

Chapter 10: Access, Traffic and Transport

Chapter 10

Access, Traffic and Transport

Introduction

10.1 This chapter presents the findings of the assessment of the likely significant effects of the Proposed Development with respect to the Access, Traffic and Transport. The specific objectives of the chapter are to:

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

10.2 This chapter is supported by the following figures and appendices which are referenced throughout the text:

- **EIA Report Volume 3a: Figures**
 - **Figure 10.1: Study Area;**
 - **Figure 10.2: Traffic Count Locations;**
 - **Figure 10.3: Personal Injury Accident Plan; and**
 - **Figure 10.4: Abnormal Indivisible Load Route.**
- **EIA Report Volume 4: Appendices:**
 - **Appendix 10.1: Transport Assessment.**

Methodology

Legislation and Guidance

Legislation

10.3 The assessment has been undertaken in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations).

Policy and Guidance

10.4 This assessment is carried out in accordance with the principles contained within the following documents:

- Institute of Environmental Assessment, Guidelines for the Environmental Assessment of Road Traffic (1993)¹;
- Institution of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005)²;

¹ Institute of Environmental Assessment (1993) Guidelines for the Environmental Assessment of Road Traffic

² Institute of Environmental Management and Assessment (2005), Guidelines for Environmental Impact Assessment

- National Planning Framework 4 (2023) ³;
- Transport Assessment Guidance (2012) ⁴;
- Planning Advice Note 75 – Planning for Transport (2005) ⁵;
- Scottish Borders Council Local Access Transport Strategy (LATS) (2015) ⁶;
- Scottish Borders Council Local Development Plan (LDP (2016) ⁷; and
- Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008) ⁸.

Effects Scoped In to the Assessment

10.5 This assessment focusses on the effects of construction of the Proposed Development upon those receptors identified during the review of desk-based information and field surveys (the extents of the study areas are set out in the Method of Baseline Characterisation section below).

10.6 The following potential effects were identified at the Scoping Stage for consideration in this assessment:

- Direct effects on road users during construction due to changes in traffic flows and transport of abnormal indivisible loads (AIL) in the surrounding study area;
- Direct effects on local residents as a result of increased traffic during construction; and
- Decommissioning effects

10.7 The assessment scenarios used for this topic are as follows:

- Future Baseline Flows (2026) – which are estimated by applying National Road Traffic Forecast (NRTF) low growth factors to traffic flow information obtained from the Department for Transport (DfT) database and Automatic Traffic Count (ATC) surveys; and
- Future Baseline + Development Flows (2026) – which are estimated by applying the distributed development trips to the future baseline traffic flow information.

Effects Scoped Out of the Assessment

10.8 On the basis of the desk based and field survey work undertaken, the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, and feedback received from consultees, the following topic areas have been 'scoped out' of detailed assessment, as proposed in the Scoping Report (March 2022):

- Operational Phase: The traffic effects during the operational phase of the Proposed Development will be low, with two to three vehicles per day for maintenance purposes, far below the recognized thresholds for triggering a formal transport assessment. As such, the effects during the operational phase are scoped out of the assessment.

Consultation

10.9 In undertaking the assessment, consideration has been given to the Scoping Responses and other consultation, which has been undertaken as detailed in **Table 10.1**.

³ Scottish Government (2023), National Planning Framework 4

⁴ Transport Scotland (2012), Transport Assessment Guidance

⁵ Scottish Borders Council (2015), Local Access Transport Strategy (LATS)

⁶ Scottish Borders Council (2016), Local Development Plan

⁷ Scottish Government (2005), Planning Advice Note: PAN 75 – Planning for Transport

⁸ Highways Agency (2008), Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB)

Table 10.1: Consultation Responses

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
Scottish Borders Council, 08 April 2022	Scoping	<p>The EIA is recommended to cover the following points within its detailed section on Transport:</p> <ul style="list-style-type: none"> • Impact on the local road network • Construction traffic type, frequency, numbers etc. • Access routes for general construction traffic • Abnormal loads route and mitigation measures. 	The assessment has been undertaken in line with these requirements.
		<p>The Land Reform (Scotland) Act 2003 (LRA) introduced a right of responsible public access to most areas of land and inland water in Scotland. This gives everyone a right to take non-motorised access to walk, cycle and horse-ride over most land, by following the Scottish Outdoor Access Code. Rights of Way are specifically protected by law under the Countryside (Scotland) Act 1967 sec. 46. Anyone exercising their access rights must do so responsibly by following the Scottish Outdoor Access Code and land owners/managers have a reciprocal responsibility in respecting the interests of those exercising their rights. Scottish Borders Council (SBC) has a statutory duty to uphold these rights.</p>	Comment noted.
		<p>According to the records held by Scottish Borders Council, the Southern Upland Way (SUW) core path and a number of rights of way lie within this area of land (see the map below). There are also core paths, rights of way and promoted paths in the local area from which the Proposed Development will be clearly visible.</p>	Comment noted. Consideration to the SUW and other Public Rights of Way have been given within the proposed mitigation section of the chapter and will be addressed fully in the Access Management Plan undertaken post consent.
		<p>Please note that SBC does not have a definitive record of every claimed right of way within its area. The Scottish Rights of Way and Access Society, community councils and local residents may have evidence of existence of claimed rights of way that have not yet been recorded by SBC.</p>	Comment noted and response to ScotWays Scoping Response is provided below.
		<p>With regards to managing access during and after construction, Developers should follow the guidance set out in the document 'Good Practice during Wind Farm Construction – Part 8 Recreation and Access'.</p>	Comment noted.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		Wind turbines should be set back at a reasonable distance from rights of way and other potential recreational routes. In their 'Scottish Wind Farm Advice Note', the British Horse Society Scotland recommend a separation distance of four times the overall height should be the target for core paths and National Trails, as these are likely to be used by equestrians unfamiliar with turbines, and a distance of three times overall height from all other routes, including roads to maintain safe access for horses and riders.	Turbine 14 is approximately 855 m distant to the SUW at its closest point to the south of the Site.
East Lothian Council, 08 April 2022	Scoping	The access routes to the site are not within East Lothian so in terms of transport and access the Council would not anticipate any impacts within the ELC area. The Council does not require any additional assessment over and above what is included in the Scoping Report.	Comment noted.
Transport Scotland (TS), 11 April 2022	Scoping	TS note from the Scoping Report (SR) that the Transport & Access EIAR Chapter will be supported by a Transport Assessment report and Abnormal Load Route Survey. We note that the thresholds as indicated within the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic are to be used as a screening process for the assessment.	Noted. The assessment has been undertaken as per the IEMA Guidelines.
		TS note from the SR that a peak construction period assessment will be undertaken, with a review of the maximum impact assessment of the effects of construction traffic on both the local and trunk road networks. We note that the study area will comprise the A68(T) between the A720(T) and Lauder, in addition to local roads. Transport Scotland is satisfied with the proposed study area.	Noted. The assessment is undertaken in the Construction Effects section of this chapter.
		The SR also indicates that potential trunk road related environmental impacts such as driver delay, pedestrian amenity, severance, safety etc will be considered and assessed where the IEMA Guidelines for further detailed assessment are breached. These specify that road links should be taken forward for further detailed assessment if: <ul style="list-style-type: none"> • Traffic flows will increase by more than 30%, or • The number of HGVs will increase by more than 30%, or 	Noted. The assessment has been undertaken as per the IEMA Guidelines.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		<ul style="list-style-type: none"> Traffic flows will increase by 10% or more in sensitive areas. 	
		<p>We note that existing traffic count data will be extracted from the Department for Transport (DfT) database for the A68(T), with National Road Traffic Forecasts (NRTF) Low Growth being applied. Transport Scotland is satisfied with the application of growth but would ask that the A68 data is sourced directly from Transport Scotland.</p>	<p>Comment noted, all data for the trunk road network has been sourced from the Transport Scotland database, while the local road network has been sourced from the DfT database. Traffic data for the year 2019 has been used from both sources, to enable traffic flows to be used that would be unaffected by Covid-related travel restrictions or factors that are continuing to have implications on traffic volumes.</p>
		<p>It is noted that any impacts associated with both the operational and decommissioning phases of the Proposed Development are to be scoped out of the EIA. We would consider this to be acceptable in this instance.</p>	<p>Comment noted.</p>
		<p>The potential requirement for alterations to the existing Fallago Rig Wind Farm access route to accommodate larger turbine components, including any works required to the public highway or land required to facilitate access, will be investigated as part of the EIA. Transport Scotland is satisfied with this approach but would add that the Abnormal Loads Assessment report should identify key pinch points on the trunk road network and that swept path analysis should be undertaken and details provided with regard to any required changes to street furniture or structures along the route.</p>	<p>Comment noted. A detailed Route Survey Report is included as Appendix A in Appendix 10.1.</p>
		<p>It should also be noted that any proposed changes to the trunk road network must be discussed and approved (via a technical approval process) by the appropriate Area Manager(s) prior to the movement of any abnormal load.</p>	<p>Comment noted.</p>
<p>The British Horse Society, 23 March 2022</p>	<p>Scoping</p>	<p>Under the Land Reform (Scotland) Act 2003, horse-riders and carriage drivers enjoy a right of access to most land in Scotland, provided that they behave responsibly. Land managers in turn are obliged to respect equestrian access rights and take proper account of the right of responsible access in managing their land.</p>	<p>Comment Noted. Mitigation measures proposed for horse riding will be considered as part of the Access Management Plan. An outline of the anticipated mitigation measures is provided in the Mitigation section of this chapter.</p>
<p>Gifford Community Council, 08 April 2022</p>	<p>Scoping</p>	<p>Since all access to the site is to be from the south, we do not envisage any significant impact on the Gifford area from traffic or transport and have no comments to this section of the report.</p>	<p>Comment noted.</p>

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
ScotWays, 27 April 2022	Scoping	The enclosed map shows that rights of way BB103, BB104, BB106, BB108-113, BB118, BB140, BB143 and LE207 as recorded in the National Catalogue of Rights of Way (CROW) cross or are close to the application site as shown on Figure 1.1 Site Location .	Comment noted and those applicable paths have been included within the assessment and where necessary mitigation measures proposed. An Outline Outdoor Access Management Plan is included at Appendix 3.3 .
		The enclosed map shows other path BB196 as recorded in the National Catalogue of Rights of Way (CROW) crosses or is close to the application site as shown on Figure 1.1 Site Location .	
		The enclosed map shows the Heritage Paths project promotes a route, Herring Road [HP01], for its historic interest. This old route crosses or is close to the application site as shown on Figure 1.1 Site Location .	
		The enclosed map shows that our book Scottish Hill Tracks describes routes number 32 Dunbar to Lauder "The Herring Road" [HT525], 34 Garvald to Westruther [HT712] and 35 Cranshaws to Longformacus and Westruther [HT731/HT720] which cross or are close to the application site as shown on Figure 1.1 Site Location .	
		In this case as rights of way BB103, BB104, BB106, BB110, BB111, BB140 and BB143 are recorded as equestrian rights of way we strongly recommend consulting the British Horse Society Scotland as their guidance regarding separation distance may differ from that set out above.	
		It is advisable to set back all wind turbines a minimum distance, equivalent to the height of the blade tip, from the edge of any public highway (road or other public right of way) or railway line.	BB/BB108/1 cuts through the proposed temporary hardstanding and access track to Turbine 15. Turbine 15 is approximately 145 m away from the PRoW.
		Under section 3 of the Land Reform (Scotland) Act 2003, there is a duty upon landowners to use and manage land responsibly in a way which respects public access rights. Under section 14 of the same Act, access authorities have a duty to uphold access rights. Accordingly, we suggest that the Applicant may wish to approach the relevant authority's access team for their input when drawing up their Access Management Plan for their Proposed Development.	Comment noted. An Outline Outdoor Access Management Plan (OAMP) is included at Appendix 3.3 . A finalised OAMP will be discussed and agreed with the Council access officer prior to commencement of development.

Committed Design Considerations

10.10 Access to the Proposed Development will be via the existing access junction for Fallago Rig Wind Farm and will make use of some existing access tracks leading through to the Site, thus reducing the requirement for onsite infrastructure. There will be a requirement to upgrade the existing Site access junction and some of the internal tracks, however in using existing infrastructure, there will be a reduction in construction trips generated by the Proposed Development.

Method of Baseline Characterisation

Extent of the Study Area

10.11 The Study Area comprises the public roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

10.12 Access for construction materials will be predominantly from the west via the A697 and B6456 through to the Site access junction, which can be seen on **Figure 10.1**. Where feasible, local materials will be sourced, which will avoid traffic impacting on the wider road network and other communities.

10.13 All AIL traffic will access the Proposed Development from the Port of Entry (POE) at Rosyth, utilising the proven abnormal load route used during the construction of Fallago Rig Wind Farm. AILs will route to the Site via the A720 Edinburgh City bypass, A68, A697 and B6456. Full details of the AIL route are provided later in the report within the **Potential Construction Effects** section and within **Appendix 10.1**.

10.14 Based on the above, the Study Area for the assessment comprises:

- A68 between the A720 and Lauder;
- A697 between Carfraemill and Greenlaw; and
- B6456 between Whiteburn and Choiselee.

10.15 This Study Area includes areas of material supply (quarries, etc), the Site access junction, the trunk road network and the construction material and abnormal load delivery routes. It is also of sufficient size to include the main areas of workforce accommodation during the construction period.

10.16 Effects associated with general construction traffic generated by the Proposed Development will be most pronounced in close proximity to the Site access junction and on the final approaches to the Site. As vehicles travel away from the Proposed Development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the Study Area identified above.

10.17 The study area network is presented in **Figure 10.1**.

Desk Study

10.18 The following data sources have informed the assessment:

- Relevant transport planning policy as included in **Appendix 10.1** – Government / Council planning website;
- Personal injury accident data – crashmap.co.uk;
- Traffic data – roadtraffic.dft.gov.uk and project specific automatic traffic counts (ATC);
- Sensitive locations within study area (as defined by IEMA such as settlements, schools etc.) – googlemaps.co.uk;
- Any other traffic sensitive receptors in the area (core paths, routes, communities, etc.) – googlemaps.co.uk and relevant agency's website;
- Ordnance Survey (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;

- Cumulative development information – Scottish Borders Council (SBC) planning portal⁹ and the Scottish Government’s Energy Consents Unit (ECU)¹⁰; and
- Constraints to the movement of AILs through a Route Survey including swept path assessments – OS plans, video footage¹¹ and Google Streetview.

Field Survey

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

- A visit to the Site to review the potential access routes and potential constraints was undertaken in May 2022;
- A detailed review of the proposed AIL route was undertaken in May 2022; and
- Collection of traffic flow and speed data, which were undertaken at two ATC sites between 24th and 30th of June and 4th and 10th of July 2022 and illustrated in **Figure 10.2**.

Criteria for the Assessment of Effects

Criteria for Assessing Sensitivity of Receptors

10.20 Sensitivity has been determined on the basis of the guidelines outlined in The Institution of Environmental Management and Assessment (IEMA) ‘Guidelines for Environmental Impact Assessment’ (2005) which notes that the separate ‘Guidelines for the Environmental Assessment of Road Traffic’ (1993)¹² document should be used to characterise the environmental traffic and transport effects (offsite effects) and the assessment of significance of major new developments. The guidelines intend to complement professional judgement and the experience of trained assessors.

10.21 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, which includes residents and other people at these locations.

10.22 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 10.2**.

Table 10.2: Classification of Receptor Sensitivity

Receptor	Sensitivity			
	High	Medium	Low	Negligible
Users of Roads	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads.
Users / Residents of Locations	Where a location is a large rural settlement	Where a location is an intermediate sized	Where a location is a small rural settlement,	Where a location includes individual

⁹ <https://eplanning.scotborders.gov.uk/online-applications/search.do?action=simple&searchType=Application>

¹⁰ <https://www.energyconsents.scot/>

¹¹ Video footage undertaken during Pell Frischmann site visit to inform Route Survey Report

¹² Institute of Environmental Assessment (1993), The Guidelines for the Environmental Assessment of Road Traffic

Receptor	Sensitivity			
	High	Medium	Low	Negligible
	containing a high number of community and public services and facilities.	rural settlement, containing some community or public facilities and services.	few community or public facilities or services.	dwelling or scattered settlements with no facilities.

10.23 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.

Criteria for Assessing Magnitude of Change

10.24 Magnitude of change has been assessed in relation to the IEMA Guidelines which are used to determine which public roads within the study area should be considered for detailed assessment:

- Rule 1 – include highway links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles is predicted to increase by more than 30%); and
- Rule 2 – include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.

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

10.26 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 states that, “*severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery.*” Further, “*Changes in traffic of 30%, 60%, and 90% are regarded as producing ‘slight’, ‘moderate’, and ‘substantial’ [or minor, moderate, and major] changes in severance respectively.*” However, the Guidelines acknowledge that “*the measurement and prediction of severance is extremely difficult.*” (Para 4.28);
- Driver delay – the IEMA Guidelines note that these delays are only likely to be “*significant [or major] when the traffic on the network surrounding the development is already at, or close to, the capacity of the system.*” (Para 4.32);
- Pedestrian delay – the delay to pedestrians, as with driver delay, is likely only to be major when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. An increase in total traffic of approximately 30% can double the delay experienced by pedestrians attempting to cross the road and would be considered major;
- Pedestrian amenity – the IEMA Guidelines suggests that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or its lorry component) is halved or doubled (Para 4.39). It is therefore considered that a change in the traffic flow of -50% or +100% would produce a major change in pedestrian amenity;
- 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 major changes respectively; and
- Accidents and safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents.

10.27 Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) sets out four levels against which the magnitude of these impacts should be assessed – major, moderate, minor and negligible. The impacts and levels of magnitude are discussed below in **Table 10.3**.

Table 10.3: Magnitude of Effect

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

Criteria for Assessing Significance

10.28 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 10.4**.

Table 10.4: Significance Criteria

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

10.29 Significance is categorized 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.

10.30 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 would be considered **not significant** in the context of EIA Regulations.

Limitations and Assumptions

10.31 The assessment is based upon average traffic flows in one-month periods. During the month, activities at the Site may fluctuate between one day and another and it is not possible to fully develop a day-by-day traffic flow estimate as no 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).

10.32 Key assumptions made to inform the assessment include:

- The assessment is based upon an assumed construction programme for the Proposed Development lasting 19 months. Alterations in this programme, may increase or decrease traffic flows per month, however on the information available at this time, it is considered a robust assessment;
- Traffic generation across the construction programme is based on the estimates of construction materials and staff working onsite as set out in **Appendix 10.1**. Whilst this has been estimated as accurately as possible at this stage, any changes to staff numbers or material requirements may increase or decrease traffic flows per month. It is however considered a robust assessment;

- Assumptions on the origin points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on surrounding areas may alter to those presented in the assessment;
- It is assumed that up to 50% of stone aggregate requirements will be imported to Site. In reality, it is likely that the onsite borrow pits will provide most, if not all, of the stone aggregate materials, therefore traffic estimates for aggregate imports are conservative;
- It is assumed that concrete batching will be undertaken onsite, however allowance has been made for construction traffic importing concrete batching materials to Site;
- The Proposed Development will be accessed via the existing Fallago Rig Wind Farm access, which will be upgraded to accommodate larger loads associated with the Proposed Development. All inbound traffic movements (including abnormal loads) will use this access;
- The distribution of development 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 existing Fallago Rig access junction on the B6456;
 - deliveries associated with concrete materials, such as cement powder and water, will be sourced from local concrete suppliers, which for the purpose of this assessment will originate from the A68, B6362, A697 and B6456;
 - whilst it is anticipated that onsite borrow pits will be able to meet aggregate requirements, for the purpose of this assessment it is proposed that 50% of track and hardstanding aggregate requirements will be sourced from local quarries, which for the purpose of this assessment will originate from the A68, B6362, A697 and B6456. The BoP contractor will confirm final quarry and material sourcing with SBC in the final CTMP;
 - HGV deliveries associated with cabling and associated materials, etc. will arrive via the A68, A697 and B6456;
 - staff working at the Site are likely to be based locally. It is assumed that 45% will come from the A68 to the north, 45% from the south, and 10% from the A697 to the south-east; and
 - general Site deliveries will be split via the A68, A697 and B6456 from the west (70%) and via the A697 and B6456 from the east.

10.33 The Future Baseline Year being assessed as part of the traffic and transport assessment is 2026, as this is the anticipated first year of construction, should the Proposed Development get planning consent.

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

Baseline Conditions

Existing Baseline Conditions

Active Travel Network

10.35 There are limited pedestrian facilities in the immediate vicinity of the Site, reflecting the rural nature of the area. The closest pedestrian facilities are located in Westruther and comprise a pedestrian footpath on both sides of the carriageway on the B6456 in Westruther, running between the Kirkpark junction and Westruther Primary School, for a distance of approximately 100 m.

10.36 Further away from the Site within the wider Study Area, there are pedestrian facilities within the larger settlements, including Lauder and Pathhead, where there are footways on one side or both sides of the carriageway. In addition, there are dedicated signal-controlled crossing points for pedestrians in both settlements.

10.37 The level of pedestrian infrastructure is commensurate with the scale of the local settlements and their rural setting.

10.38 A full review of the existing pedestrian facilities is included in **Appendix 10.1**.

10.39 A review of SBC's Core Path network¹³ and the ScotWays Maps enclosed in the Scoping Response indicates that there are a number of Core Paths, Public Rights of Way and recreational routes in the immediate vicinity of, and within the Site. The majority of the paths appear to be recreational in nature and do not appear to provide significant commuter / school traffic linkages to the surrounding settlements. Where these paths meet the road network or interact with onsite construction routes, there is potential for an interaction between construction movements and pedestrians.

10.40 A full list of applicable Core Paths, Public Rights of Way and recreational routes is included in **Table 2** within **Appendix 10.1**, while the location of the paths can be seen in **Figure 3.13a** of **EIA Report Volume 3a: Figures**.

10.41 A review of Sustrans' National Cycle Route (NCR) map¹⁴ does not show any national cycle routes within the Proposed Development Site or on within the Study Area.

Baseline Traffic Conditions

10.42 To assess the impact of development traffic on the Study Area, two ATC sites were established between 24th and 30th of June and 4th and 10th of July 2022. The ATC surveys were conducted over a 7-day period, recording vehicle classifications, direction of travel and speeds. The count sites were as follows:

1. D52 Proposed Site Access Road (ATC); and
2. B6456 at Westruther (ATC).

10.43 In addition to the ATC data, further traffic count data was obtained from the UK Department for Transport (DfT) traffic database and Transport Scotland database. With regards to the traffic data obtained from the DfT and Transport Scotland databases, 2019 has been used, as these flows would be unaffected by Covid-related travel restrictions. DfT traffic data allow the traffic flows to be split into vehicle classes. The data was summarised into Cars/Light Goods Vehicles (LGVs) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).

10.44 Traffic data has been used for the following locations:

3. A697 South of Addinston (Count site reference: 50934);
4. A68 North of Carfraemill (Count site reference: JTC00048);
5. A68 at Pathhead (Count site reference: 130754);
6. A68 North of Lauder (Count site reference: ATC00004); and
7. A697 at Greenlaw (Count site reference: 10871).

10.45 The locations of the DfT and Transport Scotland count points and ATC survey locations are presented in **Appendix 10.1** and **Figure 10.2**.

10.46 A National Road Traffic Forecast (NRTF) low growth factor was applied to the ATC, DfT and Transport Scotland survey data, to bring the traffic data up to the base assessment year of 2023. The NRTF low growth factor for 2022 to 2023 is 1.005 and for 2019 to 2023 is 1.027.

10.47 A summary of the results for the average daily 24-hour period is provided in **Table 10.5**.

Table 10.5: 24-hour Average Traffic Data (2023)

No.	Survey Location	Car & LGV	HGV	Total	% HGVs
1	D52 Proposed Site Access Road	62	39	101	38.6%

¹³ The Scottish Borders Council, Countryside and Access Plan: <https://www.scotborders.gov.uk/mapadvanced>

¹⁴ <https://www.sustrans.org.uk/national-cycle-network>

No.	Survey Location	Car & LGV	HGV	Total	% HGVs
2	B6456 at Westruther	419	134	553	24.3%
3	A697 South of Addinston	2,591	268	2,859	9.4%
4	A68 North of Carfraemill	8,602	1,009	9,611	10.5%
5	A68 at Pathhead	9,359	994	10,353	9.6%
6	A68 North of Lauder	7,090	542	7,631	7.1%
7	A697 at Greenlaw	4,697	450	5,147	8.8%

10.48 Construction of the Proposed Development is assumed to commence during 2026 if consent is granted and is anticipated to take approximately 19 months depending on weather conditions and ecological considerations (in relation to any imposed construction timing restrictions).

10.49 To assess the likely effects during construction, base year traffic flows were determined by applying a NRTF low growth factor to the 2023 base year assessment flows. The NRTF low growth factor for 2023 to 2026 is 1.016. These factors were applied to the survey data to estimate the 2026 Base traffic flows, as shown in **Table 10.6**. This is used in the Construction Peak Traffic Impact Assessment.

Table 10.6: 24-hour Average Traffic Data (2026)

No.	Survey Location	Car & LGV	HGV	Total	% HGVs
1	D52 Proposed Site Access Road	63	40	103	38.6%
2	B6456 at Westruther	425	136	562	24.3%
3	A697 South of Addinston	2,632	272	2,904	9.4%
4	A68 North of Carfraemill	8,739	1,025	9,765	10.5%
5	A68 at Pathhead	9,509	1,010	10,519	9.6%
6	A68 North of Lauder	7,203	550	7,753	7.1%
7	A697 at Greenlaw	4,772	458	5,230	8.8%

Please note that variances may occur due to rounding.

10.50 Note, if the Proposed Development did not proceed, or proceeded later than currently predicted (i.e. later than 2026), traffic growth will occur and the public roads within the Study Area will experience increased traffic flows resulting from other development pressures, tourism traffic and population growth. Accordingly, the assessment represents a worst case as the contribution of the Proposed Development in relative terms would decrease in the future.

10.51 With regards to recorded speed information from the ATC surveys undertaken and from the Transport Scotland database, **Table 10.7** presents the results of the two-way five-day average and 85th percentile speeds. There is no speed information available for the DFT sites.

Table 10.7: Speed Summary (2022)

No.	Survey Location	Data Source	Mean Speed (mph)	85th %ile Speed (mph)	Speed Limit (mph)
1	D52 Proposed Site Access Road	ATC	36.1	45.0	60

No.	Survey Location	Data Source	Mean Speed (mph)	85th %ile Speed (mph)	Speed Limit (mph)
2	B6456 at Westruther	ATC	26.8	33.8	20
4	A68 North of Carfraemill	Transport Scotland	45.9	52.7	60
5	A68 at Pathhead	Transport Scotland	27.1	30.9	30
6	A68 North of Lauder	Transport Scotland	24.4	29.2	20

10.52 The speed survey data indicates that on the B6456 in Westruther and the A68 north of Lauder, speed limits are not currently being adhered to. New permanent 20 miles per hour (mph) speed limit were adopted at these locations in January 2023, following a 2-year trial period. This indicates that traffic management measures will be required at these locations for construction traffic. Furthermore, Police Scotland may wish to consider enforcement spot checks in these areas as part of their wider road policing measures.

10.53 Those management measures relating to construction staff for the Proposed Development, will be included within the Construction Traffic Management Plan (CTMP) and will include, for example, reduced speed limits for Site operatives.

Road Access

10.54 The Proposed Development during both construction and operation will be accessed via the existing Fallago Rig Wind Farm access, which is taken from the D52 which runs from its junction with the B6456 to the entrance to Wedderlie Farm Steading. The junction is located approximately 1.3 kilometres (km) to the east of the settlement of Westruther and can be seen on **Figure 10.1**.

10.55 The B6456 is a single carriageway rural road, which runs in an east to west direction between Whiteburn and Choicelee, for a distance of approximately 16 km. The road has the national speed limit (60 mph) in place and is a good standard rural road. The B6556 passes through the settlement of Westruther where the speed limit drops to 20 mph.

10.56 The A697 is a single carriageway rural road, which runs from Carfraemill at the A86 to Morpeth, for a distance of approximately 38 km. The A697 provides access to the aforementioned B6456, which in turn provides access to the Proposed Development Site. The speed limit varies on the A697, with the national speed limit (60 mph) in place on quiet rural sections, dropping to either 20 mph or 30 mph in villages and settlements.

10.57 The A68 Edinburgh to Newcastle Upon Tyne is a Trunk Road operated by Bear Scotland. The road runs from the grade separated junction with the A720 Edinburgh City By-pass in a south-eastwards direction for a distance of approximately 83 km to the Scotland / England border. The national speed limit is in place for large sections of its length, reducing to 20 or 30 mph in villages and settlements along its length.

Personal Injury Accident Review

10.58 Road traffic accident data for the five-year period commencing 01 January 2017 through to the 31 December 2021 for the A697 and B6456 within the Study Area was obtained from the online resource [crashmap.co.uk](https://www.crashmap.co.uk)¹⁵ which uses data collected by the police about road traffic crashes occurring on British roads where someone is injured.

10.59 The statistics are categorised into three categories, namely "Slight", "Serious" and "Fatal", for those accidents that result in a death. The locations and severity of the recorded accidents within the Study Area are summarised in **Table 10.8**, while **Figure 10.3** shows their locations.

¹⁵ <https://www.crashmap.co.uk/>

Table 10.8: Personal Injury Accident Summary

Location	Slight	Serious	Fatal	HGV Incidents
B6456	1	0	0	-
A697	9	3	1	3 Slight, 2 Serious & 1 Fatal
Total	10	3	1	-
Percentage	71.4%	21.4%	7.1%	-

10.60 A summary analysis of the incidents indicates that:

- A total of 14 PIAs were recorded within the Study Area within the last five-year period;
- Of those 14 PIAs, ten were “Slight” (71.4%), three were “Serious” (21.4%) and one was “Fatal” (7.1%);
- The single ‘Fatal’ PIA involved a motorbike, no other vehicles were involved;
- No PIAs involved a pedestrian or cyclist;
- Six of the recorded PIAs involved an HGV, five of these were ‘Slight’ and one was ‘Serious’;
- Young drivers (16-20) were involved in three accidents, all “Slight”;
- No accidents were recorded on the B6456 in the vicinity of the Site access junction; and
- Seven of the recorded PIAs occurred between the junction of the A697 / B6362 and Whiteburn, off these, two occurred at the aforementioned junction and the others occurred at bends on the carriageway.

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

Future Baseline in the Absence of the Proposed Development

10.62 As noted above, the assessment has been undertaken on the basis of a future baseline of conditions in 2026, with growth factors applied. In the absence of the Proposed Development, it is anticipated that traffic growth will occur throughout the Study Area as a result of other development pressures, tourism and population flows.

Implications of Climate Change

10.63 Chapter 12: Other Issues assesses details of the climate change projections in the East of Scotland for the 2050s, when the operational period of the Proposed Development is likely to end. In summary, the projections highlight that in the 2050s, summer and winter temperatures are likely to be greater than the current baseline, with winter rainfall increasing and summer rainfall decreasing.

10.64 It is considered that climate change projections would not have a discernible impact on the baseline conditions for road traffic within the timescales of the Proposed Development.

10.65 It is assumed that, at regional level, appropriate measures would be put in place to ensure flood risk is managed and does not have long term effects on transport infrastructure.

Assessment of Likely Significant Effects

10.66 The assessment of effects is based on the project description as outlined in **Chapter 3: Development Description** and the embedded mitigation by design described in **Chapter 2: Site Selection and Design Strategy**. An Outline Construction Environmental Management (CEMP) has also been prepared and is included in **Appendix 3.1 (EIA Report Volume 4)**.

Summary of Sensitive Receptors

10.67 A review of sensitive receptors has been undertaken within the Study Area. **Table 10.9** 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 10.2**.

Table 10.9: Receptor Sensitivity Summary

Receptor	Sensitivity	Justification
D52 Proposed Site Access Road Users	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
B6456 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
A697 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
A68 Users	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
Residents along D52	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents along B6456	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Westruther Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Residents along A697	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Greenlaw Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Whiteburn Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Carfraemill Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Residents along A68	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Pathhead Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Lauder Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.

Receptor	Sensitivity	Justification
Core Paths / Public Rights of Way Users within the Site	High	Minor paths used by walkers and cyclists, not constructed to accommodate HGV traffic flows

10.68 As previously noted in the **Criteria for Assessing Magnitude of Change** section, examples of sensitive areas are presented in the IEMA Guidelines as locations which include hospitals, churches, schools, historical buildings.

10.69 Based on these indicators which are stated within the IEMA Guidelines, the following locations have been identified as sensitive areas in this assessment:

- Westruther;
- Greenlaw;
- Pathhead; and
- Lauder.

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

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

Potential Construction Effects

10.72 The assessment is based upon the construction effects that may occur within the Study Area during the 19 month construction programme. To assess the effects, it is necessary to determine the likely traffic generation associated with the Proposed Development during the peak construction month.

10.73 During the 19-month construction period, the following traffic will require access to the Site:

- Staff transport, in either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock;
- Components relating to the battery storage element and associated infrastructure; and
- Abnormal loads consisting of the wind turbine sections and heavy lift cranes.

10.74 Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development and these are detailed in the Transport Assessment contained in **Appendix 10.1**. The trip estimates have been based upon first principle estimates of traffic movements to and from the Site, having established the likely volumes of construction materials, resources and components.

10.75 Except for the turbine components, most traffic will be HGVs and normal construction plant, including grading tractors, excavators, high-capacity cranes, forklifts and dumper trucks. Most will arrive at the Site access junction on low loaders.

10.76 The turbines are delivered in component sections for transport and should be assembled within the turbine array. The nacelle, hub, drive train, blade, tower sections are classified as AILs due to their weight and/or length, width and height when loaded.

10.77 The components can be delivered on a variety of transport platforms with typical examples illustrated in **Appendix 10.1**.

10.78 In addition to the turbine deliveries, up to two high-capacity erection cranes will be needed to offload components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that will be escorted by boom and ballast trucks to allow full mobilisation onsite. A smaller erector / assist crane will also be present to allow the assembly of the main cranes and to ease overall erection of the turbines.

10.79 The resulting traffic generation profile is presented in **Appendix 10.1**. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 11 of the construction programme. During this month,

an average of 68 HGV movements is predicted per day and it is estimated that there will be a further 42 car and light van movements per day to transport construction workers to and from the Site.

10.80 These figures on average indicate approximately six additional HGV two-way movements per hour on the network at the peak of construction activities, during a typical 12 hour working day.

10.81 It should also be noted that within the estimated peak month of construction activities, AIL movements are expected to begin. Therefore, within the monthly total of 1,497 HGV movements, 66 of these will represent AIL loads.

10.82 The distribution of development traffic on the network will vary depending on the types of loads being transported, however the vast majority of materials will route to the Site access junction from the west on the B6456. The assumptions for the distribution of construction traffic during the peak months are presented in **Appendix 10.1**.

10.83 Loads relating to the turbine components will be delivered from the proposed PoE for the Proposed Development, which is Rosyth. The port is the closest, suitable port to the Site access junction and as such is in line with the Government's "Water Preferred" policy towards AIL movements.

10.84 The access route from the PoE to the Site access junction will therefore be as follows:

- Loads will exit the port onto Keith Road and will then proceed eastbound;
- Loads will then merge onto the B981 before turning right onto the M90 southbound;
- Loads will continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- Loads will merge onto the M8 at Newbridge and will proceed towards Edinburgh until Hermiston Gait, where they will turn right and join the A720 Edinburgh City Bypass;
- Loads will continue eastbound on the length of the A720 before exiting at the Millerhill Junction;
- Loads will proceed southbound on the A68 until Carfraemill when they will turn left onto the A697 eastbound;
- Loads will turn left onto the B6456 and proceed through Westruther; and
- To the east of Westruther, loads will turn left onto the D52. From here, loads will proceed northbound before turning right into the existing Site access junction.

10.85 The above AIL route can be seen in **Figure 10.4**.

10.86 Following the distribution and assignment of traffic flows to the Study Area network, the resultant daily traffic during the peak of construction in month 11, is summarised in **Table 10.10**.

Table 10.10: Peak Construction Traffic

No.	Survey Location	Car & LGV	HGV	Total	%HGV
1	D52 Proposed Site Access Road	42	68	110	61.7%
2	B6456 at Westruther	42	68	110	61.7%
3	A697 South of Addinston	38	8	46	17.3%
4	A68 North of Carfraemill	20	8	28	28.3%
5	A68 at Pathhead	20	8	28	28.3%
6	A68 North of Lauder	18	62	80	77.5%
7	A697 at Greenlaw	4	2	6	33.3%

Please note that variances may occur due to rounding.

10.87 The construction traffic was compared against the future baseline traffic to estimate the increase in traffic associated with this phase of the Proposed Development. **Table 10.11** illustrates the potential traffic impact at the peak of construction activity during month 11.

Table 10.11: 2026 Future Baseline + Construction Traffic Impact Summary

No.	Survey Location	Car & LGV	HGV	Total	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	D52 Proposed Site Access Road	105	108	213	67.2%	171.6%	107.5%
2	B6456 at Westruther	468	204	672	9.9%	49.9%	19.6%
3	A697 South of Addinston	2,671	280	2,951	1.5%	2.9%	1.6%
4	A68 North of Carfraemill	8,760	1,033	9,793	0.2%	0.8%	0.3%
5	A68 at Pathhead	9,529	1,018	10,547	0.2%	0.8%	0.3%
6	A68 North of Lauder	7,221	612	7,833	0.2%	11.3%	1.0%
7	A697 at Greenlaw	4,776	460	5,236	0.1%	0.4%	0.1%

Please note that variances may occur due to rounding.

10.88 The total traffic movements are not predicted to increase by more than 30% on any of the public roads within the Study Area, with the exception of the D52 which leads through to the proposed access road, where there is an increase of 107.5%. Although this increase in total flows could be considered statistically significant, it is generally caused by the relatively low total flows at this location and will see an additional 110 daily journeys (55 inbound and 55 outbound). This represents approximately five inbound journeys every hour which is not considered significant in terms of overall traffic flows.

10.89 The total HGV movements are predicted to increase by 171.6% on the D52. Again this could be considered statistically significant, however, it is a result of the low levels of HGV flows on this road. The additional 68 daily journeys (34 inbound and 34 outbound) will represent approximately three HGV inbound journeys every hour which is not considered significant in terms of overall traffic flows.

10.90 The B6456 at Westruther sees the next highest increase in both total traffic and HGV flows, with an increase of 19.6% and 49.9% respectively.

10.91 A review of existing theoretical road capacity has been undertaken using the DMRB, Volume 15, Part 5 "The NESAs Manual" (Network evaluation from surveys and assignment). The theoretical road capacity has been estimated for each of the road links that make up the Study Area, for a 12-hour period. The results are summarised in **Table 10.12**.

Table 10.12: 2026 Daily Traffic (12hr) Capacity Review Summary

No.	Survey Location	2026 Baseline Flow (total traffic)	2026 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	D52 Proposed Site Access Road	103	213	3,360	93.7%
2	B6456 at Westruther	562	672	21,600	96.9%
3	A697 South of Addinston	2,904	2,951	21,600	86.3%

No.	Survey Location	2026 Baseline Flow (total traffic)	2026 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
4	A68 North of Carfraemill	9,290	9,318	28,800	66.0%
5	A68 at Pathhead	10,403	10,431	28,800	63.4%
6	A68 North of Lauder	6,755	6,835	28,800	72.8%
7	A697 at Greenlaw	5,230	5,236	21,600	75.8%

Please note that variances may occur due to rounding.

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

10.93 In accordance with the IEMA Guidelines Rules 1 and 2, detailed assessments have been undertaken on the following receptors:

- D52 Proposed Site Access Road Users (High sensitivity);
- B6456 Users (Medium sensitivity);
- Residents along the D52 (Negligible sensitivity);
- Residents along the B6456 (Negligible sensitivity);
- Westruther Residents; and (Low sensitivity);
- Core Path / Public Right of Way Users within the Site (High sensitivity).

10.94 With regards to the Core Path / Public Rights of Way Users within the Site, this relates to those paths specifically impacted by the construction of the Proposed Development, for example where sections of the path are shared with onsite access tracks, where onsite paths are crossed by the proposed access tracks, or where other onsite infrastructure could impact people using paths. For the purposes of the assessment, the following Core Paths / Public Rights of Way identified on **Figure 3.13a of EIA Report Volume 3a: Figures**, have been included within the assessment:

- BB/HT712/1;
- BB/BB196/1;
- BB/BB109/1;
- BB/BB110/2;
- BB/HT720/8;
- BB/HP01/5;
- BB/HP01/14;
- BB/BB108/1;
- BB/BB109/1;
- BB/BB103/1;
- BB/HT525/17;
- BB/BB/104/1; and
- BB/BB106/1.

10.95 The significance of the potential effects on the above receptors has been determined using the rules and thresholds previously outlined in the Criteria for Assessing Significance. **Table 10.13** summarises the significance of the effect on the receptors for the construction phase.

Table 10.13: Construction Phase Effects Summary

Receptor	Severance	Driver Delay	Pedestrian Delay	Amenity	Fear	Accidents & Safety
D52 Proposed Site Access Road Users	Major	Moderate / Minor	Major	Major	Major	Moderate / Minor
B6456 Users	Minor	Minor	Moderate	Major / Moderate	Minor	Minor
Residents along D52	Minor	Minor / Negligible	Minor	Minor	Minor	Minor / Negligible
Residents along B6456	Minor / Negligible	Minor / Negligible	Minor	Minor	Minor / Negligible	Minor / Negligible
Westruther Residents	Minor	Minor	Minor	Minor	Minor	Minor
Core Path / Public Right of Way Users within the Site	Major	Moderate / Minor	Major	Major	Major	Major / Moderate

10.96 The assessment of significance suggests that the following receptors are considered likely to experience Significant effects in accordance with the EIA Regulations, prior to the application of mitigation measures:

- D52 Proposed Site Access Road Users;
- B6456 Users; and
- Core Path / Public Right of Way Users.

10.97 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.

Potential Cumulative Effects

Potential Cumulative Construction Effects

10.98 Transport Assessment guidance¹⁶ advises that only those projects with extant planning permission or local development plan allocations within an adopted or approved plan require to be included in any assessment. Those projects in scoping or not yet determined should not be included in cumulative assessments as they have yet to be determined.

10.99 When considering traffic impacts specifically in relation to the construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in the assessment.

10.100 A full review of the SBC online planning portal¹⁷ and the ECU portal¹⁸ was undertaken within **Appendix 10.1** to identify any consented developments within the vicinity of the Proposed Development which will generate significant traffic and should be considered as part of any cumulative assessment.

¹⁶ <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements>

¹⁷ <https://eplanning.scotborders.gov.uk/online-applications/search.do?action=simple&searchType=Application>

¹⁸ <https://www.energyconsents.scot/ApplicationSearch.aspx?T=1>

10.101 No onshore wind farm developments or other potentially significant traffic generating developments with extant planning permission were identified, that should be considered as part of any cumulative assessment, relating solely to construction traffic effects.

Decommissioning

10.102 The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 35 years on from the completion of the Site. As elements of the Proposed Development are likely to remain in-situ (such as cable trenches, some 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 Decommissioning effects are considered to be less than or equal to, the predicted construction phase effects.

Mitigation

Mitigation During Construction

Construction Traffic Management Plan (CTMP)

10.103 The following measures will be implemented during the construction phase through the CTMP, secured via a deemed planning permission condition:

- Agree AIL route modifications and improvements with SBC, Transport Scotland, and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the respective delivery route options Route Survey Report (RSR), which are presented in Appendix A of **Appendix 10.1**;
- 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) will be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures will 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 SBC;
- Normal Site working hours will be limited to between 0700 and 1900 Monday to Friday and 0700 and 1200 Saturday, though component delivery and turbine erection may take place outside these hours. No work is proposed on Sundays and public holidays unless otherwise agreed with SBC;
- Appropriate traffic management measures will be put in place on the B6456 and the D52 leading through to the Site, to avoid conflict with general traffic, subject to the agreement of SBC. Typical measures will include HGV turning and crossing signs and/ or banksmen at the Site access and warning signs;
- Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary reduced speed limits for construction traffic at locations to be agreed with SBC. For reference, there is an existing 10 mph speed limit in place for Site operative of Fallago Rig wind farm in the vicinity of Wedderlie Farm and Byrecleugh and a 20 mph limit in all other areas in the vicinity of the Site;
- 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 settlements); and
- Identification of the required access routes and the controls to ensure no departure from these routes.

Offsite Mitigation

10.104 SBC are likely to request that an agreement to cover the cost of abnormal wear on its network is made, which will be covered by a Section 96 Agreement or similar agreement.

10.105 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 SBC'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.

10.106 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.

10.107 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.

10.108 Before the AILs traverse the route, 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.

10.109 Information on the AIL turbine convoys will be provided to local media outlets to help assist the public. These could include:

- Local Newspapers;
- Community Council; and
- SBC website.

10.110 Information will relate to expected vehicle movements from the port of entry through to the Site access junction. This would assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

10.111 Advance warning signs will be installed on the approaches to the affected road network, subject to the agreement of the road authorities.

10.112 Site direction signage will also be provided to direct construction traffic to the Site and to ensure that traffic remains on approved routes and will not operate on minor road links that have not been assessed. The Balance of Plant (BoP) contract would specify the routes that suppliers must take during construction activities. This would be enforced by the Site agent.

10.113 It is anticipated that an agreement on wear and tear on road infrastructure caused directly by construction traffic would be established prior to construction commencing. The agreement would set out the area of review, scope and response requirement of any dilapidations that can be proven to be linked to construction traffic.

Abnormal Indivisible Loads

AIL Route Survey Report (RSR)

10.114 The AIL RSR highlights a number of pinch points which have been assessed within the report using swept path assessment software. The locations of the constraint points and the swept path drawings are included as Appendix A, within **Appendix 10.1**.

10.115 The AIL RSR identifies key points and issues associated with the route that requires the temporary removal of physical obstructions such as street furniture, bollards, road signs, guardrails and lighting columns, as well as the trimming / removal of vegetation.

10.116 Additional mitigation measures outlined in the RSR highlights areas where vehicle over-run will be required along the delivery route.

10.117 The existing Fallago Rig Wind Farm Site access junction with the B6456 will be upgraded to accommodate the delivery of AILs accessing the Site. The general arrangement of the junction is provided in Appendix B in **Appendix 10.1**.

10.118 AIL mitigation works can be designed to be temporary in nature to enable the restoration to their original condition (if required by SBC and Transport Scotland).

AIL Transport Management Plan (TMP)

10.119 An Abnormal Load Transport Management Plan will be prepared and will likely be subject to a planning condition, to cater for all movements to and from the Proposed Development. This will include for example:

- 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 popular local events etc.;
- 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 group. This group will form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

10.120 In addition, there are a number of traffic management measures (temporary mitigation measures) that will 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 at sensitive locations, for example around schools and nurseries. .

10.121 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.

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

- On sections of single carriageway road, for example on the A697 at Westruther and B6456;
- At locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width, for example on the A697 to the west of Thirlestane;
- Where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms, for example at the roundabout between the A86 (T) and the A697;
- In locations where high speeds of general traffic are predicted, for example at locations where the national speed limit is in place or where known speeding issues have been recorded; and
- Within the Site where the internal access tracks interact with Core Paths and Public Right of Way.

10.123 At these potential conflict locations, appropriate mitigation measures will be employed to minimise the risk to other road users including for example the use of escort vehicles and additional signage.

10.124 The AIL 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 liaison group. This group will provide a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Onsite Measures delivered using an Access Management Plan (AMP)

10.125 Within the Site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the paths. If required by the Scottish Borders Council, a Path Planning Study will be conducted post consent and will be secured through a planning condition. Findings from the study will be used to formulate a set of measures into an Access Management Plan (AMP). An Outline OAMP is included within **Chapter 3** of the EIAR as **Appendix 3.3**.

10.126 Users of the Core Path and Public Rights of Way networks identified in **Section 10.95** will be separated from construction traffic through the use of barriers where it is deemed necessary. Crossing points will be provided where required, with path users having right of way over construction vehicles. Appropriate Traffic Signs Manual Chapter 8¹⁹ compliant temporary road signage will be provided to assist at these crossing for the benefit of all users.

10.127 The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the Core Path / Public Rights of Way and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

10.128 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.

10.129 With regards to the possible interaction with horses on and in the vicinity of the Proposed Development, a Scoping Response has been received from The British Horse Society. Consideration will therefore be given to the implementation of measures to mitigate any potential issues between construction traffic and horse riders. 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.

10.130 The main factors causing fear in horses in this situation are:

- Something approaching them, which is unfamiliar and intimidating;
- A large moving object, especially if it is noisy;
- Lack of space between the horse and the vehicle;
- The sound of air brakes; and
- Anxiety on the part of the rider.

10.131 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;

¹⁹ Department for Transport/Highways Agency, Department for Regional Development (Northern Ireland), Transport Scotland & Welsh Assembly Government (2009): Traffic Signs Manual, Chapter 8 – Traffic Safety Measures and Signs for Road Works and Temporary Situations

- 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 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

10.132 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.

Assessment of Residual Effects

Residual Construction Effects

10.133 The identification of residual construction effects considers the assessment of traffic effects following the incorporation of the identified mitigation measures above. An evaluation of the potential effects of the temporary increase in traffic on the Study Area roads used for the construction traffic has been undertaken. To avoid repetition, the summary of this assessment of residual effects is presented in **Table 10.13**.

10.134 The assessment confirms the temporary construction stage effects will be minor in nature and they would be not significant, following the implementation of a comprehensive CTMP, together with onsite route signage and an access management plan, which would incorporate any required re-routing of Core Paths / 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.

Residual Cumulative Effects

Residual Cumulative Construction Effects

10.135 No residual cumulative effects are predicted as part of the Proposed Development.

Monitoring

10.136 Site entrance roads will be well maintained and monitored during the construction phase and operational life of the Proposed Development and is anticipated to be monitored post decommissioning (where applicable). With regards to the construction phase, this will be done as part of the CTMP and will involve monitoring the Site access junction and public road network in the vicinity of the Site to ensure mud and debris from construction activities are not tracked on to the road network. Furthermore, monitoring of the public road network will be undertaken as part of the road conditions surveys, that will likely be required by the SBC.

10.137 During the operational life of the Proposed Development, regular maintenance will be undertaken to keep the Site access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

Summary

10.138 This chapter presents the findings of the potential effects of the Proposed Development on Access, Traffic and Transport during the construction phase.

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

10.140 The maximum traffic impact associated with construction is predicted to occur in Month 11 of the programme. During this month, an average of 68 HGV movements is predicted per day and it is estimated that there will be a further 42 car and light van movements per day to transport construction workers to and from the Site. The greatest magnitude of effect will occur along the D52 which is the proposed Site access road and the B6456.

10.141 No 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, as background traffic movements are low, the links are of a reasonably good standard and appropriate mitigation is proposed. The effects of construction traffic are temporary in nature and are transitory.

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

10.143 Traffic levels during the operational phase of the Proposed Development will be low, with two to three vehicles per day 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.

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

Glossary/Abbreviations

Table 10.14: Glossary and abbreviations

Term in Full	Abbreviation	Meaning/Description
AADT	Annual Average Daily Traffic	The average traffic flow over the course of a full year which passes a particular location on the road network each day.
AIL	Abnormal Indivisible Load	Loads / vehicles which exceed the maximum vehicle weight, axle weight or dimensions which are set out in the Road Vehicles (Construction and Use) Regulations 1986 as amended.
AMP	Access Management Plan	Plan outlining measures for path users following outcomes from the Path Planning Study.
ATC	Automatic Traffic Count	Equipment which is laid across a road and measures traffic characteristics such as the number of vehicles passing over it, speed and classification.
BoP	Balance of Plant	Infrastructural components of a windfarm, except the turbine and its elements.
CEMP	Construction Environmental Management Plan	A project's document which outlines measures to achieve compliance with

Term in Full	Abbreviation	Meaning/Description
		the environmental protection and mitigation requirements.
CTMP	Construction Traffic Management Plan	Document which outlines traffic management measures to mitigate adverse impacts associated with construction related traffic.
DfT	Department for Transport	Department for Transport
DMRB	Design Manual for Roads and Bridges	Design Manual for Roads and Bridges
DPEA	Planning and Environmental Appeals Division	Scottish Government's Planning and Environmental Appeals Division
EIAR	Environmental Impact Assessment Report	A document detailing the effects a project would have on the environment.
ESDAL	Electronic Service Delivery for Abnormal Loads	System that provides information on who to notify regarding a route to transport abnormal loads.
HGV	Heavy Goods Vehicle	All goods vehicles > 3.5 tonnes gross maximum weight.
IEMA	The Institution of Environmental Management and Assessment	The Institution of Environmental Management and Assessment
Lights or LGV	Light goods vehicles	All commercial vehicles < 3.5 tonnes gross maximum weight.
NCR	National Cycle Route	Designated National Cycle Routes within the UK.
NRTF	National Road Traffic Forecast	Factors used to apply future year growth to traffic flows.
OS	Ordnance Survey	Great Britain's national mapping agency.
PoE	Port of Entry	Port from which ALLs are to be delivered.
PRoW	Public Rights of Way	A path where the public has a right of passage along common law 'rights of way'.
RSR	Route Survey Report	Report assessing the suitability of a route to transport abnormal loads.
T	Trunk Road	Strategic road
TPC	Travel Plan Coordinator	Personal responsible for updating, promoting and implementing the Travel Plan
TS	Transport Scotland	Transport Scotland

References

- Department for Transport (2013). Design Manual for Roads and Bridges, Volume 15, Part 5 “The NESA Manual”. Available at: <http://www.sias.com/2013/TS/201303NesaManual.pdf>
- Scottish Government (2022). National Planning Framework 4. Available at: <https://www.transformingplanning.scot/national-planning-framework/approved-npf4/>
- Scottish Government (2005). Planning Advice Note (PAN) 75. Available at: <https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/>
- Scottish Government (2014). Onshore Wind Turbines; Renewables Planning Advice. Available at: <https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/>
- The Institution of Environmental Management and Assessment (2005). Guidelines for Environmental Impact Assessment.
- The Institution of Environmental Management and Assessment (1993). Guidelines for the Environmental Assessment of Road Traffic.
- Transport Scotland (2012). Transport Assessment Guidance. Available at: https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management_dpmtag_ref_17_-_transport_assessment_guidance_final_-_june_2012.pdf
- The Timber Transport Forum, ‘Agreed Timber Route Map’. Available at: <https://timbertransportforum.org.uk/maps/agreed-routes>
- CrashMap accident data. Available at: <https://www.crashmap.co.uk/>
- Google Maps. Available at: <https://www.google.co.uk/maps>
- Promap (OS mapping): Available at: <https://www.promap.co.uk/>
- Department for Transport, traffic count data. Available at: <https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints>