

FEARNA STORAGE

Fearna Pumped Storage Hydro Scheme EIA Report

Chapter 15 – Transport & Access

February 2025



Quality Information

Prepared by

Pell Frischmann

Checked by

Chris Pasteur

Approved by

Fraser Allison

Revision History

Revision

01

Revision Date

February 2025

Details

Issue to ECU

Authorised

Fraser Allison

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15. Transport and Access

15.1 Executive Summary

- 15.1.1 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.
- 15.1.2 The Proposed Development will be accessed from an upgraded junction on the A87, via a combination of existing and upgraded forestry tracks, through the Glen Garry Forest, together with a short section of the C1144. The access proposals, for the purposes of the Proposed Development are known as the Southern Access Route (SAR). The junction upgrade works on the A87 will be undertaken as part of the consented Coire Glas Pumped Storage Hydro Scheme (PSHS).
- 15.1.3 Whilst the majority of the C1144 will not be used during the main construction phase, there will be a requirement to use the whole length of the road while undertaking preliminary ground investigation works. The data obtained during these preliminary works will be used to finalise the construction design. In addition, the C1144 would be used to support early enabling works, to allow the completion of the SAR.
- 15.1.4 Traffic associated with site material deliveries are all assumed to access the Proposed Development from the A87, accessed primarily via the A82 corridor to the east. Access to the A82 corridor would be taken via the A9 to the north and the A830 or A86 to the south.
- 15.1.5 The Proposed Development would lead to increased traffic volumes on a number of roads in the vicinity of the site during the construction phase. These would be of a temporary timescale and transitory in nature. Traffic volumes would fall considerably outside the peak period of construction.
- 15.1.6 The peak of construction activity in terms of construction vehicle generation would occur on the Trunk Road Network and is expected to occur for a period of 19 months of the 101 month programme, when there would be a total of 506 vehicle movements per day, comprising 178 two-way HGV movements and 328 two-way car / LGV movements.
- 15.1.7 No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development.
- 15.1.8 With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of Transport and Access issues. The residual effects are all assessed to be minor and would occur during the construction phase only, they are temporary and reversible.
- 15.1.9 The operational phase is restricted to trips associated with staff who would operate the equipment, monitor the operation and undertake maintenance. During the operation of the Proposed Development, up to 10 staff may be at the site to operate the equipment, which is not considered to result in journeys in excess of daily traffic variation levels on the road network.
- 15.1.10 The movement of AIL traffic would require small scale and temporary remedial works at a number of locations along identified delivery route.

15.2 Introduction

- 15.2.1 This Chapter considers the potential effects, including cumulative effects, of the Proposed Development on Transport and Access during construction and operation. As detailed in **Chapter 2: The Proposed Development**, with proper maintenance the Proposed Development should remain functional indefinitely. If the project were to be decommissioned, it is anticipated that the potential effects on Transport and Access would be lesser than the construction impacts. As such, a separate assessment of potential decommissioning effects on Transport and Access is not included in this Chapter. Where likely significant effects are predicted during construction and operation, appropriate mitigation measures are proposed, and the significance predicted residual effects are assessed.

- 15.2.2 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.
- 15.2.3 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 Traffic and Movement (2023). The document is referred to as the IEMA Guidelines in this chapter.
- 15.2.4 This chapter should be read in conjunction with **Technical Appendix 15.1: Transport Assessment** and **Appendix 15.2 – Abnormal Load Route** Survey (as per requirements of Scoping Opinion from Transport Scotland).
- 15.2.5 This Chapter is supported by the following Figures (**EIA Report Volume 2**):
- Figure 15.1: Study Area;
 - Figure 15.2: Traffic Count Locations; and
 - Figure 15.3: Personal Injury Accident Plan.
- 15.2.6 This assessment has been carried out by Pell Frischmann. A table presenting relevant qualifications and experience of key staff involved in the preparation of this Chapter is included in **Appendix 1.1 – EIA Specialist Team**, contained within Volume 4 of this EIA Report.

15.3 Scope of Assessment

Study Area

- 15.3.1 The Study Area encompasses the area over which all desk-based and field data were gathered to inform the assessment presented in this Chapter. The Study Area is shown in **Figure 15.1** and comprises the following road links:
- C1144 between the site access junction and its junction with the A87;
 - The A87 between Invergarry and Bunloyne Bridge;
 - The A887 between Invermoriston and Bunloyne Bridge;
 - The A82 between Fort William and Invermoriston; and
 - The A830 between Corpach and Fort William.
- 15.3.2 The following effects were identified at the scoping stage for consideration in this assessment:
- Direct effects during construction on traffic and transport;
 - Traffic flows in the surrounding area;
 - Local road users;
 - Local residents; and
 - Cumulative effects during construction on traffic and transport.
- 15.3.3 The assessment scenarios used for this topic will be:

- Future Baseline Flows (2032) – which are estimated by applying National Road Traffic Forecast (NRTF) High and Low growth factors to traffic flow information obtained from Automatic Traffic Counts (ATCs), the Department for Transport (DfT) and Transport Scotland (TS) databases; and
- Future Baseline + Development Flows (2032) – which are estimated by applying the distributed development trips to the future baseline traffic flow information.

Consultation Responses

15.3.4 To inform the scope of the assessment for the Proposed Development, consultation was undertaken with statutory and non-statutory bodies. **Table 15.1** summarises the scoping and consultation responses relevant to Transport and Access provides information on where and/or how points raised have been addressed in this assessment.

15.3.5 Full details on the consultation responses and scoping opinion can be reviewed in **Chapter 5: Scoping and Consultation**, and associated appendices.

Table 15.1 Consultation Responses

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
The Highland Council	Scoping Opinion Response	17th July 2024	Highland Council's Transport Planning Team notes that their interests will relate largely to the impact of development traffic on the Council maintained road network and its users during the construction phase of the project. Transport Scotland's interest will relate to the impact of development on the trunk road network.	Comment noted.
			The Transport Planning Team recommends that the applicant refers to the information provided for 23/01810/PREMAJ with regards to the scoping requirements in relation to traffic and transport related matters. Although the change in traffic flows during the construction period may be temporary, due to the fragile nature of the C1144, which is an evolved road and not a designed road, permanent mitigation is likely to be required. In real terms, the impact of construction traffic on the C1144 will be significant and they agree with the statement in 1.2.5 that the "the C1144.....is currently unsuitable for use by construction traffic of the type required to build a PSH scheme".	Comment noted. The Proposed Development proposes to use the Southern Access Route (SAR) through Glengarry Forest for the main construction. It is proposed that the C1144 will be used for the ground investigation works and also for enabling works to construct the western end of the SAR, namely the bridge over the Gearr Garry and C1144 widening between the SAR and main site (approximately 2.5km). Further information on the access proposals, together with impacts on THC infrastructure is included in this Chapter and in Technical Appendix 15.1: Transport Assessment .
			The potential use of a forestry track south of	See comment above. With regards to drawings

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			Glen Garry to avoid using the C1144 is welcomed (proposed Southern Access Route). The access points to the Southern Access Route from the A87 and C114 must be clearly shown on suitably dimensioned drawings including details of junction radii, surfacing and drainage as well as the required visibility splays and must be designed as per the requirements of the Council document "Roads and Transport Guidelines for New Developments".	for the proposed junction arrangements, these are shown in the EIAR as figures associated with Chapter 2 – The Proposed Development .
			The widening of the C1144 from the access to the Southern Access Route to the construction site is welcomed. Dimensioned drawings of the proposed road widening must be provided. The detailed design of the road widening will need to be approved through a Road Construction Consent (RCC) application and we recommend the applicant refers to the Council's website for details on the RCC process.	Comment noted. These drawings are included in the EIAR as figures associated with Chapter 2: The Proposed Development and a Road Construction Consent (RCC) application will be prepared at the appropriate time, post consent.
			A detailed assessment of the geometry and construction of the construction routes on the Council maintained roads, together with any structures along them will be required. Early contact should be made with the Council's Structures Team regarding any affected Council maintained structures.	Comment noted. The Applicant is aware of ongoing upgrades to the C1144 route and the structures along it. It is proposed that the survey be carried out on completion of these works or following the Proposed Development being consented, with the required works secured via an appropriately worded planning condition.
			It is noted that satellite parking, delivery areas, the main site compound and accommodation would be located off the Southern Access Route. The Guidelines for the Environmental Assessment of Road Traffic was updated in 2023. Transport Planning welcome the applicants'	Comment noted.

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			confirmation that the study will take cognisance of the Transport Scotland document "Transport Assessment Guidance". They consider the extents of the Council maintained roads in the study area are acceptable.	
			Transport Planning consider the locations of ATC counts are acceptable. The Council may have traffic data and they recommend the applicant contacts THC Transport Scotland should be consulted with regards to the extent of the study area and ATC surveys on the trunk road network. It is recommended that future growth is applied using High National Road Traffic Forecast estimates. For abnormal loads a swept path analysis will be required. Cyclists should be considered with regards to potential impacts.	Comment noted. NRTF growth factors have been applied as per THC requirements. Swept path assessments have been undertaken and are included within Annex B within Technical Appendix 15.1: Transport Assessment. Cyclists have been considered as with other vulnerable road users in line with the EIA assessment guidelines.
			The study should explain the various stages of the project and the estimates of daily traffic generation within each stage, with the likely volume of HGV's, abnormal loads, LGV's and private cars clearly shown. The Council Planning Department should be contacted with regards to committed developments in the area.	Comment noted. Technical Appendix 15.1: Transport Assessment provides information in relation to the proposed construction methodology and resultant construction trip generation.
			A Framework Construction Traffic Management Plan (CTMP) should be included in the planning submission. The CTMP shall include measures to ensure that development traffic adheres to approved routes. Consultation with stakeholders including local community representatives may be necessary regarding the detailed content and implementation of the CTMP.	Comment noted. An Outline Construction Traffic Management Plan (CTMP) is provided as part of the proposed mitigation measures as part of this chapter. The provision of a final CTMP will form a planning condition and will include the requested information.

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			Transport Planning see the measures in a CTMP being supplementary and complementary to any physical road improvements deemed necessary through the above referenced assessments. The measures in a final CTMP should be developed using feedback from engagement undertaken with local community groups (e.g. Local Community Councils), with consideration given to the following: • Avoidance of HGV routing past schools during their opening and closing times. • No conveying of HGV or site staff vehicles. Drivers will be asked to resolve convoys by spacing out trips if this arises during routing to/from the site. • Agreed routes to be used by all site staff, contractor, sub-contractor and deliveries unless origin/destination from elsewhere within the local area. • Steps to be taken for deterring/preventing 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 minibuses if used) should consider marking their vehicles with a unique number identifier on the front, sides and rear of the vehicles and a windfarm 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 other parts of The Highlands and has been found to be effective. It also helps to avoid issues with traffic	Comment noted. An Outline CTMP is provided as part of the proposed mitigation measures as part of this chapter. The provision of a final CTMP will form a planning condition and will include the requested information.

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			from other developments being wrongly associated with this proposal. • Set 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, Facebook and other social media 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 villages and settlements, with cognisance of relevant speed restrictions and local conditions/limitations	
			Transport Planning Team would expect any submission to clarify the willingness to enter into a formal "Wear & Tear" Agreement (Section 96 of the Roads (Scotland) Act 1984) with Highland Council. This is to protect The Council from any extraordinary expenses in having to repair the local public roads from any damage inflicted by the construction traffic activities of this development. As with CTMP's, they would see this as supplementary to any physical improvements deemed necessary to make the local public roads safe and usable by all when being used for construction access to this development.	The Applicant is willing to enter into a formal Wear & Tear agreement. This will form a suitably worded planning condition.
			Any submission should set out the intended arrangements for surveying and recording the existing condition of	The Applicant is willing to enter into a formal Wear & Tear agreement. This will form a suitably

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			the local public roads impacted by the proposed construction access route(s) prior to any works commencing at this site. It should then clarify how the condition of those roads will be reviewed during and at the end of the proposed development, along with how any repairs deemed necessary will be undertaken.	worded planning condition.
			Depending on the construction routes settled on, The Council is likely to require some form of financial security/road bond that they'd be able to call on in the event of the Developer not being able to repair damage inflicted to the roads by their construction activities to the satisfaction of The Council as the Local Roads Authority. Again, any submission should clarify the Promoters willingness to consider some form of road bond or other financial security linked to a "Wear and Tear" agreement.	The Applicant is willing to enter into a formal Wear & Tear agreement. This will form a suitably worded planning condition.
			When undertaking pre-works condition surveys, the Promoter may want to use that data to consider whether any works are required to repair or stabilise the existing roads forming the proposed construction access route(s) before their construction traffic starts to make use of them. It could be of benefit to the Promoter to work with Highland Council on such up-front repairs, as this could limit or remove the need for temporary restrictions to their proposed construction access arrangements during their works whilst emergency road repairs are undertaken.	Comment noted. The Applicant will enter into discussions with the Council regarding the road condition as part of the Wear and Tear agreement.
			The above information is not exhaustive and shall be used as a guide for	A Transport Assessment is provided as Technical Appendix 15.1 .

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			submission of all relevant information in relation to roads, traffic and transport matters arising from the development proposals, which shall be in the form of a Transport Statement/Assessment forming part of the Environmental Statement submission. The EIAR must also consider the implications on the Trunk Road network as part of the EIAR process.	
Transport Scotland	Scoping Opinion Response	22/04/2024	Transport Scotland would state that that any proposed changes to the trunk road network must be discussed and approved (via a technical approval process) by the appropriate Area Manager. At this scoping stage, it would be helpful to contact the Area Manager for the A87(T), who is David Devine and who can be contacted at david.devine@transport.gov.scot. We would ask that at the application stage, 1:500 drawings of any new or modified junctions are submitted for review by Transport Scotland including visibility splay plans. There may also be a need for a Stage 1 Road Safety Audit depending on what is proposed.	Comment noted. A meeting has been held with David Devine at Transport Scotland to discuss the potential known changes to the trunk road network and these are considered this Chapter and in Technical Appendix 15.1: Transport Assessment. Any additional changes identified through the application process will be discussed at the appropriate time.
			Chapter 14 of the SR presents the proposed methodology for the assessment of Transport and Access. This states that the Transport & Access EIA Report Chapter will be supported by a Transport Assessment report and Abnormal Load Route Survey. We note that the Guidelines proposed to inform the assessment are the Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment (IEA), 1993).	Comment noted. The assessment has been undertaken in line with the outlined methodology.

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			Transport Scotland would note that new guidance has been published by the Institute of Environmental Management and Assessment (IEMA). These Guidelines, entitled Environmental Assessment of Traffic and Movement (July 2023), are intended to update and replace the previous 1993 guidelines and provide enhanced and up to date advice on the assessment of traffic and movement.	
			Transport Scotland would request that the thresholds as indicated within these new Guidelines be used as a screening process for the assessment. These specify that road links should be taken forward for further assessment where the following two rules are breached: Rule 1: Include road links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%) Rule 2: Include road links of high sensitivity where traffic flows have increased by 10% or more.	Comment noted. The assessment has been undertaken in line with the outlined methodology.
			Chapter 14 indicates that the study area will include: • C1144 between the site access junction and its junction with the A87(T); • The A87(T) between Invergarry and Bunloyne Bridge; • The A887(T) between Invermoriston and Bunloyne Bridge; • The A82(T) between Fort William and Invermoriston. • The A830(T) between Corpach and Fort William	Comment noted. The assessment study area is as described and further details of the study area are presented in this Chapter and within Technical Appendix 15.1: Transport Assessment .

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			We note that the DfT and Traffic Scotland databases will be utilised to inform the baseline, with ATC surveys being undertaken at the following locations: • The C1144 at the site access junction; • The A87(T) at its junction with the C1144; and • The A887(T) in Invermoriston. In addition, we note that future year traffic growth will be obtained by using National Road Traffic Forecast (NRTF) Low growth estimates. Transport Scotland is satisfied with this approach.	Details of the Average Annual Daily Traffic (AADT) are presented in this Chapter and within Technical Appendix 15.1: Transport Assessment. Details of the NRTF growth factors used to estimate future year traffic growth are presented in this Chapter and within Technical Appendix 15.1: Transport Assessment.
			Abnormal Loads Assessment Chapter 14 states that an Abnormal Load Route Survey (ALRS) will be prepared. In this, the worst-case load would be assessed which is likely to access the site from the Port of Inverness to site via barge access on Loch Ness and then via the A82(T) (from a lochside landing north of Fort Augustus), A87(T) and the preferred SAR. An alternative route from the Port of Corpach is also being considered.	The proposed Abnormal Indivisible Load (AIL) delivery route (Access Route) is presented as part of the RSR in Technical Appendix 15.1: Transport Assessment. For the purposes of this assessment the proposals have considered Corpach Harbour only at this time.
			Transport Scotland will require to be satisfied that the size of loads proposed can negotiate the selected trunk road route and that their transportation will not have any detrimental effect on structures within the trunk road route path.	Comment noted. The proposed AIL delivery route (Access Route) is presented as part of the RSR in Technical Appendix 15.1: Transport Assessment, supported by the necessary swept path assessment drawings, which identify necessary works.
			The ALRS should identify key pinch points on the trunk road network. Swept path analysis should be undertaken and details provided with	The proposed AIL delivery route (Access Route) is presented as part of the RSR in Technical Appendix 15.1: Transport

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
			regard to any required changes to street furniture or structures along the route.	Assessment , supported by the necessary swept path assessment drawings, which identify necessary works.
Scottish Canals	Scoping Opinion Response	18th April 2024	SC recognises the significant opportunity for pump hydro scheme(s) to use the Caledonian Canal for a variety of freight purposes. SC notes that the development will involve transporting wide loads and we welcome the proposal in the EIA scoping report for barge access from Inverness to Loch Ness is to be included in the Route Survey Report.	Comment noted. The current proposals and assessment undertaken to date have not considered the use of the Caledonian Canal for freight. The Applicant is however willing to explore alternative options in terms of freight transport, as the project progresses, with relevant studies undertaken as necessary.
			SC supported trial passages of water-based freight in relation to the Coire Glas pumped storage hydro-scheme development on Loch Lochy in late 2022.	Comment noted.
			Use of the canal to support hydro-related transport can significantly reduce the number of abnormal indivisible loads on the already congested A82 and wider Highland road network.	Comment noted. The current proposals and assessment undertaken to date have not considered the use of the Caledonian Canal for freight or AIL movements. The Applicant is however willing to explore alternative options in terms of freight and AIL transport, as the project progresses, with relevant studies undertaken as necessary.
			We note that the use of water borne freight has the potential to reduce the transport carbon emissions during the construction phase of the Proposed Development	Comment noted.
			SC would welcome the opportunity to discuss the potential use of the Caledonian Canal for freight purposes with the Developer as part of the EIA process.	Comment noted. The current proposals and assessment undertaken to date have not considered the use of the Caledonian Canal for freight. The Applicant is however willing to explore alternative options in terms of freight transport,

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
				as the project progresses, with relevant studies undertaken as necessary.
ScotWays	Scoping Opinion Response	29th May 2024	For information this (HL11) is the route that runs north/south on our map and terminates on the public road by Loch Quaich dam.	Comment noted.
			The recorded rights of way HL12 and HL21 both, in part, lie along the forest tracks which are proposed to be used, and developed, as the SAR. The impact of the proposed development on public recreational access needs to be fully considered. We would anticipate that an Access Management Plan be drawn up in order to ensure continued public recreational access at all stages of the proposed development.	Measures which could be included in an Outdoor Access Management Plan (OAMP) are presented as part of the mitigation section of this Chapter. A Path Planning Study will be conducted post consent and will be secured through a planning condition (if deemed necessary). Findings from the study will be used to formulate a set of measures into an OAMP if required.
Glengarry Community Council	Scoping Opinion Response	18th April 2024	The phrase 'temporary effects' is used throughout. Two comments arise. First, how long is temporary? We understand this is a long term project of over ten years, a lifetime for some. Second, we take encouragement that it is temporary – so forest tracks will be put back (eventually) to what they are – forest tracks. And any new bridges, tracks and other infrastructure will be landscaped back to their original state – that is as if they were never there.	Comment noted. Information on proposed construction timescales are provided in Technical Appendix 15.1: Transport Assessment . Further information on these would be provided at the appropriate time, following consent and detail design of the development proposals. As detailed in Chapter 2: The Proposed Development , the SAR would be retained, not reinstated.
			The use of buses is suggested but there is a sign at the end of the C1144 road saying the road is unsuitable for buses. We really don't think the limitations on the capacity of the road are fully understood. It's a very long, narrow, single-track road into the wilderness. Representation has recently been made to us that the end of the road (where, ironically, they	Comment noted. Construction traffic including buses would be using the SAR, with on a short section of the C114 used, which would be upgraded prior to its use. Further details on this are included in Technical Appendix 15.1: Transport Assessment .

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			are 'off grid' entirely) is so poor that even the postal service struggles to get there and supermarket deliveries have been cancelled due to the dangerous state of the road.	
			We would be interested to see the risk assessment associated with removing the rock to widen the C1144 'around the Quoich dam' as the risk, of blasting and vibration (noted above) immediately below the previous landslide, could be significant.	Comment noted. Geology and ground stability is assessed in the EIAR at Chapter 12: Geology, Soils and Water.
			The new bridge across the Gearr Garry is noted. But no mention of restoration after the project.	Comment noted. As detailed in EIAR Chapter 2: The Proposed Development , the SAR and improved river crossings would be retained, not reinstated.
			How big is this staff/supplies compound and where is it?	Details of the main compound are included in EIAR Chapter 2: The Proposed Development.
			If the landowners do not agree to the SAR, then all traffic will be via the C1144. Even with the preferred SAR, cumulative access pressure for various major projects is substantial. For example, for the concurrent Skye Reinforcement Project, the Highland Council has estimated extra traffic as: Section 5 – Loch Quoich to Invergarry: C1144 Quoich Road and U1207 Loch Hourn Road 29,514 (LGVs/cars) and 25,525 (HGVs) We do not believe it is sustainable to continue adding in this cumulative way.	Comment noted. The basis of this application is the use of the SAR for construction access. Landowner negotiations have progressed and are entering their final stages.
			The study area should also include the damage caused (ecological etc) along the route of the preferred SAR. Also, some analysis of extra risk within the village of Invergarry should be	Comment noted. Traffic through Invergarry village is assessed in this Chapter in accordance with the methodology agreed with THC and Transport Scotland. This considers cumulative

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			undertaken. In particular, we have many representations regarding the issue of weight and speed of traffic past the school. Regardless of whether or not the preferred SAR is used, all the traffic will pass through the village. What is the projected volume of traffic?	impacts from other infrastructure projects.
			The Route Survey Report (RSR) should include analysis in the case that the preferred SAR is not used.	Comment noted. The basis of this application is the use of the SAR for construction and AIL access.
			The percentage increase should be calculated when there is no other construction traffic (see 14.2.29 above for cumulative impact comment.)	The assessment has been undertaken in line with the appropriate guidelines in relation to cumulative impacts. A full review of committed developments is included within Technical Appendix 15.1: Transport Assessment , detailing the justification or otherwise for their inclusion within the assessment.
			Decommissioning should be included. This would give reassurance that the preferred SAR will be taken away, rather than just left in the landscape, like many other things in the glen. (For example, see the concrete blast bunkers above Kingie – left in the landscape after the dam build in the 1950s.)	Decommissioning has been scoped out of the assessment, as agreed with THC. As detailed in Chapter 2: The Proposed Development , the SAR would be retained, not reinstated
			These rules are not appropriate for this situation due to the fragility of the roads and environment. And emphasises the need to be clear about what percentage is being measured. See above for comments on cumulative impacts.	The assessment undertaken within the Chapter has been done in accordance with the agreed methodology with THC and Transport Scotland, and line with relevant guidance.
			It is not appropriate to include planning consented traffic to the base line for the reasons given above.	The assessment has been undertaken in line with the appropriate guidelines in relation to cumulative impacts. A full review of committed developments is included

Consultee	Consultation Type	Date	Issue Raised	Response/Action Taken
				within Technical Appendix 15.1: Transport Assessment , detailing the justification or otherwise for their inclusion within the assessment.
			This is not a 'general' case and a formal transport assessment is necessary for the reasons given above.	A Transport Assessment is included as Technical Appendix 15.1 . This has been undertaken as per the agreed scoping methodology with THC and TS.
			Specific Questions: 14.5.1 Is the proposed methodology acceptable? [GCC comment – No.] 14.5.2 Are the methods proposed for obtaining traffic flow data are acceptable? [GCC comment – No.] 14.5.3 Is the use of Low National Road Traffic Forecasts (NRTF) is acceptable for the whole of the study? [GCC comment – No.] 14.5.4 What committed development schemes should be included in the assessment? [GCC comment – all of them. Unless by 'included' it is meant to include the traffic in the baseline. In which case they should all be excluded.]	Comments noted.

Issues Scoped out of Assessment

- 15.3.6 The traffic effects during the operational phase of the proposed development are likely to be insignificant. There are predicted to be approximately 10 members of staff on site at any one time, working an eight hour shift. As a worst case scenario, assuming that all staff travelled to the Proposed Development in single occupancy cars, this would equate to 10 arrivals and 10 departures per eight hour shift. After which, the road network would return to the existing (future) baseline levels. This is below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operation phase are scoped out of the assessment.

15.4 Legislation, Policy and Guidance

Legislative Context

- 15.4.1 There is no legislation, which is specific to transport assessments, that is required to be considered as part of this assessment.

Policy Context

- 15.4.2 The following policy has been considered in the assessment:

- National Planning Framework 4 (NPF4) (2023) ¹;
- Highland-wide Local Development Plan (2012) ²; and
- The West Highlands and Islands Local Development Plan ³ (2019).

Technical Guidance

- 15.4.3 The following technical guidance has been considered in the assessment:

- Institute of Environmental Assessment, Guidelines for the Environmental Assessment of Road Traffic (1993) ⁴;
- Institute of Environmental Assessment, Environmental Assessment of Traffic and Movement (2023) ⁵;
- Institution of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005) ⁶;
- LA104, Environmental assessment and monitoring, the Design Manual for Roads and Bridges (DMRB) (2020) ⁷;
- National Planning Framework 4 (NPF4) (2023) ⁸;
- Planning Advice Note (PAN) 75 (1995) ⁹;
- Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008) ¹⁰;
- Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESAs Manual" (2013) ¹¹;

¹ Scottish Government (2023), National Planning Framework 4. Available at: <https://www.gov.scot/publications/national-planning-framework-4/>

² The Highland Council (2012), Highland-wide Local Development Plan (2012). Available at: https://www.highland.gov.uk/info/178/development_plans/199/highland-wide_local_development_plan

³ The Highland Council (2019), West Highland and Islands Local Development Plan (2019). Available at: https://www.highland.gov.uk/info/178/development_plans/199/highland-wide_local_development_plan

⁴ Institute of Environmental Assessment (1993), The Guidelines for the Environmental Assessment of Road Traffic

⁵ Institute of Environmental Management and Assessment (2023), Environmental Assessment of Traffic and Movement

⁶ The Institution of Environmental Management and Assessment (2005), Guidelines for the Environmental Assessment

⁷ Highways England, Transport Scotland, Welsh Government & Department for Infrastructure (2020), LA104, Environmental assessment and monitoring, the Design Manual for Roads and Bridges (DMRB)

⁸ Scottish Government. (2014) National Planning Framework 4: Available at: <https://www.transformingplanning.scot/national-planning-framework/>

⁹ Scottish Government. Planning Advice Note (PAN) 75. Available at: <https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/>,

¹⁰ Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008)

¹¹ Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESAs Manual" (2013)

- Roads and Transport Guidelines for New Developments (2013)¹²; and
- Guidance on the Preparation of Transport Assessments (2014)¹³.

15.5 Methodology

Desk Study

15.5.1 The desk study included reviews and identification of the following:

- review of relevant transport planning policy;
- consideration of potential origin locations of construction staff and potential supply locations for construction materials to inform extent of local area roads network to be considered in the assessment;
- collection of existing traffic flow information;
- review of the relevant roads hierarchy;
- review of personal injury accident (PIA) data ;
- identification of sensitive locations within study area (as defined by IEMA such as settlements, schools, tourist attractions etc.) using freely available online mapping;
- identification of any other traffic sensitive receptors in the area (Core Paths, routes, communities, etc.) using freely available online mapping and relevant agency websites;
- review of Ordnance Survey (OS) plans;
- review of cumulative development information – THC planning portal and the Scottish Government's Energy Consents Unit portal ; and
- identification of constraints to the movement of AILs through a Route Survey including swept path assessments – OS plans, video footage and Google Streetview.

Field Study

15.5.2 The following field surveys were carried out to inform the assessment:

- Automatic Traffic Count (ATC) surveys to obtain baseline traffic flows and speed information; and
- Detailed site visits were undertaken to review the proposed access route and potential constraints for both general construction traffic and AILs.

Assessment Methodology

15.5.3 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 (offsite effects) and the assessment of significance of major new developments. More 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, which should be used to characterise the environmental traffic and transport effects (offsite effects) and the assessment of significance of major new developments. The guidelines intend to complement professional judgement and the experience of trained assessors.

¹² The Highland Council (2013), Roads and Transport Guidelines for New Developments. Available at: https://www.highland.gov.uk/downloads/file/527/road_guidelines_for_new_developments

¹³ The Highland Council (2024), Guidance on the Preparation of Transport Assessments. Available at: https://www.highland.gov.uk/info/178/development_plans/202/inner_moray_firth_local_development_plan

Sensitivity Criteria

- 15.5.4 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.
- 15.5.5 The 2023 IEMA Guidelines include 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 15.2**.

Table 15.2: 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
Users/ Residents of Locations	Where a location is a large rural settlement containing a high number of community and public services and facilities	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services	Where a location is a small rural settlement, few community or public facilities or services	Where a location includes individual dwellings or scattered settlements with no facilities

- 15.5.6 It is acknowledged that there would be locations both in terms of users of roads or users / residents of locations that may not fit within one of the sensitivity classifications highlighted in **Table 15.2**. In these situations, professional judgement has been applied and justification for any changes provided.
- 15.5.7 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.

Magnitude of Effect

- 15.5.8 Magnitude of change has been assessed in accordance with the following rules which are outlined in the 2023 IEMA Guidelines, and are used to inform a screening exercise to determine which links within the Study Area are to be considered for detailed analysis in the assessment:
- Rule 1 – Include highway links where traffic flows would increase by more than 30% (or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%); and
 - Rule 2 – Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.
- 15.5.9 Examples of sensitive areas are presented in the IEMA Guidelines as hospitals, churches, schools, historical buildings and tourist attractions etc. These locations are to be assessed in relation to “Rule 2”.

- 15.5.10 The 2023 IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development; the impacts and levels of magnitude are discussed below:
- Severance – the IEMA Guidance advises that, *“The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.”* (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that *“the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.”* (Para 3.17).
 - Driver delay – the IEMA Guidelines note that these delays are only likely to be *“significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system”* (Para 3.20).
 - Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance advises that *“pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to crossroads. 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 undertaken following the Proposed Development being consented.
 - Large loads – The movement of the AILs associated with the construction of the Proposed Development have been considered in full, within a separate route survey assessment (see **Annex B of Technical Appendix 15.1: Transport 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 the Mitigation section.
- 15.5.11 While not specifically identified, as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

Significance Criteria

Table 3.7 of LA104 Environmental Assessment Methodology of the Design Manual for Roads and Bridges (DMRB) sets out four levels against which the magnitude of these impacts should be assessed – major, moderate, minor and negligible. The impacts and levels of magnitude are discussed below in **Table 15.3**.

Table 15.3 Magnitude of Effect

Magnitude	Description
Major	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.
Minor	These effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the project.
Negligible	No effects or those that are imperceptible.

15.5.12 The predicted significance of the effect was determined through a standard method of assessment based on professional judgement, considering both sensitivity and magnitude of change as detailed in **Table 11.4** below.

Table 15.4 Significance Criteria

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

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

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

Assumptions and Limitations

15.5.15 Limitations to the assessment are as follows:

- 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. It is not possible to fully develop a day by day traffic flow estimate as the Principal Contractor nor the Plant Supplier have been appointed and external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc).
- Assumptions on the original points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on the Study Area may alter to those presented in the assessment.
- The traffic generation associated with the Proposed Development has been based upon similar scale projects undertaken by the Developer's engineers and is based upon their recent experience and considered to be appropriate for enabling a robust assessment of the potential effects to be made.

15.5.16 The following main assumptions have informed the assessment effects in this chapter:

- A construction programme of 101 months has been assumed.
- The first year of construction is assumed to be 2028, however the peak of construction activity would occur in 2032 and as such, this has been used for the basis of the assessment within this chapter.

15.5.17 Further details on assumptions made, including construction traffic routing and distribution and where raw material would be sourced, is included in **Technical Appendix 15.1: Transport Assessment**.

15.5.18 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 Transport and Access.

15.6 Baseline Conditions

Existing Baseline

Active Travel Network

15.6.1 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 C1144 between its junction with the A87 and the proposed site access junction.

15.6.2 Further away from the Proposed Development in the wider study area, there are pedestrian facilities within the larger settlements, including Invergarry, Spean Bridge, Fort William and Fort Augustus, where there are footways on one side or both sides of the carriageways, drop kerbs with tactile paving, pedestrian refuge islands and dedicated crossing facilities by way of signalised crossings. The level of pedestrian infrastructure is commensurate with the scale of the local settlements and their relative rural setting.

15.6.3 A review of the THC Core Path network¹⁴ indicates that there are no Core Paths on the C1144 leading through to the Proposed Development site, or in the immediate vicinity of the main development areas. There are however Core Paths located to the east in the vicinity of the A87 at the location where the new access junction would be located. These Core Paths are shown in **Technical Appendix 15.1 Transport Assessment**, Figure 5 Core Path Plan and include the following paths:

¹⁴ The Highland Council, Core Path Plan:
<https://highland.maps.arcgis.com/apps/webappviewer/index.html?id=2fd3fc9c72d545f7bcf1b43bf5c8445f> [Accessed October 2024]

- LO11.08 – Access to Whitebridge waymarked trails from Mandally Road, located to the east, running from the A87 past the Glen Garry Car Park, before heading south towards Tom a' Bhodaich, and finally east towards Poll an Onochoin, for a distance of 1.56km;
 - LO11.09 – River Garry access for water sports, located to the east, running from the A87 at the access to Glen Garry Timber, heading east for a distance of approximately 0.37 metres (m) before connecting to LO11.01;
 - LO11.01 – River Garry Paths, located to the east, running from LO11.09 heading south towards Tom a' Bhodaich, before heading east towards Invergarry, for a distance of 5.79km;
 - LO11.02 – Aldernaig Burn to Loch Lundy, located to the east at Invergarry, running from the A87 in the south to Loch Lundy in the north, for a distance of approximately 6.04km;
 - LO.11.03 – Bridge of Oich Cycle Track, running from the A87 in Invergarry to Fassie Wood at Aberchalder, for a distance of 4.59km; and
 - LO11.05 – Black Bridge to Mandally Road, located to the east, running from the A87 to the Great Glen Way, for a distance of approximately 26m.
- 15.6.4 A review of Sustrans' National Cycle Route (NCR) map 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 within Fort Augustus and at Aberchalder, following sections of the Great Glen Way.
- 15.6.5 The Great Glen Way is a 127km 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.
- 15.6.6 In addition to the Great Glen Way, there is also an unofficial, unmarked and marginally wild long distance route from Fort William to Cape Wrath, known as the Cape Wrath Trail. There is no officially sanctioned route for the Trail, rather walkers using it can plan alternative routes within the start and end points.

Road Access

C1144

- 15.6.7 The C1144 Daingean Bridge to Tomdoun to Loch Quoich Road is a c-class road, commencing at its junction at Daingean Bridge on the A87, extending in a westerly direction by Loch Garry, Tomdoun and Loch Quoich to Kinloch Horn. The road is a single track road with passing places and is approximately 24km in length. The road has the national speed limit (60 miles per hour (mph)) in place and is maintained by THC, with the exception of . the eastern end of Quoich Bridge, on the northern banks of Loch Quoich, which is owned and maintained by SSE.

A87

- 15.6.8 The A87 is part of the Scottish trunk road network and maintained by Bear Scotland on behalf of TS. The A87 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. 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 40mph. The road is considered to be in good condition and maintained to a high standard by Bear Scotland.

A82

- 15.6.9 The A82 is part of the Scottish trunk road network and is managed and maintained by Bear Scotland on behalf of TS. The A82 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 30mph within Fort Augustus to the

north and 40mph 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.

A887

- 15.6.10 The A887 is part of the Scottish trunk road network and is managed and maintained by Bear Scotland on behalf of TS. The A887 runs from Bun Loyne in the west at the A87 to Invermoriston in the east at the A82. The national speed limit is in place outwith settlements for the most part, although there are sections where this reduces to 50mph, for example at locations where there are changes in the horizontal alignment of the carriageway. Within settlement, for example Invermoriston the speed reduces to 40mph. The road is considered to be in good condition and maintained to a high standard by Bear Scotland.

A830

- 15.6.11 The A830 is part of the Scottish trunk road network and is managed and maintained by Bear Scotland on behalf of TS. The A830 runs from Fort William in the east at the A82, to Mallaig in the west. The road is a single carriageway road with one lane operating in each direction, for a distance of approximately 65km. The national speed limit is in place outwith settlements, reducing to 30mph or 40mph, for example in Fort William and Corpach. The road is considered to be in good condition and maintained to a high standard by Bear Scotland.

Road Suitability

- 15.6.12 The Agreed Timber Route Map¹⁵ 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'.
- 15.6.13 'Agreed Routes' are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Those links classed as 'Consultation Routes' are categorised as a route which is key to timber extraction, but which are not up to 'Agreed Route' standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified as 'Consultation Routes' by default unless covered by one of the other classifications. 'Severely Restricted Routes' are not normally to be used for timber transport in their present condition. These routes are close to being Excluded Routes. Consultation with the local authority is required prior to use. Finally, 'Excluded Routes' should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.
- 15.6.14 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 A87 and A82 which are 'Agreed Routes' and sections of the C1144 (from Tomdoun to Kinloch Hourn), which is a 'Consultation Route'.

Existing Baseline Traffic Flows

- 15.6.15 In order to assess the impact of development traffic on the Study Area, traffic count data has been sourced from project specific ATC surveys undertaken on the local road network in the immediate vicinity of the site and from the TS and Department for Transport (DfT) databases.

¹⁵ <https://timbertransportforum.org.uk/> [Accessed October 2024]

- 15.6.16 Three ATC sites were established in June 2024. The ATC surveys were conducted over a 7-day period, recording vehicle classifications, direction of travel and speeds. The count sites were as follows:
- C1144 at the proposed site access junction;
 - A87 at the junction with the C1144; and
 - A887 at Invermoriston.
- 15.6.17 With regards to the traffic data obtained from the TS / DfT databases, the year 2023 has been used, to take account of a full years' worth of survey data. DfT and Transport Scotland traffic 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).
- 15.6.18 Traffic data has been used for the following locations:
- A87 west of Bun Loyne (Count Site Reference ATC01054);
 - A87 between Bun Loyne and C1144 junction (Count Site Reference 30776);
 - A82 between Invermoriston and Fort Augustus (Count Site Reference ATC01038);
 - A82 between Fort Augustus and Invergarry (Count Site Reference ATC01037);
 - A82 between Invergarry and Spean Bridge (Count Site Reference ATC01036);
 - A82 between Spean Bridge and Fort William (Count Site Reference ATC01034); and
 - A830 between Corpach and Fort William (Count Site Reference ATC01070).
- 15.6.19 These sites were identified as being areas where sensitive receptors on the access routes would be located.
- 15.6.20 A National Road Traffic Forecast (NRTF) growth factor was applied to the TS and DfT survey data, where applicable, to provide a base year of 2024. As requested by THC in their scoping opinion, NRTF High growth factors have been applied to the local road network, while Low growth factors have been applied to the Trunk road network. The NRTF High growth factor for 2023 to 2024 is 1.012, while the Low growth factor for 2023 to 2024 is 1.005.
- 15.6.21 The location of the traffic count surveys are shown in **Figure 15.2.** and the Annual Average Daily Traffic (AADT) traffic data collected and used in this assessment is shown in **Table 15.5.**

Table 15.5 24-hour Average Traffic Data (2024)

Survey Location	Data Source	Cars / LGV	HGV	Total
C1144 at the proposed powerhouse access junction	ATC	38	22	60
A87 at the junction with the C1144	ATC	1,705	570	2,275
A887 at Invermoriston	ATC	1,265	584	1,850
A87 west of Bun Loyne	TS	2,350	383	2,733
A87 between Bun Loyne and C1144 junction	DfT	1,338	72	1,410
A82 between Invermoriston and Fort Augustus	TS	1,259	354	1,613
A82 between Fort Augustus and Invergarry	TS	2,271	665	2,936
A82 between Invergarry and Spean Bridge	TS	3,352	887	4,239

Survey Location	Data Source	Cars / LGV	HGV	Total
A82 between Spean Bridge and Fort William	TS	16,050	865	16,915
A830 between Corpach and Fort William	TS	9,366	711	10,076

Please note that variances may occur due to rounding.

15.6.22 As noted above the ATCs undertaken to inform the study also collected speed data, as do the Transport Scotland count sites and a summary of this can be seen in **Table 15.6** below.

Table 15.6 Speed Summary

Survey Location	Mean Speed (mph)	85%tile Speed (mph)	Speed Limit (mph)
C1144 at the proposed powerhouse access junction	26.7	32.2	60
A87 at the junction with the C1144	44.8	50.4	60
A887 at Invermoriston	24.5	29.8	40
A87 west of Bun Loyne	47.2	55.3	60
A87 between Bun Loyne and C1144 junction	-	-	-
A82 between Invermoriston and Fort Augustus	41.3	53.8	60
A82 between Fort Augustus and Invergarry	49.9	57.0	60
A82 between Invergarry and Spean Bridge	49.0	55.8	60
A82 between Spean Bridge and Fort William	29.2	34.1	30
A830 between Corpach and Fort William	30.7	35.2	30

15.6.23 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. At other locations within the study area, the speed survey data indicates that speed limits are broadly being adhered to. The 85th percentile speeds at Fort William and Corpach are over the posted speed limit of 30mph and as such, Police Scotland may wish to consider enforcement spot checks in these areas as part of their wider road policing measures.

Accident Review

- 15.6.24 Personal Injury Accident (PIA) data for the three-year period covering 2020 to 2022 for the C1144 and A87 between Invergarry and Bun Loyne, was obtained from the online resource CrashMap which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.
- 15.6.25 TA Guidance 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.
- 15.6.26 The statistics are categorised into three categories, namely “Slight” for damage only incidents, “Serious” for injury accidents and “Fatal”, for those accidents that result in a fatality.
- 15.6.27 The locations and severity of the recorded accidents within the Study Area are shown in **Figure 15.3**.
- 15.6.28 A summary analysis of the incidents indicates that:
- A total of eight PIAs were recorded within the study area within the last three-year period.

- Of those eight PIAs, three were classified as “Slight” (37.5%) and five were classified as “Serious” (62.5%).
- There were no “Fatal” PIAs recorded.
- There were no PIAs recorded that involved a pedestrian or cyclist.
- Three PIAs recorded involved a motorcycle, two were classified as “Serious” and one was classified as “Slight”.
- None of the recorded PIAs involved an HGV.
- Young drivers (under 25) were involved in one accident, which was classified as “Slight”.
- No PIAs were recorded on the C1144 in the vicinity of the site or the A87 in the vicinity of the proposed site access junction.

15.6.29 In general, there are no clusters of PIAs at any location in the study area or high numbers of accidents involving HGVs for example. The majority of PIAs recorded occurred at or on approach to bends or at junctions where there is an increased interaction between vehicles. It is acknowledged that there has been a 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.

15.6.30 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 or within the study area that currently require to be addressed or would be exacerbated by the construction of the Proposed Development.

Future Baseline

15.6.31 Construction of the Proposed Development could commence during 2028 if consent is granted and is anticipated to take approximately 101 months depending on weather conditions and ecological considerations.

15.6.32 A review of the construction programme provided by the Applicant suggests that the peak of construction activities would occur in 2032. As such this has been used within the assessment for the future baseline.

15.6.33 To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF growth factors to the surveyed traffic flows. The NRTF Low growth factor for 2024 to 2032 is 1.093 and the NRTF High growth factor for 2024 to 2032 is 1.063. These factors were applied to the 2024 traffic data to estimate the 2032 Base traffic flows.

15.6.34 A review of THC’s online planning portal, in addition to the Scottish Government’s Energy Consents Unit portal was undertaken to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic and should be included as committed development within the baseline. Details of the review are provided in **Technical Appendix 15.1 Transport Assessment**. The review found that Coire Glas Pumped Storage Scheme may coincide with the peak period of construction of the Proposed Development and as such has been added to the 2032 Base traffic flows. The resultant 2032 Baseline flows plus committed development flows are shown in **Table 15.7**.

Table 15.7 24-hour Average Traffic Data (2032) Base plus Committed Development

Survey Location	Cars / LGV	HGV	Total
C1144 at the proposed powerhouse access junction	42	24	66
A87 at the junction with the C1144	1,842	670	2,512
A887 at Invermoriston	1,345	621	1,966
A87 west of Bun Loyne	2,528	471	2,999
A87 between Bun Loyne and C1144 junction	1,452	141	1,593
A82 between Invermoriston and Fort Augustus	1,357	558	1,915
A82 between Fort Augustus and Invergarry	2,432	889	3,321
A82 between Invergarry and Spean Bridge	3,587	1,062	4,649
A82 between Spean Bridge and Fort William	17,085	1,039	18,124
A830 between Corpach and Fort William	9,956	755	10,711

Please note that variances may occur due to rounding.

- 15.6.35 It should be noted that any crossover of traffic with the Proposed Development flows and other developments in the area would be addressed via an overarching Construction Traffic Management and Monitoring Plan secured by planning condition on the Proposed Development's consent.
- 15.6.36 Projects in scoping or not yet determined cannot be included in cumulative assessments as they have yet to be determined. As traffic impacts are short lived for construction projects, the potential traffic impact is highly speculative and as such, cannot be included in the assessment. Furthermore, including construction traffic associated with other development projects, specifically in relation to construction activities which are temporary in nature would dilute the potential impact that the Proposed Development would have. The approach taken is therefore considered to be an overly robust assessment.
- 15.6.37 In the scenario that the proposed development did not proceed, traffic growth would still occur and the links within the study area would experience increased traffic flows resulting from other development pressures, tourism traffic and population flows.

Receptor Sensitivity Summary

- 15.6.38 The assessment of effects is based on the project description as outlined in **Chapter 2 – The Proposed Development** and the embedded mitigation by design described in **Chapter 3: Consideration of Alternatives and Design Evolution**.
- 15.6.39 A review of sensitive receptors has been undertaken within the study area. **Table 15.8** 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 15.2**.

Table 15.8 Receptor Sensitivity Summary

Receptor	Sensitivity	Justification
Users of C1144	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Users of A82	Low	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.
Users of A87	Low	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.
Users of A877	Low	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.
Users of A830	Low	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.
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 C1144	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents along A82, A87 and A87 outwith towns and villages	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Spean Bridge Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Fort William Residents	High	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Corpach Residents	High	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Core Paths / Path Users	High	Minor paths used by walkers, cyclist and horse riders, not constructed to accommodate HGV traffic flows.

15.6.40 As previously noted in the 'Criteria for Assessing Magnitude of Change' section, examples of sensitive areas are presented in the IEMA Guidelines as locations which include hospitals, churches, schools, historical buildings tourist attractions for example. Based on these indicators which are stated within the IEMA Guidelines, the following locations within the study area have been identified as sensitive areas in this assessment:

- Invergarry (school / places of worship / tourist attractions);
- Fort Augustus (school / places of worship / tourist attractions);
- Spean Bridge (school / places of worship / tourist attractions);
- Corpach (school / places of worship / tourist attractions / hospital); and
- Fort William (school / places of worship / tourist attractions).

- 15.6.41 These locations will therefore be 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. All other locations within the study area are subject to 'Rule 1' and are assessed if traffic flows (or HGV flows) on highway links increase by more than 30%.

15.7 Mitigation by Design

- 15.7.1 The site access junctions on both the A87 and C1144 have been designed to the appropriate standards to operate in a safe and efficient manner throughout the design life of the project. They would be maintained to ensure that road safety at these locations is ensured.
- 15.7.2 Construction traffic will be routed to the site via the SAR during the main construction phase, to reduce the potential impact on the C1144. It is only proposed to utilise the whole of the C1144 while undertaking ground investigation works and to support early enabling works, to allow the completion of the SAR.
- 15.7.3 To reduce traffic volumes during the construction phase, a residential camp would be established on the site to accommodate staff engaged in construction activities at the Site. There will also be a satellite residential camp in the upper reservoir (SC3), to reduce vehicular movements between the main site and site compound (SC1). Having staff based at the site would help reduce the number of vehicular movements on the local road network.
- 15.7.4 In addition, to further reduce traffic volumes, it is proposed that an off-site staging area (location to be confirmed, however for the purposes of the assessment it is assumed to be located to the south of Invergarry) with staff parking will be used, with site personnel shuttled to and from the site and residential compound. As part of this, the Principal Contractor will make use of a logistics plan to further control vehicular movement to and from the site, thus minimising as far as practicable potential impacts on the local road network.

15.8 Potential Significant Effects

- 15.8.1 This section considers the potential impacts and associated effect significance of the construction, and operation of the Proposed Development based on the typical activities described in **Chapter 2 – The Proposed Development**.

Construction Effects

- 15.8.2 The construction phase would involve different tasks being undertaken at the site. These activities would involve different levels of activities, materials and staff and as such, there would be fluctuations in traffic travelling to and from the site.
- 15.8.3 During construction, a peak of construction traffic movement would occur and this assessment reviews the effects that this peak month of activity would have on roads located within the study area.
- 15.8.4 During the construction phase of the Proposed Development, the following traffic would require access to the site:
- Staff transport, shuttled in minibuses to a residential camp to be founded within the Proposed Development area;
 - Light Goods Vehicles (LGV) providing supplies, provisions and deliveries to the construction offices and residential camp;
 - Removal of waste water and solid waste (should on-site treatment not be used);
 - Construction consumables such as fuel and oil deliveries made in HGVs;
 - Construction equipment, plant and machinery by HGV low loader (or similar);
 - Bulk materials such as cement and aggregate (the majority of aggregates would be won from the site); and

- AILs associated with the High Voltage (HV) transformer equipment and tunnel linings.

15.8.5 The estimated traffic generation associated with the Proposed Development has been based upon similar scale projects and based upon recent experience. Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development and these are detailed in **Technical Appendix 15.1: Transport Assessment**.

15.8.6 Following the distribution and assignment of traffic flows to the study area network, the resultant daily traffic during the peak of construction, is summarised in **Table 15.9**.

Table 15.9 24-hour Average Traffic Data (2032) Base plus Committed Development

Survey Location	Cars / LGV	HGV	Total
C1144 at the proposed powerhouse access junction	250	180	430
A87 at the junction with the C1144	328	180	508
A887 at Invermoriston	-	-	-
A87 west of Bun Loyne	-	-	-
A87 between Bun Loyne and C1144 junction	-	-	-
A82 between Invermoriston and Fort Augustus	164	72	236
A82 between Fort Augustus and Invergarry	164	72	236
A82 between Invergarry and Spean Bridge	328	108	436
A82 between Spean Bridge and Fort William	164	108	272
A830 between Corpach and Fort William	33	-	33

Please note that variances may occur due to rounding.

15.8.7 The resulting peak construction traffic has been added to the future year baseline traffic flows (2032) in order to consider the percentage impact that these flows would have. The resulting traffic impact is summarised in **Table 15.10**.

Table 15.10 2032 Peak Construction Traffic Network Impact

Survey Location	Cars / LGV	HGV	Total	Cars / LGV	HGV	Total
C1144 at the proposed site access junction	292	204	496	595.2%	763.4%	655.7%
A87 at the junction with the C1144	2,170	850	3,020	17.8%	26.9%	20.2%
A887 at Invermoriston	1,345	621	1,966	0.0%	0.0%	0.0%
A87 west of Bun Loyne	2,498	407	2,905	0.0%	0.0%	0.0%
A87 between Bun Loyne and C1144 junction	1,422	77	1,499	0.0%	0.0%	0.0%
A82 between Invermoriston and Fort Augustus	1,521	630	2,151	12.1%	12.9%	12.3%

Survey Location	Cars / LGV	HGV	Total	Cars / LGV	HGV	Total
A82 between Fort Augustus and Invergarry	2,596	961	3,557	6.7%	8.1%	7.1%
A82 between Invergarry and Spean Bridge	3,933	1,333	5,226	9.1%	8.8%	9.0%
A82 between Spean Bridge and Fort William	17,249	1,147	18,396	0.9%	10.4%	1.5%
A830 between Corpach and Fort William	9,988	755	10,744	0.3%	0.0%	0.3%

Please note that variances may occur due to rounding.

- 15.8.8 **Table 15.10** shows that the total traffic movements are predicted to increase by 655.7% on the C1144, where the proposed site access for the main site area would 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. It should also be noted that this impact on the C1144 would only be between the main site and the junction with the SAR, a section totalling approximately 2.3km, which would be upgraded to accommodate the vehicles associated with the construction activities and where there are no sensitive receptors. To put the increase into perspective, there would be an additional 430 two-way vehicle movements at this location per day.
- 15.8.9 On the rest of the public road network within the study area, the next highest total traffic increase (20.2%) is on the A87, to the west of Invergarry. To put the increase into perspective, there would be an additional 508 two-way vehicle movements at this location per day.
- 15.8.10 The total HGV traffic movements would increase by 763.4% on the upgraded 2.3km section of the C1144 in the vicinity of the site, where the proposed site access would 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. To put the increase into perspective, there would be an additional 180 two-way HGV movements at this location per day.
- 15.8.11 On the rest of the public road network, the highest HGV traffic increase is 26.9%, which is on the A87 to the west of Invergarry. Again, to put the increase into perspective, there would be an additional 180 two-way HGV movements at this location per day.
- 15.8.12 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.
- 15.8.13 A review of existing theoretical road capacity has been undertaken using The NESAs Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in **Table 15.11**.

Table 15.11 2032 Theoretical Road Capacity

Survey Location	2032 Baseline Flow (total traffic)	2032 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
C1144 at the proposed site access junction	66	496	3,360	85.3%
A87 at the junction with the C1144	2,512	3,020	21,600	86.0%
A887 at Invermoriston	1,966	1,966	21,600	90.9%
A87 west of Bun Loyne	2,905	2,905	21,600	86.6%
A87 between Bun Loyne and C1144 junction	1,499	1,499	21,600	93.1%
A82 between Invermoriston and Fort Augustus	1,915	2,151	21,600	90.0%
A82 between Fort Augustus and Invergarry	3,321	3,557	21,600	83.5%
A82 between Invergarry and Spean Bridge	4,830	5,266	21,600	75.6%
A82 between Spean Bridge and Fort William	18,124	18,396	21,600	14.8%
A830 between Corpach and Fort William	10,711	10,744	21,600	50.3%

Please note that variances may occur due to rounding.

- 15.8.14 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.
- 15.8.15 In accordance with the 2023 IEMA Guidelines Rules 1 and 2, detailed assessments have been undertaken on the following receptors within the study area:
- Users of C1144 (High Sensitivity);
 - Residents along C1144 (Negligible Sensitivity);
 - Invergarry (Medium Sensitivity); and
 - Fort Augustus (Medium Sensitivity).
- 15.8.16 As there are Core Paths in close proximity of the site access junction on the A87 and in relation to the SAR, together with other paths located within the site, which are noted as sensitive receptors, as a worst-case assessment it is assumed that traffic impacting on these paths would be an increase of over 100%, and therefore a further assessment has been undertaken.
- 15.8.17 For the purposes of undertaking the assessment, where both the users of a road and residents in the vicinity of the road require to be assessed, these have been done together to avoid repetition.
- 15.8.18 The significance of the potential effects has been determined using the rules and thresholds discussed previously. **Table 15.12** summarises the significance on the receptors for the peak construction phase.

Table 15.12 Overall Construction Phase Effects Assessment

Receptor	Severance	Driver Delay	Pedestrian Delay	Non-motorised Amenity	Fear & Intimidation	Road Safety	Large Loads
Users / Residents along C1144	Moderate / Minor	Moderate / Minor	Moderate / Minor	Moderate / Minor	Moderate / Minor	Moderate / Minor	Moderate / Minor
Invergarry	Minor	Minor	Minor	Minor	Minor	Minor	Moderate
Fort Augustus	Minor	Minor	Minor	Minor	Minor	Minor	Moderate
Core Path / Path Users	Major	N/A	Major	Major	Major	Major	Major

15.8.19 The assessment of significance, taking cognisance of the embedded mitigation, for example the upgrading of the C1144 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 C1144 (High Sensitivity);
- Residents along C1144 (Negligible Sensitivity);
- Invergarry (Medium Sensitivity);
- Fort Augustus (Medium Sensitivity); and
- Core Path / Path Users (High Sensitivity).

15.8.20 It should be noted that the impacts relate solely to the peak of construction activities and that the peak construction period is relatively short lived when taking account of the whole construction phase, and the effects are transitory in nature.

Operational Effects

15.8.21 The operational effects associated with the Proposed Development has been scoped out of the assessment as the level of traffic generation is minimal.

Cumulative Effects

15.8.22 A review of THC's online planning portal and Scottish Governments ECU portal was undertaken within **Technical Appendix 15.1: Transport Assessment** to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic within the same study area and should be included within the assessment.

15.8.23 Coire Glas Pumped Storage Scheme, located to the east of the Proposed Development was consented in October 2020. Based on the current status of the project and duration of the construction programme, which was estimated to be nine years, it is considered that the peak construction period of this and the Proposed Development may coincide, and as such the construction peak traffic flows have been obtained from the relevant planning application documents available from THC planning portal and assigned to the base traffic flows for 2032.

15.8.24 The review did not identify any other significant traffic generating developments in the study area that may occur during the peak construction period associated with the Proposed Development, that should be considered as part of any cumulative assessment of construction effects within this Chapter.

15.9 Mitigation

Mitigation During Construction

Construction Traffic Management Plan

- 15.9.1 The following measures could be implemented through a Construction Traffic Management Plan (CTMP) during the construction phase. The CTMP would be agreed with THC prior to construction works commencing:
- 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 work site (including pick up and drop off times);
 - 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 and TS;
 - Contractual requirements that contractors will only use the agreed access routes;
 - Direction signage signposting traffic on the agreed access routes;
 - Identification numbers of HGV and vans to allow easy recognition;
 - Providing the public with details of how to report use of unapproved routes or driving issues of concern;
 - Using GPS trackers to allow the monitoring of bulk delivery vehicle movements;
 - Setting out site staff disciplinary measures for those who ignore the agreed access route and enforcing these throughout the construction period;
 - All site vehicles will feature “white noise” reversing warning devices to reduce noise disruption when on site;
 - Appropriate traffic management measures would be put in place on the A87 and C1144 to avoid conflict with general traffic, subject to the agreement of the THC and TS. Typical measures would include HGV turning and crossing signs and / or banksmen at the site access and warning signs;
 - 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 speed limit of 20mph for all construction vehicles travelling through local villages and towns;
 - All drivers would be required to attend an induction to include:
 - A tool box 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 such as Invergarry, Fort Augustus, Spean Bridge, Corpach and Fort William; and
 - Identification of the required access routes and the controls to ensure no departure from these routes.
- 15.9.2 TS and THC may require an agreement to cover the cost of abnormal wear and tear on the A87 in close proximity to the access junction and the C1144. Video footage of the pre-construction phase condition of the construction vehicles route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with the Roads Authority. 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.
- 15.9.3 Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.
- 15.9.4 There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete

Off-site Mitigation

- 15.9.5 As part of the Proposed Development, it is proposed to implement improvements on approximately 2.3km of the C1144 in the vicinity of Quoich Dam, which is part of the public road network and would provide access between the main site area and the main site compound.
- 15.9.6 The Proposed Development would increase traffic flows on this section of the C1144 road, between the SAR and the proposed site access junction. The section of road in question is a narrow single track road with passing places and, as such, it is proposed to upgrade this section. Through this section, the carriageway would be widened by 4m with associated verge and drainage works, allowing for two-way HGV movements. Details of the proposed works on the C1144 can be seen on **Figure 2.19 – C1144 Widening** and **Figure 2.20 – C1144 Widening Details**.

Specific AIL Mitigation

- 15.9.7 There are a number of traffic management measures that could help reduce the effect of AIL convoys.
- 15.9.8 All AIL 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.
- 15.9.9 The majority of potential conflicts between construction traffic and other road users would occur with AIL 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.
- 15.9.10 Potential conflicts between AILs and other road users can occur at a variety of locations and circumstances, for example:
- where the loads may straddle the centre line of the carriageway or where fast moving oncoming traffic may be encountered;
 - at 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;
 - where traffic turns at a road junctions, requiring other traffic to be restrained on other approach arms; and
 - in locations where high speeds of general traffic are predicted.
- 15.9.11 Advance warning signs would be installed on the approaches to the affected road network. Information signage could be installed to help improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).
- 15.9.12 The location and numbers of signs would be agreed post consent and would form part of the wider traffic management proposals for the Proposed Development.

AIL Transport Management Plan

- 15.9.13 The AIL 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.

Public Information

- 15.9.14 Information on the AIL deliveries would be provided to local media outlets such as local papers and local radio to help assist the public.
- 15.9.15 Information would relate to expected vehicle movements from the Port of Entry (PoE) through to the site access junction. This would assist residents in understanding the timing of the convoy movements and may help reduce any potential conflicts.
- 15.9.16 The Applicant would also ensure information is distributed through its communication team via the project website, local newsletters, and social media.

AIL Convoy System

- 15.9.17 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.
- 15.9.18 The AIL convoys would be no more than three AILs vehicles 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.
- 15.9.19 The times in which the convoys would travel would need to be agreed with Police Scotland who have sole discretion on when loads can be transported.

Construction Staff Travel Plan

- 15.9.20 A Travel Plan for construction staff would be developed to reduce dependency on single occupancy car trips. The Travel Plan would be a contractual requirement for contractors working on the site and would include the following elements:
- The provision of staff minibus / coach links from local rail stations;
 - Staff would be required to park at a satellite parking area and be shuttled to the accommodation camp and main site compound SC1;
 - The use of limited parking spaces on-site. The level of parking would be agreed with THC, prior to works commencing;
 - The encouragement for car sharing amongst staff and visitors;
 - Provision of emergency taxi links from the site in the event of family emergency requirements;
 - Subsidised rail tickets to the minibus pick up areas;

- Reviewing shift changes to ensure that large numbers of staff movements occur outside peak network times to reduce the impact on school trips etc. These could be co-ordinated with other large construction schemes with significant traffic generation in the study area, if required; and
- The provision of a staff travel co-ordinator to assist in organising the travel links, reviewing their operation and monitoring compliance with the contractual requirements.

On-site Measures delivered using an Outdoor Access Management Plan (OAMP)

- 15.9.21 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 would be conducted post consent and would be secured through a planning condition. Findings from the study would be used to formulate a set of measures into an Outdoor Access Management Plan (OAMP). A draft OAMP, drafted in consultation with the THC Access Officer, is included at **Appendix 14.1 – Draft OAMP**.
- 15.9.22 Crossing points would be provided where required, with path users having right of way. Appropriate Traffic Signs Manual Chapter 8 compliant temporary road signage would be provided to assist at these crossing for the benefit of all users.
- 15.9.23 The principal contractor would 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 would also be installed on approaches to areas where path users may interact with construction traffic.
- 15.9.24 Signage would 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 would also be emphasised in the weekly toolbox talks.
- 15.9.25 No scoping response has been received from The British Horse Society, however measures implemented on similar schemes would 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.
- 15.9.26 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.
- 15.9.27 The British Horse Society has previously recommended the following actions that would 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.

Mitigation During Operation

- 15.9.28 Site entrance roads would be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance would be undertaken to keep the site access track drainage systems fully operation and to ensure there are no run-off issues onto the public road network.

15.10 Residual Effects

Construction Residual Effects

- 15.10.1 The identification of residual construction effects considers the assessment of traffic effects following the incorporation of the identified mitigation measures above. An evaluation of the potential effects of the temporary increase in traffic on the study area roads used for the construction traffic has been undertaken, with the results provided below:
- Users of C1144 – Not Significant;
 - Residents along C1144 – Not Significant;
 - Invergarry – Not Significant;
 - Fort Augustus – Not Significant; and
 - Core Path / Path Users – Not Significant.
- 15.10.2 A summary of the assessment of residual effects, including the proposed mitigation measures is presented in **Table 15.13**.
- 15.10.3 The assessment confirms the temporary construction stage effects would be minor in nature and they would be not significant, following the implementation of a comprehensive CTMP, together with onsite route signage and an OAMP. The traffic effects are transitory in nature and appropriate mitigation measures are proposed to reduce the potential impacts. No long-term detrimental transport or access issues are associated with the construction phase of the Proposed Development.

Operational Residual Effects

- 15.10.4 There are no operational residual effects associated with the Proposed Development.

15.11 Summary and Conclusion

- 15.11.1 The Proposed Development would lead to increased traffic volumes on a number of roads in the vicinity of the site during the construction phase. These would be of a temporary timescale and transitory in nature. Traffic volumes would fall considerably outside the peak period of construction.
- 15.11.2 The peak of construction activity in terms of construction vehicle generation would occur on the Trunk Road Network and is expected to occur for a period of 19 months of the 101 month programme, when there would be a total of 506 vehicle movements per day, comprising 178 two-way HGV movements and 328 two-way car / LGV movements.
- 15.11.3 No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development.
- 15.11.4 The greatest impact on the public road would occur on the short section of the C1144 where the main site access would be located, with an increase in total traffic of 655.7% and HGV traffic of 763.4%. 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 (20.2%) is on the A87 to the west of Invergarry.

- 15.11.5 With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of Transport and Access issues. The residual effects are all assessed to be slight and would occur during the construction phase only, they are temporary and reversible.
- 15.11.6 The operational phase is restricted to trips associated staff who would operate the equipment, monitor the operation and undertake maintenance. During the operation of the Proposed Development, up to 10 staff may be at the site to operate the equipment, which is not considered to result in journeys in excess of daily traffic variation levels on the road network.
- 15.11.7 The movement of AIL traffic would require small scale and temporary remedial works at a number of locations along identified delivery route.
- 15.11.8 As required by any future consent or to address consultation responses to the EIA Report, the Applicant is committed to engaging with the relevant stakeholders to minimise disruption, and to explore delivery routes, timescales and means of delivery of AIL to the Proposed Development.

Table 15.13 Summary of Residual Effects – Construction Phase

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Construction Phase			
<i>Users of and Residents living along the C1144</i>			
Severance	CTMP – delivered by the Contractor. Staff Travel Plan – would be delivered by the Principal Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier. C1144 improvement works and carriageway widening.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Driver delay	CTMP – delivered by the Contractor. Staff Travel Plan – would be delivered by the Principal Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier. C1144 improvement works and carriageway widening.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Pedestrian delay	CTMP – delivered by the Contractor.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Non-motorised user amenity	CTMP – delivered by the Contractor.	Via a condition of consent. Agreed with THC prior to	Minor (Not significant)

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Construction Phase			
		construction activities commencing.	
Fear and intimidation	CTMP – delivered by the Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier. C1144 improvement works and carriageway widening.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Road Safety	CTMP – delivered by the Contractor. Staff Travel Plan – would be delivered by the Principal Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier. C1144 improvement works and carriageway widening. Road safety audits of proposed site access junctions and in relation to C1144 works.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Large Loads	AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Invergarry and Fort Augustus			
Severance	CTMP – delivered by the Contractor. Staff Travel Plan – would be delivered by the Principal Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Driver delay	CTMP – delivered by the Contractor. Staff Travel Plan – would be delivered by the Principal Contractor. AIL Transport Management Plan – would be prepared and	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Construction Phase			
	delivered by the Abnormal Load supplier.		
Pedestrian delay	CTMP – delivered by the Contractor.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Non-motorised user amenity	CTMP – delivered by the Contractor.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Fear and intimidation	CTMP – delivered by the Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Road Safety	CTMP – delivered by the Contractor. Staff Travel Plan – would be delivered by the Principal Contractor. AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Large Loads	AIL Transport Management Plan – would be prepared and delivered by the Abnormal Load supplier.	Via a condition of consent. Agreed with THC / TS prior to construction activities commencing.	Minor (Not significant)
Core Path / Path Users			
Severance	CTMP – delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Driver delay	CTMP – delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)
Pedestrian delay	CTMP – delivered by the Contractor. Provision of an OAMP if required.	Via a condition of consent. Agreed with THC prior to construction activities commencing.	Minor (Not significant)

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