Chapter 12 Traffic & Transport

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List of Abbreviations

Abbreviation	Description
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
AMP	Access Management Plan
ATC	Automatic Traffic Count
BoP	Balance of Plant
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DPEA	Planning and Environmental Appeals Division
EIA Report	Environmental Impact Assessment Report

ESDAL	Electronic Service Delivery for Abnormal Loads
HGV	Heavy Goods Vehicle
IEMA	The Institution of Environmental Management and Assessment

12. Traffic & Transport

12.1. Executive Summary

12.1.1. This chapter provides an assessment of the potential effects of the Proposed Development on receptors along the transport routes resulting from vehicle movements associated with the construction phase.

12.1.2. Access to the Proposed Development will 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).

12.1.3. Existing traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.

12.1.4. The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The maximum traffic effect associated with construction of the Proposed 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 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.

12.1.5. With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport matters. The residual effects are all assessed to be slight or not significant and as they will occur during the construction phase only, they are temporary and reversible.

12.1.6. Traffic levels during the operational phase of Proposed Development will be approximately two vehicles per week for maintenance purposes. Traffic levels during the decommissioning of the Proposed Development are expected to be lower than during the construction phase as some elements are likely to be left in situ and others broken up on-site.

12.1.7. The movement of Abnormal Indivisible Loads (AIL) traffic will require small scale and temporary remedial works at a number of locations along the identified delivery route.

12.2. Introduction

12.2.1. This chapter provides an assessment of the potential effects of the Proposed Development on receptors along the transport routes resulting from vehicle movements associated with the construction phase.

12.2.2. The specific objectives of the chapter are to:

- review the relevant policy and legislative framework;
- describe the baseline transport conditions;
- describe the assessment methodology and significance criteria used in undertaking the assessment;
- describe the potential effects, including direct, indirect and cumulative effects;
- describe the mitigation measures proposed to avoid, reduce and offset likely potential significant adverse effects; and
- assess the significance of residual effects remaining following the implementation of mitigation.

12.2.3. The assessment has been carried out in accordance with the Institute of Environmental Assessment (now Institute of Environmental Management and Assessment (IEMA)) Guidelines for the Environmental Assessment of Road Traffic. The document is referred to as the IEMA Guidelines in this chapter.

12.2.4. The assessment was carried out by Pell Frischmann Consultants Limited.

12.2.5. This chapter should be read in conjunction with **Technical Appendix 12.1: Transport Assessment**.

12.2.6. This chapter is supported by the following Figures (**EIA Report Volume 3**):

- **Figure 12.1: Study Area**;
- **Figure 12.2: Traffic Count Locations**;
- **Figure 12.3: Personal Injury Accident Plan**; and
- **Figure 12.4: Abnormal Indivisible Load Route Plan**.

12.3. Legislation, Policy and Guidelines

12.3.1. Relevant legislation, policy and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance are:

- National Planning Framework 4 (NPF4) (2023);
- Planning Advice Note (PAN) 75 (2005);
- Transport Assessment Guidance (2012);
- Onshore Wind Turbines; Online Renewables Planning Advice (2014);
- Institute of Environmental Assessment, Environmental Assessment of Traffic and Movement (2023);
- The Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment (IEA), (1993);
- Institution of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005);
- Roads and Transport Guidelines for New Developments (2013);
- Highland-wide Local Development Plan (2012);
- Guidance on the Preparation of Transport Assessments (2014);
- LA104, Environmental assessment and monitoring, Design Manual for Roads and Bridges (DMRB) (Standards for Highways, 2020); and
- Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008).

12.4. Consultation

12.4.1. In undertaking the assessment, a request for a Scoping Opinion was issued to transport agencies that have an interest in the surrounding road network, which includes The Highland Council (THC) as local roads agency and Transport Scotland as the trunk road agency.

12.4.2. **Table 12.1** provides a summary of the consultation responses received to date in relation to the Proposed Development, as detailed within **Appendix 4.3 Gatecheck Report** and the supporting **Pre-Application Consultation Report.**

Table 12.1 – List of Consultee Responses

Consultee	Consultation Response	Applicant Action
Transport Scotland Scoping Response (01/12/2021)	Transport Scotland will require a threshold assessment to determine whether there are likely to be any significant environmental issues associated with increased traffic on the trunk road network and any requirement for further trunk road assessment. We also stated that potential trunk road related environmental impacts such as driver delay, pedestrian amenity, severance, safety etc will require to be considered and assessed where appropriate (i.e. where Institute of Environmental Management and Assessment (IEMA) Guidelines for further assessment are breached).	Noted. The assessments has been undertaken as per the 'IEMA' Guidelines.
	Transport Scotland will require to be satisfied that the size of turbines proposed can negotiate the selected route and that their transportation will not have any detrimental effect on structures within the trunk road route path. We stated that a full Abnormal Loads Assessment report should be provided which identifies key pinch points on the trunk road network and that swept path analysis should be undertaken and details provided with regard to any required changes to street furniture or structures along the route. In particular, should access to the site be proposed from the northern tip of the site, the junction of the A82(T) with the minor road (signed for Ardachy) will require to be assessed.	A Route Survey Report is presented in as **Appendix A** in **Technical Appendix 12.1**.
	Chapter 10 also confirms that the study area will include the A82(T) and that base traffic data for the trunk road will be obtained from the Department for Transport (DfT) traffic count database. We note that National Road Traffic Forecast (NRTF) Low Traffic Growth factors will be used to obtain the future year baseline. Transport Scotland is satisfied with this approach but would note that DfT measured counts are fine but estimated traffic flows should not be used.	Noted and can confirm the assessment has been undertaken in line with this comment.

	It is noted that any impacts associated with the operational phase of the development are to be scoped out of the EIA Report. We would consider this to be acceptable in this instance.	Comment noted.
	Transport Scotland will require a threshold assessment to determine whether there are likely to be any significant environmental issues associated with increased traffic on the trunk road network and any requirement for further trunk road assessment. We also stated that potential trunk road related environmental impacts such as driver delay, pedestrian amenity, severance, safety etc will require to be considered and assessed where appropriate (i.e. where Institute of Environmental Management and Assessment (IEMA) Guidelines for further assessment are breached).	Noted. The assessments has been undertaken as per the 'IEMA' Guidelines.
The Highland Council Pre-Application Advice (01/12/2021)	Transport Assessment (TA), Construction Traffic Management Plan and an Abnormal Load Assessment will be required within the EIA Report. The Scope of the TA should be agreed with all impacted Road Authorities. It was suggested at the meeting that all construction access will be taken from the south where the U1667 Ardachy Road meets the A82 Trunk Road. This is welcomed, as the majority of the Ardachy Road is not currently suitable for construction-related vehicles and will require extensive improvements if any form of construction access is proposed along it from the B862 to the north.	Comment noted, a Transport Assessment is included as **Technical Appendix 12.1**, with the Route Survey Report included as **Appendix A** of the Transport Assessment. Access for construction traffic and materials will be routed to the site from the A82(T) to the south. The U1667 Ardachy Road from the north will not be used for any construction activities. The assessment within the chapter has been undertaken in this regard.
	We accept that construction access is likely to have the greatest vehicular impact on the local public roads and any assessment should be based on that worst-case scenario. However, any submission should also set out the likely operational access needs during the life of the proposed wind farm, including a breakdown of the anticipated type and frequency of traffic needing access during that operational period.	Comment noted and information on operational traffic is included within the chapter.
	Any proposals for construction traffic using the B862 will need to recognise	Comment noted, construction traffic is not proposed to use any of the roads listed.

	that this is also a substandard route, as is the B851 that it comes off and the B852 that connects with it. Therefore, any construction related traffic from this development proposing to make use of that route will need to be identified in any submission made, with improvement / investment measures proposed towards mitigating those impacts. Such mitigation should be developed in accordance with the current South Loch Ness Road Improvement Strategy and be agreed with The Council who are leading on the development and delivery of that strategy.	
	Any submission should also set out the steps that will be taken to avoid / limit impacts from construction related traffic on Fort Augustus. This is a relatively small community that suffers from traffic congestion during the busy tourist season. Therefore, any submission should recognise the implications of tourist traffic on Fort Augustus and take necessary steps to avoid exacerbating those existing issues (see comments below under CTMP).	Comment noted and information on routing of construction trips is included within the chapter and measures in relation to the control of construction activities is included within the proposed mitigation measures.
	Any survey information gathered during the current Covid pandemic to determine baseline traffic levels will need to be supported with additional data to determine the likely levels of influence that Covid may have had on such traffic levels. The submission should include full details on the data used and approach taken to determine likely Covid influences, including justification for any assumptions made and any alterations / uplifts applied to surveyed data. 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 will 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	Comment noted, traffic surveys were undertaken in 2023 outwith any COVID related travel restrictions. Information on predicted traffic generation has been included within the chapter and justification for this has been provided. With regards to the sourcing of aggregate material, reference has been made to **Technical Appendix 9.7: Borrow Pit Desktop Assessment**.

	scenario of no such suitable materials being found within the site.	
	The Transport Assessment Methodology below sets out what the Council requires, and further information is provided in our published Roads and Transport Guidelines for New Developments. 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.	Comment noted.
	Any submission should clarify the proposed port of entry for the large turbine components and demonstrate that the port and the public roads serving it can accommodate such large loads. If the turbine components are to be stored remote from the port prior to being moved to the site for erection, the location of that store should be identified and the adequacy of the access arrangements justified. A review of the preferred routing of such large components to the site should include swept path assessment and consideration of any structures along the route. A trial run should also be undertaken to demonstrate the suitability of the abnormal load route for the proposed components.	Comment noted, a Route Survey Report is presented in as **Appendix A** in **Technical Appendix 12.1**. A trial run for the Proposed Development would be undertaken post consent and can be secured by way of a planning condition.
	The TA should include an Abnormal Load Assessment of the roads utilised to convent abnormal loads to the site. The assessment will need to confirm the proposed port of entry for AIL components and justify the adequacy of the route for transporting them to the site. Early discussion with the Council's abnormal loads team and the Council's structures team is recommended.	Comment noted, a Route Survey Report is presented in as **Appendix A** in **Technical Appendix 12.1**.
	Details of any new site access should be clearly set out on dimensioned drawings related to OS data and include confirmation of geometry, construction form, drainage details to prevent water running out onto the public road and evidence that appropriate visibility splays can be achieved. Vehicle swept paths should also be provided to evidence that the proposed junction form will be suitable for its intended use. Details of reinstatement of any temporary site access at its junction	Comment noted, an indicative layout of the proposed junction on the U1667 Ardachy Road is presented in **Appendix B** in **Technical Appendix 12.1,** as Drawing 15607_DET_301, prepared by Natural Power on behalf of the Applicant.

	with the public road, post construction is also required. Appropriate junction arrangements and visibility splay information can be found in our published Roads and Transport Guidelines for New Developments.	
	We note the intention to look into providing amenity facilities at the proposed access from the U1667 Ardachy Road to support public access to the Wades Road. The details for that should be clearly set out on the site access arrangements, demonstrating how the interaction between public and construction access will be safely managed.	Following liaison with local residents who did not want this to be included as part of the development proposals, the Applicant has removed this from the scheme.
	The TA should include a framework Construction Traffic Management Plan (CTMP) aimed at minimising the impact of the construction traffic. This should recognise that public roads in this area are heavily influenced by tourist traffic. It should also demonstrate what steps will be being taken to avoid / limit the impacts of construction traffic on Fort Augustus. It shall include measures to ensure development traffic adheres to the approved routes and to prevent platooning during heavier flows such as any ready mix concrete pours. Consultation with the local community and the Local Area Roads Office will be required for the detailed content and implementation of the CTMP.	Comment noted and information on routing of construction trips is included within the chapter and measures in relation to the control of construction activities is included within the proposed mitigation measures. CTMP measures are included within **Technical Appendix 12.1** and within the chapter. Further consultation with the Local Area Roads Officer and local communities will be undertaken as part of the full CTMP which will be compiled post consent and can be secured by way of a planning condition.
	Measures proposed in a CTMP will be supplementary and complementary to any physical road improvements deemed necessary to achieve safe construction access. The development of a CTMP should give consideration to the following: • Avoid HGV routing in the vicinity of local schools, particularly during school opening and closing times. • No convoying of HGV or site staff vehicles. • Agreed routes to be used by all site staff, contractor, sub-contractor and deliveries. • Clarify the steps that will be taken to deter / prevent construction traffic using non-designated routes to and from the site.	Comments noted and consideration to these has been given within the proposed CTMP measures.

	• Providers of products and materials to this development (e.g. aggregate or concrete, staff mini-buses if used etc) should mark their vehicles with a unique number identifier on the front, sides and rear of the vehicles and a Culachy WF identifier. This enables easy identification in the event of problems arising, such as speeding or discourteous driving, as registration number plates are difficult to obtain. This is a well-established practice in South Loch Ness and has worked successfully in recent and previous developments. It also helps to avoid issues with traffic from other developments being wrongly associated with this proposal. • Setting up a single point of contact for local residents to use in the event of problems or concerns, such as in the above bullet point. This should be telephone and website details as a minimum, with consideration of Twitter and Facebook as appropriate. All such details should be provided to Community Councils for their notice boards and websites. • Toolbox talks established with all suppliers, contractors, site staff etc to encourage careful and courteous driving at all times. Particular attention should be made to driving through all villages and settlements, with cognisance of relevant speed restrictions and local conditions/limitations of the road network.	
	It should be noted that any works required on the public road or disruption to its use by others as a result of this scheme (e.g. temporary traffic management measures) will need the permission of the Local Roads Authority. We acknowledge that the detail of such measures may not be fully understood until the Contractors have been appointed. However, any such measures that are expected to be required should be set out in the Framework CTMP.	Comment noted.
	Even with suitable road improvements and traffic management measures, there may remain a risk of damage to Council maintained roads from development related traffic. In order to protect the interests of the Council, as roads authority, a suitable Wear and Tear	A **Section 96 Agreement** or similar agreement to cover Wear and Tear on the local road network will be agreed with THC to ensure the road does not deteriorate as a result of the proposed construction traffic.

	agreement relating to Section 96 of the Roads (Scotland) Act and appropriate planning legislation is likely to be required. This would include the provision of an appropriate Road Bond or equivalent financial security.	
	Should there be overlaps with construction activities from other developments in the area, consideration should be given to a joint approach to the development of a CTMP and Wear and Tear Agreement.	Comment noted and reference to this has been made as part of the cumulative assessment.
	The EIA should assess the proposal's impact on outdoor access according to Appendix 6 in NatureScot's Environmental Impact Assessment Handbook 2nd Ed. That includes all the potential temporary and permanent impacts of this proposal on outdoor access seeking to minimise any adverse and maximise any positive impacts. It should include assessments on the effects on the quality of the settings where outdoor access takes place.	Comment noted. Within this chapter reference has been made to the potential impacts on Core Paths / Public Rights of Way and mitigation measures have been proposed in this regard by way of a Path Management Plan, which would be undertaken post consent and can be secured by a suitably worded planning condition.
	That assessment and the proposed mitigation will form the basis of an access management plan which should be submitted with an application. That is in line with HwLDP Policy 77 that requires such a plan to be submitted for a Major Development and which requires proposals to retain, maintain or enhance exiting routes or ensure that alternatives are as attractive to use.	An Outline Access Management Plan has been prepared and is included as **Technical Appendix 3.2.**
	The proposal will also be assessed against HwLDP Policy 78 Long Distance Routes. The Great Glen Way, Great Glen Canoe Trail and South Loch Ness Trail are all in the vicinity. General Wade's Military Road might be considered among these serving as a critical element of a coast to coast cycle route and a popular choice for long distance walks and bikes rides including the Highland 550. That policy seeks to safeguard and enhance long distance routes and their settings.	Comment noted.
	General Wade's Military Road is a public right of way here. It is also a candidate core path. The Ardochy Road is part of the Paths Around Fort Augustus network and serves as a spur for circular walks about the	Comment noted and these routes have been considered within the assessment undertaken and mitigation measures proposed where appropriate.

	village. There are promoted paths through Glen Tarf to the Falls which are also an alternative hill route to Carn a Chuilinn. Almost all of the area is accessible under the Land Reform (Scotland) Act 2003.	
The Highland Council Scoping Opinion (03/05/2022)	Transport Planning team refer to the drawings and documentation submitted in respect of the above scoping request. Their earlier pre-application consultation response, 21/04202/PREMAJ, essentially sets out the transport related requirements for any subsequent planning application.	Comment noted, responses have been made to this earlier in **Table 12.1**.
	In accordance with pre-application advice, any impact by development traffic on the Council Road network north of the site access will need to be considered and assessed. This may include the northern section of the U1667, the B862, B851 and B852; and will relate to workforce traffic as well as general construction traffic. Given the character and condition of these roads, any increase in overall traffic or HGV traffic may have a significant impact.	Comment noted, a Transport Assessment is included as **Technical Appendix 12.1.** Access for construction traffic and materials will be routed to the site from the A82(T) to the south. The U1667 Ardachy Road from the north will not be used for any construction activities. The assessment within the chapter has been undertaken in this regard.
	With regard to the Scoping Questions to Consultees, subject to confirmation that no construction related traffic will be generated on the local road network north of the site access, Transport Planning team would respond as follows. • The methodology is considered generally acceptable. • The methods proposed for obtaining traffic flow data are considered acceptable. • Use of Low NRTF is considered acceptable. • Details of relevant committed developments should be obtained from the Planning service. • Transport planning team are not aware of any proposed upgrades or network changes that may be undertaken in the study area within the next 5 years.	Comments noted.
	It will need to be clearly demonstrated to the satisfaction of the Council that suitable measures will be in place to ensure that no construction related traffic will be	Comment noted, measures in relation to the routing of traffic is included within the CTMP measures.

generated on the local road network north of the site access.	
A Transport Assessment (TA) will be required, with the basic framework for that set out on the attached note. It was suggested at the meeting that all construction access will be taken from the south where the U1667 Ardachy Road meets the A82 Trunk Road. This is welcomed, as the majority of the Ardachy Road is not currently suitable for construction-related vehicles and will require extensive improvements if any form of construction access is proposed along it from the B862 to the north. Transport Planning team accept that construction access is likely to have the greatest vehicular impact on the local public roads and any assessment should be based on that worst case scenario. However, any submission should also set out the likely operational access needs during the life of the proposed wind farm, including a breakdown of the anticipated type and frequency of traffic needing access during that operational period.	Comment noted, a Transport Assessment is included as **Technical Appendix 12.1.** Access for construction traffic and materials will be routed to the site from the A82(T) to the south. The U1667 Ardachy Road from the north will not be used for any construction activities. The assessment within the chapter has been undertaken in this regard. Information on predicted traffic generation has been included within the chapter and justification for this has been covered. With regards to the sourcing of aggregate material, reference has been made to **Technical Appendix 9.7: Borrow Pit Desktop Assessment**. Consideration to the operational traffic generation has been given within the chapter.
Any proposals for construction traffic using the B862 will need to recognise that this is also a substandard route, as is the B851 that it comes off and the B852 that connects with it. Therefore, any construction-related traffic from this development proposing to make use of that route will need to be identified in any submission made, with improvement / investment measures proposed towards mitigating those impacts. Such mitigation should be developed in accordance with the current South Loch Ness Road Improvement Strategy and be agreed with The Council who are leading on the development and delivery of that strategy.	Comment noted, no construction traffic is proposed to use these routes,
Any submission should also set out the steps that will be taken to avoid / limit impacts from construction-related traffic on Fort Augustus. This is a relatively small community that suffers from traffic congestion during the busy tourist season. Therefore, any submission should recognise the implications of tourist traffic on Fort Augustus and take necessary steps to avoid exacerbating those existing	Comment noted and information on routing of construction trips is included within the chapter and measures in relation to the control of construction activities is included within the proposed mitigation measures.

issues (see comments below under CTMP).	
Any survey information gathered during the current Covid pandemic to determine baseline traffic levels will need to be supported with additional data to determine the likely levels of influence that Covid may have had on such traffic levels. The submission should include full details on the data used and approach taken to determine likely Covid influences, including justification for any assumptions made and any alterations / uplifts applied to surveyed data. 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.	Comment noted, traffic surveys were undertaken in 2023 outwith any COVID related travel restrictions.
This includes for example any assumptions made about the amounts of material that will 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. Prior to preparation of the TA, the applicant shall undertake a detailed scoping exercise in consultation with the Council's Transport Planning Team and Transport Scotland.	Comment noted, information on predicted traffic generation has been included within the chapter and justification for this has been provided. With regards to the sourcing of aggregate material, reference has been made to **Technical Appendix 9.7: Borrow Pit Desktop Assessment**.
Any submission should clarify the proposed port of entry for the large turbine components and demonstrate that the port and the public roads serving it can accommodate such large loads. If the turbine components are to be stored remote from the port prior to being moved to the site for erection, the location of that store should be identified and the adequacy of the access arrangements justified. A review of the preferred routing of such large components to the site should include swept path assessment and consideration of any structures along the route. A trial run should also be undertaken to demonstrate the	Comment noted, a Route Survey Report is presented in as **Appendix A** in **Technical Appendix 12.1**. A trial run for the Proposed Development would be undertaken post consent and can be secured by way of a planning condition.

suitability of the abnormal load route for the proposed components.	
Measures proposed in a CTMP will be supplementary and complementary to any physical road improvements deemed necessary to achieve safe construction access. The development of a CTMP should give consideration to the following: Avoid HGV routing in the vicinity of local schools, particularly during school opening and closing times. • No convoying of HGV or site staff vehicles. • Agreed routes to be used by all site staff, contractor, sub-contractor and deliveries. • Clarify the steps that will be taken to deter / prevent construction traffic using non designated routes to and from the site. • Providers of products and materials to this development (e.g. aggregate or concrete, staff mini-buses if used etc) should mark their vehicles with a unique number identifier on the front, sides and rear of the vehicles and a Culachy WF identifier. This enables easy identification in the event of problems arising, such as speeding or discourteous driving, as registration number plates are difficult to obtain. This is a well-established practice in South Loch Ness and has worked successfully in recent and previous developments. It also helps to avoid issues with traffic from other developments being wrongly associated with this proposal. • Setting up a single point of contact for local residents to use in the event of problems or concerns, such as in the above bullet point. This should be telephone and website details as a minimum, with consideration of Twitter and Facebook as appropriate. All such details should be provided to Community Councils for their notice boards and websites. • Toolbox talks established with all suppliers, contractors, site staff etc to encourage careful and courteous driving at all times. Particular attention should be made to driving through all villages and settlements, with cognisance of relevant speed restrictions and local	Comments noted and consideration to these has been given within the proposed CTMP measures.

conditions/limitations of the road network.	
To ensure that arrangements are in-place to repair the local public road network being used for construction access purposes, should it be damaged by vehicles accessing this development, we would expect any proposal to enter into a formal Section 96 'Wear & Tear' Agreements (Section 96 of the Roads (Scotland) Act 1984) with Highland Council. 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, including by construction related vehicles.	A **Section 96 Agreement** or similar agreement to cover Wear and Tear on the local road network will be agreed with THC to ensure the road does not deteriorate as a result of the proposed construction traffic.
The proposal for any new or upgraded access points onto the public road shall be detailed on dimensioned drawings including radii, surfacing and drainage as well as the required visibility splays in accordance with the Highland Council's Roads and Transport Guidelines for New Developments available online.	Comment noted, an indicative layout of the proposed junction on the U1667 Ardachy Road is presented in **Appendix B** in **Technical Appendix 12.1,** as Drawing 15607_DET_301, prepared by Natural Power on behalf of the Applicant.
Transport Planning Team note the intention to look into providing amenity facilities at the proposed access from the U1667 Ardachy Road to support public access to the Wades Road. The details for that should be clearly set out on the site access arrangements, demonstrating how the interaction between public and construction access will be safely managed.	Following liaison with local residents who did not want this to be included as part of the development proposals, the Applicant has removed this from the scheme.
Identify all public roads affected by the development, including routes from ports used to receive and/or store turbine component parts. It is expected that the developer will submit preferred access route(s) for the development, both for abnormal loads and for general construction traffic, staff and suppliers. All other possible access route options should be identified, having been investigated in order to establish their feasibility. This should clearly identify the pros and cons of all the route options and therefore provide a logical selection process for arriving at the preferred route(s). The size of the proposed turbines may require an assessment for getting out of the	Comment noted, a Route Survey Report is presented in as **Appendix A** in **Technical Appendix 12.1**.

preferred port, when chosen, as ports in the area may not have accommodated such large components before.	
Set out the existing nature and condition of these public roads. This should include: • The road name and number, where applicable. • Road widths, including any pinch points. • The nature of their horizontal and vertical alignments, including any known steep gradients. • An appraisal of the carriageway strength including, where necessary, construction depths and road formation where there is likely to be significant impacts. • The location of any structures either spanning or supporting the roads, including a description of their nature (e.g. bridge, culvert etc), any width, and height or weight restrictions and where necessary, an assessment of their load carrying capability. This work should be undertaken by a suitably capable and qualified consulting engineer acceptable to The Council. • The nature and quantum of properties and other development types serviced by the roads. In addition to the quantum of residential properties, specific recognition should be made of any sensitive facilities such as schools, businesses or other community facilities along the roads. • The nature and quantum of existing traffic flows on these roads. This should include reference to how often the roads are used by school or commercial bus services and whether the routes are used by pedestrians, cyclists and equestrians. Our Public Transport Team may be able to assist with info on school and scheduled bus services	Comment noted, we would advise that a road condition survey will be prepared prior to the commencement of construction and will include the requested information. It is anticipated that this would form a planning condition. The baseline established from the condition survey will inform any change in the road condition during the construction phase. Any necessary repairs attributed to the Proposed Development on the local road network will be coordinated with THC via a **Section 96 Agreement** or similar agreement. With regards to the roads and those areas served, together with existing traffic flows, this is covered within the **Baseline Conditions** section of both this chapter and **Technical Appendix 12**.1.
Identify the anticipated impacts from the Proposed Development, including any cumulative impacts from other developments that have the potential to be happening at the same time. These impacts should include:	Comments noted. The assessments has been undertaken as per the 'IEMA' Guidelines, taking cognisance of these comments. A road condition survey will be prepared prior to the commencement of construction and will include the requested information. It is

• The quantum of new traffic impacting on these roads throughout the construction, operation and decommissioning periods of this development. This should cover: o numbers of light and heavy vehicles (differentiated) o numbers of abnormal loads o profiles of anticipated new traffic movements throughout the duration of the works • Any impacts to existing carriageways, structures, verges or other aspects of these public roads. This should include information on swept paths and gradient analysis where it is envisaged that the passage of traffic could be problematic. • Trial Runs for abnormal loads to be carried out in order to prove the route is achievable and/or to establish the extent of works required to facilitate transportation. • The location of any new or changes to existing accesses off these public roads to be used for accessing this development. This should include the extent of existing visibility from each of the accesses onto the public roads. • Any impacts or restrictions needing to be imposed on existing road users. • Any impacts or restrictions needing to be imposed on adjacent properties or local communities serviced by these public roads.	anticipated that this would form a planning condition. The baseline established from the condition survey will inform any change in the road condition during the construction phase. Any necessary repairs on the local road network attributed to the Proposed Development will be coordinated with THC via a **Section 96 Agreement** or similar agreement. A trial run will be undertaken post consent and can be secured by planning condition. Comment noted, an indicative layout of the proposed junction on the U1667 Ardachy Road is presented in **Appendix B** in **Technical Appendix 12.1,** as Drawing 15607_DET_301, prepared by Natural Power on behalf of the Applicant. Restriction in relation to construction activities on the local road network or on adjacent properties or existing road users is included within proposed mitigation measures.
Set out the proposed mitigation measures needed to tackle the anticipated impacts set out above. This should include: • The location and nature of any carriageway widening or strengthening. • Works to improve the visibility at proposed access points with public roads and at junctions along the proposed access routes. • The location and nature of any strengthening or widening needed to existing structures. • The provision of new or enhanced passing places on single track roads. • Road safety measures deemed necessary to effectively manage the	Details of mitigation measures to address impacts of proposed traffic are presented in the Proposed Mitigation **section 12.6** of this chapter. The Route Survey Report included as **Appendix A** within Technical **Appendix 12.1** addresses required mitigation to the road network to facilitate AILs. Existing passing places are located along the U1667 Ardachy Road. Comment noted, an indicative layout of the proposed junction on the U1667 Ardachy Road is presented in **Appendix B** in **Technical Appendix 12.1,** as Drawing 15607_DET_301, prepared by Natural Power on behalf of the Applicant.

impacts of any identified road safety issues. • Traffic management proposals deemed necessary to enhance compliance with the traffic management plan associated with the construction and ongoing operation of this development. Such measures should be developed with Highland Council and be in accordance with the South Loch Ness Road Improvement Strategy. It should also be noted that any such mitigation may need to be specifically considered within the wider considerations of the EIA, depending on the form, scale and location of the works proposed and their potential impacts to any existing environmentally sensitive sites.	Road safety measures and traffic management measures will be presented in the CTMP. Construction traffic is not proposed to use any of the roads in relation to the South Loch Ness Road Improvement Strategy.
Details of any residual effects on the road network and its users following the implementation of the proposed mitigation outlined above and any actions proposed associated with those residual effects.	Comment noted, addressed in **section 12.9** of this chapter.

12.5. Scope of Assessment

Effects Assessed in Full

12.5.1. The following effects were identified at the scoping stage for consideration in this assessment:

- direct effects during construction on traffic flows in the surrounding study area;
- direct effects upon local road users;
- direct effects on local residents as a result of increased traffic; and
- a cumulative sensitivity review on direct effects during construction on traffic flows in the surrounding study area.

12.5.2. Where the predicted magnitude of change to baseline conditions of roads within the study area meet the criteria set out in the IEMA guidance, a review of the effects on severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation, and accidents / road safety has been undertaken.

Effects Scoped Out

12.5.3. On the basis of the desk 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:

- Operational Phase: The traffic effects during the operational phase of the Proposed Development are not likely to be significant as expected traffic flows will be approximately two vehicle movements per week, 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, 35 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, 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, no further assessment of the decommissioning phase has been considered at this point in time and has been scoped out of the assessment. It should be noted that prior to decommissioning of the Proposed Development, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

12.6. Assessment Methods and Significance Criteria

12.6.1. The methodology adopted in this assessment involved the following key stages:

- determine the baseline for traffic and transport;
- review and identify potential impacts related to the construction of the Proposed Development;
- evaluate significance of effects on receptors;
- identify mitigation; and
- assess residual effects.

Study Area

12.6.2. 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.

12.6.3. It is estimated that the majority of construction personnel will access the site from Inverness, Fort Augustus, Fort William and other local settlements. Personnel would likely travel to the site via the A82(T) from the north or south, before accessing the site from the west on the U1667 Ardachy Road. It is possible that some construction personnel may reside in local accommodation during the working week, in which case the traffic effect on the road network would be reduced.

12.6.4. Wherever practical, construction materials will be sourced from south / west of the Proposed Development from local suppliers, thus minimising the number of Heavy Goods Vehicles (HGVs) passing through Fort Augustus. In addition, this will reduce the number of HGVs required to negotiate the tight left hand turn manoeuvre between the A82(T) and the A1667 Ardachy Road.

12.6.5. Access from the north-east on the U1667 Ardachy Road is not considered practicable due to existing constraints on the road network at this location, including carriageway running widths and a narrow bridge located to the north-east of the site access junction, which crosses the River Tarff.

12.6.6. All AIL traffic access will also access the Proposed Development via the A82(T) from the Port of Entries (POEs) at Kyle of Lochalsh Harbour and Corpach Harbour, utilising proven abnormal load routes.

12.6.7. The study area is therefore as follows and is illustrated in **Figure 12.1**:

- A82(T), between Invergarry and the A82(T) / U1667 Ardachy Road priority junction;
- A82(T), between the A82(T) / U1667 Ardachy Road priority junction and Invermoriston; and
- U1667 from the site access to the A82(T) / U1667 Ardachy Road priority junction.

12.6.8. 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.

Desk Study

12.6.9. A desk study has been undertaken to inform the assessment, which included reviews and identification of the following:

- relevant transport planning policy;
- accident data;
- sensitive locations;
- any other traffic sensitive receptors in the area (core paths, routes, communities, etc.);
- 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; and
- constraints to the movement of AIL through a Route Survey Report (RSR) including swept path assessments.

12.6.10. Traffic data has been obtained from the Department for Transport (DfT) for the trunk road network. The data format is Annual Average Daily Traffic (AADT) flows, which allow the traffic flows to be split in vehicle classes.

Field Survey

12.6.11. Detailed site visits were undertaken to review the proposed access route, to review the AIL access route options and to identify potential constraints.

12.6.12. The collection of traffic flows and speed data was undertaken to establish a baseline on the local road network in the immediate vicinity of the site. These were undertaken in January 2023.

Receptor Sensitivity / Importance

12.6.13. 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.

12.6.14. 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.

12.6.15. The IEMA Guidelines includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement was used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in **Table 12.2**.

Table 12.2 – 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 Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads.
User / 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.

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

Impact Magnitude

12.6.17. The following rules taken from the IEMA Guidelines are used to determine which links within the study area should be considered for detailed assessment:

- Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2 – include highway links of high sensitivity where traffic flows have increase by 10% or more.

12.6.18. The 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, 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 **Section 12.9** Mitigation.

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

Significance of Effect

12.6.20. To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of change or impact assessments are correlated and classified using a scale set out in LA 104 Environmental Assessment and Monitoring (Revision 1) of the Design Manual for Roads and Bridges (DMRB) and is summarised in **Table 12.3**.

12.6.21. The DMRB defines the potential changes in effect as follows:

- Large: These effects are considered to be material in the decision-making process;
- Moderate: 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;

- Slight: 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; and
- Neutral: No effects or those that are imperceptible.

Table 12.3 – Significance of Effects

Receptor Sensitivity	Magnitude of Impacts			
	Major	**Major**	**Major**	**Major**
High	Large	Large/Moderate	Moderate/Slight	Slight
Medium	Large/Moderate	Moderate	Slight	Slight/Neutral
Low	Moderate/Slight	Slight	Slight	Slight/Neutral
Negligible	Slight	Slight	Slight/Neutral	Neutral

12.6.22. In terms of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('EIA Regulations'), effects would be considered significant where they are assessed to be large or moderate. Where an effect could be one of Large / Moderate or Moderate / Slight, professional judgement would be used to determine which option should be applicable.

Requirements for Mitigation

12.6.23. If significant likely potential effects are identified, appropriate mitigation will be implemented to remove and reduce the significance of the effects where possible.

Assessment of Residual Effects

12.6.24. Residual effects will be assessed following the methodology described above, taking into consideration the identified mitigation.

Assessment of Cumulative Effects

12.6.25. A review of THC's Wind Turbine Map[1] and online planning portal[2], in addition to the Scottish Government's Energy Consents Unit portal[3] was undertaken to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic. Table 6 in **Technical Appendix 12.1** provides a summary of those developments given consideration as part of the assessment of cumulative effects, while a description of those consented schemes included within the assessment are detailed below.

12.6.26. Bhlaraidh Wind Farm Extension (21/04080/S36) is to be located to the north of the Proposed Development. It is proposed that access to Bhlaraidh Wind Farm Extension will be via the existing Bhlaraidh Wind Farm. As such, construction traffic associated with Bhlaraidh Wind Farm Extension will travel along the Proposed Development's study area.

12.6.27. Dell Wind Farm (14/02879/FUL) was granted planning permission subject to conditions on 22 August 2019. Condition 1 relates to the Condition of Development which states that the

[1]Wind Turbine map, The Highland Council, Source: https://www.highland.gov.uk/info/198/planning_-_long_term_and_area_policies/152/renewable_energy/4 (Updated: January 2022) (Date Sourced: 17/05/2022)
[2] View planning applications, The Highland Council, Source: https://www.highland.gov.uk/info/180/planning_-_applications_warrants_and_certificates/143/planning_permission/4 (Date Sourced: 17/05/2022)
[3] https://www.energyconsents.scot/ApplicationSearch.aspx?T=1

development is to be commenced within 5 years of the date of the Decision Notice. It is therefore possible that the construction of Dell Wind Farm will be constructed at the same time as the Proposed Development. In September 2021, scoping for a revised planning application for Dell Wind Farm Variation (21/04400/SCOP) was undertaken which will seek to reduce the number of turbines from 14 to 12 and increase the maximum blade tip height from 130.5 m to 149.9 m. A review of the transport planning submissions associated with the consented Dell Wind Farm proposal indicates that construction traffic associated with the proposal will travel along the Proposed Development's study area.

12.6.28. Should any of the current schemes under planning consideration at present be consented, any crossover of traffic with the Proposed Development flows will be addressed via an overarching Traffic Management and Monitoring Plan (TMMP). The inclusion of further traffic flows in the baseline (i.e. including non-consented traffic) would dilute the potential impact that the Proposed Development would have. As such, the approach taken is considered to be an overly robust assessment.

12.6.29. The application of 'Low' National Road Traffic Forecast (NRTF) growth factor to the background traffic, is considered robust for addressing smaller, non-significant traffic generation caused by smaller developments within the study area. This allows for future year scenarios to be assessed, which include an increase in baseline traffic flows. As such, a robust assessment case has been provided in this report.

Limitations and Assumptions

12.6.30. The assessment is based upon average traffic flows in one-month periods. During the month, activities at the site may fluctuate between one day and another and it is not possible to fully develop a day-by-day traffic flow estimate as no Balance of Plant (BoP) contractor has been appointed and external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc).

12.6.31. Key assumptions made to inform the assessment include:

- the assessment is based upon an assumed construction programme for the Proposed Development lasting 24 months. Alterations in this programme, may increase or decrease traffic flows per month, however on the information available at this time, it is considered a robust assessment;
- traffic generation across the construction programme is based on the estimates of construction materials and staff working on-site as set out in **Technical Appendix 12.1**. Whilst this has been estimated as accurately as possible at this stage, any changes to staff numbers or material requirements may increase or decrease traffic flows per month. It is however considered a robust assessment;
- assumptions on the origin points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on surrounding areas may alter to those presented in the assessment;
- it is assumed that concrete batching will be undertaken on-site;
- access to the Proposed Development will be taken via a new simple priority junction on the U1667 Ardachy Road, located approximately 520 m to the north-east of its junction with the A82(T);
- the distribution of Proposed Development construction traffic on the network would vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months are as follows:
  - all construction traffic enters the site via the proposed access on the U1667 Ardachy Road;

- deliveries associated with concrete materials, such as cement powder and water, will be sourced from local concrete suppliers, which for the purpose of this assessment will originate from the A82(T) to the south-west in the Fort William area;
- whilst it is anticipated that on-site borrow pits will be able to meet up to 70% of the aggregate requirements, for the purpose of this assessment it is proposed that 50% of track and hardstanding aggregate requirements will be sourced from local quarries, which for the purpose of this assessment will originate from the A82(T) to the south-west in the Fort William area. The BoP contractor will confirm final quarry and material sourcing with THC in the final CTMP;
- all sand and aggregates required for the production of on-site concrete batching, will be sourced from local quarries, which for the purpose of this assessment will originate from the A82(T) to the south-west in the Fort William area;
- HGV deliveries associated with cabling and associated materials, etc. will arrive predominantly from the Central Belt and will travel to the site via the A82(T); however it is acknowledged that a small number may arrive from the Inverness area to the north and travel to the site via the A82(T). For the purposes of the assessment the split on these deliveries has been assumed to be 90% from the south and 10% from the north;
- staff working at the site are likely to be based locally. It is assumed that 50% will come from the A82(T) to the north and 50% from the south; and
- general site deliveries will arrive predominantly from the south via the A82(T); however it is acknowledged that a small number may arrive from the Inverness area to the north and travel to the site via the A82(T). For the purposes of the assessment the split on these deliveries has been assumed to be 90% from the south and 10% from the north.

12.6.32. The Future Baseline Year being assessed as part of the traffic and transport assessment is 2030, as this is the anticipated first year of construction, should the Proposed Development get planning consent.

12.6.33. Whilst some information gaps have been identified, it is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant environmental effects on access, traffic and transport.

12.7. Baseline Conditions

Active Travel Network

12.7.1. There are limited pedestrian facilities in the immediate vicinity of the Proposed Development site, reflecting the rural nature of the site. There are no facilities on the U1667 Ardachy Road between its junction with the A82(T) and the site access junction.

12.7.2. Further away from the Proposed Development in the wider study area, there are pedestrian facilities within Fort Augustus to the north. The pedestrian facilities begin on the entry to the town from the south, where there is a pedestrian footway on the western side of the carriageway, commencing at the access road to Kettle House. Other pedestrian facilities within Fort Augustus include the following:

- pedestrian footway on both sides of the A82(T) carriageway from the Millfield junction until the exit from the town at the Great Glen way junction, where it reverts to a footway on the western side only for a short distance;
- drop kerbs at crossing locations, including some with tactile paving; and
- dedicated crossing facilities by way of signalised crossings.

12.7.3. To the south of the Proposed Development there are limited pedestrian facilities near the Aberchalder Swing Bridge, providing access from the public car parks to the local Core Path network in the area.

12.7.4. It is considered that the level of pedestrian infrastructure is commensurate with the scale of the local settlements and their rural setting.

12.7.5. A review of THC's Core Path network[4] indicates that there are a number of Core Paths in the immediate vicinity of the Proposed Development site, which are as follows (note, only those paths with the potential to be impacted by construction vehicles have been included, with those Core Paths sufficiently set back from the road network excluded):

- IN16.01 – Kilchuimen Burial Ground and River Tarff, located to the north-east of the site access junction, running in a north / south direction between the U1667 Ardachy Road to the A82(T) and B862;
- IN16.06 – A82 by Campsite to Fort Augustus by Caledonian Canal, located to the north-west and accessed via the A82(T) at the south of Fort Augustus;
- IN16.04 – Caledonian Canal to A82 by church, is a short path accessed via the A82(T) in the vicinity of Lovat Terrace;
- IN16.17 – Fort Augustus Abbey Loop, accessed from the A82(T) south of the Fort Augustus Swing Bridge and the B862 at the Loch Ness Highland Resort;
- IN16.07 – Aberchalder to Fort Augustus by Great Glen Way / Caledonian Canal Towpath, accessed from the Aberchalder Swing Bridge to the south or the Fort Augustus Swing Bridge to the north;
- IN16.05 – Caledonian Canal from Bridge of Oich to Fort Augustus, accessed from Fort Augustus Swing Bridge and Aberchalder Swing Bridge;
- IN16.15 – Great Glen Way Aberchalder to North Laggan (Lochaber Ref LO11.06), located at Aberchalder to the south and accessed from the Aberchalder Swing Bridge;
- IN16.09 – Bridge of Oich to Invergarry by Loch Lundie (Lochaber Ref LO11.02), located at Aberchalder to the south and accessed from the A82(T) near Oich Bridge;
- IN16.08 – Bridge of Oich to Invergarry by old Great Glen Cycle Route (Lochaber Ref LO11.03), located at Aberchalder to the south and accessed from the A82(T) near Oich Bridge; and
- LO11.01 – River Garry Paths, located in Invergarry to the south and accessed via the A82(T).

12.7.6. In addition, to the west of the site access junction there is a path known as the Corrieyairack Pass which runs between Laggan and Fort Augustus, following the path of the old General Wade's Military Road.

12.7.7. The Core Paths identified above can be seen by purple lines on Figure 6 included within **Technical Appendix 12.1**.

12.7.8. A review of Sustrans' National Cycle Route (NCR) map[5] does not show any national cycle routes in the immediate vicinity of the Proposed Development site or on the proposed construction access routes. The closest route is the Caledonian Way, National Cycle Route 78 which runs from Campbeltown to Inverness and crosses the A82(T) within Fort Augustus and at Aberchalder, following sections of the Great Glen Way.

12.7.9. The Great Glen Way is a 127 km waymarked route between Inverness and Fort William which is mainly traffic-free, however there are sections in Drumnadrochit, Invermoriston, Fort Augustus and Invergarry where pedestrians use the footways beside the highway and at these locations cyclists and horse riders travel along the road.

[4] The Highland Council, Core Paths in Highland Council area plan: https://highland.maps.arcgis.com/apps/webappviewer/
[5] https://www.sustrans.org.uk/national-cycle-network

Road Access

Site Access

12.7.10. The Proposed Development will be accessed via a new simple priority junction on the U1667 Ardachy Road, located approximately 520 m to the north-east of its junction with the A82(T). The layout of the site access junction is included as **Appendix B** in **Technical Appendix 12.1**.

Local Road Network

12.7.11. The U1667 Ardachy Road is an unclassified road within THC administrative area and runs from its junction with the A82(T) in the south to its junction with the B862 in the north. The road is approximately 2.2 km in length and is a single track road with passing places. The road has the national speed limit (60 miles per hour (mph)) in place and is signposted as being unsuitable for HGV use.

12.7.12. The A82(T) is part of the Scottish trunk road network and is managed and maintained by Bear Scotland on behalf of Transport Scotland. The A82(T) runs from Glasgow to Fort William and Inverness, passing along the shores of Loch Lomond and Loch Ness. It is a key trunk route in the West Highlands. In the vicinity of the Proposed Development the road is a single carriageway road with one lane operating in each direction. The national speed limit is in place outwith settlements, reducing to 30 mph within Fort Augustus to the north and 40 mph in the vicinity of Invergarry to the south. The road is considered to be in good condition and maintained to a high standard by Bear Scotland.

12.7.13. The A87(T) is also part of the Scottish trunk road network and maintained by Bear Scotland on behalf of Transport Scotland. The A87(T) commences at the port of Uig and runs in a southerly direction between Portree and Broadford on Skye, before reaching the mainland via the Skye Road Bridge. Once on the mainland, it continues to its junction with the A82(T). The road is a single carriageway road, operating with one lane in each direction. The national speed limit is in place outwith villages and settlements, where it reduces to 30 or 40 mph. The road is considered to be in good condition and maintained to a high standard by Bear Scotland.

12.7.14. A number of the roads within the study area form part of the agreed route network used for the extraction of timber and are therefore regularly used by HGV traffic. This includes the A82(T) and A87(T) which are ‘Agreed Routes’ and the U1667 Ardachy Road, which is a ‘Consultation Route’.

12.7.15. The Agreed Timber Route Map[6] 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’.

12.7.16. ‘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

[6] https://timbertransportforum.org.uk/

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.

Existing Baseline Traffic Flows

12.7.17. In order to assess the impact of development traffic on the study area, traffic count data has been sourced from project specific Automatic Traffic Count (ATC) surveys undertaken on the local road network in the immediate vicinity of the site and from the Department for Transport (DfT) database.

12.7.18. Two ATC sites were established in January 2023. The ATC surveys were conducted over a 7-day period, recording vehicle classifications, direction of travel and speeds. The count sites were as follows:

1. U1667 Ardachy Road to the west of the site access; and
2. A82(T) north of the U1667 Ardachy Road junction.

12.7.19. With regards to the traffic data obtained from the DfT database, the year 2019 has been used, as these flows would be unaffected by Covid-related travel restrictions. DfT data allow the traffic flows to be split into vehicle classes. The data was summarised into Cars/Light Goods Vehicles (LGVs) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).

12.7.20. Traffic data from the DfT has been used for the following locations:

1. A82(T) north of Fort Augustus (Count site reference: 50707), ATC count; and
2. A82(T) at Aberchalder (Count site reference 10760), ATC count.

12.7.21. The above sites were identified as being areas where sensitive receptors on the access routes would be located. The location of the count sites is presented in **Figure 12.2**, while **Table 12.4** summarises the AADT traffic data collected and used in this assessment.

Table 12.4 – 24-hour Average Traffic Data (2019 and 2023)

Survey Location	Cars & Lights	HGV	Total
U1667 Ardachy Road*	42	21	63
A82(T) north of the U1667 Ardachy Road junction*	940	454	1,394
A82(T) north of Fort Augustus**	2,614	179	2,793
A82(T) at Aberchalder**	2,677	171	2,848

Please note that variances may occur due to rounding.
** 2023 Flows*
*** 2019 Flows*

12.7.22. As noted above the ATCs undertaken to inform the study also collected speed data and a summary of this can be seen in **Table 12.5**.

Table 12.5 – Speed Summary

Survey Location	Mean Speed (mph)	85%tile Speed (mph)	Speed Limit (mph)
U1667 Ardachy Road	26.8	35.0	60
A82(T) north of the U1667 Ardachy Road junction	50.1	58.2	60

12.7.23. The speed survey data indicates that speed limits are being adhered to in the immediate vicinity of the Proposed Development, at the locations where ATC surveys were undertaken.

Accident Review

12.7.24. Personal Injury Accident (PIA) data for the five-year period covering 2017 to 2021 for the U1667 Ardachy Road and the A82(T) between Invergarry to the south and Invermoriston to the north, was obtained from the online resource CrashMap[7] which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.

12.7.25. Transport Assessment Guidance[8] requires an analysis of the PIA on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the site has been identified as being within a high accident area. Whilst this is not considered the case for the study area, a full 5-year review has been undertaken for completeness.

12.7.26. The statistics are categorised into three categories, namely “Slight”, “Serious” and “Fatal”, for those accidents that result in a death. The locations and severity of the recorded accidents within the study area are summarised in **Table 12.6**, while **Figure 12.3** shows their locations.

Table 12.6 – Personal Injury Accident Summary

Survey Location	Slight	Serious	Fatal	HGV Incidents
U1667 Ardachy Road	-	-	-	-
A82(T)	12	6	0	1 Serious
Total	**12**	**6**	**0**	**-**
Percentage	**66.7%**	**33.3%**	**0.0%**	**-**

12.7.27. A summary analysis of the incidents indicates that:

- A total of 18 PIAs were recorded within the study area within the last five-year period.
- Of those 18 PIAs, 12 were classified as “Slight” (66.7%) and six were classified as “Serious” (33.3%).
- There were no “Fatal” PIAs recorded.
- Two of the “Slight” PIAs involved a pedestrian, one was struck by a car and one was struck by a motorcycle.
- No PIAs recorded involved a cyclist.
- Five PIAs recorded involved a motorcycle, two were classified as “Serious” and three were classified as “Slight”.
- One of the recorded PIAs involved an HGV, which was classified as “Serious”.
- Young drivers (16-20) were involved in two accidents, one was classified as “Slight” and one was classified as “Serious”.

[7] https://www.crashmap.co.uk/
[8] https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf

- No PIA were recorded on the U1667 Ardachy Road in the vicinity of the site or the the site access junction.

12.7.28. In general, there are no clusters of PIAs at any location in the study area or high numbers of accidents involving HGVs for example. It is however acknowledged that there has been a reasonably high number of accidents involving motorcycles, which could be attributed to the fact the local road network is used by a high number of tourists, including those undertaking motorcycle touring holidays.

12.7.29. 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 would be exacerbated by the construction of the Proposed Development.

Future Year Baseline

12.7.30. It is anticipated that construction will commence in 2030 and is anticipated to take up to 24 months depending on weather conditions and ecological considerations.

12.7.31. To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF 'Low' growth factor to the surveyed traffic flows. The NRTF 'Low' growth factor for 2019 to 2030 is 1.064 and for 2023 to 2030 is 1.036. These factors were applied to the survey data to estimate the 2030 base traffic flows, as shown in **Table 12.7**. This has been used in the construction peak traffic impact assessment.

Table 12.7 – Future Baseline 24-hour Average Traffic Data (2030)

Survey Location	Cars & Lights	HGV	Total
U1667 Ardachy Road	43	22	65
A82(T) north of the U1667 Ardachy Road junction	974	470	1,444
A82(T) north of Fort Augustus	2,781	190	2,972
A82(T) at Aberchalder	2,848	182	3,030

Please note minor variances due to rounding may occur.

12.7.32. Note, if the Proposed Development did not proceed, or proceeded later than currently predicted (i.e. later than 2030), traffic growth will occur and the public roads within the study area will experience increased traffic flows resulting from other development pressures, tourism traffic and population growth. Accordingly, the assessment represents a worst case as the contribution of the Proposed Development in relative terms would decrease in the future.

Summary of Sensitive Receptors

12.7.33. A review of sensitive receptors has been undertaken within the study area. **Table 12.8** 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 12.8**.

Table 12.8 – Summary of Sensitive Receptors

Receptor	Sensitivity	Justification
Users of A82(T)	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes

Receptor	Sensitivity	Justification
		roads with little or no traffic calming or traffic management measures.
Users of U1667 Ardachy Road	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Invermoriston Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Fort Augustus Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Invergarry Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Residents along A82(T)	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents along U1667 Ardachy Road	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Core Paths / Public Rights of Way Users	High	Minor paths used by walkers and cyclists, not constructed to accommodate HGV traffic flows.

12.7.34. Based on the indicators which are stated within the IEMA Guidelines, the following locations are identified as sensitive receptors in this assessment due to the presence of schools, churches or medical practices, as well as paths:

- Fort Augustus;
- Invergarry; and
- Core Path / Public Right of Way Users.

12.7.35. These locations are therefore subject to ‘Rule 2’ of the IEMA Guidelines which requires a full assessment of effects if the locations are subject to an increase in 10% of traffic.

12.7.36. All other locations within the study area are subject to ‘Rule 1’ and are assessed if traffic flows (or HGV flows) on road links increase by more than 30%.

12.8. Potential Effects

Construction

12.8.1. The assessment is based upon the construction effects that may occur within the study area during the 24-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.

12.8.2. During the assumed 24 month construction period, the following traffic would require access to the site:

- staff transport, either cars or staff minibuses;
- construction equipment and materials, deliveries of machinery and supplies such as concrete raw materials;
- components relating to the battery storage element and associated infrastructure;
- AILs consisting of the wind turbine components and heavy lift crane(s); and
- escort vehicles for AIL deliveries.

12.8.3. Average monthly traffic flow data were used to establish the construction trips associated with the Proposed Development and are detailed in the **Transport Assessment** included as **Technical Appendix 12.1**. 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.

12.8.4. Except for the turbine components, most traffic would be normal construction plant and will include grading tractors, excavators, high capacity cranes, forklifts and dumper trucks. Most will arrive at the site on low loaders. The turbine components will be delivered in component sections (up to 14 per turbine see **Technical Appendix 12.1**) for ease of transport and will be assembled at the site. The nacelle, hub, drive train, blade, tower sections are classified as AIL 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 12.1**.

12.8.5. The most appropriate POEs for the site are Corpach Harbour and Kyle of Lochalsh Harbour. These ports have been previously used by turbines imports in the past, having been used for Stronelairg, Bhlaraidh, Beinnun and Millennium wind farms.

12.8.6. Access for blades is only possible from Kyle of Lochalsh, whilst access for towers and nacelle sections is only possible from Corpach due to a weight constraint to the east of Kyle of Lochalsh. Loads relating to the turbine components would be delivered on the routes illustrated in **Figure 12.4**, while a full description of the routes in included within **Technical Appendix 12.1** and the Route Survey Report included as **Appendix A**.

12.8.7. If consented, the Applicant would engage in detailed discussions with the turbine suppliers, haulage contractors, Transport Scotland, Police Scotland and road authorities with regards to an agreed POE strategy and AIL delivery route.

12.8.8. In addition to the turbine deliveries, two high capacity erection cranes will be needed to offload some components and erect the turbines. The cranes are likely to be a mobile cranes with a capacity up to 1,000 tonnes that will be escorted by boom and ballast trucks to allow full mobilisation on site. 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. Confirmation on the proposed type and number of cranes used on-site would be confirmed following selection of the candidate turbine and appointment of both the haulage and crane contractors. Information on this would be provided to THC as part of the CTMP and secured by planning condition.

12.8.9. The trip estimates have been assigned to the proposed construction programme to allow the identification of the peak of construction traffic to be established. The construction programme is provided in **Technical Appendix 12.1**.

12.8.10. To provide a robust assessment of potential traffic impact, it has been assumed that 50% of the material for tracks, hardstandings and compound areas will be imported to the site. This represents an overestimate, given that the borrow pit assessment (**Technical Appendix 9.7**) that has been undertaken estimating that 70% of the required material can be won on-site from the two borrow pits. The assessment is therefore an over-estimate and is considered robust.

12.8.11. The resulting traffic generation profile is presented in **Technical Appendix 12.1**. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 10 of the construction programme. During Month 10, an average of 72 HGV movements is predicted per day and it is estimated that there will be a further 46 car and light van movements per day to transport construction workers to and from the site.

12.8.12. The distribution of development traffic on the network would vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the

peak months are presented in the Limitations and Assumptions section of this chapter, as well as in **Technical Appendix 12.1**.

12.8.13. Following the distribution and assignment of traffic flows to the study area network, the resultant daily traffic during the peak of construction in Month 10, is summarised in **Table 12.9**.

Table 12.9 – Peak Construction Traffic

Survey Location	Cars & Lights	HGV	Total
U1667 Ardachy Road	46	72	118
A82(T) north of the U1667 Ardachy Road junction	24	0	24
A82(T) north of Fort Augustus	24	2	26
A82(T) at Aberchalder	24	72	96

12.8.14. The peak month traffic data was combined with the future year (2030) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is presented in percentage increases for each class of vehicle and is illustrated in **Table 12.10**.

Table 12.10 – Traffic Impact Summary

Survey Location	Cars & Lights	HGV	Total	Cars & Lights % Increase	HGV % Increase	Total Traffic % Increase
U1667 Ardachy Road	89	94	183	106.4%	328.7%	181.2%
A82(T) north of the U1667 Ardachy Road junction	998	470	1,468	2.5%	0.1%	1.7%
A82(T) north of Fort Augustus	2,805	192	2,998	0.9%	1.1%	0.9%
A82(T) at Aberchalder	2,872	254	3,126	0.8%	39.6%	3.2%

Please note minor variances due to rounding may occur.

12.8.15. The total traffic movements are predicted to increase by 181.2% on the U1667 Ardachy Road, where the site access will be located. Whilst this increase could be considered high, it is generally caused by the relatively low vehicle flows on the road at this location. On the rest of the public road network within the study area, the next highest total traffic increase (3.2%) is on the A82(T) at Aberchalder to the south of the Proposed Development.

12.8.16. The HGV traffic movements will increase by 328.7% on the U1667 Ardachy Road, where the site access will be located. Whilst this increase could be considered high, it is generally caused by the relatively low HGV flows on the road at this location. On the rest of the public road network, the highest HGV traffic increase is 39.6%, which is on the A82(T) at Aberchalder to the south of the Proposed Development.

12.8.17. 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.

12.8.18. A review of existing theoretical road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESA Manual". 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 12.11**.

Table 12.11 – 2030 Daily Traffic (12hr) Capacity Review Summary

Survey Location	2030 Baseline Flow	2030 Base + Development Flows	Theoretical Road Capacity (12HR)	Spare Road Capacity %
U1667 Ardachy Road	65	183	3,360	94.6%
A82(T) north of the U1667 Ardachy Road junction	1,444	1,468	28,800	94.9%
A82(T) north of Fort Augustus	2,972	2,998	28,800	89.6%
A82(T) at Aberchalder	3,030	3,126	28,800	89.1%

Please note minor variances due to rounding may occur.

12.8.19. 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 network to accommodate all construction phase traffic.

12.8.20. In accordance with the IEMA Guidelines Rules 1 and 2 and based on the construction traffic data shown in **Table 12.10**, detailed assessments have been undertaken on the following receptors:

- Users of U1667 Ardachy Road (High sensitivity);
- Users of A82(T) at Aberchalder (Low sensitivity);
- Residents on the U1667 Ardachy Road (Negligible sensitivity);
- Residents on the A82(T) near Aberchalder (Negligible sensitivity); and
- Core Path / Public Right of Way Users (High sensitivity).

12.8.21. It is acknowledged that there will be other months within the overall construction programme as shown in Table 14 of **Technical Appendix 12.1**, which will also be above the threshold for undertaking detailed assessment, however the assessment focusses on the peak month only, which is the worst case in terms of potential impacts. Other months will still result in impacts within the study area; however, these would be less than the predicted peak month.

12.8.22. The significance of the potential effects on the above receptors has been determined using the rules and thresholds previously outlined in the Criteria for Assessing Significance. **Table 12.12** summarises the significance of the effect on the receptors for the construction phase, prior to mitigation measures being applied.

Table 12.12 – Overall Construction Phase Effects Assessment

Receptor	Severance	Driver Delay	Pedestrian Delay	Non-motorised user Amenity	Fear & Intimidation	Road Safety	Large Loads
Users of U1667 Ardachy Road	Large	Moderate/ Slight	Large	Large	Large	Moderate/ Slight	Large

Users of A82(T) at Aberchalder	Slight	Slight	Slight	Slight	Slight	Slight	Moderate/ Slight
Residents on the U1667 Ardachy Road	Slight	Slight/ Neutral	Slight	Slight	Slight	Slight/ Neutral	Slight
Residents on the A82(T) near Aberchalder	Slight	Slight/ Neutral	Slight	Slight	Slight/ Neutral	Slight/ Neutral	Slight
Core Path / Public Right of Way Users	Large	Moderate/ Slight	Large	Large	Large	Moderate/ Slight	Large

12.8.23. The assessment of significance 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:

- Users of U1667 Ardachy Road; and
- Core Path / Public Right of Way Users.

12.8.24. 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 transitory in nature.

Operation

12.8.25. It is predicted that during the operational phase of the wind farm there would be up to two vehicle movements per week for maintenance purposes associated with the Proposed Development. Also, there may be occasional abnormal load movements to deliver replacement components to the wind farm site in the unlikely event of a major failure.

Decommissioning

12.8.26. The decommissioning phase would result in fewer trips on the road network than the construction phase as it is considered likely that the majority of the proposed access track would be left in place for wider estate access.

12.8.27. Prior to decommissioning of the site, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

12.9. Mitigation

Construction Traffic Management Plan (CTMP)

12.9.1. During the construction period, a project website, blog or Twitter feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This would be agreed with THC.

12.9.2. The following measures would be implemented during the construction phase through the CTMP:

- agree AIL route modifications and improvements with THC and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the respective delivery route options RSR, which are presented in **Appendix A of Technical Appendix 12.1**;
- where possible, the detailed design process would minimise the volume of material to be imported to site to help reduce HGV numbers;
- a site worker transport and travel arrangement 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 would be limited to between 0700 and 1900 (Monday to Friday) and 0700 and 1300 (Saturday), though component delivery and turbine erection may take place outside these hours;
- appropriate traffic management measures would be put in place on the U1667 Ardachy Road leading through to the site and at its junction with the A82(T) to avoid conflict with general traffic, subject to the agreement of THC. Typical measures would include HGV turning and crossing signs and / or banksmen at the site access and warning signs;
- additional signage would be proposed at key location in the vicinity of the site, for example where General Wades Road crosses the U1667 Ardachy Road, to ensure site operatives are aware of the potential interaction with pedestrians and to ensure the users of the road are aware of the presence of construction vehicles;

- temporary signage installed on the local road network in the vicinity of the site directing site operatives and delivery vehicles via the designated routes via the A82(T);
- temporary signage installed on the local network to the north of the site advising that no access is available at this location and all access should be taken via the A82(T) to the south;
- provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the site;
- adoption of a voluntary reduced speed limits at locations to be agreed with THC;
- all drivers would 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.

12.9.3. Specific restrictions on vehicle routeing to the site will be implemented for the duration of the constriction phase, with no construction vehicles permitted to access the site from the north on the U1667 Ardachy Road. As detailed above, it would be proposed to implement signage on the local road network, advising of permitted and non-permitted routes.

12.9.4. All parties involved in making deliveries to the site will be instructed on these restrictions, and for contractors making regular deliveries they will form part of their contractual obligations. This will be reinforced within the Principal Contractor's site inductions and regular tool-box talks.

12.9.5. The routes and any applicable time restrictions identified in the CTMP will be strictly enforced, unless otherwise agreed with THC and other stakeholders. The Principal Contractor and all subcontracting companies involved in the construction of the Proposed Development will be required to ensure they follow the correct routes. The routes will be clearly defined in all contracts and clearly signposted for all drivers to see. This will be reinforced by inclusion within the Principal Contractor's site induction and regular toolbox talks for site operatives.

12.9.6. Any residents or road users in the vicinity of the site who believe that contractors or delivery drivers are not complying with the details of the CTMP would be encouraged to take a note of

the vehicle registration and vehicle type, the location and time of the incident and report this to the nominated point of contact. Any contractor not adhering to the relevant route guidance will be reminded of the designated routes and restrictions. On-site monitoring, spot checks and additional route signage (if required) will assist in ensuring the route is adhered to.

12.9.7. With regards to potential damage to the Council infrastructure, THC are likely to request that an agreement to cover the cost of abnormal wear on its road network is made.

12.9.8. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route would be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline would provide evidence of any change in the road condition during the construction phase. Any necessary repairs would 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, would be repaired immediately.

12.9.9. Damage to road infrastructure caused directly by construction traffic would be remediated, and street furniture that is removed on a temporary basis would be fully reinstated.

12.9.10. There would be a regular road review, and any debris and mud would be removed from the carriageway using an on-site road sweeper to ensure road safety for all road users.

Abnormal Load Transport Management Plan

12.9.11. There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.

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

12.9.13. 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.

12.9.14. 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 the A830 when the loads will exit Corpach Harbour;
- on the A830 Blah Mhor Roundabout where contraflow measures will be introduced so that the loads can navigate through the junction;
- on the A830 Lochybridge Roundabout, where traffic management will be required to hold back on-coming traffic;
- on the A82 Spean Bridge, where traffic management will be required to hold back on-coming traffic;
- on the A87(T) Kyleakin Roundabout where contraflow measures will be introduced so that the loads can navigate through the junction;
- on the A82(T), A87(T) and A887 where the loads may straddle the centre line or where fast moving oncoming traffic may be encountered;
- at other locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- on sections of single carriageway road, for example on the U1667 Ardachy Road;
- where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms; and

- in locations where high speeds of general traffic are predicted.

12.9.15. Advance warning signs would be installed on the approaches to the affected road network. Information signage will be installed to help assist drivers, with flip up panels which would be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the Traffic Management contractor.

12.9.16. This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist). The location and numbers of signs would be agreed post consent and would form part of the Traffic Management Proposal for the project.

12.9.17. The Abnormal Load Transport Management Plan would also 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.

12.9.18. Prior to AILs travelling along the routes from the two POEs, the following tasks would be undertaken to ensure load and road user safety:

- ensure any vegetation which may obstruct the loads is trimmed back to allow passage;
- confirm there are no roadworks or closures that could affect the passage of the loads;
- check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- confirm the police are satisfied with the proposed movement strategy.

Public Information

12.9.19. Information on the AIL convoys would be provided to local media outlets such as local papers and local radio to help assist the public.

12.9.20. Information would relate to expected vehicle movements from the POEs through to the site access junction. This will assist residents to become aware of the convoy movements and may help reduce any potential conflicts.

12.9.21. The applicant would also ensure information would be distributed through its communication team via the project website, local newsletters, and social media.

Convoy Systems

12.9.22. A police escort would be required to facilitate the delivery of the predicted AILs. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.

12.9.23. The abnormal loads convoys would 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.

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

On-site Measures delivered using an Outdoor Access Management Plan

12.9.25. Within the site, consideration has been given to pedestrians, cyclists and horse riders alike due to potential interactions between construction traffic and users of the paths and public roads. If required, a Path Planning Study will be conducted post consent and will be secured through a planning condition. Findings from the study will be used to formulate a set of measures into an Outdoor Access Management Plan (OAMP).

12.9.26. A diversion, which will be indicated by appropriate signage, will be put in place at the U1667 Ardachy Road entrance to Corrievairack Pass / General Wade's Military Road, as well as at the start and end of the diversion route, to direct users to the appropriate route to travel along. The location of the proposed diversion route would be confirmed post consent, taking consideration of on-site topography and ground conditions. Users of the tracks / paths in the vicinity of the diversion route will be separated from construction traffic through the use of barriers.

12.9.27. Crossing points will be provided where required, with path users having right of way. Appropriate Traffic Signs Manual Chapter 8[9] compliant temporary road signage would be provided to assist at these crossing for the benefit of all users.

12.9.28. 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 the tracks / paths and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

12.9.29. Signage will be installed on the site exits 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.

12.9.30. 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.

12.9.31. 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.

[9] Department for Transport/Highways Agency, Department for Regional Development (Northern Ireland), Transport Scotland & Welsh Assembly Government (2009): Traffic Signs Manual, Chapter 8 – Traffic Safety Measures and Signs for Road Works and Temporary Situations

12.9.32. 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.

12.9.33. An outline OAMP is provided as **Appendix 3.2**, which provides further details on the proposed onsite measures.

Staff Travel Plan

12.9.34. 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; and
- car parking management.

Operational Phase Mitigation

12.9.35. The site entrance junction and access track will be well maintained and monitored during the operational life of the 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.

12.10. Residual Effects

12.10.1. This section considers the assessment of traffic impacts following the incorporation of the identified mitigation measures. An evaluation of the potential effects of the increase in traffic on the study area roads used for construction traffic was undertaken. The summary of this assessment is provided in **Table 12.16**.

12.10.2. The assessment confirms the effects will be minor in nature and they would be **not significant**, following the implementation of a comprehensive CTMP, together with on-site route signage and an OAMP, which would incorporate any required re-routing of tracks / paths and the provision of signage at potential crossing points to protect users from construction activities. 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.

12.11. Cumulative Effects

12.11.1. As detailed in **Technical Appendix 12.1** and the '**Assessment of Cumulative Effects**' section of this chapter, there are two consented onshore wind farms, which could potentially

impact the roads within the study area, namely Bhlaraidh Wind Farm Extension and Dell Wind Farm.

12.11.2. The peak traffic flows for the two schemes were obtained from their respective planning application documents (see **Table 12.13**: Combined Scheme Sensitivity Review Peak Traffic Summary (2030) and then compared to the future baseline year (2030) on **Table 12.14**.

Table 12.13 – 2030 Daily Traffic (12hr) Capacity Review Summary

Survey Location	Proposed Development		Bhlaraidh Wind Farm Extension		Dell Wind Farm	
	Cars & Lights	HGV	Cars & Lights	HGV	Cars & Lights	HGV
U1667 Ardachy Road	46	72	0	0	0	0
A82(T) north of the U1667 Ardachy Road junction	24	0	11	16	18	36
A82(T) north of Fort Augustus	24	2	11	16	18	36
A82(T) at Aberchalder	24	72	11	16	18	36

Table 12.14 – Combined Scheme Sensitivity Traffic Impact Summary (2030)

Survey Location	Cars & Lights	HGV	Total	Cars & Lights % Increase	HGV % Increase	Total Traffic % Increase
U1667 Ardachy Road	89	94	183	106.4%	328.7%	181.2%
A82(T) north of the U1667 Ardachy Road junction	1,027	522	1,549	5.4%	11.1%	7.3%
A82(T) north of Fort Augustus	2,834	244	3,079	1.9%	28.4%	3.6%
A82(T) at Aberchalder	2,901	306	3,207	1.9%	68.2%	5.8%

12.11.3. The combined traffic flows indicate that there is a large increase in HGV flows along the A82(T) north of Fort Augustus and at Aberchalder, which would exceed the thresholds for detailed assessment within the IEMA Guidelines, and as such, a review of the existing road capacity has been undertaken using the DMRB, Volume 15, Part 5 “The NESA Manual”. The theoretical road capacity has been estimated for each of the road links that makes up the study area and is shown in **Table 12.15**.

Table 12.15 – Daily Traffic (12h) Combined Scheme Capacity Review Summary (2030)

Survey Location	2030 Baseline Flow	2030 Base + Development Flows	Theoretical Road Capacity (12HR)	% Spare Capacity
U1667 Ardachy Road	65	183	3,360	94.6%
A82(T) north of the U1667 Ardachy Road junction	1,444	1,549	21,600	92.8%
A82(T) north of Fort Augustus	2,972	3,079	28,800	89.3%
A82(T) at Aberchalder	3,030	3,207	28,800	88.9%

12.11.4. The results indicate there would still be no road capacity issues should the Proposed Development and other schemes be constructed at the same time, with ample spare capacity within the study area road network to accommodate construction phase traffic.

12.11.5. It should however be noted that the large increase in HGV traffic at this location, which is not attributed to the Proposed Development, given that HGV construction traffic is primarily routing to the site from the south. The increase is associated with the other consented developments utilising the A82(T) at this location to access the sites.

12.11.6. The Applicant would welcome the opportunity to engage with other developers in consultation with THC to ensure appropriate traffic management measures would be implemented to minimise any cumulative impacts. In the event of all the sites being constructed at the same time it is suggested this would be mitigated through the use of an overarching Traffic Management and Monitoring Plan (TMMP) for all of the sites and by introducing a phased delivery plan which would be agreed with THC and Police Scotland.

12.11.7. Furthermore, it is not predicted that the potential traffic flow increases would ever occur on the study area, as it is extremely unlikely that the peak traffic conditions will occur at the same time due to differences in construction programmes, material supplies and developer resources. In addition, those schemes already consented will likely begin construction prior to the Proposed Development gaining planning consent.

12.12. Summary

12.12.1. The Proposed Development will lead to increased traffic volumes on a number of roads in the vicinity of the site during the construction phase. These will be of a temporary timescale and transitory in nature.

12.12.2. The peak of construction occurs in Month 10 with 118 journeys (46 Car / Lights and 72 HGV journeys).

12.12.3. No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development.

12.12.4. A sensitivity review was undertaken to inform the planning authorities of possible issues with other relevant schemes in the area, whose construction traffic would impact the study area, should they be constructed concurrently. The review found that there would be more than sufficient spare road capacity to accommodate all schemes being constructed at the same time. It is proposed that any effects of all the sites being constructed at the same time would

be mitigated through the use of an overarching Traffic Management and Monitoring Plan, which can be co-ordinated with THC.

12.12.5. With the implementation of appropriate mitigation, **no significant residual effects** are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be slight and will occur during the construction phase only, they are temporary and reversible.

12.12.6. Traffic levels during the operational phase of Proposed Development will be up to two vehicles per week for maintenance purposes. Traffic levels during the decommissioning of the Proposed Development are expected to be lower than during the construction phase as some elements are likely be left in situ and others broken up on-site.

12.12.7. The movement of AIL traffic will require small scale and temporary remedial works at a number of locations along identified delivery route.

Table 12.16 – Summary of Effects

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/Adverse		Significance	Beneficial/Adverse
Construction					
Users of U1667 Ardachy Road	**Large / Moderate / Significant**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Slight/ Minor / Not Significant	Neutral
Core Path / Public Right of Way Users	**Large / Moderate / Significant**	**Adverse**	Implementation of Construction Traffic Management Plan including adoption of a voluntary speed limit of 15 mph for all construction vehicles on the U1667 Ardachy Road in the vicinity of the Core Paths, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works. Provision of an on-site Path Management Plan.	Slight/ Minor / Not Significant	Neutral
Operational					
No operational effects anticipated.					
Decommissioning					
Any decommissioning effects would be less that those predicted for the construction phase.					

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