” (Para 3.24). Furthermore, the guidance advises that “... it is not considered wise to set down definitive thresholds. Instead, it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect.” (Para 3.26).

- Non-motorised user amenity - the IEMA Guidance advises that, “The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law.” (Para 3.30).
- Fear and intimidation - there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the Proposed Development.
- Road safety - professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance, those areas of collision clusters would be subject to detailed review.
- Road safety audits - It would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition.
- Large loads - The movement of the AILs associated with the construction of the proposed development have been considered in full, within a separate route survey assessment (see **Annex B of Technical Appendix 10.1**), which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as standard within **Mitigation During Construction** section.

10.4.21 While not specifically identified as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

10.4.22 Table 3.7 of LA104 Environmental Assessment Methodology of the Design Manual for Roads and Bridges (DMRB) sets out four levels against which the magnitude of these impacts should be assessed - major, moderate, minor and negligible. The impacts and levels of magnitude are discussed below in **Table 10.3**.

Table 10.3 Magnitude of Effect

Magnitude	Description
High	These effects are considered to be material in the decision-making process.
Medium	These effects may be important but are not likely to be material factors in decision making. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor.
Low	These effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the project.
Negligible	No effects or those that are imperceptible.

10.4.23 The predicted level of effect is based upon the consideration of magnitude of impact and sensitivity of the resource/receptor to come to a professional judgement of how important this effect is.

Significance Criteria

10.4.24 The predicted significance of the effect was determined through a standard method of assessment based on professional judgement, considering both sensitivity and magnitude of change as detailed in **Table 10.4**.

Table 10.4 Significance Criteria

Receptor Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Major / Moderate	Moderate / Minor	Minor
Medium	Major / Moderate	Moderate	Minor	Minor / Negligible
Low	Moderate / Minor	Minor	Minor	Minor / Negligible
Negligible	Minor	Minor	Minor / Negligible	Negligible

10.4.25 Significance is categorised as major, moderate, minor or negligible. Effects judged to be of major or moderate significance are considered to be significant in with the context of the EIA Regulations and require mitigation.

¹⁷ <https://map-highland.opendata.arcgis.com/datasets/4ff063a3130b4914bec21d1e90434b5c/explore?location=57.176906%2C-4.394959%2C8.33> [Accessed September 2024]

10.4.26 Where an effect could be one of major / moderate or moderate / minor significance, professional judgement is used to determine which option should be applicable. Effects judged to be of minor or negligible significance are considered not significant in the context of EIA Regulations.

10.5 Baseline

Current Baseline

Pedestrian and Cyclist Networks

10.5.1 There are no dedicated pedestrian facilities in the immediate vicinity of the Site, reflecting its rural setting. Further away from the Proposed Development in the wider study area, there are pedestrian facilities within the larger settlements like Inverness and Carrbridge, and some of the smaller settlements, including Tomatin and Moy.

10.5.2 The level of pedestrian infrastructure in the immediate vicinity of the Site is commensurate with the scale of the local settlements and their rural setting

10.5.3 A review of THC Core Path Map¹⁷ indicates a small number of Core Paths in the vicinity of the Site, which are provided below:

- Core Path IN27.01 (part of the National Cycle Network (NCN) Route 7), 1.64km in length. The path connects with Core Path LBS114 which falls within the Cairngorms National Park;
- Core Path IN27.03 (Allt Neacrath loop), 1.90km in length located in the Morilemore area of Tomatin; and
- Core Path IN27.02 (Distillery Wood), 3.06km in length located to the south of the Tomatin Distillery Visitor Centre.

10.5.4 The Core Path Network within the vicinity of the Site can be seen in **Figure 7 of Technical Appendix 10.1: Transport Assessment**.

10.5.5 A review of the Sustrans National Cycle Network map¹⁸ indicates that NCN Route 7 follows Core Path IN27.01 and LBS114 which run parallel to the A9, before continuing on-road along the U2856, past the proposed Site access location towards Tomatin and beyond to Inverness.

¹⁸ <https://www.sustrans.org.uk/national-cycle-network> [Accessed September 2024]

10.5.6 NCN Route 7 forms the northern section of the long-distance Lochs and Glens Way route in the north of Scotland and links Inverness and Carrbridge in the Cairngorms National Park. Connecting to NCN Route 1 alongside the River Nairn, it passes the battlefield at Culloden and the Tomatin Distillery Visitor Centre.

Road Network

10.5.7 The U2856 Slochd to Findhorn Bridge Road is a single carriageway road with one lane operating in each direction, linking the A9 with Findhorn Bridge to the south of Tomatin. There is a 30 miles per hour (mph) speed limit in place on the initial section where it meets the A9, with the national speed limit (60mph) in place for the remainder of the road. The road is maintained by THC and appears to be in good condition.

10.5.8 The A9 is the main trunk road in the area which links Perth to Scrabster. The road is operated by BEAR Scotland on behalf of Transport Scotland. The road is subject to a speed limit of 60mph within the study area, however, sections of dual carriageway are signed as 70mph. Dualling of the A9 between Tomatin and Moy is scheduled to commence in Spring 2025, with the road expected to be completed by Spring 2028.

Road Suitability

10.5.9 The Agreed Timber Route Map¹⁹ has been developed by The Timber Transport Forum who are a partnership of the forestry and timber industries, local government, national government agencies, timber hauliers and road and freight associations. One of the key aims of the forum is to minimise the impact of timber transport on the public road network, on local communities and the environment and a way of achieving this is to categorise the roads leading to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles i.e., HGVs. The routes are categorised into four groups, namely; 'Agreed Routes', 'Consultation Routes', 'Severely Restricted Routes' and 'Excluded Routes'.

10.5.10 'Agreed Routes' are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Those links classed as 'Consultation Routes' are categorised as a route which is key to timber extraction, but which are not up to 'Agreed Route' standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified

as 'Consultation Routes' by default unless covered by one of the other classifications. 'Severely Restricted Routes' are not normally to be used for timber transport in their present condition. These routes are close to being Excluded Routes. Consultation with the local authority is required prior to use. Finally, 'Excluded Routes' should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.

10.5.11 Roads within the study area form part of the route network used for the extraction of timber and are therefore regularly used by HGV traffic. This includes the A9 which is an 'Agreed Route' and the U2856 which is a 'Consultation Route'.

Existing Traffic Conditions

10.5.12 In order to assess the impact of development traffic on the study area, an ATC was deployed along the U2856, in the vicinity of the proposed Site access over a 7-day period in June 2024, in order to collect vehicle volumes, composition and speed per direction per hour.

10.5.13 To compliment the ATC survey, existing traffic count data was obtained from the TS database, with 2024 data utilised.

10.5.14 The traffic count sites used are as follows:

- U2856, between the A9 and Findhorn Bridge (Commissioned ATC Survey);
- A9, between the Site entrance and Slochd (TS Counter: JTC00314);
- A9, between Slochd and Aviemore (TS Counter: ATC01005); and
- A9, between the Site entrance and Scatraig (TS Counter: 104480).

10.5.15 The traffic counters allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / light good vehicles (LGVs) and HGVs (all goods vehicles >3.5 tonnes gross maximum weight).

10.5.16 These sites were identified as being areas where sensitive receptors on the access route would be located.

10.5.17 The locations of the traffic sites are illustrated in **Figure 10.2**, while the 24-hour two-way average traffic flows for each of the traffic count locations are presented in **Table 10.5**.

¹⁹ <https://timbertransportforum.org.uk> [Accessed September 2024]

Table 10.5 24-Hour Two-Way Average Traffic Data (2024)

Site ID	Survey Location	Count Source	Cars & LGVs	HGVs	Total
1	U2856	ATC Survey	125	52	178
2	A9, between the U2856 junction and Slochd	Traffic Scotland	7,495	2,259	9,754
3	A9, between Slochd and Aviemore	Traffic Scotland	6,440	2,048	8,488
4	A9, between the U2856 junction and Scatraig	Traffic Scotland	9,383	1,534	10,917

Please note minor variances due to rounding may occur.

10.5.18 The ATC and TS survey locations which provided traffic volume data were also used to obtain speed statistics. The two-way seven-day average and 85th percentile speeds observed at the count sites are summarised in **Table 10.6**.

Table 10.6 Speed Summary

Site ID	Survey Location	Count Source	Mean Speed (mph)	85thile (mph)	Speed Limit (mph)
1	U2856	ATC Survey	40.0	49.6	60
2	A9, between the U2856 junction and Slochd	Traffic Scotland	53.0	59.6	60
3	A9, between Slochd and Aviemore	Traffic Scotland	54.4	59.6	60
4	A9, between the U2856 junction and Scatraig	Traffic Scotland	52.3	58.1	60

* Speed data obtained October 2024

10.5.19 Speed information from the **Table 10.6**, suggests that the recorded speeds are being adhered to within the study area.

Accident Review

10.5.20 Personal Injury Accident (PIA) data for the five and a half year period covering January 2019 to September 2024 for the A9 approximately 19km north and 16km south of the junction between the A9 and U2856, was obtained from TS in line with the requirement set out in the EIA Scoping Opinion for the trunk road network within the study area.

10.5.21 For all other locations (the U2856), PIA data for the five-year period commencing 01 January 2018 through to the 31 December 2022 was obtained from the online resource CrashMap²⁰ which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.

10.5.22 PIA statistics from CrashMap are categorised into three categories, namely “Slight”, for damage only incidents, “Serious”, for injury accidents and “Fatal”, for those accidents that result in a death. TS however allow for four categories within the “Serious” classification, namely “Less Serious”, “Moderately Serious”, “Serious” and “Very Serious”.

10.5.23 A general summary of the incidents is provided below, while the location of the accidents can be seen in **Figure 10.3**:

U2856

- There have been no PIAs recorded on the U2856 within the study area, within the most recent five-year period.

A9, between the U2856 junction and Slochd

- There were four incidents recorded on this section of road within the most recent five and a half year period, one categorised as “Slight”, one “Moderately Serious”, and two “Fatal”.
- The “Slight” incident was a single vehicle accident involving a car and resulting in one casualty. The accident occurred at night with no street lighting present and the road conditions were wet.
- The “Moderately Serious” incident involved a car, van and HGV, and resulted in one casualty. The accident occurred during wet weather conditions, with snow present on the carriageway.
- One of the incidents, which resulted in a fatality, involved a car and a bus and resulted in a total of 15 casualties. This incident occurred on a bend at night with no street lighting present.
- The second incident which included a fatality occurred on a straight section of road and involved three vehicles. This incident resulted in five casualties.
- There were no cyclists, pedestrians or motorcycles involved in incidents within this section of the study area.

A9, between Slochd and Aviemore

- There were a total of 15 incidents recorded on this section of the A9 within the most recent five and half year period. Five of these incidents were categorised as “Slight”, five were categorised as “Moderately Serious”, three were “Very Serious” and two were “Fatal”.
- Seven of the recorded incidents involved an HGV, one of which resulted in a fatality. The incident involved two HGVs, resulting in two casualties and

²⁰ <https://www.crashmap.co.uk> [Accessed December 2024]

occurred on approach to a junction. The road conditions were wet and the incident occurred during the hours of darkness.

- The other incident resulting in a fatality involved two cars in the vicinity of a junction, resulting in a total of five casualties. The road and weather conditions were recorded as dry, and it occurred during the hours of darkness.
- There was a cluster of five incidents close to Aviemore at the T-junction connecting the A9 and the A95, three of which were categorised as “Very Serious”, one as “Moderately Serious”, and one as “Slight”.
- There were no cyclists, pedestrians or motorcycles involved in incidents within this section of the study area.

A9, between the U2856 junction and Scatraig

- There were ten incidents recorded on this section of the A9 within the most recent five and half year period, five categorised as “Slight”, one as “Less Serious”, one as “Moderately Serious”, one as “Very Serious” and two as “Fatal”.
- Four of the recorded incidents involved an HGV, with two recorded as “Slight” and two resulting in fatalities.
- One incident which resulted in a fatality occurred on a left hand bend and involved an HGV and car, resulting in one casualty. Weather and road conditions were recorded and fine / dry.
- The second incident resulting in a fatality occurred on a straight section of road and involved an HGV and car, resulting in one casualty. Weather conditions were recorded and fine, while the road condition was recorded as wet.
- There were no cyclists, pedestrians or motorcycles involved in incidents within this section of the study area.

PIA Summary

10.5.24 The analysis indicates that there were a total of 29 PIA incidents within the most recent five and a half year period. Most recorded accidents are categorised as being within the combined “Serious” accident category, representing approximately 41% of all accidents. “Slight” accidents represent approximately 38% of all accidents, while and 21% of accidents involved a fatality.

10.5.25 There was a cluster of PIAs at one location within the assessed area, namely the junction between the A9 and A95 at Aviemore, however this was not close to the

Site access and was to the south of the Proposed Development. Construction traffic will predominantly approach the Proposed Development from the north on the A9.

10.5.26 There were no pedestrian, cyclist or motorbike casualties recorded within the study area within the most recent five and half year period.

10.5.27 Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require to be addressed or will be exacerbated by construction activities.

Future Baseline

10.5.28 Construction of the Proposed Development is anticipated to commence in 2028 if consent is granted and is expected to last up to 23 months depending on weather conditions and ecological considerations.

10.5.29 To assess the likely effects during the construction phase, base year traffic flows were determined by applying an NRTF low growth factor to the surveyed traffic flows. The NRTF low growth factor for 2024 to 2028 is 1.029. This factor was applied to the 2024 traffic data presented in **Table 10.5** to estimate the 2028 Base traffic flows presented in **Table 10.7**.

Table 10.7 Future Baseline Daily Two-Way Traffic (2028)

Site ID	Survey Location	Cars & LGVs	HGVs	Total
1	U2856	129	54	183
2	A9, between the U2856 junction and Slochd	7,710	2,324	10,034
3	A9, between Slochd and Aviemore	6,625	2,107	8,731
4	A9, between the U2856 junction and Scatraig	9,652	1,578	11,230

Please note minor variances due to rounding may occur.

Committed Development

10.5.30 A review of THC’s online planning portal²¹ and Scottish Governments ECU portal²² was undertaken within **Technical Appendix 10.1: Transport Assessment** to identify any consented developments within the vicinity of the Proposed Development which

²¹ https://www.highland.gov.uk/info/180/planning_-_applications_warrants_and_certificates/143/planning_permission/4 [Accessed September 2024]

²² <https://www.energyconsents.scot/ApplicationSearch.aspx?T=1> [Accessed September 2024]

would generate significant traffic within the same study area and should be included within the assessment.

- 10.5.31 No other onshore wind farm developments or other potentially significant traffic generating developments were identified that should be considered as part of any cumulative assessment of construction effects within this Chapter.

Receptor Sensitivity

- 10.5.32 The assessment of effects is based on the project description as outlined in **Chapter 3: Proposed Project Description** and the embedded mitigation by design described in **Chapter 2: Site Description and Design Evolution**.
- 10.5.33 A review of sensitive receptors has been undertaken within the study area. **Table 8** details the receptors and their sensitivities for use within the following assessment. A justification for the sensitivity has been provided, based upon the details contained in **Table 2**.

Table 10.8 Receptor Sensitivity Summary

Receptor	Sensitivity	Justification
A9 Users	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
U2856 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
Residents on the A9	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents on the U2856	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Tomatin Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Core Path / Path Users	High	Minor paths used by walkers and cyclists, not constructed to accommodate HGV traffic flows
NCN Users	High	Minor paths used by walkers and cyclists, not constructed to accommodate HGV traffic flows

- 10.5.34 Note, whilst the U2856 is classed as an ‘un-classified road’, the standard of this is such that it is considered suitable to accommodate HGV traffic. This is based on the carriageway running width, road condition and the fact it is classed as a ‘consultation route’ in terms of being used for HGV traffic for the extraction of timber in the area. As such, rather than classing the road as ‘High’ sensitivity for users, this has been classed as ‘Medium’.

- 10.5.35 As previously noted in the ‘Criteria for Assessing Magnitude of Change’ section, examples of sensitive areas are presented in the IEMA Guidelines as locations which

include hospitals, churches, schools, historical buildings tourist attractions for example. Based on these indicators which are stated within the IEMA Guidelines, there are no locations which fall in to this category. All locations within the study area are therefore subject to ‘Rule 1’ and are assessed if total traffic flows (or HGV flows) on highway links increase by more than 30%.

- 10.5.36 It is acknowledged that there will be locations both in terms of users of roads or users / residents of locations that may not fit within one of the sensitivity classifications highlighted above. In these situations, professional judgement has been applied and justification for any changes provided.
- 10.5.37 Where a road passes through a location, users are considered subject to the highest level of sensitivity defined by either the road or location characteristics.

10.6 Implications of Climate Change for Existing Conditions

- 10.6.1 It is considered that climate change projections will not have a discernible impact on the baseline conditions for road traffic within the timescales of the Proposed Development.
- 10.6.2 It is assumed that, at regional level, appropriate measures will be put in place to ensure flood risk is managed and does not have long term effects on transport infrastructure.

10.7 Future Baseline in the Absence of the Proposed Development

- 10.7.1 As noted above, the assessment has been undertaken on the basis of a future baseline of conditions in 2028, with growth factors applied. In the absence of the Proposed Development, it is anticipated that traffic growth will occur throughout the study area as a result of other development pressures, tourism and population flows.

10.8 Embedded Design Mitigation

- 10.8.1 The Site layout includes the use of onsite borrow pits to provide material for the creation of the access tracks, hardstandings and compound bases. Confirmation on the number of borrow pits to be used and material quantities will be confirmed following the detailed Site Investigation (SI) has been undertaken. It is however estimated that these can provide a significant amount of the aggregate requirements for the Site. Nevertheless, to ensure that a robust assessment is

undertaken, it has been assumed that 100% of the required material will be brought to the Site.

10.8.2 Batching of concrete for use onsite is considered feasible and economic and facilities to enable this are being provided at the Proposed Development. The assessment, has, however, taken into consideration the importation of concrete batching materials, including water and aggregates.

10.9 Assessment of Potential Effects

Construction Effects

10.9.1 The assessment is based upon the construction effects that may occur within the study area during the 23-month construction programme. To assess the effects, it is necessary to determine the likely traffic generation associated with the Proposed Development during the peak construction month.

10.9.2 During the 23-month construction period, the following traffic will require access to the Site:

- Staff transport, in either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete materials and crushed rock;
- Components relating to the BESS element, substation components and associated infrastructure; and
- ALLs consisting of the wind turbine sections and heavy lift cranes.

10.9.3 Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development and these are detailed in the Transport Assessment provided as **Technical Appendix 10.1: Transport Assessment**. The trip estimates have been based upon first principle estimates of traffic movements to and from the Site, having established the likely volumes of construction materials, resources and components.

10.9.4 Except for the turbine components, most traffic will be HGVs and normal construction plant, including grading tractors, excavators, high-capacity cranes, forklifts and dumper trucks. Most will arrive at the Site access junction on low loaders.

10.9.5 The turbines are delivered in component sections for transport and will be assembled within the turbine array. The nacelle, hub, drive train, blade, tower

sections are classified as ALLs due to their weight and/or length, width and height when loaded. The components can be delivered on a variety of transport platforms with typical examples illustrated in **Technical Appendix 10.1: Transport Assessment**.

10.9.6 In addition to the turbine deliveries, up to two high-capacity erection cranes will be needed to offload components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that will be escorted by boom and ballast trucks to allow full mobilisation onsite. A smaller erector / assist crane will also be present to allow the assembly of the main cranes and to ease overall erection of the turbines.

10.9.7 The resulting traffic generation profile is presented in **Technical Appendix 10.1: Transport Assessment**. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in months 14 and 15 when there will be a total of 172 vehicle movements per day, comprising 70 two-way HGV movements and 102 car / LGV movements.

10.9.8 This would equate to approximately 14 two-way total movements or approximately six two-way HGV movements per hour, across a typical 12-hour day, assuming a flat traffic profile, where traffic arrived and departed the Site equally throughout the working day.

10.9.9 The distribution of development traffic on the network will vary depending on the types of loads being transported. Access for construction materials would be predominantly from the north and south via the A9 (depending on what materials are being delivered). This can be accessed from the Site via the U2856. The assumptions for the distribution of construction traffic during the peak month are presented in **Technical Appendix 10.1: Transport Assessment**.

10.9.10 The likely POE used for the discharging of wind turbine components will be Inverness Harbour. The proposed access route would be as follows:

- Loads will turn left on exiting the harbour onto Longman Drive / Stadium Road;
- Loads will take the first exit at the roundabout and join the A9 heading south;
- Loads will depart the A9 at the Tomatin South junction and will proceed north on the U2856; and
- Once on the U2856 the loads will head north westbound before turning left in to the Site via the proposed access junction, which can be seen in **Annex A of Technical Appendix 10.1**.

10.9.11 The above route is shown in **Figure 10.4**.

10.9.12 Following the distribution and assignment of traffic flows to the study area network, the resultant daily traffic during the peak of construction in month 14 and 15, is summarised in **Table 10.9**. Note where road links show no assignment of traffic flows, this is due to no construction traffic associated with the peak month routing to the Site via this route.

Table 10.9 Peak Daily Construction Traffic

Site ID	Survey Location	Cars & LGVs	HGVs	Total
1	U2856	102	70	172
2	A9, between the U2856 junction and Slochd	20	2	22
3	A9, between Slochd and Aviemore	20	2	22
4	A9, between the U2856 junction and Scatraig	82	68	150

Please note minor variances due to rounding may occur

10.9.13 The construction traffic was compared against the future baseline traffic to estimate the increase in traffic associated with this phase of the Proposed Development. **Table 10.10** illustrates the potential traffic impact at the peak of construction activity during month 14 and 15.

Table 10.10 Peak Daily Construction Network Impact

Site ID	Survey Location	Cars & LGVs	HGVs	Total	Cars / LGVs % Increase	HGV % Increase	Total % Increase
1	U2856	231	124	355	79.11%	130.94%	94.4%
2	A9, between the U2856 junction and Slochd	7,730	2,325	10,056	0.26%	0.07%	0.22%
3	A9, between Slochd and Aviemore	6,645	2,108	8,753	0.31%	0.08%	0.25%
4	A9, between the U2856 junction and Scatraig	9,734	1,647	11,380	0.85%	4.35%	1.34%

Please note minor variances may occur due to rounding

10.9.14 The total traffic movements are predicted to increase by more than 94% on the U2856, which is where the proposed Site access junction is located and as such all construction traffic will use. On the rest of the study area, the highest total traffic increase is 1.34%, which occurs on the A9 to the north of its junction with the U2856.

10.9.15 **Table 10.10** shows that highest HGV traffic movements increase will occur on the U2856, where it is estimated to increase by 130.94%, and whilst this increase could

be considered high, it is generally caused by the relatively low HGV flows on the road at this location. To put the increase into perspective, the U2856 will see an additional 70 HGV movements per day or six HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

10.9.16 The next highest HGV traffic movement increase would occur on the A9 to the north of its junction with the U2856, with a 4.35% increase. This is not considered significant in terms of overall traffic flows.

10.9.17 It should be noted the construction phase is transitory in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe when taking account of the whole construction programme.

10.9.18 A review of existing theoretical road capacity has been undertaken using The NESAs Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in **Table 10.11**.

Table 10.11 Peak Traffic Flow Capacity Review

Site ID	Survey Location	2028 Baseline Traffic	2028 Baseline + Development Flows	Theoretical Capacity	Spare Road Capacity %
1	U2856	183	355	21,600	98.36%
2	A9, between the U2856 junction and Slochd	10,034	10,056	81,600	87.68%
3	A9, between Slochd and Aviemore	8,731	8,753	28,800	69.61%
4	A9, between the U2856 junction and Scatraig	11,230	11,380	28,800	60.49%

Please note minor variances may occur due to rounding

10.9.19 The results indicate there are no road capacity issues with the addition of the construction traffic associated with the Proposed Development and ample spare capacity exists within the trunk and local road network.

10.9.20 The results indicate there are no road capacity issues with the addition of construction traffic associated with the Proposed Development and significant spare capacity exists within the trunk and local road networks to accommodate all construction phase traffic.

10.9.21 In accordance with the IEMA Guidelines Rules 1 and 2, detailed assessments have been undertaken on the following receptors within the study area. Note all receptors fall within Rule 1:

- U2856 Users (Medium Sensitivity); and
- Residents on the U2856 (Negligible Sensitivity).

10.9.22 As there is a Core Path and NCN Route in close proximity of the Site access junction, together with other paths located within the Site, which are noted as sensitive receptors, as a worst-case assessment it is assumed that traffic impacting on these paths will be an increase of over 100 %, and therefore a further assessment has been undertaken, and the summary of construction phase effects is presented in **Table 10.12**.

Table 10.12 Construction Phase Effects Summary

Receptors	Severance	Driver Delay	Pedestrian Delay	Non-motorised user Amenity	Fear & Intimidation	Road Safety	Large Loads
U2856 Users	Major/ Moderate (Significant)	Moderate (Significant)	Minor (Not Significant)	Moderate/ Minor (Not Significant)	Major/ Moderate (Significant)	Minor (Not Significant)	Minor (Not Significant)
Residents on the U2856	Moderate/ Minor (Not Significant)	Moderate/ Minor (Not Significant)	Negligible (Not Significant)	Moderate/ Minor (Not Significant)	Moderate/ Minor (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)
Core Path/ Path Users	Major (Significant)	N/A	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)
NCN Users	Major (Significant)	N/A	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)

10.9.23 The assessment suggests that the following receptors are considered likely to experience Significant effects in accordance with the EIA Regulations, prior to the application of mitigation measures:

- U2856 Users;
- Core Path / Path Users; and
- NCN Users.

10.9.24 It should be noted that the impacts relate solely to the peak of construction activities and that the construction period is short lived and the effects are temporary in nature. Whilst it is acknowledged that other months within the

construction programme may cause Significant effects, these would be less than those assessed and for which mitigation measures have been proposed.

10.9.25 Furthermore, the assessment undertaken has assumed a worst case scenario, whereby all stone / aggregate material would be imported to the Site from nearby quarries. In reality a significant amount of the required material will be won from on Site borrow pits, which would result in an overall reduction in HGV vehicle movements during the construction phase.

10.10 Committed Additional Mitigation

Construction Traffic Management Plan (CTMP)

10.10.1 The following measures will be implemented during the construction phase through the CTMP, secured via a deemed planning permission condition:

- Agree AIL route modifications and improvements with THC, TS and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the Route Survey Report (RSR), which is presented in **Annex B of Technical Appendix 10.1: Transport Assessment**;
- Where possible, the detailed design process will minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Transport Management Plan for AIL deliveries;
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the Site entrance, depending on the views of THC;
- Normal Site working hours will be limited to between 0700 and 1900 Monday to Saturday though component delivery and turbine erection may take place outside these hours i.e. depending on when police escort is available;
- Appropriate traffic management measures will be put in place on the U2856 and A9 leading through to the Site, to avoid conflict with general traffic, subject to the agreement of THC and TS. Typical measures will include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;

- Provide construction updates on the project website, social media feeds and a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary reduced speed limits, for example on the U2856 and B738 in the vicinity of the Site access junction and at other locations to be agreed with THC;
- All drivers will be required to attend an induction to include:
 - A toolbox talk safety briefing;
 - The need for appropriate care and speed control;
 - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations through the villages); and
 - Identification of the required access routes and the controls to ensure no departure from these routes.

10.10.2 A community liaison group would be formed by RES to keep local residents informed of planned deliveries and abnormal load movements.

Offsite Mitigation

10.10.3 THC is likely to request that an agreement to cover the cost of abnormal wear on its network is made. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline will inform any change in the road condition during the construction phase. Any necessary repairs will be coordinated with THC's roads team. Any damage caused by traffic associated with the Proposed Development during the construction period that would be hazardous to public traffic will be repaired immediately.

10.10.4 Damage to road infrastructure caused directly by construction traffic will be repaired and street furniture that is removed on a temporary basis will be fully reinstated.

10.10.5 There will be a regular road review and any debris and mud will be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.

Specific Abnormal Load Mitigation

10.10.6 There are a number of traffic management measures that could help reduce the effect of AIL convoys.

10.10.7 All AIL deliveries will be undertaken at appropriate times (to be discussed and agreed with the local authority, TS and the police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys will travel in the early morning periods before peak times while general construction traffic will generally avoid the morning and evening peak periods.

10.10.8 The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

10.10.9 Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:

- On sections of single carriageway road or narrow road sections, for example on the U2856;
- At locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- Where traffic turns at road junctions, requiring other traffic to be restrained on other approach arms; and
- In locations where high speeds of general traffic are predicted.

10.10.10 Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

10.10.11 The location and numbers of signs will be agreed post consent and would form part of the wider traffic management proposals for the Proposed Development.

10.10.12 Information on the wind turbine convoys will be provided to local media outlets such as local papers and local radio to help assist the public. Information will relate to expected vehicle movements from the port of entry through to the Site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

10.10.13 The Applicant will also ensure information was distributed through its communication team via the project website, local newsletters, and social media.

10.10.14 A police escort will be required to facilitate the delivery of the predicted AILs. The police escort will be further supplemented by a civilian pilot car to assist with

the escort duty. It is proposed that an advance escort will warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy will remain in radio contact at all times where possible.

10.10.15 The abnormal loads convoys will be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

10.10.16 The times in which the convoys will travel will need to be agreed with Police Scotland who have sole discretion on when loads can be moved.

AIL Transport Management Plan

10.10.17 An Abnormal Load Transport Management Plan will be prepared to cater for all movements to and from the Proposed Development. This will include:

- Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates, and agreeing communication protocols and lay over areas to allow overtaking;
- A diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events;
- A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- Proposals to establish a construction liaison group to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Staff Travel Plan

10.10.18 A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

- Appointment of a Travel Plan Coordinator (TPC);
- Provision of public transport information;

- Mini-bus service for transport of Site staff;
- Promotion of a car sharing scheme;
- Car parking management; and
- Restrictions on parking, for example on the public road network and verges in the vicinity of the Site entrance.

Outdoor Access Management Plan (OAMP)

10.10.19 Within the Site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of Core Paths / paths, cycle routes and public roads. An Outdoor Access Management Plan (OAMP) will be developed and secured via a planning condition. A draft OAMP is included as **Technical Appendix 3.4**.

10.10.20 Users of the Core Paths /paths etc. will be separated from construction traffic wherever possible. Crossing points will be provided where required, with path users having right of way and temporary diversions will be provided where necessary. Appropriate Traffic Signs Manual Chapter 8²³ compliant temporary road signage will be provided to assist at these crossings for the benefit of all users.

10.10.21 The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to paths / footways and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

10.10.22 Signage will be installed on the Site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This will also be emphasised in the weekly toolbox talks.

10.10.23 No scoping response has been received from The British Horse Society, however measures implemented on similar schemes will be given consideration as part of the Proposed Development. These measures are predominantly focused around the interactions between HGV traffic and horses. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

²³ <https://assets.publishing.service.gov.uk/media/5a74adeaed915d7ab83b5ab2/traffic-signs-manual-chapter-08-part-01.pdf>

- 10.10.24 The main factors causing fear in horses in this situation are:
- something approaching them, which is unfamiliar and intimidating;
 - a large moving object, especially if it is noisy;
 - lack of space between the horse and the vehicle;
 - the sound of air brakes; and
 - anxiety on the part of the rider.

- 10.10.25 The British Horse Society has previously recommended the following actions that will be included in the Site training for all HGV staff:
- on seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible;
 - if the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so);
 - the vehicle should not move off until the riders are well clear of the back of the HGV;
 - if drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them; and
 - all drivers delivering to the Site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

10.11 Assessment of Residual Effects

Construction

- 10.11.1 The identification of residual construction effects considers the assessment of traffic effects following the incorporation of the identified mitigation measures above. An evaluation of the potential effects of the temporary increase in traffic on the study area roads used for the construction traffic has been undertaken, with the results provided below:
- U2856 Users - Not Significant;
 - Core Path / Path Users - Not Significant ; and
 - NCN Users - Not Significant.
- 10.11.2 A summary of the assessment of residual effects, including the proposed mitigation measures is presented in **Table 10.13**.

- 10.11.3 The assessment confirms the temporary construction stage effects will be minor in nature and they will be not significant, following the implementation of a comprehensive CTMP, together with onsite route signage and an OAMP. The traffic effects are transitory in nature and appropriate mitigation measures are proposed to reduce the potential impacts. No long-term detrimental transport or access issues are associated with the construction phase of the Proposed Development.

10.12 Interrelationship Between Effects

- 10.12.1 The IEMA guidelines also refer to interrelationships with traffic and transport effects in relation to amenity including visual effects, noise and hazardous loads. Visual effects and noise are addressed in **Chapter 5: Landscape and Visual Impact Assessment** and **Chapter 11: Acoustics**.

10.13 Further Survey Requirements and Monitoring

- 10.13.1 Site entrance roads will be maintained and monitored during the construction phase and operational life of the Proposed Development. With regards to the construction phase, this will be done as part of the CTMP and will involve monitoring the Site access junction and public road network in the vicinity of the Site to ensure mud and debris from construction activities are not tracked on to the road network. Furthermore, monitoring of the public road network will be undertaken as part of the road conditions surveys, that will likely be required as part of the planning conditions attached to the consent.
- 10.13.2 During the operational life of the Proposed Development, regular maintenance will be undertaken to keep the Site access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

10.14 Summary

- 10.14.1 The Proposed Development would lead to a temporary increase in traffic volumes on roads in the study area during the construction phase compared to the future baseline. Traffic volumes would fall considerably outside the peak period of construction.
- 10.14.2 The maximum traffic impact associated with construction is predicted to occur in month 14 and 15 of the 23-month construction programme, when there will be a total of 172 vehicle movements per day, comprising 70 two-way HGV movements and 102 car / LGV movements. This would equate to approximately 14 two-way total movements or approximately six two-way HGV movements per hour, across a typical

12-hour day, assuming a flat traffic profile, where traffic arrived and departed the Site equally throughout the working day.

10.14.3 The greatest impact on the public road would occur along the U2856, within the vicinity of the proposed Site access junction, with an increase in traffic of more than 94.4%. In addition, users of the nearby Core Path and NCN are likely to be affected.

10.14.4 As previously advised, the assessment undertaken has assumed a worst case scenario, whereby all stone / aggregate material would be imported to the Site from nearby quarries. In reality a significant amount of the required material will be won from on Site borrow pits, which would result in an overall reduction in HGV vehicle movements and hence impacts within the study area.

10.14.5 With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect transport and access issues. The residual effects are all assessed to be Minor. Furthermore, as they will occur during the construction phase only, they are temporary and reversible.

Table 10.13 Summary of Residual Effects

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Construction Phase			
U2856 Users			
Severance	CTMP - delivered by the Contractor. Staff Travel Plan - will be delivered by the Principal Contractor. AIL Transport Management Plan - will be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Driver delay	CTMP - delivered by the Contractor. Staff Travel Plan - will be delivered by the Principal Contractor. AIL Transport Management Plan - will be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Fear and intimidation	CTMP - delivered by the Contractor. Staff Travel Plan - will be delivered by the Principal Contractor.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
	AIL Transport Management Plan - will be prepared and delivered by the Abnormal Load supplier.		
Core Path /Path / NCN Users			
Severance	CTMP - delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Driver delay	CTMP - delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Pedestrian delay	CTMP - delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Non-motorised user amenity	CTMP - delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Fear and intimidation	CTMP - delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Road Safety	CTMP - delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Large Loads	AIL Transport Management Plan - will be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Operational Phase			
None	None	None	None
Decommissioning Phase			
None	None	None	None

10.15 References

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