VOLUME 1: CHAPTER 11: TRAFFIC AND TRANSPORT

Figures (Volume 2 of this EIA Report)

The relevant figures for this Chapter are contained within the Appendices listed below.

Appendices (Volume 4 of this EIA Report)

Appendix V1-11.1: Transport Assessment

Appendix V1-11.2: Draft Outdoor Access Management Plan

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11. TRAFFIC AND TRANSPORT

11.1 Executive Summary

11.1.1 A review of the transport and access issues associated with the Proposed Development with the Proposed Alignment has been undertaken (hereafter referred to as the Proposed Alignment). A review of the transport and access issues associated with the Proposed Development with the Alternative Alignment is reported in **Volume 5: Chapter 9: Traffic and Transport – Alternative Alignment**.

11.1.2 The assessment considers the direct effects during construction on increased traffic flows in the surrounding study area, including upon local road users and local residents. Where certain criteria are met, in accordance with best practice guidance, a review of the effects on severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation and accidents / road safety have been evaluated. The operational phase of the Proposed Alignment would not have any significant effects on the public road network as a result of the low levels of traffic that are forecast and is scoped out of the assessment.

11.1.3 An assessment of average daily development trips is considered an appropriate method of assessing the impact of the Proposed Alignment, as this will account for peaks and troughs during the construction programme. The Proposed Alignment would lead to a temporary increase in traffic volumes on the road network within the study area during the construction phase. However, no link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Alignment. The effects of construction traffic are temporary in nature and are transitory.

11.1.4 The assessment identified a significant effect could be expected on Scottish Hill Track 344 and Core Path SU19.03 by track users, and Kirkton Road users during the construction phase. To reduce effects to not significant levels, a series of mitigation measures and management plans have been proposed to help mitigate and offset impacts during the construction phase. These include the implementation of a Construction Traffic Management Plan, Outdoor Access Management Plan and Staff Travel Plan.

11.1.5 The assessment confirms the predicted residual effects (i.e. after the implementation of mitigation) would be minor in nature and they would not be significant. There are no long-term detrimental transport or access issues associated with the construction phase of the Proposed Alignment.

11.2 Introduction

11.2.1 This Chapter considers the likely significant effects, including cumulative effects, of the Proposed Alignment on transport and access matters during construction.

11.2.2 The specific objectives of the Chapter are to:

- describe the existing access network and transport baseline;
- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the potential effects, including direct, indirect and any potential cumulative effects;
- describe the mitigation measures proposed to address likely significant effects; and
- assess the residual effects remaining following the implementation of mitigation.

11.2.3 An overview of the effects of the traffic movements has been considered in accordance with the Institute of Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (2023)[1]. The document is referred to as the IEMA Guidelines in this Chapter.

[1] IEMA (2023), Environmental Assessment of Traffic and Movement, Institute of Environmental Management and Assessment.

11.2.4 The Chapter is supported by **Volume 4: Appendix V1-11.1: Transport Assessment** that contains the Transport Assessment (TA) and **Volume 4: Appendix V1-11.2: Draft Outdoor Access Management Plan** that contains the Draft Outdoor Access Management Plan (OAMP). This is referenced in the body of the text, where relevant.

11.2.5 The assessment was undertaken by Pell Frischmann Consultants Limited. A table presenting relevant qualifications and experience of key staff involved in the preparation of this Chapter is included in **Volume 4: Appendix V1-5.1: EIA Team Details**.

11.3 Scope of Assessment

11.3.1 The assessment has fully considered the transport and access issues arising from the construction phase of the Proposed Alignment. This Chapter considers effects on the following:

- direct effects during construction on traffic flows in the surrounding study area;
- direct effects upon local road users; and
- effects upon local residents due to an increase in construction traffic.

11.3.2 Where the effects meet the criteria set out in the IEMA Guidelines, a review of the effects on severance, driver delay, pedestrian delay, non-motorised user amenity, fear and intimidation and accidents / road safety has been undertaken.

11.3.3 The assessment is based on the Proposed Alignment as described in **Volume 1: Chapter 3 - The Proposed Development**.

Study Area

11.3.4 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 comprises the road links assessed as part of this assessment. These are identified in **Volume 4: Appendix V1-11.1** and listed below:

- The A9 between Georgemas and Scrabster;
- The A836 between Thurso and Strathy; and
- The A897 between the A836 and Connagill 275/132 kV substation.

11.4 Consultation

11.4.1 The scope of the assessment has been determined through a combination of professional judgement, reference to relevant guidance documents (see Section 11.5) and consultation with stakeholders through pre-application advice and a formal EIA scoping process. **Table V1-11.1** summarises the scoping responses relevant to transport and access matters and provides information on where and / or how points raised have been addressed in this assessment.

Table V1-11.1: Scoping Responses

Organisation & Date	Summary of Consultation Response	EIA / Design Response to Consultee
Transport Scotland (TS)	TS consider the assessment approach set out in the Scoping Report appropriate.	Noted.
25th April 2024	Requested a threshold assessment for the trunk road network.	Noted. An assessment of the A9 has been undertaken (see **Volume 4: Appendix V1-11.1**). No significant impacts are anticipated.

Organisation & Date	Summary of Consultation Response	EIA / Design Response to Consultee
The Highland Council (THC) 21st May 2024	A standalone Transport Assessment (TA) is required.	Noted. A TA is provided in **Volume 4: Appendix V1-11.1**.
	Scoping discussions are required with THC officers.	Noted. Discussions with the North Area Transport Officer have been held.
	Key elements to be considered in the assessment are: • the haulage routes on the public road and the number of and type of Heavy Goods Vehicles (HGV) movements proposed. • Structural assets should be identified and may need assessment for C&U traffic where the increase in traffic is significant (and for any abnormal crane movements). • Upgrading and construction of private access routes to construct an OHL often results in an 'extraordinary' (in terms of section 96 of the Roads (Scotland) Act 1984) increase of HGV movements on the public road in quieter rural areas such as this. Road link capacity is unlikely to be a factor and use of the DMRB standard capacity calculations are not appropriate on historic local roads of varying width.	The proposed haulage routes have been identified in **Volume 4: Appendix V1-11.1.** The access routes have no posted weight limits and consideration of the suitability of the network has been made against the Timber Forum map. A Section 96 Agreement is proposed in the Framework Traffic Management proposals included in **Volume 4: Appendix V1-11.1**. The comments on road capacity are noted.
	For the Transport Assessment where the public road affected is considered 'vulnerable' by the Roads Authority the threshold value will be 10% for the impacts relating to infrastructure rather than environment (where the IEMA thresholds apply).	Noted.
	There is a large number of significant developments proposed in the area. The assessment will need to propose a method for assessing or controlling the impact of these developments wishing proceed to the construction phase at the same time.	The committed developments of Strathy South and Strathy Wood wind farms are included in the assessment. The traffic associated with Strathy Wood Wind Farm Grid Connection has also been included in the committed traffic flows. Whilst this scheme is not yet determined, it is essential to the Proposed Development and would be concurrent in traffic terms. The control of other development impacts is not within the scope of the Applicant.
	Recent experience [of the THC Transport Planning Team] of OHL projects, considers that crane movements are likely to be required and that these vehicles are usually abnormal.	The Applicant has advised that the crane required for the Proposed Development is not considered an Abnormal Indivisible load (AIL).

Organisation & Date	Summary of Consultation Response	EIA / Design Response to Consultee
		Should this change once the Principal Contractor has been appointed, a supplementary AIL access review will be provided to THC along with the relevant AIL permits.
	The inclusion of a framework Travel Plan (TP) is recommended to encourage more sustainable travel modes and, as far as possible, discourage single occupancy car journeys to and from the development.	A Travel Plan is included in the Framework Traffic Management Plan, included within **Volume 4: Appendix V1-11.1.**
	A Framework Construction Traffic Management Plan (CTMP) shall be submitted.	A Framework Traffic Management Plan is included within **Volume 4: Appendix V1-11.1.**
	To protect the interests of the Council, as roads authority, a suitable agreement relating to Section 96 of the Roads (Scotland) Act and appropriate planning legislation may be required	Agreed and incorporated in the Framework Traffic Management Plan, included within **Volume 4: Appendix V1-11.1**.
	The intended location of site compounds / offices, material stores, loading and unloading areas, workforce parking areas and the routes connecting them to the public road network should be clearly identified. Off-road access routes that will be used to access the site, clearly defining which routes are intended to be left in-place and which will be removed when no longer required shall be defined. The finished form of any routes being left in-place should be clarified with justification why they will be needed in that form going forward.	These details will be decided by the Principal Contractor and would be subject to separate planning applications. They do not form part of the Proposed Development and are therefore not included in the application for statutory consents. Nevertheless, a provision for traffic associated with a potential site compound to be located on the existing access track (leading to Strathy North Wind Farm) has been made within the traffic generation calculations contained within **Volume 4: Appendix V1-11.1.** The areas of new temporary access tracks are also included for, as well as their removal.
ScotWays 15th May 2024	ScotWays note that Scottish Hill Track 344: Strath Halladale (Trantlebeg) to Strathy runs along an existing track that will be used by the Proposed Development to access the Site. ScotWays welcomes that an Outdoor Access Management Plan (OAMP) is prepared.	An Outdoor Access Management Plan (OAMP) will be prepared, a draft of which is included in **Volume 4: Appendix V1-11.2**, to demonstrate how continued access for recreational users along routes in the area, particularly Scottish Hill Track 344 and Core Path SU19.03, would be managed during construction. The OAMP would be prepared as part of the CEMP and signage would be erected at suitable locations to warn recreational users of construction traffic.

Issues Scoped Out of Assessment

11.4.2 The potential for the Proposed Development to give rise to traffic impacts would be limited to the construction phase only. No impacts are anticipated during the operational phase as the Proposed Development would not generate any new traffic, apart from during infrequent maintenance activities. On this basis, an operational traffic assessment is scoped out of this assessment in its entirety.

11.4.3 As described in **Volume 1: Chapter 3**, it is anticipated that the effects associated with the construction phase could be considered to be representative of a worst-case, when compared to the decommissioning effects on transport matters. As such, a separate assessment of potential decommissioning effects is not included in this Chapter.

11.4.4 As there is no AIL access required, an AIL assessment has been scoped out of this assessment.

11.5 Legislation, Policy and Guidance

11.5.1 The scope of the assessment has been informed by scoping responses summarised in **Table V1-11.1** and the following guidelines / policies (further detail is provided in **Volume 4: Appendix V1-11.1**):

- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017;
- National Planning Framework 4 (2023);
- Highland-wide Local Development Plan (2012);
- Caithness and Sutherland Local Development Plan (2018);
- Onshore Wind Energy Supplementary Guidance (2016);
- Guidance on the Preparation of Transport Assessments (2014);
- Environmental Assessment of Traffic and Movement (2023); and
- Road and Transport Guidelines for New Developments (2013).

11.6 Methodology

Desk Study

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

- relevant transport policy;
- accident data;
- sensitive locations;
- any other traffic sensitive receptors in the area (core paths, routes, communities, etc.);
- Ordnance Survey (OS) plans; and
- potential origin locations of construction staff and supply locations for construction material to inform extent of local area roads network to be included in the assessment.

Field Survey

11.6.2 Field surveys were also undertaken and comprised of a site visit in May 2024 to review the general study area.

Assessment of Effects

Sensitivity / Importance of Receptors

11.6.3 In terms of traffic and transport impacts, the receptors are the users of the roads and any core paths within the study area and the users of, and residents within, locations through which those roads pass.

11.6.4 The 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 V1-11.2**.

Table V1-11.2: 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 HGV 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.

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

Magnitude of Effect

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

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

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

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

- Severance – the IEMA Guidelines advise 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 of the Guidelines). 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 of the Guidelines).
- 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 of the Guidelines).
- Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidelines advise that "*pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.*" (Para 3.24 of the Guidelines). 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 of the Guidelines).
- Non-motorised user amenity – the IEMA Guidelines 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 of the Guidelines).
- 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 of the Guidelines). 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 has been used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidelines, 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, if required, given the access junction is an existing junction. If necessary, this can be secured via a planning condition.
- Large loads – There are no component AIL deliveries associated with the Proposed Development and as such, as discussed in paragraph 11.4.4, an AIL assessment has been scoped out of this assessment.

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

Significance of Effect

11.6.10 To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of change assessments are correlated and classified using a scale set out in Table 2.4 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB)[2] and summarised in **Table V1-11.3** below.

11.6.11 The DMRB defines the potential changes in effect as follows:

- Large: These effects are considered to be material in the decision making process;
- Moderate: These effects may be important but are not likely to be material factors in decision making. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor;
- Slight: These effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in improving the subsequent design of the project; and
- Neutral: No effects or those that are imperceptible.

Table V1-11.3: Significance of Effects

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

11.6.12 In terms of the EIA Regulations, effects would be considered of significance where they are assessed to be Large or Moderate. Where an effect could be one of Large / Moderate or Moderate / Slight, professional judgement would be used to determine which significance criterion should be applicable.

Limitations to the Assessment

11.6.13 The assessment is based upon average traffic flows. During the construction period, activities at the Proposed Development Site may fluctuate between one day and another and it is not possible to develop fully a day-by-day traffic flow estimate as no Principal Contractor has been appointed and external factors can impact upon activities on a day-by-day basis (weather conditions, availability of materials, time of year, etc).

11.6.14 Assumptions on the origin points for staff and 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.

11.6.15 Please note that variances may occur in the calculations due to rounding. These variances are not considered significant.

11.6.16 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 matters.

[2] Design Manual for Roads & Bridges, National Highways & Transport Scotland

11.7 Baseline Conditions

11.7.1 Access to the Proposed Development would be taken from six locations on the public road network, as displayed on **Figure 2** within **Volume 4: Appendix V1-11.1**. These are:

- Junction A: Access would be taken from the A836 from the existing Strathy North Wind Farm access junction off the A836, leading south along an existing access track. The junction off the A836 and the existing access track were upgraded ahead of the construction of the Strathy North Wind Farm, as far as the Strathy North substation. The upgrade of the track is currently being extended for use during the construction of the consented Strathy South and Strathy Wood wind farms. No further works would be required to the junction or the existing access track to enable access for the Proposed Development;
- Junction B: Access would be taken from an existing access junction on the A836, located to the east of Strathy. The existing junction would be upgraded to suit construction traffic and a layout plan of the proposed junction upgrade is provided in **Annex A** of **Volume 4: Appendix V1-11.1**;
- Junction C: Access would be taken from an existing access junction on the A836, located to the west of Melvich. The existing junction would be upgraded to suit construction traffic and a layout plan of the proposed junction upgrade is provided in **Annex A** of **Volume 4: Appendix V1-11.1**;
- Junction D1 and D2: Access would be taken from A836 via the Kirkton Road. Two access junctions are proposed, using existing access points off Kirkton Road that are located in close proximity; and
- Junction E: Access to the terminal tower and cable sealing end (CSE) compound would be taken from the A897, via a new access junction located to the south of the existing Connagill 275/132 kV substation, see **Annex A** of **Volume 4: Appendix V1-11.1**.

11.7.2 To enable construction of the Proposed Alignment, existing private access tracks would be widened, and new permanent and temporary offroad access tracks would be constructed to enable access to the various tower locations and CSE compound along the length of the Proposed Alignment.

11.7.3 To minimise the impact of construction traffic on the local road network, it is proposed that local quarry sources would be used. It is assumed that the aggregate quarries located off the A897 at Ackron are used.

11.7.4 Previous experience of projects located along the A836 suggests that THC would resist the use of the north – south access links of the A897 (Melvich – Helmsdale) and A836 between Lairg and Tongue (located to the west of the Proposed Development). As such, it is assumed that delivery of all materials and components for use at the Proposed Development, would be delivered from the east, via the A9 and A836 from Thurso.

Network Conditions: Active Travel Network

11.7.5 A review of Core Paths directly affected by the Proposed Development has been undertaken. Core Path SU19.03 (Kirkton – Upper Bighouse), as displayed on **Figure 11.1.1** in **Volume 4: Appendix V1-11.2**, is used by traffic accessing the Proposed Development Site from Kirkton Road.

11.7.6 The main existing access track to be utilised by the Proposed Development to the west of the Proposed Development Site, passing to the east of the River Strathy and Strathy Forest, is featured within the guidebook 'Scottish Hill Tracks'. This is a joint publication between the Scottish Rights of Way and Access Society and The Scottish Mountaineering Trust. The track forms part of Scottish Hill Track 344: Strath Halladale, which travels between Trantlebeg and Strathy (as displayed on **Figure 11.1.1** in **Volume 4: Appendix V1-11.2)**.

11.7.7 A review of the Sustrans cycle network plan of the United Kingdom indicates that the A836 is part of National Cycle Network 1 (NCN1) between Lairg and Thurso. There is however no dedicated cycle infrastructure on the road, other than directional signage.

Network Conditions: Vehicle Access

A9

11.7.8 The A9 is the main trunk road in the area and connects Polmont to Scrabster. The road is operated on behalf of Transport Scotland by BEAR Scotland. Within the study area, the road is subject to a 60 miles per hour (mph) speed limit in the main and typically varies between 7 metres (m) and 8 m in width.

A836

11.7.9 The A836 is a two-way single carriageway road which is a district distributor road that provides connections between Tain and Thurso by way of Lairg and Tongue. The road is maintained by THC and is generally of a good standard and typically varies between 6 m and 7 m in width, with a speed limit of 60 mph, with 30 mph restrictions within settlements.

11.7.10 The section of the A836 between Scrabster and the various Proposed Development access junctions is in good relative condition, as observed during the time of a site visit. There are sections to the west of the study area where sections of the road surfacing would benefit from re-dressing and areas of minor edge cracking. There are no posted weight limits on the road.

11.7.11 The A9 and A836 within the study area form part of the North Coast 500 (NC500) tourist route. This 830 km (516 mile) route is now a popular tourist sightseeing route around the northwest Highlands and Sutherland and has been responsible for an increase in traffic visiting the study area.

A897

11.7.12 The A897 provides local connections between the A836 to the east of Melvich and Helmsdale in Caithness. The road is predominantly single carriageway with passing places along its length. The section of A897 from Connagill 275/1323 kV substation to the A836 has been subject to road widening works, although the use of passing places is still required. The A897 to the north of Ackron Quarry is two lanes, however the widened section does not reach the quarry access junction.

Kirkton Road

11.7.13 Kirkton Road is a minor single carriageway providing access to agricultural and residential properties. The road is single carriageway with passing places.

Network Conditions: Accident Review

11.7.14 Road traffic accident data for the five-year period commencing 01 January 2018 through to the 31 December 2022 was obtained from the online resource Crashmap[3] which uses data collected by the police about road traffic crashes occurring on British roads.

11.7.15 Nine accidents were recorded on the A836 between the Proposed Development Site and Thurso. A further eight were noted on the A9. One slight accident was noted on the A897 and no accidents were recorded on Kirkton Road. Further details of the accidents are provided in **Volume 4: Appendix V1-11.1**. Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require addressing or would be exacerbated by the construction of the Proposed Development.

Existing Traffic Conditions

11.7.16 Traffic data used in the assessment has been sourced from the following sources:

[3] CrashMap: www.crashmap.co.uk

- Transport Scotland (TS) database[4];
- Department for Transport (DfT) Traffic Statistics database[5]; and
- Ackron Wind Farm planning submission documents[6].

11.7.17 The locations of the count points on the A836, A897 and the A9 are shown on **Figure 5** within **Volume 4: Appendix V1-11.1**.

11.7.18 The traffic count data allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / light goods vehicles (LGVs) and heavy goods vehicles (HGVs) (i.e. all goods vehicles >3.5 tonnes gross maximum weight). The baseline data for 2024 is illustrated in **Table V1-11.4**.

Table V1-11.4: 2024 Existing Traffic Conditions (Average Daily Two-Way Flows)

Site Ref. No.	Survey Location	Car / LGV	HGV	Total
1	A9 north of Georgemas Junction	3,077	436	3,512
2	A9 Thurso	2,908	136	3,044
3	A836 near Forss	2,286	31	2318
4	A836 near Strathy	623	20	643
5	A897	847	251	1,098

Future Baseline

11.7.19 Construction of the Proposed Development is expected to commence in 2026, if consent is granted. Construction is anticipated to take approximately 21 months.

11.7.20 To assess the likely effects during the construction and typical operational phases, base year flows were forecast by applying a National Road Traffic Forecasts (NRTF) low growth factor to the 2026 flows in **Table V1-11.5**. The NRTF low growth factor for 2024 to 2026 is 1.011.

Table V1-11.5: Future Baseline Flows (2026 Flows)

Site Ref. No.	Survey Location	Car / LGV	HGV	Total
1	A9 north of Georgemas Junction	3,111	440	3,551
2	A9 Thurso	2,940	137	3,078
3	A836 near Forss	2,312	31	2,343
4	A836 near Strathy	630	20	650
5	A897	857	254	1,110

Please note minor variances due to rounding may occur.

[4] https://ts.drakewell.com/
[5] https://roadtraffic.dft.gov.uk/
[6] https://projects.statkraft.co.uk/Ackron-windfarm/project-documents/

11.7.21 It has been assumed for the purposes of this assessment that both Strathy South and Strathy Wood wind farms, as consented developments for which the grid connection that would be provided by the Proposed Development (with the Proposed Alignment) is required, would be constructed at the same time as the Proposed Development.

11.7.22 The traffic associated with the proposed Strathy Wood Wind Farm Grid Connection has also been included in the committed traffic flows. Whilst this scheme is not yet determined, it is essential to the Proposed Development and would be concurrent in traffic terms.

11.7.23 Their peak construction traffic has therefore been included in the baseline 2026 traffic flows. The Base + Committed Development traffic flows are summarised in **Table V1-11.6**.

Table V1-11.6: Future Baseline Flows (2026 Base + Committed Flows)

Site Ref. No.	Survey Location	Car / LGV	HGV	Total
1	A9 north of Georgemas Junction	3,221	471	3,692
2	A9 Thurso	3,050	168	3,219
3	A836 near Forss	2,422	62	2,484
4	A836 near Strathy	740	51	791
5	A897	857	254	1,110

Please note minor variances due to rounding may occur.

Summary of Sensitive Receptors

11.7.24 A summary of the sensitive receptors within the study area is presented in **Table V1-11.7**.

Table V1-11.7: Summary of Sensitive Receptors

Receptor	Sensitivity	Justification
A836 Users	**Medium**	Where the road is a local A or B class road capable of regular use by HGV traffic.
A897 Users	**Medium**	Where the road is a local A or B class road capable of regular use by HGV traffic.
Kirkton Road Users	**High**	Where the road is a minor rural road, not constructed to accommodate frequent use by HGV traffic.
A9 Road Users	**Low**	Where the road is a Trunk or A-class, constructed to accommodate significant HGV composition.
Thurso Residents	**High**	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Reay Residents	**Medium**	Intermediate rural settlement with some community facilities.
Melvich Residents	**Medium**	Intermediate rural settlement with some community facilities.
Hill Track / Access Track / Core Path Users	**High**	Where the road is a minor rural road.

Receptor	Sensitivity	Justification
Residents living along the A9	**Low**	Where a location is a small rural settlement, few community or public facilities or services.
Residents living along the A836, Kirkton Road and A897	**Low**	Where a location is a small rural settlement, few community or public facilities or services.

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

11.7.26 Based on the examples of sensitive areas (e.g., hospitals, churches, schools, historical buildings, tourist attractions etc.), as outlined in paragraph 11.6.7, the following areas are considered sensitive and will 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:

- Users of Kirkton Road;
- Thurso;
- Reay; and
- Melvich.

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

11.8 Assessment of Likely Significant Effects

11.8.1 This section considers the potential impacts and associated effect significance of the construction of the Proposed Alignment, based on the typical activities described in **Volume 1: Chapter 3.**

Construction (and dismantling of the existing 132 kV OHL) Works Effects

11.8.2 Traffic generation for the Proposed Alignment, including ancillary works, is presented in **Volume 4: Appendix V1-11.1**.

11.8.3 The peak traffic flows indicate 100 car / LGV and 76 HGV two way movements are predicted per day, at the peak of construction activity (Month 7).

11.8.4 The construction traffic was compared against the future baseline traffic to estimate the increase in traffic associated with the Proposed Alignment. **Table V1-11.8** illustrates the potential traffic impact of the peak month of construction activity at the survey locations used to inform the traffic count data.

Table V1-11.8: Traffic Impact Summary

Site Ref. No.	Survey Location	Car / LGV	HGV	Total	Car / LGV % Increase	HGV % Increase	Total % Increase
1	A9 north of Georgemas	3,265	548	3,813	0.9%	7.5%	1.8%
2	A9 Thurso	3,183	245	3,428	2.9%	18.6%	3.9%
3	A836 near Forss	2,554	139	2,693	3.7%	38.2%	5.0%

Site Ref. No.	Survey Location	Car / LGV	HGV	Total	Car / LGV % Increase	HGV % Increase	Total % Increase
4	A836 near Strathy	886	165	1,051	12.7%	85.1%	20.1%
5	A897	859	292	1,150	0.2%	15.0%	3.6%

Please note minor variances due to rounding may occur.

11.8.5 The total traffic movements are not predicted to increase by more than 20.1% across the whole study area network at these locations, with the highest increase occurring on the A836 near Strathy. The traffic impact on Kirkton Road will be higher, given the nature of the road and its likely traffic uses (see **Table V1-11.9**).

11.8.6 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.

11.8.7 In accordance with the IEMA Guidelines Rules 1 and 2 and based on the construction traffic data shown in **Table V1-11.8**, detailed assessments have been undertaken on the following receptors:

- Kirkton Road Users (High Sensitivity)
- A836 Users (Medium Sensitivity);
- A897 Users (Medium Sensitivity);
- Reay Residents (Medium Sensitivity);
- Melvich Residents (Medium Sensitivity); and
- Scottish Hill Track 344 / Core Path SU19.03 / Access Track Users (High Sensitivity).

11.8.8 The significance of the potential effects has been determined using the rules and thresholds discussed in paragraph 11.6.6. **Table V1-11.9** summarises the significance on the receptors for the construction (and dismantling of the existing 132 kV OHL) phase.

Table V1-11.9: Overall Construction Effects

Receptors	Severance	Driver Delay	Pedestrian Delay	Non-motorised User Amenity	Fear & Intimidation	Accidents & Safety
A836 Users	Slight	Slight	Slight	Slight	Slight	Slight
A897 Users	Slight	Slight	Slight	Slight	Slight	Slight
Kirkton Road Users	**Large**	Slight	Slight	**Large**	**Large**	Slight
Reay Residents	Slight	Slight	Slight	Slight	Slight	Slight
Melvich Residents	Slight	Slight	Slight	Slight	Slight	Slight
Scottish Hill Track 344 / Core Path	Slight	Slight	**Large**	**Large**	**Large**	Slight

Receptors	Severance	Driver Delay	Pedestrian Delay	Non-motorised User Amenity	Fear & Intimidation	Accidents & Safety
SU19.03 Track Users						

11.8.9 The assessment of significance suggests that **Large** and **significant effects** could be expected on Scottish Hill Track 344 / Core Path SU19.03 track users and Kirkton Road users during the construction phase. As such mitigation measures will be required.

11.9 Mitigation

Mitigation During Construction

Construction Traffic Management Plan (CTMP)

11.9.1 A CTMP is proposed to help reduce the traffic impact of the construction (and dismantling of the existing 132 kV OHL) phase on the study area.

11.9.2 The following measures would be implemented through a 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 the Proposed Development Site to help reduce HGV numbers;
- Explore whether onsite borrow pits could be used to reduce or eliminate the need for external sources of aggregate, thus reducing the traffic accessing the Proposed Development Site;
- 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 access junctions, depending on the views of THC;
- Normal site working hours would be limited to between the following hours:
  - March to September – 07:00 to 19.00 – 7 days a week
  - October to February – 07.30 to 17.00 (or within daylight hours)
- Appropriate traffic management measures would be put in place at the site access junctions to avoid conflict with general traffic, subject to the agreement of THC and TS. Typical measures would include HGV turning 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 Proposed Development Site;
- Adoption of a voluntary speed limit of 20 mph for all construction vehicles travelling through local villages and towns;
- Adoption of a maximum speed limit of 15 mph for all construction vehicles travelling on the existing access tracks south of the A836;
- Adoption of a maximum speed limit of 30 mph for all construction vehicles travelling on the A897 and Kirkton Road;

- Undertaking a pre-commencement survey of the affected public road network and addressing existing significant road defects prior to construction works commencing on Kirkton Road and the A897;
- A commitment to undertake a passing place review with THC Transport Officers and THC Road Manager to review the need and specification for any passing place upgrades on the A897 between Ackron Quarry and the A836 junction and along Kirkton Road, prior to works commencing. It is suggested that this is reviewed post-determination, in case the quarry supply contract is awarded to a different quarry;
- 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 through the villages); and
  - Identification of the required access routes and the controls to ensure no departure from these routes.

11.9.3 THC may require an agreement to cover the cost of abnormal wear and tear on the A836, A897 and Kirkton Road. 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.

11.9.4 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.

11.9.5 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.

11.9.6 It is not anticipated that abnormal load components would be required to be delivered to the Proposed Development Site. Access for an erection crane would be required.

Public Information

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

Outdoor Access Management Plan

11.9.8 Consideration would be given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of Scottish Hill Track 344 and Core Path SU19.03. These measures would be formulated into an Outdoor Access Management Plan (OAMP) (see **Volume 4: Appendix V1-11.2**).

11.9.9 The Principal Contractor would ensure that speed limits are adhered to by their drivers and associated subcontractors. Advisory speed limit signage would also be installed on approaches to areas where Scottish Hill Track and core path users may interact with construction traffic.

11.9.10 Signage would be installed on the Site exits to make 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 weekly toolbox talks.

11.9.11 On similar projects, The British Horse Society has made recommendations on the interactions between HGV traffic and horses. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flighty 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. 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.

11.9.12 The British Horse Society recommends the following actions that will be included in the Site training for all HGV staff:

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

Operational Phase

11.9.13 Whilst operational phase impacts have been scoped out of the assessment given the low levels of traffic that are forecast, best practice measures would be put in place. This would include ensuring site entrance roads are well maintained and monitored during the operational life of the Proposed Development. Regular maintenance would also be undertaken to keep the Proposed Development access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

11.10 Residual Effects

11.10.1 An evaluation of the potential effects of the increase in traffic on the study area roads used for construction traffic has been undertaken. The summary of this assessment is provided in **Table V1-11.10**.

11.10.2 The assessment confirms the predicted residual effects (i.e. after the implementation of mitigation) would be minor in nature and they would not be significant. The construction traffic effects are transitory in nature. There are no long-term detrimental transport or access issues associated with the construction phase of the Proposed Development.

Table V1-11.10: Summary of Residual Effects

Description of Effect	Significance of Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
Construction (and dismantling of the existing 132 kV OHL)					
Kirkton Road Users: Severance	Large	Adverse	CTMP and OAMP Measures and Staff Travel Plan	Slight	Adverse
Kirkton Road Users: Amenity	Large	Adverse	CTMP and OAMP Measures and Staff Travel Plan	Slight	Adverse
Kirkton Road Users: Fear & Intimidation	Large	Adverse	CTMP and OAMP Measures and Staff Travel Plan	Slight	Adverse
Scottish Hill Track 344 / Core Path SU19.03 / Track Users: Pedestrian Delay	Large	Adverse	CTMP and OAMP Measures and Staff Travel Plan	Slight	Adverse
Scottish Hill Track 344 / Core Path SU19.03 / Track Users: Amenity	Large	Adverse	CTMP and OAMP Measures and Staff Travel Plan.	Slight	Adverse
Scottish Hill Track 344 / Core Path SU19.03 / Track Users: Fear & Intimidation	Large	Adverse	CTMP and OAMP Measures and Staff Travel Plan.	Slight	Adverse

11.11 Cumulative Effects

11.11.1 The baseline traffic flows already include the committed developments of Strathy Wood and Strathy South wind farms, in line with accepted transport planning guidelines.

11.11.2 Only consented schemes are considered as committed developments and are included in the assessment of cumulative effects. A review of consented developments within the study area includes Spaceport Sutherland.

11.11.3 The operational phase traffic associated with Spaceport Sutherland has been obtained from the EIA Transport Assessment[7] produced in support of the planning application for that project. A typical launch event would result in 400 car and LGV movements and 4 HGV movements per day.

11.11.4 As these events are expected to occur on one day per month, it is not considered appropriate to include them as fully committed traffic as the high levels of traffic on launch days would mask the true impact of the construction phase associated with the Proposed Alignment.

11.11.5 There are no other significant, consented planning applications noted within the study area. The imposition of further committed development traffic into the baseline to undertake a cumulative assessment dilutes the potential traffic impact that the Proposed Alignment would have. The level of traffic generation associated with the Proposed Alignment is such that it, combined with the committed development and the future proposed development traffic, would not impact on the road link capacity.

11.11.6 As set out in Section 11.9, it is proposed that a CTMP is developed to include the wider impacts of any further projects in the area that are eventually consented and have similar construction timescales to this project. This would be agreed with THC and TS.

11.12 Summary and Conclusions

11.12.1 The Proposed Development with the Proposed Alignment would lead to a temporary increase in traffic volumes on the road network within the study area during the construction phase. Traffic volumes would fall outside the peak period of construction.

11.12.2 An assessment of average daily development trips is considered an appropriate method of assessing the impact of the Proposed Alignment as this will account for peaks and troughs during the construction (and the dismantling of the redundant section of the existing 132 kV OHL) programme. The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Alignment.

11.12.3 No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Alignment. The effects of construction traffic are temporary in nature and are transitory.

11.12.4 The increase in traffic has been assessed as not significant in EIA terms following the application of a series of mitigation measures and management plans proposed to reduce the impacts of the traffic flows from the construction (and dismantling of the redundant section of the existing 132 kV OHL) phase of the Proposed Alignment.

[7] Spaceport Sutherland EIA Report (2020). Available at: https://wam.highland.gov.uk/wam/applicationDetails.do?keyVal=Q5CD2AIHKTF00&activeTab=summary [Accessed November 2024]