atmos CONSULTING

Environmental Impact Assessment Report

Swarclett Wind Farm

Chapter 11: Transport and Access

Swarclett Wind Energy Limited

wind2

June 2024

Contents

Contents

Tables

Figures

Appendices

Glossary of Terms

Term	Definition
The Applicant	Swarclett Wind Energy Limited
Environmental and Planning Consultant	Atmos Consulting Limited
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development.
Environmental Impact Assessment Regulations	The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations
Proposed Development	Swarclett Wind Farm
Proposed Development Footprint	The area within which the Proposed Development will be located.
Proposed Development Site	The full application boundary, i.e. the red line boundary (Figure 1-1 Site Location).
Study Area	Those roads on the public road network likely to be affected by the construction of the Proposed Development and where sensitive receptors are located.

List of Abbreviations

Abbreviation	Description
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
AMP	Access Management Plan
ATC	Automatic Traffic Counter
BoP	Balance of Plant
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DPEA	Planning and Environmental Appeals Division
EnvCoW/ECoW	Ecological/Environmental Clerk of Works
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ESDAL	Electronic Service Delivery for Abnormal Loads
HGV	Heavy Goods Vehicle
IEMA	The Institution of Environmental Management and Assessment
KM	Kilometres
LGV	Light goods vehicles
MPH	Miles per Hour
M	Metres
NCR	National Cycle Route

Abbreviation	Description
NPF4	National Planning Framework 4
NRTF	National Road Traffic Forecast
NTS	Non-Technical Summary
OPMP	Onsite Path Management Plan
OS	Ordnance Survey
PAN	Planning Advice Note
PoE	Port of Entry
RSR	Route Survey Report
TR	Trunk Road
TS	Transport Scotland
THC	The Highland Council

11 Transport and Access

11.1 Introduction

This Chapter considers the likely significant effects on receptors along the transport routes resulting from vehicle movements associated with the construction and operation of the Proposed Development. 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 and indirect;
- Describe the mitigation measures proposed to address likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation.

A high-level overview of the effects of the traffic movements has been considered in accordance with Institute of Environmental Assessment (now Institute of Environmental Management and Assessment (IEMA)) Guidelines for the Environmental Assessment of Road Traffic. The document is referred to as the IEMA Guidelines in this chapter.

The assessment was carried out by Pell Frischmann Consultants Limited.

The chapter should be read in conjunction with Technical Appendix 11-1 Transport Assessment and the Abnormal Indivisible Load Route Survey which appends the Transport Assessment as Annex A.

This chapter is supported by Figures 11-1 to 11-4 (inclusive) which are referenced throughout the text.

11.2 Methodology and Approach

11.2.1 Legislation, Planning Policy and Guidance

There is no specific legislation which should be considered as part of this traffic and transport assessment.

This assessment is carried out in accordance with the principles contained within the following policy and guidance documents:

- National Planning Framework 4 (NPF4) (2023);
- Planning Advice Note (PAN) 75 (2005);
- The Guidelines for the Environmental Assessment of Road Traffic (1993);
- Environmental Assessment of Traffic and Movement (2023);
- Guidelines for Environmental Impact Assessment (2005);
- Transport Assessment Guidance (2012);
- Onshore Wind Turbines; Online Renewables Planning Advice (2014);
- Roads and Transport Guidelines for New Developments (2013);
- Highland-wide Local Development Plan (2012);
- Guidance on the Preparation of Transport Assessments (2014);

- LA104, Environmental assessment and monitoring, Design Manual for Roads and Bridges (DMRB) (Standards for Highways, 2020);
- Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008); and
- Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESA Manual" (2013).

11.2.2 Consultation

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

Table 11-1 provides a summary of the consultation responses received to date in relation to the Proposed Development, as detailed within Chapter 2 EIA Approach and Methodology of this EIA Report

Table 11-1: Consultation

Consultee	Summary of Consultee Response	Where addressed within this Report
THC	No objection to operational and decommissioning effects being scoped out of the initial assessment regarding traffic and transport.	Comment noted.
THC	No objection to the routes to be assessed within the study area; however, the study area may require to be expanded depending on the sources of construction materials to be employed.	Comment noted, reference to proposed access routes used during construction is covered in Appendix 11-1: Transport Assessment and in Section 11.3.
	Details of any other developments to be considered in terms of cumulative impact should be obtained from the planning service.	Comment noted, reference to cumulative effects is detailed in Section 11.6 and in Appendix 11-1: Transport Assessment.
	Transport Planning's interest will relate largely to the impact of the development on the local Council maintained road network. The impacts of development traffic may include impact on road carriageway, verges and associated structures; and impact on road users and adjacent communities. Transport Scotland will require to be consulted regarding any implications for the trunk road network.	Comment noted, consultation with Transport Scotland has been undertaken. Impacts in relation to local authority infrastructure has been considered and is covered in Section 11.5.
	A Transport Assessment (TA) or a section on traffic and transport within the Environmental Assessment for the project will be required. The TA should identify all Council maintained roads likely to be affected by the various stages of the development, consider in detail the impacts of development traffic on these roads, and propose measures to mitigate those impacts. Given the character and condition of the B874, it should be noted that this road will be particularly vulnerable to the effects of prolonged heavy construction traffic. It is, therefore, likely that significant mitigation works will be required to prevent damage and possible failure. Cumulative impact with any other developments in progress or committed, including other renewable energy projects, should be considered in the TA. A detailed review of the preferred route to site	A Transport Assessment has been undertaken and included as Appendix 11-1, which gives consideration to those roads likely to be affected and details appropriate mitigation measures. These are also detailed within Section 11.5 of this Chapter. Reference to cumulative effects is detailed in Section 11.6 and in Appendix 11-1: Transport Assessment. A Route Survey Report is included as Appendix A within Appendix 11-1 and includes swept path assessments of the

Consultee	Summary of Consultee Response	Where addressed within this Report
	for AIL's, to include swept path assessment and consideration of structures along the route, shall be undertaken. It is likely that a trial run to demonstrate the suitability of the route will also be required.	proposed abnormal load routes, detailing mitigation works where necessary. Liaison with The Highland Council and any other consultees in relation to structures has also been included within the report.
THC	Early consultation with the Council's Structures Section is recommended with regard to affected Council maintained structures.	Comment noted. Liaison has been undertaken within the Route Survey Report included as Appendix A of Appendix 11-1.
	The route/s for general construction traffic from proposed material sources to site should also be identified and reviewed within the TA. Prior to preparation of the TA, the applicant shall undertake a detailed scoping exercise in consultation with the Council's Transport Planning team and Transport Scotland.	Comment noted and this has been covered within the Transport Assessment included as Appendix 11-1. Additional scoping discussions were undertaken with Fred McIntosh at a meeting on 30 August 2023 at 14:00.
	Mitigation required may include new or improved infrastructure, road safety measures and traffic management. Traffic management shall include measures to ensure that development traffic adheres to approved routes. Prior to submission of a planning application, it is strongly recommended that an on-site meeting with a representative of the local roads office is undertaken, to gain an understanding of the extent and detail of mitigation works that will be required.	Comment noted and appropriate mitigation measures also detailed within Section 11.5 of this Chapter. On-site meetings with Council representatives would be proposed post consent.
	The proposed access at its junction with the public road should be clearly detailed on dimensioned drawings related to OS data; and include confirmation of geometry, construction, and drainage, as well as junction visibility splays.	To be completed following detailed design
	A Construction Traffic Management Plan (CTMP) to help control and reduce the impact of construction traffic shall be implemented prior to the commencement of development. A Framework CTMP should be included in the planning submission. Consultation with stakeholders, including local community representatives, will be	Comment noted and a full CTMP can be secured by condition. A framework CTMP is included within Section 11.5 and Appendix 11-1.

Consultee	Summary of Consultee Response	Where addressed within this Report
	necessary regarding the detailed content and implementation of the CTMP.	
THC	In order 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 will therefore be required. The agreement shall include the provision of an appropriate Road Bond or similar security.	Comment noted, a Section 96 Agreement or similar agreement on the road to cover Wear and Tear will be agreed with The Highland Council to ensure the road does not deteriorate as a result of the proposed construction traffic.
	Should related grid connection and/or substation works be likely to impact on the local road network, it would be desirable to consider the impact of these works and the mitigation required in conjunction with the proposed wind farm.	Comment noted, all applicable works have been consideration within the assessment at this time.
	Identify all public roads affected by the development. In addition to transportation of all abnormal loads & vehicles (delivery of components) this should also include routes to be used by local suppliers and staff. It is expected that the developer submits a preferred access route for the development. All other access route options should be provided, having been investigated in order to establish their feasibility. This should clearly identify the pros and cons of all the route options and therefore provide a logical selection process to arrive at a preferred route.	Comment noted and the requirements have been covered in the Transport Assessment included as Appendix 11-1, which gives consideration to those roads likely to be affected by the construction of the Proposed Development, including a review of their suitability. Section 11.3 Baseline Conditions of this chapter also makes reference to the proposed roads used for construction purposes.
	Establish current condition of the roads. This work which should be undertaken by a consulting engineer acceptable to the Council and will involve an engineering appraisal of the routes including the following: • Assessment of structural strength of carriageway including construction depths and road formation where this is likely to be significant in respect of proposed impacts, including non-destructive testing and sampling as required. • Road surface condition and profile	Comment noted, we would advise that a road condition survey will be prepared prior to the commencement of construction and will include the requested information. It is anticipated that this would form a planning condition. The baseline established from the condition survey will inform any change in the road condition during the construction phase. Any

Consultee	Summary of Consultee Response	Where addressed within this Report
THC	• Assessment of structures and any weight restrictions • Road widths, vertical and horizontal alignment and provision of passing places • Details of adjacent communities	necessary repairs attributed to the Proposed Development on the local road network will be coordinated with The Highland Council via a Section 96 Agreement or similar agreement. With regards to the roads and those areas served, together with existing traffic flows, this is covered within Section 11.3 Baseline Conditions section of this Chapter and Appendix 11-1.
	Determine the traffic generation and distribution of the proposals throughout the construction and operation periods to provide accurate data resulting from the proposed development including: • Nos. of light and heavy vehicles including staff travel • Abnormal loads • Duration of works	Comment noted, this is detailed in Appendix 11-1: Transport Assessment.
	Current traffic flows including use by public transport services, school buses, refuse vehicles, commercial users, pedestrians, cyclists and equestrians.	Comment noted and consideration has been given to this with Section 11.3 Baseline Conditions.
	Impacts of proposed traffic including: • Impacts on carriageway, structures, verges etc. • Impacts on other road users • Impacts on adjacent communities • Swept path and gradient analysis where it is envisaged that transportation of traffic could be problematic • Provision of Trial Runs to be carried out in order to prove the route is achievable and/or to establish the extent of works required to facilitate transportation	Comments noted. The assessments has been undertaken as per the 'IEMA' Guidelines, taking cognisance of these comments. A road condition survey will be prepared prior to the commencement of construction and will include the requested information. It is anticipated that this would form a planning condition. The baseline established from the condition survey will inform any change in the road condition during the construction phase. Any necessary repairs on the local road network attributed to the Proposed Development will be coordinated with The

Consultee	Summary of Consultee Response	Where addressed within this Report
THC		Highland Council via a Section 96 Agreement or similar agreement. A Route Survey Report is included as Appendix A within Appendix 11-1 and includes swept path assessments of the proposed abnormal load routes. A trial run will be undertaken post consent and can be secured by planning condition.
	Cumulative impacts with other developments in progress and committed developments including other Renewable Energy projects.	Comment noted, reference to cumulative effects is detailed in Section 11.6 and in Appendix 11-1: Transport Assessment.
	Proposed mitigation measures to address impacts identified in 5 above, including: • Carriageway strengthening • Strengthening of bridges and culverts • Carriageway widening and/or edge strengthening • Provision of passing places • Road safety measures • Traffic management including measures to be taken to ensure that development traffic does not use routes other than the approved routes.	Details of mitigation measures to address impacts of proposed traffic are presented in the Mitigation section 11.5 of this chapter. The Route Survey Report included as Appendix A within Technical Appendix 11-1 addresses required mitigation to the road network to facilitate AILs. Road safety measures and traffic management measures will be presented in the CTMP.
	Details of residual effects.	Covered in Section 11.7 of this chapter.

11.2.3 Assessment Methodology

Scope of the Assessment

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

- Direct effects during construction on traffic flows in the surrounding Study Area;
- Direct effects upon local road users; and
- Direct effects on local residents as a result of increased traffic.

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

Effects Scoped Out

On the basis of the desk and field survey work undertaken, the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, the following topic areas have been 'scoped out' of detailed assessment, as proposed in the Scoping Report:

- Operational Phase: The traffic effects during the operational phase of the Proposed Development are likely to be insignificant as expected traffic flows will be less than two vehicle movements per week, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the construction phase are scoped out of the assessment; and
- Decommissioning Phase: The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 30 years on from the completion of the Proposed Development Site. As elements of the Proposed Development are likely to remain in-situ (such as cable trenches, access tracks, etc), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst case assessment and as such, no further assessment of the decommissioning phase has been considered at this point in time and has been scoped out of the assessment.

Study Area

The Study Area includes local roads that are likely to experience increased traffic flows resulting from the construction of the Proposed Development. The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction.

It is estimated that the majority of construction personnel will come from local settlements including Thurso to the northwest and Wick to the southeast. Those personnel travelling from the Thurso area will likely do so via the A9(T), before accessing the site from the west on the U2188 Weydale Road, U2196 Sordale / Hilliclay Road and C1069 Poolhoy / Wester Road.

Those coming from the Wick area will likely come via the A882 to the east, before heading north to the site via the U1782 Dunn / Corsback Road, B874 and C1069 Poolhoy / Wester Road.

It is possible that some construction personnel may reside in local accommodation during the working week, in which case the traffic effect on the road network will be reduced.

Wherever practical, construction materials will be sourced from local suppliers, including two local quarries located to the south in close proximity to Loch Watten. It is considered that a number of route options are available to access the Proposed Development from the local quarries, the majority of which are unclassified roads.

It would be proposed to route traffic via the shortest most direct routes, thus reducing the potential impacts of HGV traffic on the wider area.

The likely Port of Entry (POE) used for the discharging of turbine components will be Wick Harbour, with abnormal indivisible loads (AILs) routing to the site via Martha Terrace / River Street, A99, A9, U2188 Weydale Road, U2196 Sordale / Hilliclay Road and C1069 Poolhoy / Wester Road.

Based on the above, the Study Area for the assessment has therefore been assumed to be as follows:

- A9(T), between the B870 at Mybster and the U2188 junction;
- A9(T), between Thurso and the U2188 junction;
- A882, between Wick and the A9(T) junction;
- B874, between the C1069 Poolhoy / Wester Road and the U1304 Faulds Road;
- U1782 Dunn / Corsback Road;
- U1304 Faulds Road;
- U1300 Gersa / Halcro Road, between the U1304 Faulds Road junction and the B870;
- U2188 Weydale Road, between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road;
- C1025 Thurso / Hilliclay / Bishophill Road, between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road;
- B876, between Wick and the C1069 Poolhoy / Wester Road; and
- C1069 Poolhoy / Wester Road, between the B876 and the B874.

The above Study Area can be seen in Figure 11.1:

Effects associated with construction traffic generated by the Proposed Development would be most pronounced in close proximity to the site access junction and on the final approaches to the Proposed Development Site.

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

Desk Study

The following data sources have informed the assessment:

- Accident data – crashmap.co.uk;
- Traffic data –Automatic Traffic Counts, Transport Scotland and Department for Transport traffic databases;
- Sensitive locations within Study Area – googlemaps.co.uk;

- Any other traffic sensitive receptors in the area (core paths, routes, communities, etc.) – googlemaps.co.uk and relevant agency's website;
- OS plans;
- Potential origin locations of construction staff and supply locations for construction materials to inform extent of local area roads network to be included in the assessment – googlemaps.co.uk;
- Constraints to the movement of AILs through a Route Survey including swept path assessments – site visits, OS plans, video footage and Google Streetview; and
- Cumulative development information – THC planning portal.

Site Visit

A detailed site visit to review the proposed access route and potential constraints was undertaken in June 2023.

11.2.4 Significance Criteria

Sensitivity

The IEMA 'Guidelines for Environmental Impact Assessment' (2005) notes that the separate 'Guidelines for the Environmental Assessment of Road Traffic' (1993) document should be used to characterise the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments.

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

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.

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 11-2.

Table 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 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

Receptor	Sensitivity			
				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

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 Impact

The following rules, also taken from the 1993 and 2023 IEMA Guidelines, were used to determine which links within the Study Area should be considered for detailed assessment:

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

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

- Severance – the IEMA Guidance advises that: "*The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.*" *(Para 3.16)*. The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that; "*…the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.*" (Para 3.17);
- Driver delay – the IEMA Guidelines note that these delays are only likely to be "*…significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system*" (Para 3.20);
- Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance advises that "pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site." (Para 3.24). Furthermore, the guidance advises that "…it is not considered wise to set down definitive thresholds. Instead it is recommended that

the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect." (Para 3.26);

- Non-motorised user amenity - the IEMA Guidance advises that: "*The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law.*" (Para 3.30);
- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the Proposed Development;
- Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance, those areas of collision clusters would be subject to detailed review;
- Road safety audits – It would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition; and
- Large loads – The movement of the AILs associated with the construction of the Proposed Development have been considered in full, within a separate route survey assessment, which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as standard within Section 9.10 Mitigation of this Chapter.

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

Significance

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 11-3 below.

Table 11-3: Significance Criteria

Receptor	Magnitude of Effect			
	Major	**Moderate**	**Minor**	**Negligible**
High	Major	Major / Moderate	Moderate / Minor	Minor
Medium	Major / Moderate	Moderate	Minor	Minor / Negligible
Low	Moderate / Minor	Minor	Minor	Minor / Negligible
Negligible	Minor	Minor	Minor / Negligible	Negligible

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

Where an effect could be one of major/moderate or moderate/minor significance, professional judgement will be used to determine which option should be applicable. Effects judged to be of minor or negligible significance will be considered not significant.

Requirements for Mitigation

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

Assessment of Residual Effect Significance

Residual effects will be assessed following a similar methodology as the potential effects but taking into consideration the identified mitigation.

Limitations to Assessment

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

11.3 Baseline Conditions

11.3.1 Active Travel Network

There are limited pedestrian facilities in the immediate vicinity of the Proposed Development Site, reflecting the rural nature of the location. There are no facilities on the C1069 Poolhoy / Wester Road, where the proposed site access junction will be located. In addition, there are no facilities on any of the other local roads in the vicinity of the Proposed Development Site.

Further away from the Proposed Development in the wider Study Area, there are pedestrian facilities within the larger local settlements, including Thurso and Wick, which are commensurate with the scale of the settlements. With regards to the smaller settlements and roads within the Study area, the following facilities are available:

- Reiss (B876, c. 14km southeast of the Site): Pedestrian footway on the southern side of the carriageway for a distance of approximately 570 metres (m)
- B876 (c.3km east of the Site): Pedestrian footway on the northern side of the carriageway from Bower Primary School to Bower for a distance of approximately 750m
- Watten (A882, c. 9km south of the Site:)
  - Pedestrian footway on the northern side of the carriageway on entry to the village from the east, from the vicinity of Loch Watten House, for a distance of approximately 565m;
  - Pedestrian footway on both side of the carriageway from Watten Primary School to Watten Village Hall, for a distance of approximately 215m;
  - Pedestrian footway on the southern side of the carriageway from Watten Primary School to the western extents of the village for a distance of approximately 380m; and

  - Zebra crossing at Watten Primary School.
- Spital (A9(T), c 10km south of the Site): Pedestrian footway on the western side of the carriageway on entry to the village from the south for a distance of approximately 210m, at which point it continues on the eastern side of the carriageway for a distance of approximately 350m;
- Latheron (c. 30km south of the Site):
  - Short sections of pedestrian footway on all sides of the A99 / A9(T) junction, with drop kerbs and tactile paving; and
  - Pedestrian footway on the northern side of the carriageway on the western extents of the village, continuing through to Latheronwheel to the west;
- Lybster (A99(T) c. 26km south of the Site): Pedestrian footways on one or both sides of the carriageway through the village, with drop kerbs and tactile paving at crossing points
- Thrumster (A99, c. 21km southeast): Pedestrian footways on at least one side of the carriageway through the village

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

A review of THC's Core Path network[1] indicates that there are no Core Paths in the immediate vicinity of the Proposed Development Site, as can be seen in Figure 6 included within Technical Appendix 11-1 Transport Assessment (the location of the proposed site access junction can be seen by the red marker).

The closest Core Path (CA02.01) is located on the B876 to the north-east and is a short section of roadside footway.

A review of Sustrans' National Cycle Route (NCR) map[2] 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 NCR is the on-road Inverness to John O' Groats route.

Road Access

A99(T)

The A99(T) follows the east coast of Caithness from Latheron in the south, where it meets the A9(T), through to Wick and John O' Groats in the north. It is a key trunk route in the north-east of the Highlands and is maintained by BEAR (North West) on behalf of Transport Scotland.

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, 40 or 50 miles per hour (mph). The road is considered to be in good condition and maintained to a high standard.

[1] The Highland Council, Core Paths in Highland Council area plan: https://highland.maps.arcgis.com/apps/webappviewer/

[2] https://www.sustrans.org.uk/national-cycle-network

A9(T)

The A9(T) is a strategic link from the Highlands to the Central Belt, linking Polmont in the south with Scrabster in the north. It is a key trunk route in the north-east of the Highlands and is maintained by BEAR (North West) on behalf of Transport Scotland. In the vicinity of the Proposed Development, 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, 40 or 50 mph. The road is considered to be in good condition and maintained to a high standard.

B876

The B876 is a B-class road maintained by THC, running from Castletown in the north to Reiss in the south, for a distance of 19.5 km. The road is a single carriageway road, with one lane operating in each direction. The national speed limit is in place outwith villages and settlements, where it reduces to 30 or 40 mph. The road is considered to be in good condition and maintained to a good standard.

A882

The A882 is a A-class road maintained by THC, running from its junction with the A9(T) to the west and Wick in the east, for a distance of 23 km. The road is a single carriageway road, with one lane operating in each direction. The national speed limit is in place outwith villages and settlements, where it reduces to 30 mph. The road is considered to be in good condition and maintained to a good standard.

B870

The B870 is a B-class road maintained by THC, running from its junction with the B876 to the southeast of Bower to Glengolly, to the south of Thurso, for a distance of 37 km. The road is a single track road of varying width through its length. In the vicinity of the Proposed Development, it is single track, with passing places and the national speed limit in place, except through the village of Watten, where it reduces to 30mph.

B874

The B874 is a B-class road maintained by THC, running from its junction with the A9(T) in the west to the A99(T) in the east, for a distance of 23 km. The road is a single track road of varying width through its length. In the vicinity of the Proposed Development, it is single track, with passing places and the national speed limit in place.

C1025 Thurso / Hilliclay / Bishophill Road

The C1025 is a C-class road maintained by THC, running from Thurso in the north to the C1069 in the vicinity of the proposed development, for a distance of 10 km. The road is a single track road of varying width through its length. In the vicinity of the Proposed Development, it is single track, with passing places and the national speed limit in place.

U2188 Weydale Road

The U2188 Weydale Road is an unclassified road maintained by THC, commencing at its junction with the A9(T) near Bulliemore and running in an easterly direction to its junction with the C1025 near Hilliclay, for a distance of approximately 3 km. The road is a single track road of varying width through its length. In the vicinity of the Proposed

Development, it is single track, with passing places and the national speed limit in place.

U2196 Sordale / Hilliclay Road

The U2196 Sordale / Hiiliclay Road is an unclassified road maintained by THC, commencing at its junction with the A9(T) near Sordale and running in a north easterly direction to its junction with the C1025 at Hilliclay, for a distance of approximately 3.6 km. The road is a single track road of varying width through its length. In the vicinity of the Proposed Development, it is single track, with passing places and the national speed limit in place.

C1069 Poolhoy / Wester Road

The C1069 is a C-class road maintained by THC, running from its junction with the B874 in the south with the B876 in the north for a distance of approximately 5.4 km, passing the western Proposed Development Site boundary. The road is a single track road of varying width through its length. In the vicinity of the proposed development, it is single track, with passing places and the national speed limit in place.

U1782 Dunn / Corsback Road

The U1782 Dunn / Corsback Road is an unclassified road maintained by THC, commencing at its junction with the A882 in the south to the B874 in the north, running for a distance of approximately 2.96 km. The road is a single track road of varying width through its length, with passing places and the national speed limit in place. The road provides access to the John Gunn & Sons quarry.

U1782 Dunn / Corsback Road

The U1782 Dunn / Corsback Road is an unclassified road maintained by THC, commencing at its junction with the A882 in the south to the B874 in the north, running for a distance of approximately 2.96 km. The road is a single track road of varying width through its length, with passing places and the national speed limit in place. The road provides access to the John Gunn & Sons quarry.

U1300 Gersa / Halcro Road

The U1300 Gersa / Halcro Road is an unclassified road maintained by THC, commencing at its junction with the B870 in the east running to the U1755 at Halcro in the west, running for a distance of approximately 4.84 km. The road is a single track road of varying width through its length, with passing places and the national speed limit in place. The road provides access to the A & W Sinclair quarry.

U1304 Faulds Road

The U1304 Faulds Road is an unclassified road maintained by THC, commencing at its junction with the U1300 Gersa / Halcro Road in the north with the B874 in the south, for a distance of approximately 1.48 km. The road is a single track road of varying width through its length, with passing places and the national speed limit in place.

General Road Suitability

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 A9(T), A882 and A99(T) which are 'Agreed Routes' and the B876, B870 and B874, which are 'Consultation Routes'.

The Agreed Timber Route Map[3] 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'.

'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.

Baseline Traffic Flows

In order to assess the impact of construction traffic within the Study Area, Annual Average Daily Traffic (AADT) flows were obtained from the UK Department for Transport (DfT) traffic database . Available 2019 flow information was obtained for all locations, as these flows would be unaffected by Covid-related travel restrictions. The traffic counts sites used were as follows:

The count sites were as follows:

1. A9(T), between the B870 at Mybster and the U2188 junction (DfT 10800, ATC count);
2. A9(T), between Thurso and the U2188 junction (DfT 40956, estimated count);
3. A882, between Wick and the A9(T) junction (DfT 30804, estimated count);
4. B874, between the A9(T) and the U1304 Faulds Road (DfT 811483, manual count); and
5. B876, between Wick and the C1069 Poolhoy / Wester Road (DfT 1013, estimated count).

DfT traffic data allow the traffic flows to be split in vehicle classes. The data was summarised into Cars/Light Goods Vehicles (LGVs) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).

[3] http://timbertransportforum.org.uk/

These traffic count sites were identified following a desk study and review of online mapping resources along the access routes to determine the location of sensitive receptors. A full receptor sensitivity and effect review is prepared in the Transport and Access Chapter of the EIA Report (Volume 2: Chapter 11).

With regards to those other roads potentially used to access the Proposed Development site, these are all single track roads with passing places , generally serving a small number of isolated dwellings and providing access to areas used for agricultural purposes.

These roads are generally very lightly trafficked and should they be used by a significant number of construction vehicles, the percentage increase will likely be significant. As such rather than use the base flows to determine if an assessment is required, one has been undertaken regardless on the following roads:

6. U1782 Dunn / Corsback Road;
7. U1304 Faulds Road;
8. U1300 Gersa / Halcro Road, between the U1304 Faulds Road junction and the B870;
9. U2188 Weydale Road, between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road;
10. C1025 Thurso / Hilliclay / Bishophill Road, between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road;
11. C1069 Poolhoy / Wester Road, between the B876 and the B874.

Figure 11-2 shows the location of the surveys, while Table 11-4 summarises the Annual Average Daily Traffic (AADT) traffic data collected and used in this assessment.

Table 11-4: 24-hour Average Traffic Data (2019)

Survey Location	Cars / LGV	HGV	Total
A9(T), between the B870 at Mybster and the U2188 junction	2,639	301	3,469
A9(T), between Thurso and the U2188 junction	13,958	272	14,230
A882, between Wick and the A9(T) junction	1,797	96	1,893
B874, between the A9(T) and the U1304 Faulds Road	154	8	162
B876, between Wick and the C1069 Poolhoy / Wester Road	3,469	172	3,641

Accident Review

Personal Injury Accident (PIA) data for the five-year period covering 2017 to 2021, 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.

The statistics are categorised into three categories, namely "Slight", "Serious" and "Fatal", for those accidents that result in a death.

For the purposes of the PIA review, the following road links have been assessed:

- A9(T), between the B870 junction and the A836 junction in Thurso;
- U1782 Dunn / Corsback Road;
- U1304 Faulds Road;
- U1300 Gersa / Halcro Road, between the U1304 Faulds Road junction and the B870;

- U2188 Weydale Road, between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road;
- C1025 Thurso / Hilliclay / Bishophill Road, between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road;
- B876, between Wick and the C1069 Poolhoy / Wester Road;
- B874, between the A9(T) and the U1304 Faulds Road;
- A882, between Wick and the A9(T) junction; and
- C1069 Poolhoy / Wester Road, between the B876 and the B874.

Tables 11-5, 11-6 and 11-7 summarise the accidents noted in the Study Area and the locations are presented in Figure 11.3.

Table 11-5: Accident History Summary

Accident Severity	Number of Recorded Incidents
Fatal	1
Serious	4
Slight	24

There are recorded incidents along road links within the Study Area within the survey period. A summary of the casualty types are presented in Table 11-6 and the types of vehicles involved in the accidents are presented in Table 11-7.

Table 11-6: Casualty Type Summary

Accident Severity	Casualty Type				
	Cyclist	Child	Motorcyclist	Pedestrian	Driver / Passenger
Slight	0	2	1	1	20
Serious	0	0	1	0	3
Fatal	0	0	0	0	1

Table 11-7: Vehicles Involved Summary

Accident Severity	All Vehicles					
	Cyclist	Motorcycle	Car	HGV	Bus	Young Driver
Slight	0	1	25	4	0	6
Serious	0	1	5	0	0	0
Fatal	0	0	2	0	0	1

Additional information on the above recorded accidents is presented in Technical Appendix 11-1.

The analysis found that most recorded accidents (82.8%) are categorised as being "Slight", with "Serious" accidents representing approximately 13.8% of all accidents and there being one "Fatal" accident.

No PIAs were recorded on the C1069 Poolhoy / Wester Road in the vicinity of the Proposed Development Site or the proposed site access junction or on the U2188 Weydale Road and C1025 Thurso / Hilliclay / Bishophill Road, which will be used by the AILs to access the Proposed Development Site.

In general, there are no clusters of PIAs at any location in the assessed area or high numbers of accidents involving HGVs for example. The majority of PIAs recorded

occurred at or on approach to junctions / access to properties, where there is an increased interaction between vehicles.

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

Future Year Baseline

Construction of the Proposed Development could commence during 2027 if consent is granted and is anticipated to take up to nine months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction and typical operational phase, base year traffic flows were determined by applying a NRTF low growth factor to the DfT surveyed traffic flows.

The traffic flows were brought to a common year of 2027 using NRTF by applying low growth estimates for 2023 to 2027 is 1.049.

The 2027 baseline flows are presented in Table 11-8 and these flows will be used in the Construction Traffic Impact Assessment.

Table 11-8: Baseline 24-hour Average Traffic Data (2027)

Survey Location	Cars / LGV	HGV	Total
A9(T), between the B870 at Mybster and the U2188 junction	2,768	316	3,639
A9(T), between Thurso and the U2188 junction	14,642	285	14,927
A882, between Wick and the A9(T) junction	1,885	101	1,986
B874, between the A9(T) and the U1304 Faulds Road	162	8	170
B876, between Wick and the C1069 Poolhoy / Wester Road	3,639	180	3,819

Receptor Sensitivity

A review of sensitive receptors has been undertaken within the Study Area. Table 11-9 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 11-2.

Table 11-9: Summary of Receptor Sensitivity

Receptor	Sensitivity	Justification
A9(T) Users - between the B870 at Mybster and the U2188 junction	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
A9(T) Users - between Thurso and the U2188 junction	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
A882 Users - between Wick and the A9(T) junction	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
B874 Users - between the A9(T) and the U1304 Faulds Road	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.

Receptor	Sensitivity	Justification
B876 Users - between Wick and the C1069 Poolhoy / Wester Road	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
U1782 Dunn / Corsback Road Users	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
U1304 Faulds Road Users	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
U1300 Gersa / Halcro Road Users - between the U1304 Faulds Road junction and the B870	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
U2188 Weydale Road Users - between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
C1025 Thurso / Hilliclay / Bishophill Road Users - between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
C1069 Poolhoy / Wester Road Users - between the B876 and the B874	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Residents / Users living and working along the A9(T)	Low	Where a location is a small rural settlement, few community or public facilities or services
Residents / Users living and working along the A882, including Watten and Haster	Low	Where a location is a small rural settlement, few community or public facilities or services
Residents / Users living and working along the B874	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents / Users living and working along the B876	Low	Where a location is a small rural settlement, few community or public facilities or services
Residents / Users living and working along the U1782 Dunn / Corsback Road	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents / Users living and working along the U1304 Faulds Road	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents / Users living and working along the U1300 Gersa / Halcro Road, between the U1304 Faulds Road junction and the B870	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents / Users living and working along the U2188 Weydale Road, between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents / Users living and working along the C1025 Thurso / Hilliclay / Bishophill Road, between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.

Receptor	Sensitivity	Justification
Residents / Users living and working along the C1069 Poolhoy / Wester Road, between the B876 and the B874	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.

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

- A882 at Watten (churches and school); and
- B876 at Bower (school).

These locations will be subject to the 'Rule 2' of the IEMA Guidelines which requires a full assessment of effects if the traffic count locations are anticipated to be subject to an increase in 10% of total 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 are anticipated to increase by more than 30% as a result of the construction of the Proposed Development.

11.4 Assessment of Effects and Mitigation

11.4.1 Construction Effects

The assessment is based upon the construction effects that may occur within the Study Area. In order to assess the effects, it is necessary to determine the likely traffic generation associated with the Proposed Development.

During the 12 month construction period, the following traffic will require access to the Proposed Development Site:

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

Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development. The trip estimates have been based upon first principle estimates of traffic movements to and from the Proposed Development Site, having established the likely volumes of construction materials, resources and components.

A full description of the assumptions used to determine the construction trips and resultant material quantities, is detailed in full within Section 6: 'Trip Generation and Distribution' of Technical Appendix 11-1. This includes a full breakdown of the following materials:

- Construction staff;
- AIL and turbine components;
- General site deliveries;
- Material deliveries, including:
- Ready-mix concrete;

- Steel;
- Aggregates;
- Geotextile
- Cable / cable sand etc.; and
- Substation and BESS components and associated materials.

Except for the turbine components, most traffic will be normal construction plant and will include grading tractors, excavators, high capacity cranes, forklifts and dumper trucks. Most will arrive at the Proposed Development Site on low loaders.

The turbines will be delivered in component sections (up to 12 per turbine see Technical Appendix 11-1) for ease of transport and will be assembled at the Proposed Development Site.

The nacelle, hub, drive train, blade, tower sections are classified as AIL due to their weight and/or length, width and height when loaded. The components can be delivered on a variety of transport platforms with typical examples illustrated in Technical Appendix 11-1.

In addition to the turbine deliveries, a high-capacity erection crane will be needed to offload a number of components and erect the turbines. The crane is likely to be a mobile crane with a capacity up to 1,000 tonnes, escorted by boom and ballast trucks to allow full mobilisation on site.

Smaller erector cranes will also be present to allow the assembly of the main cranes and to ease the overall erection of the turbines. AIL associated with the cranes will be escorted to site by civilian escort vehicles.

Confirmation on the proposed type and number of cranes used onsite will be confirmed following selection of the candidate turbine and appointment of both the haulage and crane contractors. Information on this will be provided to THC as part of the CTMP and secured by planning condition.

The resulting traffic generation profile and indicative construction programme can be seen on Table 12 in Technical Appendix 11-1. This shows that month five is the peak period for construction activities. The activities are anticipated to generate an average of 83 vehicle movements per day comprising 28 Car / LGV movements and 55 HGV movements.

These figures on average indicate approximately five additional HGV movements per hour on the road network, within the Study Area at the peak of construction activities, during a typical 12 hour working day.

The distribution of Proposed Development construction traffic on the network will vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months are as follows:

- All construction traffic enters the site via the proposed access on the C1069 Poolhoy / Wester Road;

- Deliveries associated with aggregate materials and concrete materials, will be sourced from local quarries to the southeast, using the most direct routes. The Balance of Plant (BoP) contractor will confirm final quarry and material sourcing with THC in the final CTMP, however for the purposes of this assessment the following has been assumed:
  - John Gunn & Sons - U1782 Dunn / Corsback Road, B874 and C1069 Poolhoy / Wester Road
  - A & W Sinclair - U1300 Gersa / Halcro Road, U1304 Faulds Road, B874 and C1069 Poolhoy / Wester Road
- HGV deliveries associated with the High Voltage (HV) electrical installation, control buildings, batteries, etc will arrive via the A9(T) to the south, before travelling through to the site on the B874 and C1069 Poolhoy / Wester Road;
- staff working at the Proposed Development Site are likely to be based locally. It is assumed that 50% will be based to the northwest at Thurso, arriving from the A9(T) from the north, while 50% will be based to the southeast in Wick, arriving via the A882; and
- General site deliveries will be via the A9(T) from the south, before travelling through to the Proposed Development Site on the B874 and C1069 Poolhoy / Wester Road. These are generally smaller rigid HGV vehicles.

For the purposes of this assessment, it has been assumed that all abnormal load traffic will access the Proposed Development Site via the following route:

- Loads will depart Wick Harbour on Martha Terrace / River Street, turning on to the A99(T);
- Loads will continue south on the A99(T) with blade loads making use of the blade transfer point located at the southern extents of Wick, to transfer the blade loads from the blade lifting trailer onto the standard Super Wing Carrier trailer;
- All loads then required to continue south on the A99(T) to the junction with the A9(T), where they will turn right, heading north;
- The loads will continue northbound until the junction with the U2188 Weydale Road, where they make a right turn, heading eastbound;
- At the end of the U2188 Weydale Road, the loads will make a right hand turn on to the C1025 Thurso / Hilliclay / Bishophill Road and travel eastbound to the junction with the C1069 Poolhoy / Wester Road; and
- At the junction, the loads will turn right onto C1069 Poolhoy / Wester Road and travel south for a short distance before turning left in to the Proposed Development Site.

The proposed construction vehicle and AIL delivery routes are shown on Figure 11-4.

Using the distribution of traffic described above and in Technical Appendix 11-1, the proposed traffic flows on the Study Area network at the peak of construction are illustrated in Table 11-10.

Table 11-10: Peak Construction Month Daily Traffic Data (Month 5)

Survey Location	Cars / LGV	HGV	Total
A9(T), between the B870 at Mybster and the U2188 junction	-	2	2
A9(T), between Thurso and the U2188 junction	14	-	14

Survey Location	Cars / LGV	HGV	Total
A882, between Wick and the A9(T) junction	14	-	14
B874, between the A9(T) and the U1304 Faulds Road	14	46	60
B876, between Wick and the C1069 Poolhoy / Wester Road	-	-	-

Please note minor variances due to rounding may occur.

The peak month traffic data was combined with the future year (2027) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is presented in percentage increases for each class of vehicle and is illustrated in Table 11-11.

Table 11-11: 2027 Peak Month Daily Traffic Data

Survey Location	Cars / L GV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
A9(T), between the B870 at Mybster and the U2188 junction	2,768	318	3,641	0.0%	0.7%	0.1%
A9(T), between Thurso and the U2188 junction	14,656	285	14,941	0.1%	0.0%	0.1%
A882, between Wick and the A9(T) junction	1,899	101	2,000	0.7%	0.0%	0.7%
B874, between the A9(T) and the U1304 Faulds Road	176	54	230	8.7%	545.9%	35.2%
B876, between Wick and the C1069 Poolhoy / Wester Road	3,639	180	3,819	0.0%	0.0%	0.0%

Please note minor variances due to rounding may occur.

The total traffic movements are predicted to increase by 35.2% on the B874, which will be used by HGV vehicles transporting aggregates and concrete materials to the Proposed Development Site and by staff travelling to and from the site. All other roads identified above have increases below 1%.

It is however assumed that the total traffic increase on the other more rural single track roads likely to be used to access the Proposed Development Site in particular those roads used by vehicles travelling to and from the local quarries will be in excess of 10% for total traffic due to the extremely low levels of existing traffic using them and as such further consideration will be given to these within the assessment.

The highest total HGV traffic movements will increase by 545.9% again on the B874, as a result of the HGV traffic travelling to and from the quarry locations. Whilst this increase could be considered high, it is generally caused by the relatively low HGV flows on the road at this location.

The increase will see an additional 46 HGV movements per day (23 inbound trips and 23 outbound trips), over the course of a typical 12-hour day on site, this will equate to approximately 4 HGV movements per hour.

With regards to the C1069 Poolhoy / Wester Road where the site access will be located, all HGV traffic accessing the site will be required to use this road. This will result in approximately 55 HGV movements per day, which will equate to approximately 5 movements per hour over the course of a typical 12-hour day on Site.

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.

A review of existing theoretical road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESA Manual". The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the Study Area. The results are summarised in Table 11-12.

Table 11-12: 2027 Daily Traffic (12hr) Capacity Review Summary

Survey Location	2027 Baseline Flow	2027 Base + Dev. Flows	Theoretical Road Capacity (12 hr)	Spare Road Capacity %
A9(T), between the B870 at Mybster and the U2188 junction	3,639	3,641	21,600	83.1%
A9(T), between Thurso and the U2188 junction	14,927	14,941	21,600	30.8%
A882, between Wick and the A9(T) junction	1,986	2,000	21,600	90.7%
B874, between the A9(T) and the U1304 Faulds Road	170	230	3,360	93.2%
B876, between Wick and the C1069 Poolhoy / Wester Road	3,819	3,819	21,600	82.3%

Please note minor variances due to rounding may occur.

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

In accordance with the IEMA Guidelines Rules 1 and 2 and based on the construction traffic data shown in Table 11-11, detailed assessments have been undertaken on the following receptors:

- B874 Users - between the A9(T) and the U1304 Faulds Road (High Sensitivity); and
- Residents / Users living and working along the B874 (Negligible Sensitivity).

As previously advised, a detailed assessment has been undertaken for those other more rural roads, primarily single track roads with passing places that could be used to access the Proposed Development. These roads are lightly trafficked and as such even a small increase in vehicular traffic could impact on local sensitive receptors. As such, in addition to the above, the assessment includes the following receptors:

- U1782 Dunn / Corsback Road Users (High Sensitivity);
- U1304 Faulds Road Users (High Sensitivity);
- U1300 Gersa / Halcro Road Users - between the U1304 Faulds Road junction and the B870 (High Sensitivity);
- U2188 Weydale Road Users - between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road (High Sensitivity);
- C1025 Thurso / Hilliclay / Bishophill Road Users - between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road (High Sensitivity);
- C1069 Poolhoy / Wester Road Users - between the B876 and the B874 (High Sensitivity);

- Residents / Users living and working along the U1782 Dunn / Corsback Road (Negligible Sensitivity);
- Residents / Users living and working along the U1304 Faulds Road (Negligible Sensitivity);
- Residents / Users living and working along the U1300 Gersa / Halcro Road, between the U1304 Faulds Road junction and the B870 (Negligible Sensitivity);
- Residents / Users living and working along the U2188 Weydale Road, between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road (Negligible Sensitivity);
- Residents / Users living and working along the C1025 Thurso / Hilliclay / Bishophill Road, between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road (Negligible Sensitivity); and
- Residents / Users living and working along the C1069 Poolhoy / Wester Road, between the B876 and the B874 (Negligible Sensitivity).

It is acknowledged that there will be other months within the overall construction programme as shown in Table 12 of Technical Appendix 11-1, which will also be above the threshold for undertaking detailed assessment, however the assessment focusses on the peak month only, which is the worst case in terms of potential impacts.

Other months will still result in impacts within the Study Area; however, these will be less than the predicted peak month. The significance of the potential effects on the above receptors has been determined using the rules and thresholds previously outlined in the Assessment of Significance section. Table 11-13 summarises the significance on the receptors for the construction phase prior to mitigation measures being applied.

Table 11-13: Construction Phase Effects Summary

Receptor	Severance	Driver Delay	Pedestrian Delay	Non-motorised user Amenity	Fear & Intimidation	Road Safety	Large Loads
B874 Users - between the A9(T) and the U1304 Faulds Road	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	N/A
U1782 Dunn / Corsback Road Users	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	N/A
U1304 Faulds Road Users	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	N/A
U1300 Gersa / Halcro Road Users - between the U1304 Faulds Road junction and the B870	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	N/A
U2188 Weydale Road Users - between the A9(T) and the C1025 Thurso / Hilliclay / Bishophill Road	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	Major / Moderate
C1025 Thurso / Hilliclay / Bishophill Road Users - between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	Major / Moderate
C1069 Poolhoy / Wester Road Users - between the B876 and the B874	Major	Moderate / Minor	Minor	Moderate / Minor	Major	Moderate / Minor	Major / Moderate
Residents / Users living and working along the B874	Minor	Minor	Minor	Minor	Minor	Minor	N/A
Residents / Users living and working along the U1782 Dunn / Corsback Road	Minor	Minor	Minor	Minor	Minor	Minor	N/A
Residents / Users living and working along the U1304 Faulds Road	Minor	Minor	Minor	Minor	Minor	Minor	N/A
Residents / Users living and working along the U1300 Gersa / Halcro Road, between the U1304 Faulds Road junction and the B870	Minor	Minor	Minor	Minor	Minor	Minor	N/A
Residents / Users living and working along the U2188 Weydale Road, between the A9(T) and the C1025 Thurso /	Minor	Minor	Minor	Minor	Minor	Minor	Minor

Receptor	Severance	Driver Delay	Pedestrian Delay	Non-motorised user Amenity	Fear & Intimidation	Road Safety	Large Loads
Hilliclay / Bishophill Road							
Residents / Users living and working along the C1025 Thurso / Hilliclay / Bishophill Road, between the U2188 Weydale Road and the C1069 Poolhoy / Wester Road	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Residents / Users living and working along the C1069 Poolhoy / Wester Road, between the B876 and the B874	Minor	Minor	Minor	Minor	Minor	Minor	Minor

The assessment of significance carried out in Table 11-13 indicates that traffic flows interacting with more rural single-track roads within the Study Area could give rise to significant adverse effects, prior to the application of mitigation measures.

It should be noted that the impacts relate solely to the peak of construction activities and that the construction period is short lived and the effects transitory in nature.

11.4.2 Operational Effects

It is predicted that during the operation of the Proposed Development there will be up to two vehicle movements per week for maintenance purposes. There may be occasional abnormal load movements to deliver replacement components in the unlikely event of a major failure.

Given the low level of traffic generation associated with the operational phase, no further assessment has been undertaken.

11.4.3 Decommissioning Effects

When the Proposed Development is decommissioned, it is likely that elements of the Proposed Development Site such as access tracks will be retained. Therefore, the traffic generated by future decommissioning works will be less than those associated with the Construction Phase.

11.5 Mitigation

11.5.1 Construction Phase Mitigation

Construction Traffic Management Plan (CTMP)

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

The following measures will be implemented during the construction phase through the CTMP:

- Aagree AIL route modifications and improvements with THC and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the respective delivery route options RSR, which are presented in Technical Appendix 11.1;
- Where possible, the detailed design process will minimise the volume of material to be imported to site to help reduce HGV numbers;
- A site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Transport Management Plan for AIL deliveries;
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;

- Wheel cleaning facilities may be established at the site entrance, depending on the views of THC;
- Normal site working hours will be limited to between 0700 and 1900 (Monday to Friday) and 0700 and 1300 (Saturday), though component delivery and turbine erection may take place outside these hours;
- Appropriate traffic management measures will be put in place on the C1069 Poolhoy / Wester Road leading through to the site and at its junctions with the roads listed below, to avoid conflict with general traffic, subject to the agreement of THC:
  - C1025 Thurso / Hilliclay / Bishophill Road;
  - B874; and
  - B876;
- Typical measures will include HGV turning and crossing signs and / or banksmen at the site access and warning signs warning of increase HGV traffic and construction activity;
- 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 reduced speed limits at locations to be agreed with THC;
- All drivers will be required to attend an induction to include:
  - A toolbox talk safety briefing;
  - The need for appropriate care and speed control;
  - A briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through the villages); and
  - Identification of the required access routes and the controls to ensure no departure from these routes.

THC are likely to request that an agreement to cover the cost of abnormal wear on its road network is made.

Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the condition of the road prior to any construction work commencing.

This baseline will provide evidence of any change in the road condition during the construction phase. Any necessary repairs will be coordinated with THC's roads team. Any damage caused by traffic associated with the Proposed Development during the construction period, that will be hazardous to public traffic, will be repaired immediately.

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

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

Before the AILs traverse the routes from the two ports, the following tasks will be undertaken to ensure load and road user safety:

- Ensure any vegetation which may foul the loads is trimmed back to allow passage;

- Confirm there are no roadworks or closures that could affect the passage of the loads;
- Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- Confirm the police are satisfied with the proposed movement strategy.

Abnormal Load Transport Management Plan

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

All abnormal load deliveries will 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 will travel in the early morning periods before peak times while general construction traffic will generally avoid the morning and evening peak periods.

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

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

- Within Wick, where the loads are required to leave the harbour area and negotiate through the town;
- U2188 Weydale Road, C1025 Thurso / Hilliclay / Bishophill Road and C1069 Poolhoy / Wester Road, where the roads are narrow single carriageway roads and the loads requiring the full carriageway width;
- 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.

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

This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

The location and numbers of signs will be agreed post consent and will form part of the Traffic Management Proposal for the project.

The Abnormal Load Transport Management Plan will 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 will form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Prior to AILs travelling along the routes from Wick Harbours, the following tasks will be undertaken to ensure load and road user safety:

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

Public Information

Information on the turbine convoys will be provided to local media outlets such as local papers and local radio to help assist the public.

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

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

Convoy System

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

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

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

Onsite Measures delivered using an Onsite Path Management Plan (OPMP)

Consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the paths and public roads. If required by the Local Authority, a Path Planning Study can be undertaken post consent and secured through a planning condition. Findings from the study will be used to formulate a set of measures into a Path Management Plan (OPMP).

Any path users will be separated from construction traffic through the use of barriers. Crossing points will be provided where required, with path users having right of way. Appropriate Traffic Signs Manual Chapter 8 compliant temporary road signage will be provided to assist at these crossing for the benefit of all users.

The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

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

No scoping response has been received from The British Horse Society, however measures implemented on similar schemes will be given consideration as part of the Proposed Development. These measures are predominantly focused around the interactions between HGV traffic and horses.

Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

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;
- A lack of space between the horse and the vehicle;
- The sound of air brakes; and
- Anxiety on the part of the rider.

The British Horse Society has previously recommended the following actions that will be included in the site training for all HGV staff:

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

Staff Travel Plan

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

- Appointment of a Travel Plan Coordinator (TPC);

- Provision of public transport information;
- Mini-bus service for transport of site staff;
- Promotion of a car sharing scheme; and
- Car parking management.

11.5.2 Operational Phase Mitigation

Site entrance roads will be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance will 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.

11.6 Cumulative Effects

As detailed in Technical Appendix 11-1, the review of committed development schemes (developments with extant planning permission) did not identify any other significant traffic generating developments in the Study Area that may occur during the construction period associated with the Proposed Development. It is therefore considered that no cumulative assessment is required.

11.7 Residual Effects and Conclusions

This section considers the assessment of traffic impacts following the incorporation of the identified mitigation measures. An evaluation of the potential effects of the increase in traffic on the Study Area roads used for construction traffic was undertaken. The summary of this assessment is provided in Table 11-14.

The assessment confirms the effects will be minor in nature and they will be not significant, following the implementation of a comprehensive CTMP, together with on-site route signage and an access management plan, which will incorporate any required re-routing of Public Rights of Way or temporary barriers to protect users from construction activities.

The traffic effects are transitory in nature and appropriate mitigation measures are proposed to reduce the potential impacts. No long-term detrimental transport or access issues are associated with the construction phase of the Proposed Development.

11.7.1 Residual Effects

Construction

The Proposed Development will lead to a temporary increase in traffic volumes within the Study Area during the construction phase. Traffic volumes will fall considerably outside the peak periods of construction.

The peak of construction occurs in month five with a total of 83 daily vehicle movements, comprising 28 Car / LGV movements and 55 HGV movements. Over the course of a typical 12 hour working day on the Proposed Development Site, this will equate to approximately 7 HGV movements per hour.

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

A review of the road network has been undertaken to assess the feasibility of transporting turbines to the Proposed Development Site and no significant issues have been noted.

It should be noted that the traffic effects associated with the construction phase are temporary in nature and are confined to the construction period only. No long-lasting detrimental transport or access issues are associated with the Proposed Development.

An evaluation of the potential effects of the increase in construction traffic on the Study Area roads used for construction traffic was undertaken. The summary of this assessment is provided in Table 11-14.

Table 11-14: Summary of Residual Effects

Likely Significant Effect	Mitigation Measures	Means of Implementation	Residual Effect
All minor rural roads assessed during construction phase			
Severance	Implementation of CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Via a planning condition	Minor (Not Significant)
Driver Delay	Implementation of CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Via a planning condition	Minor (Not Significant)
Pedestrian Delay	Implementation of CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Via a planning condition	Minor (Not Significant)
Non-motorised user Amenity	Implementation of CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Via a planning condition	Minor (Not Significant)
Fear &	Implementation of CTMP, provision of construction traffic road signage, convoy	Via a planning	Minor (Not

Likely Significant Effect	Mitigation Measures	Means of Implementation	Residual Effect
Intimidation	escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	condition	Significant)
Road Safety	Implementation of CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Via a planning condition	Minor (Not Significant)
Large Loads	Implementation of CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Via a planning condition	Minor (Not Significant)

Operation

There are no residual effects associated with the operational phase of the Proposed Development.

11.7.2 Summary

With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be **Minor or Not Significant** but as they will occur during the construction phase only, they are temporary and reversible.

11.8 Summary and Statement of Significance

The Proposed Development will lead to increased traffic volumes along road links within the Study Area during the construction phase only. This increase will be temporary as traffic volumes will fall considerably outside of the peak period. It should also be noted that background traffic levels within the Study Area are considered low.

The AIL components will be delivered to the Proposed Development Site from Wick Harbour. The movement of the AIL traffic will require temporary remedial works at a number of locations along the identified delivery route.

The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in month five of the construction programme. During this month, an average of 83 daily vehicle movements, comprising 28 Car / LGV movements and

55 HGV movements are predicted to occur. Over the course of a typical 12 hour working day on the site, this will equate to approximately 7 HGV movements per hour. The greatest impact is predicted to occur on C1069 Poolhoy / Wester Road, where the Proposed Development Site access will be located and therefore all construction vehicles will be required to travel on it.

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

No significant capacity issues are expected on any of the roads within the Study Area due to the additional construction traffic movements associated with the Proposed Development.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows.

With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be **Minor or Not Significant** but as they will occur during the construction phase only, they are temporary and reversible.

11.9 References

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