Scottish & Southern Electricity Networks
TRANSMISSION

CONTENTS

11. TRAFFIC AND TRANSPORT

11.1 Introduction

11.1.1 This chapter considers the access proposals and potential traffic and transport effects associated with the construction and operation of the Proposed Development on the surrounding public road network and on sensitive receptors. This chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the introductory chapters of this EIA Report) (Volume 2, Chapters 1-7).

11.1.2 Additional information which supports this chapter is presented in the following figures and technical appendices (see Volume 3: Figures and Volume 4: Technical Appendices, respectively):

- Volume 3, Figure 11.1: Traffic and Transport Study Area;
- Volume 3, Figure 11.2: Traffic Count Site Locations;
- Volume 3, Figure 11.3: Personal Injury Accident Locations;
- Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan; and
- Volume 4, Technical Appendix 11.2: Abnormal Load Swept Path Analysis Report.

11.1.3 The specific objectives of this chapter are to:

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

11.1.4 Refer to Volume 4, Technical Appendix 1.1: EIA Team for details on the competent experts who undertook the assessment.

11.2 Legislation, Policy and Guidance

11.2.1 The assessment has been undertaken in accordance with:

- Scottish Government – Planning Advice Note (PAN) 75 – Planning for Transport[152] (17 August 2005);
- Transport Scotland – Transport Assessment Guidance[153] (July 2012);
- Institute of Environmental Management and Assessment (IEMA); Environmental Assessment Traffic and Movement (July 2023)[154];
- National Highways et. al. (various dates). Design Manual for Roads and Bridges, Volume 15, Section 1, Part 1 The Nesa Manual (DMRB);
- Regional Transport Strategy[155] (Nestrans, 2022); and
- Aberdeenshire Local Transport Strategy[156] (2012).

[152] Scottish Government, (2005) Planning Advice Note (PAN) 75 – Planning for Transport. [Online] Available at: https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/ [Accessed: July 2024].
[153] Transport Scotland, (2012). Transport Assessment Guidance (July 2012). [Online] Available at: https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf [Accessed: July 2024].
[154] Institute of Environmental Management and Assessment (IEMA), (2023). Environmental Assessment Traffic and Movement - July 2023. [Online] Available at: https://www.iema.net/resources/blog/2023/07/12/new-iema-guidance-environmental-assessment-of-traffic-and-movement.
[155] Nestrans, (2022). The Nestrans Regional Transport Strategy (RTS). [Online] Available at: https://www.nestrans.org.uk/regional-transport-strategy/#:~:text=The%20Nestrans%20Regional%20Transport%20Strategy%20%28RTS%29%20The%20Regional,in%20the%20region%20up%20to%20the%20year%202040 [Accessed: July 2024].
[156] Aberdeenshire Council, (2012). Local Transport Strategy 2012. [Online] Available at: https://engage.aberdeenshire.gov.uk/localtransportstrategy2023 [Accessed: July 2024].

11.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

11.3.1 The assessment is made with reference to the Proposed Development as described in Volume 2, Chapter 3: Description of Proposed Development.

11.3.2 The assessment is structured around the consideration of seven potential environmental effects related to traffic and transport within the Study Area (outlined in paragraph 11.3.7) as identified by the IEMA Guidelines for Environmental Impact Assessment, hereafter referred to as the 'IEMA Guidelines'[154].

11.3.3 A number of the impacts which are identified within the IEMA Guidelines, fall outwith the scope of this chapter and are discussed and assessed in detail within relevant chapters of Volume 2 of the EIA Report. These include:

- Landscape and Visual (Volume 2, Chapter 8: Landscape and Visual Impact);
- Ecology (Volume 2, Chapter 9: Ecology, Nature Conservation and Ornithology);
- Cultural Heritage (Volume 2, Chapter 10: Cultural Heritage); and
- Noise and Vibration (Volume 2, Chapter 13: Noise and Vibration).

Issues Scoped Out

11.3.4 The following topic areas have been scoped out of detailed assessment as agreed in association with the scoping exercise undertaken in October 2023:

- The effects of construction traffic outwith the Study Area. It is anticipated that the volume of traffic associated with the construction of the Proposed Development would not have a discernible effect on roads and sensitive receptors outwith the Study Area as the effects of traffic are reduced with increasing distance from the point of origin.
- The effects of traffic associated with the operational stage. Once the Proposed Development is operational, it is expected that the Proposed Development would require approximately 20 permanent staff onsite. Therefore, the amount of traffic generated would be minimal (significantly less than the construction stage) and would generally relate to monitoring and maintenance, and onsite permanent staff. Vehicles used are likely to be a small number of private cars and/or utility vehicles (typically 4x4s or light goods vehicles). With respect to traffic and transport, the operational stage of the Proposed Development is therefore not assessed in this chapter.

11.3.5 In accordance with standard practice, this chapter has also scoped out the following:

- The effect of construction traffic on junction capacity along the road network with respect to traffic flows both in isolation and cumulatively, as the local road network is generally of a good standard. The impact of construction traffic is unlikely to be significant in terms of congestion, therefore, it is considered that detailed junction capacity assessments are not required and have subsequently not been carried out.
- The effect of hazardous loads. The form of the Proposed Development would not generate hazardous movements in association with its construction or operation and this impact has therefore not been considered as part of this assessment.

Extent of the Study Area

11.3.6 It is intended that all construction traffic will access the Site from the A950, with this road connecting to the A90 which forms part of the strategic road network, approximately 3 km to the east of the Site. The Study Area for the assessment of traffic and transport has therefore focussed on the A950 and A90 in the immediate vicinity of the Site and is shown in Volume 3, Figure 11.1: Traffic and Transport Study Area. Identification of the Study Area has been informed by the Outline Construction Traffic Management Plan, included in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan which provides information on predicted construction traffic trips, including the likely origins and destinations and routes used to access the Proposed Development.

11.3.7 Considering the potential access routes and potential receptor locations, the Study Area is identified as follows:

- A950 between Mintlaw and the Peterhead Bypass at the Howe O'Buchan Roundabout; and
- the A90 on the Peterhead Bypass between Newton and the A982 Junction with A90 North Road.
- The extent of the Study Area was agreed with Aberdeenshire Council as part of the scoping exercise.

Consultation Undertaken to Date

11.3.8 Consultation responses which are relevant to this chapter such as those provided by Aberdeenshire Council and Transport Scotland, are captured in Table 11-1.

Table 11-1 Consultation responses of relevance to traffic and transport

Body/ organisation	Type of consultation/ date	Response	How response has been considered
Aberdeenshire Council – Roads Development and Transportation	Pre-Application (ENQ/2023/0426) 12 May 2023	Comments not applicable to the EIA chapter.	Consideration within Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan.
Aberdeenshire Council – Roads Development and Transportation	Scoping Response (ENQ/2023/1465) November 2023	Overall The Council outlined that in general they had no issues or concerns with the content of the EIA Scoping Report or proposed EIA methodology. They raised a number of other traffic and transport related points which are discussed below.	Noted.
		Accesses The Council highlighted that their main interest would be regarding the accesses for work sites /construction compounds and need for appropriate visibility splays and other issues relating to traffic management/road safety etc. They confirmed their understanding that the main access to the Proposed Development will be via the A950, although there will likely be an access on the south side too, off the U55b unclassified public road. Also detailed, that the proposed access routes to/from worksites will also be of interest as depending upon the routes chosen, we may require measures such as localised road widening, widening on curves and/or passing places to be provided along the routes. It may also be necessary for junction upgrades to be provided at access points (e.g. right turn lanes etc.).	Noted. Visibility splays and proposed mitigation measures related to potential construction routes and Site access have been outlined in the Outline CTMP found in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan. All construction related traffic is expected to enter the Site via the northern access. The southern access (U55b) is primarily provided as an emergency access. Impact on the local road network during the construction phase is addressed within this assessment (Section 11.5). An Outline CTMP has been prepared for this submission and is provided within Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan. The Outline CTMP provides details of construction traffic generation and routeing, mitigation proposed to consider the impacts of Abnormal Indivisible Loads (AILs)[157] and general construction traffic and confirms the proposed Site access arrangements. An AIL study has been developed (Volume 4, Technical Appendix 11.2: Abnormal Load Swept Path Analysis

[157] Transport Scotland (2007). Abnormal Load Movements - A brief guide to Notification and Authorisation requirements. [Online] Available at: https://www.transport.gov.scot/media/33621/abnormal-load-movements-guide-to-regulations.pdf.

Body/ organisation	Type of consultation/ date	Response	How response has been considered
			Report) which identifies the preferred route to Site for AIL deliveries. The study also provides an overview of mitigation requirements identified by Swept Path Analysis.
		Study Area The Council suggested that the following roads are also included in the list of roads to be considered in terms of the impact of the Proposed Development: A950 between the Proposed Development and Longside, as well as through Longside and Mintlaw. The U55b unclassified road to the south of the development. If it is considered that there will be minimal or no impact upon the above roads and settlements, then justification should be provided as appropriate.	Noted, the Study Area is outlined in paragraph 11.3.7 and includes the A950 through Mintlaw and Longside. As stated above, the U55b unclassified road to the south of the Site is expected to be used as an emergency access, and therefore there is expected to be no impact on this road generated by construction activities, therefore it is scoped out of further assessment.
		Public Transport Impact If significant worksites are located on or close to existing bus routes, the Council would look to see how safe and convenient access to bus services can be provided. This could include new/relocated bus stops, and safe pedestrian facilities between the worksite and bus stops. In this regard, the Council's Public Transport Unit should also be consulted.	Noted. The mitigation measures pertaining to the impact on public transport services such as bus travel is detailed in the Outline CTMP, found in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan.
		Issues Scoped Out Advised that the level of traffic and transportation generation of this proposal will be mainly confined to the construction stage, and therefore from the traffic and transport position the Council advised they do not require further assessment within an Environmental Assessment (EA) and localised impacts of the scheme can be addressed through the normal planning application process. At that stage, Roads Development would require more information including the extents of any development and the traffic management plan identifying the types of vehicle proposed, any extra	Noted. The impact on the local road network during the construction phase is addressed within this assessment (Section 11.5) and focusses on the construction phase of the Proposed Development. Noted. The details pertaining to extent of development, proposed vehicles used, routing and any identified mitigation is detailed in the Outline CTMP, found in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan.

Body/ organisation	Type of consultation/ date	Response	How response has been considered
		ordinary vehicles (length, height and weight) and the proposed routing of the delivery vehicles. The Council would also be able to identify any possible mitigation measures on the road network.	
Transport Scotland (TS)	Scoping Response (ENQ/2023/1465) October 2023	Transport Scotland is no longer required to respond to EIA consultations in a statutory capacity.	N/A

Method of Baseline Data Collation

Desk Study

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

- review of relevant transport policy;
- review of personal injury accident data;
- identifying sensitive receptor locations;
- identifying any other traffic sensitive receptors in the area (Core Paths, walking routes, communities, etc.);
- reviewing Ordnance Survey (OS) plans;
- determining potential origin locations of construction staff and supply locations for construction materials to inform extent of local area road network to be included in the assessment; and
- identifying constraints to the movement of Heavy Goods Vehicles (HGV) traffic and larger loads.

Traffic Data

11.3.10 To establish baseline traffic flows, traffic survey data has been obtained from the Department for Transport (DfT)[158] for the road network contained within the Study Area. The most recent 'manual and automatic count' data available on the DfT website has been used and growthed to 2024, as this is considered a more accurate approach than using the more recently available 'estimated' flows, The following count points and years were used (traffic count locations are shown on Volume 3, Figure 11.2: Traffic Count Site Locations):

- Traffic Count Point 811615: Manual Count 2023;
- Traffic Count Point 80576: Manual Count 2018;
- Traffic Count Point 80573: Manual Count 2022;
- Traffic Count Point 80572: Automatic Counter 2022; and
- Traffic Count Point 20803: Manual Count 2017.

11.3.11 This data was provided as Average Annual Daily Traffic (AADT) total flows (in both directions), by vehicle type including HGVs.

Personal Injury Accident Data

11.3.12 Personal Injury Accident data for the most recently available five-year period covering 2018 to 2022, was obtained from the online resource Crashmap.co.uk[159] which uses data collected by Police Scotland.

[158] Department for Transport, (2022). Road traffic statistics. [Online] Available at: https://roadtraffic.dft.gov.uk/#6/55.254/-11.107/basemap-regions-countpoints [Accessed: July 2024].
[159] Crashmap, (2022). crashmap.co.uk. [Online] Available at: https://www.crashmap.co.uk/ [Accessed: April 24].

Characterisation of Effect

11.3.13 The IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development. Those key impacts are as follows:

- severance of communities;
- road vehicle driver and passenger delay;
- non-motorised user delay;
- non-motorised user amenity;
- fear and intimidation on and by road users;
- road user and pedestrian safety; and
- hazardous/large loads.

11.3.14 The evaluation methodologies for each of the seven traffic related impacts are discussed individually in turn in the following sections.

Severance of Communities

11.3.15 Severance is described by the IEMA Guidelines as:

"the perceived division that can occur within a community when it becomes separated by major transport infrastructure … severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure", (IEMA, 2023).

11.3.16 The following levels of change in traffic flow have been considered when assessing severity of severance:

- ≤30 % increase in traffic equates to a negligible change in severance;
- >30 % ≤60% increase in traffic equates to a low change in severance;
- >60 % ≤90% increase in traffic equates to a medium change in severance; and
- >90 % increase in traffic equates to a high change in severance.

11.3.17 The guidance outlines that when assessing severance, the assessor should consider any physical infrastructure barriers, road width, traffic flow, traffic composition, traffic speed, crossing facilities and likely crossing movements (e.g. defining facilities to which access may be impaired and the potential total users and user groups), along with considering the impact on vulnerable groups.

Road vehicle driver and passenger delay

11.3.18 The IEMA Guidelines states that:

"driver delay is only likely to be significant when traffic on the network surrounding the site is already at, or close to, the capacity of the system", (IEMA, 2023).

11.3.19 Impacts may be 'beneficial' or 'adverse' depending on whether the change in traffic results in an increase or decrease in driver delay. The effect on driver delay on links (excluding junctions), has been based on the change in traffic volume that would occur on key links as a result of the Proposed Development. In this case, professional judgement has been used to determine whether there will be a significant impact.

Non-Motorised User Delay

11.3.20 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. However, delays will also depend upon the general level of pedestrian activity, visibility and general physical condition of the road.

11.3.21 The IEMA Guidelines does not support the use of threshold assessments to quantify the magnitude of impacts due to changes in delay. Therefore, the magnitude of this impact has been determined using professional judgement based on the predicted increase in traffic levels and the predicted level of pedestrian activity.

Non-Motorised User Amenity

11.3.22 Pedestrian amenity describes the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic.

11.3.23 The IEMA Guidelines considers that a suitable threshold for assessing the magnitude of the impact of traffic flow increase on pedestrian amenity is a 100 % increase in traffic levels. Therefore, the magnitude of impact in pedestrian amenity has been determined based on the level of increase in traffic flows on a particular road link and the level of pedestrian activity on that link.

Fear and Intimidation

11.3.24 The level of fear and intimidation experienced by pedestrians is dependent on the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by such factors as narrow footway widths. Danger is recognised as an important environmental impact and the IEMA Guidelines suggests a set of thresholds for estimating fear and intimidation caused by traffic based on the following:

- degree of hazard;
- level of fear and Intimidation; and
- resulting magnitude of impact reviewed in relation to the change in traffic flows.

11.3.25 The IEMA Guidelines state that, the extent of fear and intimidation is dependent on:

- the total volume of traffic;
- the heavy vehicle composition;
- the speed these vehicles are passing; and
- the proximity of traffic to people and/or the feeling of the inherent lack of protection created by factors such as a narrow pavement median, a narrow path or a constraint (such as a wall or fence) preventing people stepping further away from moving vehicles.

11.3.26 The IEMA Guidelines also note that special consideration should be given to areas where there are likely to be:

- high-speed sections of road;
- locations of turning points and accesses;
- narrow pavement median, narrow footway and/or constraints such as fences;
- area frequented with road users unfamiliar with the location such as tourist spots; and
- areas frequented vulnerable groups.

11.3.27 The IEMA Guidelines detail that the assessment should be defined by the degree of hazards to pedestrians by average traffic flow over an 18-hour heavy vehicle flow and average speed over an 18-hour day in miles per hour.

11.3.28 Table 11-2 to Table 11-4 identify the criteria as extracted from the IEMA Guidelines, which has been used to review the Proposed Development's impact in relation to Fear and Intimidation.

Table 11-2 Fear and Intimidation Degree of Hazard

Average traffic flows over 18-hour day – all vehicles/hour 2-way (a)	Total 18-hour heavy vehicle flow (b)	Average vehicle speed (c)	Degree of Hazard Score
+1,800	+3,000	->40	30
1,200 – 1,80	2,000 – 3,000	30 – 40	20
600 – 1,200	1,000 – 2,000	20 – 30	10
<600	<1,000	<20	0

Source: Table 3.1 of the IEMA Guidelines: Environmental Assessment of Traffic and Movement.

11.3.29 The IEMA Guidelines suggests that assessors should consider the Total Hazard Score for each link within the Study Area base on a review of the total traffic flow, the level of HGV's using the link and the typical vehicle speeds to determine the level of Fear and Intimidation in comparison with guidance summarised in Table 11-3.

Table 11-3 Level of Fear and Intimidation

Level of Fear and Intimidation	Total Hazard Score – (a) + (b) + (c)
Extreme	71+
Great	41 – 70
Moderate	21 – 40
Small	0 – 20

Source: Table 3.2 of the IEMA Guidelines: Environmental Assessment of Traffic and Movement.

11.3.30 Table 11-4 summarises the magnitude of impact which has been used to assess Fear and Intimidation taking cognisance of the criteria shown in Table 11-2 and Table 11-3.

Table 11-4 Fear and Intimidation Magnitude of Impact

Magnitude of Impact	Change in step/traffic flows (AADT) from baseline conditions
High	Two step changes in level
Medium	One step change in level, but with >400 vehicle increase in average 18-hour average two-way all vehicle flow: and/or >500 Heavy Vehicle (HV) increase in total 18-hour HV flow
Low	One step change in level, but with <400 vehicle increase in average 18-hour average two-way all vehicle flow: and/or <500 HV increase in total 18-hour HV flow
Negligible	No change in step changes

Source: Table 3.3 of the IEMA Guidelines: Environmental Assessment of Traffic and Movement.

Road user and pedestrian safety

11.3.31 The IEMA Guidelines recommends that at locations where high levels of Personal Injury Accidents (PIAs) are recorded, accident statistics should be used to provide an estimate of the existing road link's accident rate. The Proposed Development traffic can then be used to undertake a statistical assessment of the likely increase in accident rates based on the increase in vehicle-kilometres.

Hazardous/large loads

11.3.32 The IEMA Guidelines states that should the development involved the transportation of hazardous loads, these would need to be considered under the Carriage of Dangerous Goods and the use of Transportable Pressure Equipment Regulations (2009).

11.3.33 As previously stated in paragraph 11.3.5 the form of the Proposed Development will not generate hazardous movements in association with its construction or operation and this impact has therefore not been considered further as part of this assessment.

11.3.34 The guidance states that should large or Abnormal Indivisible Loads (AIL's) be anticipated:

"The traffic and movement expert must consider appropriate routes for abnormal load movements and mitigation strategies to secure safe passage. If frequent abnormal load movements are anticipated (e.g. heavy plant movements), the traffic and transport expert should consider if other traffic impacts could be induced (e.g. fear and intimidation, driver delay, etc", (IEMA, 2023).

11.3.35 Transport Scotland specify that an AIL Vehicle (AILV) is classified as larger than 2.9 m overall width by 18.3 m rigid length or exceeding 44 tonne gross weight[157]. Movement of AILV's is subject to separate agreement with the relevant road authority and police via notification or an Electronic Service Delivery for AIL's (ESDAL) system. This is considered further as part of the AIL review, the results of which are presented in Volume 4, Technical Appendix 11.2: Abnormal Load Swept Path Analysis Report.

Other Impacts

11.3.36 The following environmental impacts are considered outwith this EIA chapter:

- Landscape and Visual (Volume 2, Chapter 8: Landscape and Visual Impact);
- Ecology (Volume 2, Chapter 9: Ecology, Nature Conservation and Ornithology);
- Cultural Heritage (Volume 2, Chapter 10: Cultural Heritage); and
- Noise and Vibration (Volume 2, Chapter 13: Noise and Vibration).

11.3.37 Local air quality and dust / dirt impacts have not been assessed in detail, however actions to ensure appropriate management of these impacts will be included in a Construction Environmental Management Plan (CEMP).

Sensitive Receptors

11.3.38 The following receptors, including groups and special interests, have been assessed for the identified Study Area in line with the IEMA Guidelines, to determine the sensitivity of receptors:

- non-motorised users;
- public right of way users;
- motorists and freight vehicles;
- public transport; and
- emergency services.

11.3.39 The receptors above can broadly be grouped as the following affected parties; 'Users of Roads', and 'Users / Residents of Locations'. The following list identifies special interests that should be considered when defining sensitive receptor geographic locations, and the sensitive locations will inform the assessment of effect significance when the development traffic is assigned to the network:

- people at home;
- people at work;
- sensitive people including young age; older age; income; health status; social disadvantage; and access and geographic factors;
- locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools);
- recreational and shopping areas;
- recreation areas including ecological / nature conservation sites;
- tourist / visitor attractions;
- collision clusters and routes with road safety concerns; and
- junctions and road links at (or over) capacity.

11.3.40 The sensitivity level of receptors for the route section has been assessed using the following scale, the number of receptors present and proximity/level of interaction between the receptors and traffic flows:

- high sensitivity;
- medium sensitivity;
- low sensitivity;
- negligible sensitivity; and
- no receptors identified.

11.3.41 The IEMA Guidelines details how the sensitivity of receptors should be assessed. Professional judgement was subsequently used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in Table 11-5.

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

Table 11-5 Receptor Sensitivity

Receptor	Sensitivity				
	High	Medium	Low	Negligible	No Receptors
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, and frequent bus services.	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, and bus services.	Where the road is a Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures, and bus services.	Where roads have few adjacent settlements, and bus services. Includes strategic trunk roads that would be little affected by additional traffic and suitable for construction type vehicles, including Abnormal Loads and new strategic trunk road junctions capable of accommodating similar types of vehicles.	Where roads have no adjacent settlements. Includes routes where there are no bus services.
Users / Residents of Locations	Where a location contains receptors with the greatest sensitivity to traffic flows: Schools, colleges, playgrounds, accident clusters, retirement homes, roads without footways that are used by pedestrians.	Where a location contains receptors with medium sensitivity to traffic flow: congested junctions/ links, doctors' surgeries, hospitals, shopping area with roadside frontage, roads with narrow footways, recreation facilities.	Where a location contains receptors with low sensitivity to traffic flow links: with adjacent land-uses such as public open space, nature conservation areas, listed buildings and residential areas with adequate footway provision and limited pedestrian/cycle users.	Where a location includes individual dwellings or few settlements with no facilities. Including farmland usage and where receptors are sufficiently distant from affected roads and junctions and no /very limited number of pedestrian and cyclists.	Where roads have no adjacent settlements. Includes farmland.

Magnitude of Impact

11.3.43 The IEMA Guidelines recommend the following two rules to be considered when assessing the impact of development traffic on a road link:

- Rule 1: Include road links where traffic flows will increase more than 30 % (or the number of HGVs will increase by more than 30 %); and

- Rule 2: Include any other specific environmental or population sensitive areas where traffic flows have increased by 10 % or more.

11.3.44 The IEMA Guidelines go on to state that any increases in traffic flows of less than 10 % are generally accepted as having no discernible environmental impact as daily variance in traffic flows can be of equal magnitude.

11.3.45 The 30 % threshold relates to the level at which receptors may perceive change and there may therefore be an effect. Impacts above this level therefore do not suggest that there is a significant impact, only that further consideration is required to assess the significance.

11.3.46 The criteria for assessing the magnitude of the predicted impact on severance, pedestrian delay and pedestrian amenity is given in Table 11-6.

Table 11-6 Magnitude of Impact

Transport effect	Magnitude of Impact			
	High	Medium	Low	Negligible
Severance	Change in total traffic or HGV flows of >90 %	Change in total traffic or HGV flow of >60 % ≤90 %	Change in total traffic or HGV flows of >30 % ≤60 %	Change in total traffic or HGV flows of ≤30 %
Driver delay	High increase in queuing at junctions and/or congestion on road links.	Medium increase in queuing at junctions and/or congestion on road links.	Low increase in queueing at junctions and/or congestion on road links.	Low or no increase in queuing at junctions and/or congestion on road links.
Non-Motorised users' amenity	A halving or doubling of traffic flow (or HGV flow) can be used as a broad threshold when considered in the local context and applied with caution.			
Non-motorised user delay	Generally, increases in traffic may lead to greater delay, though is dependent on the level of non-motorised users' activity in the area. Assessed based on pedestrian delay experienced when crossing highways links considering a range of factors including crossing type, pedestrian flows, traffic levels, visibility and general highway condition.			
Fear and Intimidation	Assessed as per Table 11-2, Table 11-3 and Table 11-4. Note that if there are AILV's user, the perception of fear and intimidation may be heightened.			
Road safety	Assignment informed by a review of existing collision patterns and trends based upon the existing personal injury accident records and the forecast increase in traffic that may change the risk of serious and fatal injuries.			

11.3.47 The magnitude of each impact has subsequently been determined in accordance with the IEMA Guidelines and based on professional judgement.

Assessment of Significance of Effects

11.3.48 The likely significant effects can be:

- Beneficial (positive): meaning that the changes produce benefits in terms of transportation and access (such as reduction of traffic, travel time or patronage, or provision of a new service, access or facility);
- Negligible (neutral): meaning that there is no measurable effect; or
- Adverse (negative): meaning that changes produce disbenefits in terms of transportation and access (such as increase of traffic, travel time, patronage or loss of service or facility).

11.3.49 The significance grading criteria summarised in Table 11-7, have been used in this assessment.

Table 11-7 Significance Criteria

Significance Criteria	Description Criteria
Major (Beneficial)	Major improvement in transport terms. This has been deemed a significant effect.
Moderate (Beneficial)	Moderate improvement in transport terms. This has been deemed a significant effect.
Minor (Beneficial)	Minor improvements in transport terms. This has been deemed a not significant effect.
Negligible	No appreciable impact in transport terms. This has been deemed a not significant effect.
Minor (Adverse)	Minor adverse impact in transport terms. This has been deemed a not significant effect.
Moderate (Adverse)	Moderate adverse impact in transport terms. This has been deemed a significant effect.
Major (Adverse)	Major adverse impact in transport terms. This has been deemed a significant effect.

11.3.50 Following the classification of an effect using the significance criteria, a clear statement is then made as to the temporal and spatial scale of the effects on the basis of the following criteria:

- 'Temporary' – where the effect occurs for a limited period of time (e.g. the construction period) and the change for a defined receptor can be reversed;
- 'Permanent '– where the effect represents a long-lasting change for a defined receptor;
- 'Local' effects are those affecting neighbouring receptors;
- 'District' effects are those which are likely to occur to receptors within the administrative boundary of Aberdeenshire Council;
- 'Sub-regional' effects are those affecting areas adjacent to the administrative area of Aberdeenshire Council;
- 'Regional' effects are those affecting receptors across the Aberdeenshire East region; and
- 'National' effects are those affecting receptors within Scotland.

11.3.51 Table 11-8 sets out the significance of the effects adopted based on the receptor sensitivity, the magnitude of impact and significance criteria, as outlined in Table 11-5 to Table 11-7.

Table 11-8 Significance Effects Matrix

		Baseline Sensitivity (Environmental Value)				
		High	Medium	Low	Negligible	No Receptor
Magnitude of Impact	High (Beneficial)	Major (Beneficial)	Major - Moderate (Beneficial)	Moderate (Beneficial)	Minor - Moderate (Beneficial)	Negligible
	Medium (Beneficial)	Major - Moderate (Beneficial)	Moderate (Beneficial)	Minor - Moderate (Beneficial)	Minor (Beneficial)	Negligible
	Low (Beneficial)	Moderate (Beneficial)	Minor - Moderate (Beneficial)	Minor (Beneficial)	Negligible - Minor (Beneficial)	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
	Low (Adverse)	Moderate (Adverse)	Moderate – Minor (Adverse)	Minor (Adverse)	Minor - Negligible (Adverse)	Negligible
	Medium (Adverse)	Major - Moderate (Adverse)	Moderate (Adverse)	Moderate – Minor (Adverse)	Minor (Adverse)	Negligible
	High (Adverse)	Major (Adverse)	Major – Moderate (Adverse)	Moderate (Adverse)	Moderate – Minor (Adverse)	Negligible

11.3.52 It is considered that the nature of the Proposed Development will result in no positive effects, with all effects anticipated to be negligible or adverse following the implementation of appropriate mitigation measures.

11.3.53 The combination of the receptor sensitivity and magnitude of impact from the Proposed Development, enables the significance of effects to be determined. Effects have been considered significant where they are assessed to be Major or Moderate. Where an effect could be one of Major/Moderate or Moderate/Minor, professional judgement has been used to determine which option should be applicable.

Requirements for Mitigation

11.3.54 Where potential significant adverse effects are identified, the Applicant will implement mitigation measures to reduce or remove these effects.

11.3.55 At present, outline mitigation measures have been included within this EIA Report based on the Outline CTMP (found in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan). It will be the responsibility of the Principal Contractor (in agreement with the Applicant), to prepare a full CTMP, developing and refining the outline mitigation measures, and which will be agreed with Aberdeenshire Council. The preparation of the CTMP will set out in full, the agreed mitigation measures which will be implemented during construction. Until the Principal Contractor for the construction period is appointed, it is not possible to finalise the CTMP and for this reason it is common for such documents to be secured by an appropriate Planning Condition.

Assessment of Residual Effects

11.3.56 The assessment of residual effects has been undertaken following a similar methodology as for the potential effects but taking into consideration the implementation of the committed mitigation measures.

Assessment of Cumulative Effects

11.3.57 The potential cumulative traffic and transport effects from developments in the vicinity of the A950 and the A90 as set out in Volume 2, Chapter 5: EIA Process and Methodology, Table 5-2 has been undertaken. An additional cumulative development outwith the cumulative development 3 km Study Area has been considered in this chapter as it is located adjacent to the traffic and transport Study Area and has the potential to generate construction traffic in-combination with the Proposed Development.

11.3.58 The additional development to be considered is located to the east of Inverugie and is for a Residential Mixed-Use scheme comprising up to 800 residential homes. An initial review of the application confirms the assumption that operational traffic will route within the traffic and transport Study Area and therefore the predicted traffic generated on these links has been considered in this cumulative assessment.

Limitations and Assumptions

11.3.59 The length of the construction programme is expected to be between five and eight years, with construction likely to start in 2026. Working hours are set out in Volume 2, Chapter 3: Description of the Proposed Development, Section 3.7. To ensure robustness, the construction impact analysis has been based on the peak daily traffic flows of site deliveries over a 10 hour period, on an assumed five year construction programme. In doing so, simulating the most intensive movements required to construct the Proposed Development in the shorter time period within the estimated five to eight year construction window. Therefore, the condensing of movements provides a worst-case assessment scenario. There may be localised peaks with construction days where flows can be higher for a specific hour, such as a shift change onsite or delivery of specific materials, however this risk would be mitigated through the shortened length of the construction programme.

11.3.60 The numbers used are estimates at this time and may change following the appointment of the contractors and conformation of their working methods.

11.3.61 The estimated number of traffic movements has been based on similar schemes undertaken by the Applicant and are considered appropriate for use as part of the EIA for the Proposed Development.

11.3.62 The contractors and suppliers for the Proposed Development have not yet been finalised and it is therefore not possible to confirm with certainty all routes that would be used by development traffic, and how much traffic would utilise each route. The information on routing has therefore been based on first principles approach from the numbers provided

within the Outline CTMP included in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan. Where information has not been available it has been necessary to make assumptions on the potential construction vehicle generation and routing.

11.4 Baseline Conditions

A950

11.4.1 The A950 forms the northern boundary of the Site and is a rural single carriageway road linking the A90 Peterhead Bypass to the east, with New Pitsilgo to the northwest. The A950 connects with the A90 via Howe O'Buchan Roundabout which is located approximately 5 km to the east of the Site.

11.4.2 Within the Study Area the A950 connects the village of Mintlaw with the A90 and is lit and subject to a 30 mph speed limit within Mintlaw and Longside where footways are provided adjacent to the carriageway. It is subject to a 60 mph limit outwith these villages.

A90

11.4.3 The A90 forms part of the trunk road network and connects Peterhead with Fraserburgh to the north and Aberdeen to the south. The A90 within the Study Area forms the Peterhead Bypass between Newton (to the south) and the A982 junction (to the north). In the Study Area, the A90 is a single carriageway road which is lit and subject to a 60 mph speed limit for all but between Newmill of Sandford and Newton, which is subject to a 40 mph speed limit.

11.4.4 There is a shared-use pedestrian/cycle facility provided for the majority of the length of the Peterhead Bypass between Howe O'Buchan Roundabout and Invernettie Roundabout although the road is semi-urban in nature. South of Peterhead to Newton there is a shared pedestrian cycleway on the eastern side of the carriageway.

Traffic Flows

11.4.5 Traffic count data for the A90 and the A950 on which the Proposed Development's construction is anticipated to have the greatest impact, has been obtained from DfT. This data (for the most recently available manual and automatic count year) was provided as total AADT flows by vehicle type including HGVs, and all data was growthed to 2024 to provide a consistent dataset for the purpose of deriving baseline data. A summary of the total flows are provided in Table 11-9, with the locations of the traffic count sites shown in Volume 3, Figure 11.2: Traffic Count Site Locations.

Table 11-9 2024 Annual Average Daily Total Traffic Flows (24-hour)

Count Site	Location	2024 Total Flows	
		HGV	Total
811615	A950, Mintlaw	11	3,431
80576	A950, Berryhill	373	8,211
80573	A90, Peterhead Bypass, Inverugie (North)	181	4,331
80572	A90, Peterhead Bypass, Opp Blackhills Road (South)	656	7,541
20803	A90 (South) between Peterhead and Newton	960	10,022

11.4.6 The traffic count information suggests that the A950 at Mintlaw (west of the Site) is accommodating less than half the level of traffic than the A950 at Berryhill (east of the Site).

11.4.7 As per paragraph 11.3.59, to ensure a robust assessment, a factor has been applied to reduce the AADT flow data to a 10-hour traffic flow to coincide with the shorter 10-hour working days. The conversion factors have been derived from DfT Road Traffic Statistics – Table TRA0308: '*Traffic distribution on all roads by time of day and day of the week, for selected vehicle types in Great Britain*' for the latest data available, 2023[160], to convert the AADT flows to 10 hour flows.

[160] Department for Transport (2023). *Statistical data set Road traffic statistics (TRA) Data on road traffic by road and vehicle type, produced by Department for Transport.* [Online] Available at: https://www.gov.uk/government/statistical-data-sets/road-traffic-statistics-tra [Accessed: July 2024].

11.4.8 The following factors were applied according to each vehicle type:

- Cars – 0.693;
- Light Vehicles – 0.707;
- HGVs – 0.646; and
- All Vehicles – 0.682.

11.4.9 Table 11-10 shows the resulting 10-hour flows following application of the derived factors.

Table 11-10 2024 Annual Average Daily Total Traffic Flows (10-hour)

Count Site	Location	2024 Total Flows	
		HGV	Total
811615	A950, Mintlaw	7	2339
80576	A950, Berryhill	241	5598
80573	A90, Peterhead Bypass, Inverugie (North)	117	2952
80572	A90, Peterhead Bypass, Opp Blackhills Road (South)	424	5141
20803	A90 (South) between Peterhead and Newton	620	6832

11.4.10 The data in Table 11-10 has been used to support the impact assessment.

Accident Data

11.4.11 PIA data for the most recently available five-year period covering 2018 to 2022, was obtained for the Study Area links. The locations and severity of the PIA's reported in the Study Area are shown in Volume 3, Figure 11.3: Personal Injury Accident Locations and are summarised in Table 11-11. The table also identifies the accident rate associated with each link, comparing this with the national average as identified by the DfT for the road type.

Table 11-11 Personal Injury Accident Summary (2018-2022)

Link No.	Study Network Route Section	Slight	Serious	Fatal	Total	PIA Rate (per Million Veh Km)	National Average (per Million Veh Km)*
1	A950 between Mintlaw and Longside	1	1	0	2	0.08	0.12
2	A950 between Longside and Site Access	0	0	0	0	n/a	n/a
3	A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	1	0	0	1	0.01	0.43
4	A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road.	0	3	0	3	0.21	0.43
5	A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	5	3	0	8	0.18	0.43
6	A90 (South) between Peterhead and Newton	1	0	0	1	0.06	0.12
Total		8	7	0	15	-	-

*The DfT reported road casualties for Great Britain 2021 as presented in RAS0302161: national accident rate per million vehicle kms by road classification.

[161] Department for Transport, (2023). Reported road collisions, vehicles and casualties tables for Great Britain - RAS0302 - Urban and rural roads. [Online] Available at: https://www.gov.uk/government/statistical-data-sets/reported-road-accidents-vehicles-and-casualties-tables-for-great-britain. [Accessed: July 2024].

11.4.12 The IEMA Guidelines recommends that at locations where high levels of PIAs are recorded, accident statistics should be used to provide an estimate of the existing road link's accident rate. However, the review of PIAs confirms that none of the route sections experience high levels of PIAs.

11.4.13 The results show that no PIAs were recorded on the A950 between Longside and the proposed Site access junction over the five-year period, with no more than three PIAs reported on Links 1, 3 and 4. It is observed that Link 5 recorded eight collisions over the five-year period and results in a low annual average of 1.6 accidents per annum.

11.4.14 As shown in Table 11-11, all of the road links have annual accident rates that are significantly below the respective national average for each of the road's characteristics.

Pedestrian Facilities

11.4.15 Shared-use facilities are provided adjacent to the Peterhead Bypass, with footways provided adjacent to the A950 within Longside and Mintlaw. There are no footways present outwith these villages.

Core Paths

11.4.16 There are a limited number of Core Paths in close proximity to the Proposed Development. The closest Core Path is located approximately 2.8 km west from the Site entrance, identified as Core Path 208.01[162], and is 1.4 km in length and routes adjacent to the Longside from the A950 south through residential land use to agricultural fields as a dirt path. Other core paths in the vicinity of the traffic and transport Study Area are:

- Core Path 215.02: 4.8 km in length and routes adjacent to the Peterhead Bypass as a shared footway/cycleway between Invernettie Roundabout and the A982 junction. The 215.02 connects to;
- Core Path 215.11: at the A90 Peterhead Bypass where the core path continues as a separate track away from the carriageway for 0.52 km; and
- Core Path 7LD.03MP.05 which connects to 7LD.03MP.06 over the A90 Peterhead Bypass and forms a portion of the Formantine and Buchan Way in the vicinity of Peterhead.

Cycle Facilities

11.4.17 There are limited number of cycle facilities in close proximity to the Proposed Development. The closest facility to the Site is a shared-use facility provided adjacent to the Peterhead Bypass between Invernettie Roundabout and the A982 junction.

Future Baseline

11.4.18 It is estimated that construction of the Proposed Development could commence during 2026 if consent is granted, with construction activities likely to take around five to eight years. To ensure a robust assessment and in line with the Outline CTMP found in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan, the construction impact has been calculated over a five year period to assess the highest construction traffic movements against the comparative baseline. The Outline CTMP forecasts that the peak period of construction activities will take place between months 20 and 24, and the assessment has therefore been undertaken for a 2028 future baseline.

11.4.19 To assess the likely effects during the construction phase, 2028 base year traffic flows were determined by applying a National Road Traffic Forecast (NRTF) low growth factor (1.041) to the 2024 traffic flows. The resulting 2028 Base traffic flows are presented in Table 11-12.

Table 11-12 2028 Annual Average Daily Total Traffic Flows (10-hour)

Count Site	Location	2028 Total Flows	
		HGV	Total
811615	A950, Mintlaw	7	2,435
80576	A950, Berryhill	251	5,827

[162] Aberdeenshire Council, (2024). Aberdeenshire Map Layers - Core Paths. [Online] Available at: https://gis.aberdeenshire.gov.uk/maps/Map.aspx?MapName=Paths&baselayer=OS%20Greyscale. [Accessed: July 2024].

Count Site	Location	2028 Total Flows	
		HGV	Total
80573	A90, Peterhead Bypass, Inverugie (North)	122	3,073
80572	A90, Peterhead Bypass, Opp Blackhills Road (South)	441	5,351
20803	A90 (South) between Peterhead and Newton	646	7,112

11.5 Assessment of Effects, Mitigation and Residual Effects

Valuation of Receptors

11.5.1 Based on the classifications set out in Table 11-5, the following receptors have been identified based on the route sections within the Study Area, with the sensitivity classified for each highlighted in Table 11-13.

Table 11-13 Classification of Receptor Sensitivity

Study Network Route Section	Motorists and Passengers	Non Motorised Users	People at Home	People at Work	Sensitive People / Locations	Recreational / Shopping Areas	Recreation / Conservation Sites	Tourist / Visitor Attractions	Road Safety Concerns	Links / Junctions at / over capacity
Link 1: A950 between Mintlaw and Longside	✓✓	✓	✓	–	✓✓✓	✓✓	×	×	-	✓
Link 2: A950 between Longside and Site Access	✓✓	✓✓✓	✓✓	–	✓✓	✓✓	×	×	-	✓
Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	✓	–	–	–	–	✓	×	×	-	✓
Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road.	–	✓	–	–	–	-	×	×	-	✓
Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	–	✓	–	–	–	✓	×	×	-	✓
Link 6: A90 (South) between Peterhead and Newton	✓	–	–	–	–	×	×	×	-	✓

✓✓✓	High sensitivity
✓✓	Medium sensitivity
✓	Low sensitivity
-	Negligible sensitivity
×	No receptors identified

11.5.2 The results of the classification of receptors on each link reflect the generally rural nature of the local road network, with the greatest amount of sensitivity located at the villages of Mintlaw and Longside (Links 1 and 2) on the A950 west of the proposed Site access. The majority of construction traffic impacts would be generated on the A950 (Link 3) east of the Site, with vehicles travelling to and from the A90.

11.5.3 While there are residential properties located in the vicinity of the Peterhead Bypass which forms Link 5, they are set back from the road and it is therefore considered that the trunk road, which supports strategic traffic movements, is of a low sensitivity on this link. The A950 and A90 which form Links 3, 4 and 6 are generally rural in nature and are therefore also considered to be of low sensitivity.

11.5.4 Based on professional judgement it can be concluded the following links are subject to Rule 2 as having 'medium' sensitivity overall:

- Link 1: A950 between Mintlaw and Longside; and
- Link 2: A950 between Longside and Site Access.

11.5.5 Based on professional judgement it can be concluded the following links are subject to Rule 1 as having 'low' sensitivity overall:

- Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout;
- Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road;
- Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout; and
- Link 6: A90 (South) between Peterhead and Newton.

11.5.6 These classifications are used throughout the following assessment.

Mitigation by Design

11.5.7 There are a number of mitigation measures proposed to reduce the significance of effect of construction traffic on the surrounding road network. These measures are both physical measures, i.e. those that require specific works to be undertaken whether on the existing road network or as part of the Proposed Development or management measures, used to change contractors' behaviours.

Physical Measures

11.5.8 As detailed within the Outline CTMP which is included within Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan, a number of physical measures are proposed within the Study Area to mitigate against the potential impacts of construction traffic associated with the Proposed Development. Some of the proposed measures include the following:

- Site access – formation of a new access on the A950 with visibility provided in accordance with standards.
- Route signage – temporary construction Site signage will be erected on the A950 in the vicinity of the proposed Site access, and at other locations as considered necessary, to warn people of construction activities and associated construction vehicles. The purpose of such signage is to provide driver information and to maintain road safety along the construction vehicle route. The exact nature and location of the signage would be agreed with Aberdeenshire Council prior to construction activity on Site.

Good Construction Practices and General Construction Traffic Management

11.5.9 Prior to the commencement of any onsite activities, a detailed CTMP would be prepared and agreed with Aberdeenshire Council. The CTMP would include a number of measures to reduce the effects of the construction of the Proposed Development on local receptors and communities. The Outline CTMP details the outline mitigation measures, which would be updated as and when additional information becomes available.

Description of Effects

11.5.10 The following sections detail the potential effects of the Proposed Development and their significance taking into account embedded mitigation measures.

11.5.11 The assessment of likely significant effects has been summarised in terms of the impact on the key local road links identified in Table 11-13, with the assessment comparing traffic generated by construction activities (as identified in the outline CTMP) with the Future Base Scenario (i.e. without construction traffic).

Construction Phase

11.5.12 This section provides an assessment of the level of effects caused by vehicles during the peak construction phase of the Proposed Development on existing network traffic.

Design Solutions and Assumptions

11.5.13 The assessment of the potential effects has been undertaken assuming a worst-case scenario of the construction phase taking five years whereas there is the potential for activities to take longer (potentially up to eight years). The construction phase includes all activities supporting installation of the Proposed Development from establishment of the temporary Site compounds to plant installation and cabling works. It is anticipated that peak construction activities are likely to occur between months 20 and 24.

11.5.14 While a Principal Contractor has yet to be appointed, SSEN Transmission have provided an estimate of the level of HGV and non-HGV trips generated by each key construction activity, and this is set out within the Outline CTMP included in Volume 4, Technical Appendix 11.1: Outline Construction Traffic Management Plan.

General Construction Elements

11.5.15 The construction process for the Proposed Development will broadly comprise the following elements:

- enabling works, site clearance and demolitions;
- platform earthworks and creation of a level platforms;
- bund/screening earthworks;
- construction of perimeter and site drainage, including SuDS;
- construction and installation of the buildings;
- installation of electrical plant;
- erection of a palisade security fence up to approximately 3 m in height around platforms;
- commissioning; and
- reinstatement and planting.

Construction Traffic

11.5.16 Construction traffic associated with the Proposed Development will comprise the following:

- HGVs transporting construction materials, plant and equipment to / from Site;
- AILV's (e.g. for transporting transformers);
- Light Goods Vehicles (LGVs) delivering to / from Site;
- staff travelling to and from the Site; and
- works on or over the public road network (formation of the access junction and potential mitigation works for AIL movements).

Construction Working Hours

11.5.17 The construction working hours are set out in Volume 2, Chapter 3: Description of Proposed Development, Section 3.7. The daily working hours would depend on the time of year with the greater working hours more likely to occur in the summer months when there are increased daylight hours.

11.5.18 Any other out of hours working would be agreed in advance with Aberdeenshire Council. With regards to weekend working, this would be planned to minimise impacts from construction traffic and areas of work would be restricted to those locations which would have the least impact on the local communities and general public.

Abnormal Indivisible Loads

11.5.19 As previously stated, AIL's are categorised as vehicles where the weight exceeds 44 t gross weight and/or the width exceeds 2.9 m and/or the length exceeds 18.3 m. Based on these parameters, the transformers associated with the construction of the Proposed Development will fall into the category of AIL's.

11.5.20 It is not currently known what type of transformers will be required in relation to the construction of the Proposed Development. At the time of writing, the Port of Entry (POE) is unknown, however it is expected that transformers will be delivered from Peterhead.

11.5.21 It is expected that these would be transported using either a typical low loader / flatbed trailer or specialist girder frame HGV and the total number to be transported in convoy (if using the same route to Site).

11.5.22 As stated in the Outline CTMP, an initial review of the potential routes for AIL delivery has identified the A90 and the A950 as the route to be used for the transport of AILs. A full AIL route assessment has been completed with swept path analysis (SPA) undertaken to identify any potential constraints and mitigation works required to accommodate the AIL vehicles.

11.5.23 Prior to the movement of any AIL's to the site, a public awareness campaign would be run to allow residents to plan and time their journey to avoid disruption. The movement of AIL's would also be timed to avoid periods of heavy traffic flow to minimise disruption to the public. These include peak summer periods, normal daily morning and evening rush hours and Saturdays and major public events.

11.5.24 Also, a trial run will be undertaken on the proposed access route. A temporary frame to simulate the proposed loads will be used during the trial run to confirm the suitability of the route and required mitigation works. The parameters of the trial run will be agreed in advance with Aberdeenshire Council, Police Scotland, Transport Scotland and the appointed haulage contractor.

11.5.25 Configuration of the convoy would be confirmed prior to the movement of any loads and directed by the Police escort in attendance. The appointed haulage contractor will provide escort vehicles at the front and rear of the convoy and at any other specific locations deemed necessary following the trial run.

Estimated Delivery Volumes

11.5.26 The Outline CTMP, presents an estimate of the total level of construction traffic associated with the delivery of each element of the Proposed Development and this is summarised in Table 11-14.

Table 11-14 Total Construction Vehicle Movements (defined as trips in and out of the site)

Construction Element	AIL	Low Loader	Tipper	Flat Bed	Concrete	Staff	Total
400 kV Substation	8	32	28,652	1,441	2,451	56,933	89513
132 kV Substation	2	0	298	313	216	4,933	5760
Spittal to Peterhead HVDC Converter Station (Spittal)	14	40	24,319	2,946	3,666	45,733	76,718
Eastern Green Link 3 HVDC Converter Station (EGL 3)	14	40	24,319	2,946	3,666	45,733	76,718
HVDC Switching Station	0	40	32,064	2,718	6,052	58,000	98,873
Operations Depot	0	32	1,603	104	713	2,933	5,385
Spares Building	0	32	7,266	175	625	5,267	13,364
Hub Road Network	0	16	8,259	194	0	5,333	13,803
Temporary Construction Compound	0	48	2,226	1,252	0	13,704	17,230
Earthworks	0	600	14,949	0	0	62,400	77,949
Total	38	880	143,955	12,089	17,388	30,0971	475,314

11.5.27 The Outline CTMP anticipates that the greatest number of traffic movements will be generated over a five month period at the end of the second year of the construction programme. This assessment has therefore focussed on this period to

provide a robust estimate of the impact of construction activities. Table 11-15 summarises the forecast number of monthly vehicle trips as estimated by the Outline CTMP.

Table 11-15 Breakdown of Peak Construction Movements

Breakdown of Peak Construction Movements	Total Construction Movements
Monthly HGV	6,053
Monthly Staff/LGV	7,530
Monthly Total	13,583
Daily HGV	216
Daily Staff/LGV	269
Daily Total	485

11.5.28 The daily trip generation estimate which is presented in Table 11-15 has been used to inform this assessment.

11.5.29 While the impact of construction traffic is only temporary in nature, the scale of the Proposed Development would result in construction activities going on for a number of years. The impact of these trips has therefore been assessed in accordance with the following seven criteria as specified by IEMA in paragraph 11.3.13.

11.5.30 Construction vehicles are expected to access and leave the Site by one new access junction which is anticipated to be formed on the A950 approximately 465 m to the east of the eastern access to Flushing. An additional access would be constructed on the unclassified road (Aberdeenshire Council reference 55B) on the southern boundary of the Site approximately 130 m east of the existing access to Netherton Farm. The southern access (U55b) is primarily provided as an emergency access.

11.5.31 Larger vehicles will be routed to the Site via the trunk road network to minimise the impact on urban rural areas and sensitive receptors as far as possible. While the assignment of these trips will not be determined until a Principal Contractor has been appointed, it has been assumed, to align with the Outline CTMP, that all HGVs would access the Site from the A90 to the east via the A950. It has further been assumed that 20 % of HGVs would access the A950 from the north, with 80 % accessing the A950 from the south.

11.5.32 As confirmed within the Outline CTMP, it is more challenging to anticipate the location where smaller construction vehicles are likely to originate from, at this stage, and it has therefore been assumed that 50 % of smaller vehicles (cars and vans) will access the Site from the west, with 50 % accessing the Site from the east.

11.5.33 A summary of the assumed trip assignment is provided in Table 11-16.

Table 11-16 **Construction Traffic Assignment**

Study Network Route Section	HGV Split	Non-HGV Split
Link 1: A950 between Mintlaw and Longside	0 %	50 %
Link 2: A950 between Longside and Site Access	0 %	50 %
Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	100%	50 %
Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road	20%	10 %
Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	80%	40 %
Link 6: A90 (South) between Peterhead and Newton	80%	40 %

11.5.34 A detailed assessment has been undertaken to determine the potential level of effect the construction traffic would have on the study network. Table 11-17 quantifies the impact which construction traffic is forecast to have on the operation of each of the links in the Study Area.

Table 11-17 **Construction Traffic Impact Assessment Summary**

Study Network Route Section	Scenario	2028 10–hour Total Flows		
		HGV	Non-HGV	Total
Link 1: A950 between Mintlaw and Longside	Baseline	7	2,427	2,435
	Baseline + Construction Traffic	7	2,562	2,569
	% Impact	0.00%	5.54%	5.52%
Link 2: A950 between Longside and Site Access	Baseline	7	2,427	2,435
	Baseline + Construction Traffic	7	2,562	2,569
	% Impact	0.00%	5.54%	5.52%
Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	Baseline	251	5,576	5,827
	Baseline + Construction Traffic	467	5,711	6177
	% Impact	86.22%	2.41%	6.02%
Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road.	Baseline	122	2,951	3,073
	Baseline + Construction Traffic	165	2,978	3,143
	% Impact	35.52%	0.91%	2.28%
Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	Baseline	441	4,910	5,351
	Baseline + Construction Traffic	614	5,018	5,632
	% Impact	39.19%	2.19%	5.24%
Link 6: A90 (South) between Peterhead and Newton.	Baseline	646	6,466	7,112
	Baseline + Construction Traffic	818	6,574	7,392
	% Impact	26.77%	1.66%	3.94%

11.5.35 As previously highlighted, the IEMA Guidelines sets the following thresholds for assessing the impact of generated traffic on a road link:

- Rule 1: Include road links where traffic flows will increase more than 30 % (or the number of HGVs will increase by more than 30 %); and
- Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10 % or more.

11.5.36 Table 11-16 shows that all of the assessed links experience an increase in the volume of total vehicles of less than 10%. It is therefore considered that the impact on the total vehicle flows on the local road network during the construction phase would be temporary, short to medium term, negligible and not significant.

11.5.37 The percentage increase in HGV flows is higher when compared to the total vehicles on Links 3-6. No increase is, however, forecast on Links 1 and 2, with this reflecting the Outline CTMP's assumption that no HGVs will originate from the west of the Site. The level of impact is however, forecast to be greater on the remaining four links, with the increase triggering Rule 1.

11.5.38 Nevertheless, as Links 1 and 2 pass through existing villages, the impact of the Proposed Development has been assessed on all links included in the Study Area and the following sections summarise the results of the assessment.

Road Capacity Assessment

11.5.39 A capacity assessment has been undertaken to determine the effects of the temporary increase in traffic flow generated by construction activities, on the capacity of Links 1-6.

11.5.40 Theoretical road capacities are based on the DMRB, Volume 13, Section 1, Part 5: Speeds on Links 2002[163]. The theoretical road capacity equates to the maximum traffic volumes which a road is able to accommodate. Above this level, traffic conditions would become unstable and queuing along the road section would occur.

11.5.41 Capacity assessments have been conducted under the worst-case construction traffic levels that occur and the results of the assessment can be seen in Table 11-18.

Table 11-18 Road Capacity Assessment

Study Network Route Section	2028 Total Hourly Flows			
	Total Base Traffic Flows	Theoretical Road Capacity (10-hour period)	Base + Construction Traffic Flows	Spare Capacity
Link 1: A950 between Mintlaw and Longside	2435	18000	2569	86%
Link 2: A950 between Longside and Site Access	2435	24000	2569	89%
Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	5827	18000	6177	66%
Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road.	3073	24000	3143	87%
Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	5351	24000	5632	77%
Link 6: A90 (South) between Peterhead and Newton	7112	24000	7392	69%

11.5.42 The results in Table 11-18 show that with the addition of the worst-case construction traffic levels, there will be significant spare capacity on all of the links. As such, it is considered that the temporary increase in traffic during the worst-case scenario will not result in a change in the impacts on road capacity, on the study network.

11.5.43 Therefore, based on the results of the road capacity assessment, during the construction phase it is considered that the sensitivity of the capacity of the traffic network to changes in traffic flows is low and the magnitude of impact is predicted to be negligible compared to the link capacities. Therefore, there is likely that the greatest impact is to have temporary, short to medium term, negligible and not significant transport effects.

Severance

11.5.44 The predicted change in severance on the links has been evaluated based on the percentage increase in total traffic levels expected during the construction phase, in line with IEMA Guidelines. The significance of the predicted change in severance has been determined based on factors including the road conditions, traffic flows and level of pedestrian activity. Table 11-19 sets out the sensitivity grading of receptors as per Table 11-13 and the magnitude of impact due to construction traffic in relation to the results of the severance assessment.

[163] DMRB, (2002). Volume 13, Section 1, Part 5: Speeds on Links - May 2002. [Online] Available at: http://www2.westsussex.gov.uk/handt/poe/n.pdf [Accessed: July 2024].

Table 11-19 Severance Assessment

Study Network Route Section	Total AADT flows					
	Total Base Traffic Flows	Base + Construction Traffic Flows	Percentage HGV % Increase	Sensitivity	Magnitude of Change	Significance
Link 1: A950 between Mintlaw and Longside	2,435	2,569	5.52%	Medium	Negligible	Not Significant
Link 2: A950 between Longside and Site Access	2,435	2,569	5.52%	Medium	Negligible	Not Significant
Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	5,827	6,177	6.02%	Low	Negligible	Not Significant
Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road.	3,073	3,143	2.28%	Low	Negligible	Not Significant
Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	5,351	5,632	5.24%	Low	Negligible	Not Significant
Link 6: A90 (South) between Peterhead and Newton	7,112	7,392	3.94%	Low	Negligible	Not Significant

11.5.45 The assessment confirms that the potential for increased severance of communities on all Links is negligible due to the forecast moderate temporary increase in construction traffic volumes.

11.5.46 Therefore, it is anticipated that the magnitude of impact is to have temporary, short to medium term, negligible and not significant transport effects.

Road vehicle driver and passenger delay

11.5.47 The proposed form of the Site access junction will result in minimal driver delay being generated when vehicles are accessing the construction Site. The IEMA Guidelines states that driver delay is only likely to be significant when traffic on the network surrounding the Proposed Development is already at, or close to, the capacity of the system. As established in Table 11-19, there are no links that are forecast to operate close to capacity following the addition of traffic generated by construction activities, with significant spare capacity available and therefore the change in driver delay is considered to be negligible.

11.5.48 Construction activities would also be supported by AIL deliveries which are generated throughout the 5 to 8 year construction programme. It is not currently known what port would be used, however at present, it is considered that abnormal loads would be transported from Peterhead Harbour to the Site via Links 3 and 5.

11.5.49 It is recognised that movement of AIL's may impact driver delay. However, the movements would be timed following a public awareness campaign, and that they would be undertaken outwith major events and the morning and evening peaks of the local road network's operation. It is therefore considered that construction traffic impact would have temporary, short to medium term, minor adverse and not significant transport effects.

Pedestrian and Non-Motorised User Delay and Amenity

11.5.50 While there are pedestrian facilities provided within Peterhead, Mintlaw and Longside, the Site is in a rural location and no pedestrian facilities are provided on the majority of the proposed access route. As such, the number of pedestrians is expected to be low and the sensitivity to pedestrian amenity is considered to have temporary, short to medium term, negligible and not significant transport effects when taking cognisance of the whole links on each access route.

11.5.51 It is estimated that there would be a maximum of 216 total daily HGV trips generated on a daily basis during the most intensive period of construction activities. This equates to less than 18 total HGV movements per hour over a 10 hour working day.

11.5.52 Based on the expected low pedestrian movements, the increase in the severity of pedestrian delay is predicted to be Low. It is considered that the effect of the construction traffic on pedestrian delay within the study network is temporary, short to medium term, minor adverse and not significant transport effects.

Fear and Intimidation

11.5.53 To assess fear and intimidation, IEMA Guidelines suggest thresholds based on 18-hour daily flow and vehicle speeds, indicating that an average traffic 18-hr flow of over 1800 vehicles and 1,000 HGVs per hour using a road subject to at 60 mph speed limit would be considered a great degree of hazard.

11.5.54 As previously mentioned, the peak construction phase is expected to generate a maximum of 485 total vehicle movements and 216 total HGV movements within a 10 hour working day and distributed between the road links as per vehicle type, indicated in Table 11-17. Table 11-20 summarises the comparison of the 18- hour baseline with a threshold for level of fear score assigned to each link and the magnitude of impact as a result of the forecast increase in vehicle movements on each link.

Table 11-20 Fear and Intimidation Assessment

Link	Base – Daily Trips		18 hr Base – Daily Trips		Speed Limit	Degree of Hazard Score	Level of Fear score	18hr Base + Peak Construction Daily Trips		Degree of Hazard Score	Level of Fear score	Impact
	Vehicles	HGVs	Vehicles	HGVs				Vehicles	HGVs			
1	3431	11	3234	10	60	60	Great	3368	10	60	Great	Negligible
2	3431	11	3234	10	60	60	Great	3368	10	60	Great	Negligible
3	8211	373	7739	351	60	60	Great	8089	567	60	Great	Negligible
4	4331	181	4081	170	60	60	Great	4340	214	60	Great	Negligible
5	7541	656	7107	618	60	60	Great	7388	791	60	Great	Negligible
6	10022	960	9445	905	40	50	Great	9726	1078	50	Great	Negligible

11.5.55 The results in Table 11-20 show that with the addition of the worst-case construction traffic levels, there would be no step changes in level of fear on all of the links. As such, it is considered that the temporary increase in traffic during the worst-case scenario will not result in a change in the impacts on road fear and intimidation, on the study network.

11.5.56 Based on the estimated construction traffic generated, there could be a requirement for a maximum of 32 AIL movements to deliver transformers via Links 3, 4 and 5 to Site.

11.5.57 It is recognised in the IEMA Guidance that movement of AIL's may heighten the perception of fear and intimidation. However, when taking cognisance of the negligible magnitude of impact on the movement of general construction traffic, the AIL movements are considered to have an incremental, temporary, medium to long term, minor adverse and not significant transport effect.

Road User and Pedestrian Safety

11.5.58 As shown in Table 11-11 there is no requirement to introduce specific casualty reduction measures as a low number of injury accidents have been reported on the local road network in the most recently available five year period. The magnitude of impact is considered to be negligible on the majority of road links in the Study Area, with only Links' 3, 4, 5 and 6 forecast to experience an increase of HGVs of over 30 %. The magnitude of impact is therefore considered Low and the overall significance of effect to be temporary, short to medium term, minor adverse and not significant transport effects.

Summary of Likely Effects Generated by Construction Traffic

11.5.59 The greatest significance of the effect generated by construction traffic is considered to have temporary, short to medium term, minor adverse and not significant transport effects when compared to the seven key criteria, therefore no further assessment of construction impacts has been undertaken.

11.5.60 All of the impacts will be generated at a local level.

Operational Phase

11.5.61 As previously highlighted, the operational phase of the development is forecast to generate a low level of vehicle trips which would result in no significant traffic increase. The assessment of operational traffic has therefore been scoped out of this assessment.

Residual Effects

11.5.62 Subject to the successful implementation and monitoring of the CTMP, it is considered that any residual effects associated with the construction of the Proposed Development would be of a temporary nature and the magnitude of any residual effects would be of the same or lesser significance than the effects detailed in the previous sections. The implementation of the CTMP will address any specific issues on the proposed access routes, thus ensuring the impact on local residents and existing road users is appropriately mitigated against.

11.5.63 A summary of the residual effects associated with the Proposed Developments construction following the implementation of the mitigation measures identified within the Outline CTMP is summarised in Table 11-21.

Table 11-21 Residual Effects

Description of Effect	Significance of Potential Effect		Mitigation Measure	Residual Effects and Significance (Post Mitigation)	
	Significance	Beneficial/ Negligible/ Adverse		Significance	Beneficial/ Negligible/ Adverse
Construction					
Road Capacity	Negligible	Negligible	Implementation of a CTMP to include a range of measures which will mitigate the impact of construction traffic on the operation of the local road network.	Negligible	Negligible
Severance	Negligible	Negligible		Negligible	Negligible
Driver Delay	Minor	Adverse		Negligible	Negligible
Pedestrian Delay	Minor	Adverse		Negligible	Negligible
Pedestrian Amenity	Minor	Adverse		Negligible	Negligible
Fear and Intimidation	Minor	Adverse		Negligible	Negligible
Accidents and Safety	Minor	Adverse		Negligible	Negligible
Operation					
No significant effects are anticipated due to traffic during operation.					

Cumulative Effects

11.5.64 A review of Aberdeenshire Council's planning portal, the Energy Consent Unit's website and discussion with SSEN Transmission has been undertaken to determine the cumulative developments that have the potential to have in-combination traffic and transport cumulative effects with regards to the Proposed Development.

11.5.65 As shown in Volume 2, Chapter 5, Table 5-2, there are seven proposals which are currently being progressed in the area that are relevant to the cumulative assessment. The four listed SSEN Transmission projects are currently at the route options stage and therefore do not have the required information relating to vehicle trips which can be used in this study. However, as these are all being delivered by SSEN Transmission, this will provide an opportunity for construction activities to be coordinated to minimise the effects generated by construction traffic.

11.5.66 The Bridgend Quarry Extension proposal has been scoped out of traffic and transport cumulative assessment as the extension of the quarry has no impact on the rate at which rock can be extracted and transported on the local road network. This is due to the quarry having set operational hours at which transport movements can occur. Therefore, this proposal has negligible effect on the Study Area.

11.5.67 Cumulative developments identified as having the potential for cumulative effects on the study network in combination with the Proposed Development have been detailed in Table 11-22 which identifies the level of daily vehicle trips forecast to be generated by each.

Table 11-22 Cumulative Developments

Planning application reference	Description	Location	Status	Daily Trips	Comments
APP/2023/1454	Green Volt Offshore Windfarm, installation onshore - formation of onshore landfall point, laying of underground cable and erection of substation.	Peterhead	Planning Permission (Major Application), Approved	464	Traffic Flows are distributed on Link 3 and 4 of the Study Area.
APP/2022/0369	Residential Mixed-Use Development comprising up to 800 Residential Homes, a local neighbourhood centre, land reserved for employment purposes, a primary school and a possible future rail halt, associated roads and drainage infrastructure, new landscaping and open spaces and a local nature reserve at Inverugie Meadows, South Ugie, Peterhead.	Peterhead	Residential Mixed-Use Development comprising up to 800 residential homes, Awaiting Decision	3652	Traffic Flows are distributed on Link 3, 4, 5 and 6 of the Study Area.
Total Daily Trips				4116	

11.5.68 A review of the magnitude of impact on the road network capacity has been undertaken and the results summarised in Table 11-23.

Table 11-23 Cumulative Road Capacity Assessment

Study Network Route Section	2028 Total Hourly Flows			
	Total Base Traffic Flows	Theoretical Road Capacity (10 hour period)	Base + Construction +Cumulative Traffic Flows	Spare Capacity
Link 1: A950 between Mintlaw and Longside	2435	18000	2569	86%
Link 2: A950 between Longside and Site Access	2435	24000	2569	89%
Link 3: A950 between Site Access and A90 Peterhead Bypass at Howe O'Buchan Roundabout	5827	18000	6644	63%
Link 4: A90 (North) between Howe O'Buchan Roundabout and A982 Junction with A90 North Road.	3073	24000	4842	80%
Link 5: A90 (South) between Howe O'Buchan Roundabout and Invernettie Roundabout	5351	24000	6989	71%
Link 6: A90 (South) between Peterhead and Newton	7112	24000	8749	64%

11.5.69 As can be seen from the summary presented in Table 11-23 all route sections are forecast to continue operate with significant levels of spare capacity following the addition of traffic generated by the local developments identified in Table 11-23.

11.5.70 The CTMPs implemented to support the Proposed Development and cumulative developments would implement measures to mitigate the impact of construction traffic as far as possible and it is therefore considered that the cumulative effect would be temporary, short to medium term, minor adverse and not significant.

11.6 Summary

11.6.1 This Traffic and Transport chapter has set out the methods used to assess the likely significant effects, the baseline conditions currently existing at the Site, the potential direct and indirect effects of the Proposed Development arising from traffic generated by its construction, the mitigation measures required to prevent, reduce, or offset the identified significant effects and the residual effects.

11.6.2 Operational traffic is considered to be so low that its effect would be negligible and has therefore been scoped out of further assessment.

11.6.3 Baseline traffic flows were gathered, and sensitive receptors identified for the construction traffic route to the Site and an assessment undertaken. The overall increase in vehicle trips compared to the existing capacity of the road, has been assessed to be low. It is therefore considered that the existing road network can accommodate the anticipated temporary increase in traffic generated by construction activities and that the effects are not significant. Seven key IEMA criteria were assessed against thresholds identified by guidance and using professional judgement, with the greatest significance found to have temporary, short to medium term, minor adverse and not significant transport effects.

11.6.4 In relation to the cumulative impact of the Proposed Development with local developments, it is considered that the coincidence of the construction phases is not predicted to result in significant cumulative traffic effects on the study network. The study has demonstrated that there is significant spare capacity on the local road network to accommodate the predicted level and type of vehicles associated with the various schemes.

11.6.5 Construction traffic will be managed through the implementation of a CTMP and the residual effect has been determined to be negligible when assessed in relation to the seven key IEMA indicators.