

10. Access, Traffic and Transport

10.1 Introduction

- 10.1.1 This chapter of the Environmental Impact Assessment (EIA) Report presents an assessment of the potential effects on users of the transport network of the additional vehicle movements that would be generated during the construction, operation and decommissioning of the Proposed Development.
- 10.1.2 The assessment has been undertaken in accordance with relevant policy, legislation and standard guidance. The main guidance document used in the assessment has been the Institute of Environmental Management and Assessment (IEMA¹) 'Guidelines: Environmental Assessment of Traffic and Movement' of July 2023. That document provides *"practitioners with good practice advice on how to carry out the assessment of traffic and movement of people as part of a statutory EIA or non-statutory environmental assessment"*.
- 10.1.3 This chapter:
- summarises the consultation responses that informed the assessment;
 - describes the assessment method used;
 - describes current and future baseline conditions (i.e. the current conditions and the future conditions in the absence of the Proposed Development);
 - describes measures that have been embedded in the design of the Proposed Development to minimise transport-related effects;
 - presents estimates of the additional vehicle movements expected to arise from the Proposed Development and assesses the impacts and effects of those movements, considering both the Proposed Development individually and in combination with other nearby developments;
 - identifies any additional measures that would be required to mitigate any transport-related effects arising from the Proposed Development; and
 - describes any residual effects after the implementation of any additional mitigation measures.
- 10.1.4 The separate Planning Statement provided as part of the consent application contains an appraisal of the Proposed Development's compliance with relevant transport planning policies.
- 10.1.5 The chapter is accompanied by the following Technical Appendices:
- **Technical Appendix 10.1: Turbine Component Delivery Route Feasibility Assessment**, which considers the feasibility of delivering the turbine components to the Proposed Development; and
 - **Technical Appendix 10.2: Assessment Method Details.**
- 10.1.6 This chapter is supported by the following figures (**Volume 3a**):
- **Figure 10.1: Study Area and Location of Traffic Surveys;**
 - **Figure 10.2: Abnormal Indivisible Load Vehicle Route;** and

¹ The IEMA was renamed as The Institute of Sustainability and Environmental Professionals (ISEP) in July 2025.



- **Figure 10.3: Location of Quarries.**

- 10.1.7 As described in **Chapter 2: Project Description**, it is expected that electricity would be exported from the Proposed Development via an overhead line (OHL) to the proposed Glenmuckloch Substation, located approximately 8 km to the south-east. The Applicant has identified an indicative corridor for the route of this OHL. Some additional vehicle movements would be generated on the road network as a result of the construction of the OHL.
- 10.1.8 The OHL does not form part of the Proposed Development for which consent is currently being sought. However, this chapter also considers the likelihood of any significant effects on users of the transport network arising from the construction of the OHL, noting that there is a degree of uncertainty of the OHL route at this stage in the design and planning process. The OHL will be subject to a separate consenting process in due course.

10.2 Consultation

- 10.2.1 Consultation undertaken prior to and during the EIA Scoping stage was described in the EIA Scoping Report. **Table 10-1** presents the consultee responses in the Scoping Opinion relevant to this chapter and a summary of how each response has been addressed.



Table 10-1: Summary of Consultation

Consultation Details	Consultee Comments	Applicant Response
East Ayrshire Council		
Scoping Opinion	<i>The traffic assessment shall be based on a worst-case scenario which, for the avoidance of doubt, the Planning Authority would expect assumes 100% of construction materials such as stone requiring to be imported to site. Vehicle movement figures should also be based on all vehicle movements, including HGV [Heavy Goods Vehicle], LGV [Light Goods Vehicle] and abnormal loads. Any expected reduction in stone importation due to the use of borrow pits (if ultimately proposed) can be reported within the EIA Report, along with the consequent effect this would have on traffic volumes. A worst-case scenario should, nevertheless, be presented in case any proposed borrow pits fail to provide the anticipated volume of stone to ensure a robust assessment of impacts.</i>	As described in Chapter 2 , the Proposed Development does not include a search area for borrow pits. Hence the vehicle movement estimates (shown in Table 10-7) are based on all stone required for construction being imported from off-site sources.
	<i>The EIA Report should identify potential sources of materials (e.g. stone quarries) if these are off-site and consider the impacts of those routes to site, including communities along those routes. Such assessment should also include cumulative impacts with other developments. Appropriate environmental and/or supporting information should be submitted to justify the need for borrow pits.</i>	Potential sources of materials are described in Section 10.6 and shown on Figure 10.3 . Cumulative impacts are considered in Section 10.10 of this chapter. No borrow pits are proposed.
	<i>The Planning Authority expects the inclusion of a cumulative traffic assessment which should consider any consented / under construction or in-planning developments likely to generate large volumes of traffic on the delivery route. This should not necessarily be limited to other wind farms as any traffic generating development using the same road network as the proposed wind farm has the potential to contribute to cumulative traffic impacts regardless of the nature of the development. The Applicant is advised to keep tabs on the cumulative situation and development applications in and around the area / using the same road network to inform the cumulative traffic assessment nearer the time, prior to submission of the application to ensure the cumulative assessment is up to date</i>	Cumulative impacts are considered in Section 10.10 of this chapter. The cumulative developments listed in Chapter 4: Landscape and Visual Impact Assessment have been considered as potential cumulative developments for this assessment if they are: • consented, but not under construction; or • the subject of an undetermined consent application. East Ayrshire Council's (EAC's) planning portal was reviewed and no other planning applications were identified which would cause a material increase in vehicle movements on the sections of road in the Study Area.



Consultation Details	Consultee Comments	Applicant Response
	<i>as this is a constantly evolving situation, particularly in the southern part of the district. This would include reviewing the Scottish Government Energy Consents Unit website to include any Section 36/37 applications potentially using/impacting on the proposed road network route."</i>	
	<i>"Any new or upgraded accesses on the road network will need to include any required visibility splays within the application site boundary so that any works necessary to form and maintain these can be included as part of the development."</i>	As described in Chapter 2 , the Proposed Development will use an existing access from the A70 and no new or upgraded accesses are required, other than an area of overrun on the western side of the access to accommodate Abnormal Indivisible Load Vehicles (AILVs).
	<i>"The EIA Report should detail the anticipated port of entry and the delivery route for turbines and components to site. Transport Scotland may provide advice in respect of the trunk road network, whilst the Applicant is also encouraged to discuss traffic matters with the Council's Ayrshire Roads Alliance (ARA). Early contact with ARA is advised. The Planning Authority would agree that the operational phase of the development can be scoped out of the traffic assessment as periodic maintenance visits are unlikely to generate significant traffic impacts."</i>	The port of entry and delivery route for the turbine components are considered in Technical Appendix 10.1 . Transport Scotland's Scoping Opinion comments are addressed later in this table. Ayrshire Roads Alliance (ARA) would be contacted to agree any works required on their network closer to the time of deliveries commencing. The operational phase has been scoped out.
	<i>"Any impacts on core paths or rights of way will need to be assessed and any mitigation required where impacts are likely. The nearest core path (C5 and B13 Cumnock to Lugar) would likely experience views of the turbines along its length, particularly when in the north-eastern extents of that route. Despite the nature of the site as a former opencast site, there is a right of way which does extend partly into the site at Duncanziemere. Impacts on recreational routes will need to be assessed. These can either be addressed in the access and traffic chapter or elsewhere if considered to be more appropriately assessed under other chapters such as landscape and visual impacts or recreational impacts."</i>	Impacts on core paths and rights of way are considered in the Socio-Economics, Tourism and Recreation Statement, which will be submitted as part of the application of Section 36 consent .
Transport Scotland		
Scoping Opinion	Transport Scotland is satisfied with EIA approach as per the scoping report.	Noted



Consultation Details	Consultee Comments	Applicant Response
	<i>"We note that the delivery of the turbine components during construction would require Abnormal Indivisible Load Vehicle (AILV) movements. Consequently, a report will be prepared to consider the potential routes for these AILVs and this report will be included as a Technical Appendix to the EIA Report. The effects of the passage of these AILVs will be considered in the assessment.</i> <i>We would consider this appropriate and would add that Transport Scotland will require to be satisfied that the size of turbines proposed will not have any detrimental effect on structures within the trunk road route path.</i> <i>The Abnormal Loads Assessment report should identify key pinch points on the trunk road network and swept path analysis should be undertaken, with details provided in respect of any required changes to street furniture or structures along the route."</i>	Technical Appendix 10.1 considers the feasibility of the AILV movements (including swept path assessments) and the effects of them are considered in this chapter. The ability of structures on the route to accommodate the laden weight of the AILVs would be considered after any consent for the Proposed Development was issued, in line with condition 24 (1) (e) in the Scottish Government's document 'Onshore Wind Standard Conditions Section 36 Consent and Deemed Planning Permission' of February 2025.
British Horse Society		
Scoping Opinion	<i>"Vehicles travelling to and from your site are likely to meet equestrians on the road and drivers should be advised of this risk. I have enclosed a copy of our "Guidance to drivers of large vehicles" document."</i>	This document is referred to in the list of topics that would be covered in the Construction Traffic Management Plan (CTMP) (see Section 10.5).
Network Rail		
Scoping Opinion	<i>"A Traffic Assessment should be included to assess the effects of construction traffic on existing traffic flows and the public road network. Preferred construction traffic routes should be indicated. This will enable Network Rail to assess the possible impacts where/if the traffic crosses over/under our infrastructure and the suitability of these crossings."</i>	Effects of construction traffic on existing traffic flows and the public road network are considered in this chapter. Preferred construction traffic routes are described in Section 10.6 and shown on Figure 10.1



- 10.2.2 Responses to the EIA Scoping Opinion were provided in the Gatecheck 1 Report which was submitted to the Scottish Ministers' Energy Consents Unit (ECU) in July 2026. No further direct consultation has been undertaken since the submission of the Gatecheck 1 Report.

10.3 Assessment Methodology and Significance Criteria

Proposed Development

- 10.3.1 The Proposed Development would generate demand for transport during its construction, and this demand would have the potential to impact users of the transport network and potentially have an effect on those users. Transport demand would be generated during construction by staff travelling to and from the Site and plant, components, materials and supplies being delivered to or removed from the Site. This would lead to additional movements of cars, vans, LGVs and HGVs on the road network and the effects of these movements are considered in the assessment.
- 10.3.2 As described in **Chapter 2**, the Proposed Development will be accessed from an existing priority junction (with a ghost island right turn lane) on the section of the A70 between Lugar and its junction with the B743. This access was used when the Site was used as an opencast site and is therefore suitable for use by standard HGVs. As also described in **Chapter 2**, an overrun area is required at the western side of the access at this junction in order to accommodate the AILVs delivering the turbine components.
- 10.3.3 The delivery of the turbine components during construction would require AILV movements as some of the vehicles carrying the components would have at least one dimension that exceeds the maxima in The Road Vehicles (Construction and Use) Regulations 1986. The report in **Technical Appendix 10.1** considers the feasibility of delivering the wind turbine components to the Proposed Development and the effects of these movements are considered in this assessment.

Study Area

- 10.3.4 The Study Area comprises those parts of the transport network where it is considered that vehicles travelling to or from the Proposed Development could have the potential to cause a significant effect on users of that network. The number of vehicle movements generated by the Proposed Development (and hence the potential for effects) would be at its highest during construction.
- 10.3.5 Hence the Study Area has been defined by considering where suppliers of construction materials (such as stone) and construction staff would likely be located and then by using professional judgement to identify the sections of the road network likely to be used by construction-related vehicles travelling between those locations and the Site. The exact routes that such vehicles would take would not be known until nearer to construction starting once supplier agreements had been reached, but reasonable estimates have been made based on locations of possible suppliers.
- 10.3.6 **Figure 10.1** shows the extent of the Study Area and the various sections of road within it and **Figure 10.3** shows the locations of nearby quarries from where materials such as aggregates could be sourced. The Study Area comprises:
- the A70 between the access to the Proposed Development and Glenbuck, east of Muirkirk;



- the A70 between the access to the Proposed Development and Dettingen Roundabout on the A76; and
- the sections of the A76 to the immediate north and south of Dettingen Roundabout.

10.3.7 The report in **Technical Appendix 10.1** considers the feasibility of delivering the wind turbine components to the Site. It considers a wider area than that shown on **Figure 10.1** and identifies the route for the delivery of the wind turbine components from King George V Dock in Glasgow to the Site (shown on **Figure 10.2**).

10.3.8 Any works required outwith the adopted road to create overrun areas to accommodate the AILVs on the proposed delivery route do not fall within the boundary of the consent application to which this EIA Report refers, but the effects of these works have been considered where appropriate within this report.

Desk Study

10.3.9 Online mapping was consulted to understand the general nature of the roads within the Study Area. Data on accidents on these roads was collated from the Department for Transport's (DfT) Mapping Application for Visualising Road Injury Casualties (MAVRIC)² website.

Field Surveys

10.3.10 Automatic Traffic Counters (ATCs) were installed at the following locations in the Study Area (shown on **Figure 10.1**):

- on the A70 at the eastern edge of Muirkirk;
- on the A70 to the west of the access to the Proposed Development;
- on the A70 in Cumnock between Robertson Avenue and Lugar Street; and
- on the A70 in Cumnock between Ayr Road and Hearth Road.

10.3.11 These ATCs counted and classified vehicle flows for a week commencing Tuesday 17 February 2026.

10.3.12 Vehicle flow data for the A76 was extracted for all of 2025 from Transport Scotland's (TS) National Traffic Database System (NTDS) for the following sites (shown on **Figure 10.1**):

- ATCSW004 A76 Cumnock/Auchinleck Bypass-between B7083 (S) and A70; and
- ATCSW005 A76 Cumnock/Auchinleck Bypass-between A70 and B7083 (N).

10.3.13 The roads in the Study Area were visited by a member of the project team. This visit noted matters such as the roads' configuration, presence of footways, speed limits, any restrictions on the passage of vehicles, and the presence and nature of any sensitive receptors.

² Department for Transport. Mapping Applications for Visualising Road Injury Casualties. 2021-2025. Available at: <https://dft.maps.arcgis.com/apps/dashboards/ea3b071df62a434aa21ed80a6214d690#> [Last accessed 17/08/2026]



Assessment of Potential Effect Level and Significance

Overview

- 10.3.14 The potential effects on traffic and the transport network have been assessed following the IEMA Guidelines referred to in **Section 10.1**. This involves initially identifying a ‘baseline’, which establishes the characteristics of the existing transport network in the Study Area, including the existing number of vehicle movements on the roads therein.
- 10.3.15 Construction is expected to commence in 2030 should consent be granted. The existing vehicle movements have been factored to represent estimated 2030 vehicle movements that could be expected to occur in the absence of the Proposed Development (referred to as the ‘future baseline’).
- 10.3.16 The number of typical daily vehicle movements that would be generated during each month of construction have been estimated. These estimates are based on volumes of materials to be transported to the Site informed by the design, typical vehicle capacities, and professional judgement based on experience of other similar projects.
- 10.3.17 Judgement has also been used to estimate the routes that these vehicles would take to and from the Site. This judgement has been informed by a review of where potential suppliers (such as those of stone) are located locally and where there are centres of population from where other supplies and staff may originate.
- 10.3.18 The number of staff likely to be present at the Site during each working day in each month of construction has been estimated based on the nature of the activities occurring during each month, professional judgement and experience and understanding of other similar projects.
- 10.3.19 The additional vehicle movements that could be expected to be generated during construction have been compared to the future baseline vehicle movements. The percentage increase in total vehicle movements (and in HGV movements only) arising from those additional vehicle movements compared to the future baseline has been calculated for each section of road within the Study Area. These percentage increases have been reviewed against the IEMA Guidelines, which state:
- “Following the determination of a study area, it is recommended that the competent traffic and movement expert applies two broad rules of thumb as criteria to assist in delimiting the scale and extent of the environmental assessment:*
- Rule 1 Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)*
- Rule 2 Include highway links of high sensitivity where traffic flows have increased by 10% or more”*
- 10.3.20 The IEMA Guidelines also state *“It should also be noted that the day-to-day variation of traffic on a road is frequently at least + or -10%. At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental impact.”*
- 10.3.21 Construction working hours would be expected to be 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. However, for the purposes of this assessment, all the construction-related vehicle movements have been assumed to occur within the period 07:00 to 19:00 Monday to Friday.



- 10.3.22 This approach ensures a robust assessment against the above two rules as the percentage increases in vehicle movements are higher than if the estimates were spread over a longer period. In practice, not all suppliers of materials would necessarily be open on Saturdays (or open for the entire period 07:00 to 13:00) and the resulting assessment is therefore considered conservative.
- 10.3.23 The additional vehicle movements would have the potential to affect other road users, such as vehicle drivers and non-motorised users travelling along, crossing or otherwise interacting with the sections of road in the Study Area. These users are referred to as receptors.
- 10.3.24 The roads within the Study Area have been divided into sections. These sections have been defined based on the location of key junctions – where traffic movements are likely to differ on either side – and on changes in road characteristics (for example, where a road passes from a rural to an urban area and is therefore assessed against Rule 2 rather than Rule 1).
- 10.3.25 All sections of road within the Study Area have been assessed against Rule 1. All sections of road have also been reviewed to identify if any could be considered as being of ‘high sensitivity’ and should be subject to an additional assessment against Rule 2. This review was informed by the IEMA Guidelines which state that the *“following list identifies special interests that should be considered when defining sensitive receptor geographic locations.*
- *people at home*
 - *people at work*
 - *sensitive and/or vulnerable groups (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)*
 - *retail areas*
 - *recreational areas*
 - *tourist attractions*
 - *collision clusters and routes with road safety concerns*
 - *junctions and highway links at (or over) capacity”*
- 10.3.26 Where the estimated increase in vehicle movements does not breach the relevant threshold for any section of road, any effects are considered to be not significant in EIA terms. No further assessment has been undertaken on such sections.
- 10.3.27 Where the estimated increase in vehicle movements breaches the relevant threshold for any section of road, the potential effects have been assessed for the following topics:
- Severance, i.e. the perceived division that can occur within a community when it becomes separated by major transport infrastructure and the separation of people from places and other people;
 - Road Vehicle Driver and Passenger Delay;
 - Non-Motorised User Delay;
 - Non-Motorised User Amenity;
 - Fear and Intimidation of and by Road Users; and



- Hazardous / Large Loads.

10.3.28 Summaries of the IEMA Guidelines relating to the assessment of each of these topics are provided in **Technical Appendix 10.2**.

Receptor Sensitivity Definitions

10.3.29 Definitions for levels of receptor sensitivity were provided in Table 10.2 of the Scoping Report. Those definitions have been applied to the topics listed above and are provided in **Technical Appendix 10.2**.

Magnitude of Change and Effect Significance

10.3.30 Thresholds for the magnitude of change and assessment of effect significance for each of the potential impacts listed above have been identified by reference to the IEMA Guidelines and professional judgement. For some impact types, magnitude of change has been defined using professional judgement, informed by local road characteristics and IEMA guidance. The detail of these thresholds and an effects significance matrix are provided in **Technical Appendix 10.2**.

10.3.31 Effects of major significance are considered to be significant in terms of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations (2017). Effects of moderate significance may be considered to be either significant or not significant in terms of the EIA Regulations and professional judgement is applied in determining significance accounting for factors such as the duration, frequency and spatial extent of the effect and the characteristics of the affected location.

10.3.32 Effects of minor or negligible significance are considered to be not significant in terms of the EIA Regulations.

Committed Mitigation

10.3.33 Where any potentially significant effects are identified, taking account of embedded (primary) and standard (tertiary) mitigation (described in **Section 10.5**), additional mitigation measures (secondary mitigation) are described. Any such measures are presented as commitments in this chapter and in **Chapter 11: Schedule of Mitigation**, with information provided on how the mitigation would be secured, for example through planning conditions.

Assessment of Residual Effect Level and Significance

10.3.34 The assessment of residual effects follows the same process and criteria as the assessment of potential effects but takes account of the committed additional (secondary) mitigation and enhancement measures.

Cumulative Assessment

10.3.35 The potential for cumulative effects to arise from the Proposed Development in combination with other developments has been considered using the same method as described above.

Limitations, Difficulties and Uncertainties

10.3.36 As noted in **Section 10.3** the number of vehicle movements on a road varies continuously. However, there is no reason to believe that the vehicle movement data collected represents atypical conditions.



- 10.3.37 The construction programme has been estimated based on experience of similar developments. The construction vehicle movement estimates have been averaged over a month and there would be some daily variation in vehicle movement numbers around that average. The routes that construction-related vehicles would take to and from the Proposed Development would vary depending on the location of staff and of the exact suppliers chosen but reasonable estimates have been made.
- 10.3.38 Potential cumulative effects could arise from the vehicle movements generated by the Proposed Development in combination with other developments that were being constructed at the same time. The timing of the construction of such other developments is uncertain and this matter is discussed further in **Section 10.10**.

10.4 Baseline Conditions

Existing Baseline

- 10.4.1 The existing baseline information for the sections of road within the Study Area is summarised in **Table 10-2** (these sections are shown on **Figure 10.1**). ARA classify an accident cluster site as a location with three accidents within a three year period. Data on accidents has been presented for the latest three year period (2023 to 2025) and is also shown on **Figure 10.1**. ARA advised that there are no accident cluster sites on the section of the A70 in the Study Area.



Table 10-2: Summary of Existing Baseline

Section of Road	Length of Section	Adjoining Land Uses	Facilities for Non-motorised Users	Road Configuration	Injury-Causing Accidents (2023 – 2025)
A70 between access to Proposed Development and Muirkirk	6.15 km	Mainly open farmland with occasional farms, homes, and other developments taking direct access (including direct field access).	- No footways. - Core Path runs to the north of and remote from the A70 for around 250m at Nether Wellwood, around 2.75km to the east of the access to the Proposed Development. Core Path then crosses the A70 to the south. Core Path is shown on Figure 4.6. - Does not form part of the National Cycle Network (NCN).	- Single carriageway with one lane in each direction. - Subject to 60mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage. (An 'Agreed Route' is a route which can be used for timber haulage without restriction other than as regulated by the Road Traffic Act 1988).	None
A70 in Muirkirk west of B743	1.5 km	- Within settlement boundary of Muirkirk as defined by EAC Local Development Plan (LDP) 2. - Easternmost 200 m or so falls within town centre boundary as defined by the LDP2. - Residential development to north at Smallburn and other	- Footway on northern side throughout this section. - Footway on southern side for easternmost 600 m or so. - Traffic islands at occasional points to aid pedestrians crossing. - Pedestrian crossings of all three arms of signalised A70 / B743 junction.	- Single carriageway with one lane in each direction. - Subject to 30 mph speed limit and part-time 20 mph limit in vicinity of school. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	6 August 2023 involving one vehicle and causing injuries categorised as serious to one person.

³ Timber Transport Forum. Agreed Route Map for Timber Transport Forum. Available at <https://timbertf.maps.arcgis.com/apps/webappviewer/index.html?id=4a23d4910e604b71872956441113c83c>. [Last accessed 17/08/2026]



Section of Road	Length of Section	Adjoining Land Uses	Facilities for Non-motorised Users	Road Configuration	Injury-Causing Accidents (2023 – 2025)
		- individual homes front northern side of road. - Muirkirk Primary School to north, although vehicle access to it is from the B743 and Burns Avenue. - Mix of open land and individual developments to south, with commercial developments within town centre.	- No Core Paths meet this section. - Does not form part of the NCN.		
A70 in Muirkirk east of B743	700 m	- Within settlement boundary of Muirkirk as defined by EAC LDP2. - Westernmost 200m or so falls within town centre boundary as defined by the LDP2. - Mix of commercial and residential developments on both sides of the road within the town centre. - Predominantly residential developments on both sides of the road east of the town centre.	- Footways on each side of the road. - No Core Paths meet this section. - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 30 mph speed limit and part time 20mph limit in vicinity of B743 junction. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	None.



Section of Road	Length of Section	Adjoining Land Uses	Facilities for Non-motorised Users	Road Configuration	Injury-Causing Accidents (2023 – 2025)
A70 between Muirkirk and Glenbuck	5.3 km	Mainly open farmland with occasional farms, homes, and other developments taking direct access (including direct field access).	- No footways. - A Core Path in EAC's network crosses the A70 in the vicinity of Glenbuck (see Figure 4.6). - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 60 mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	18 February 2023 involving one vehicle and causing injuries categorised as slight to one person. 18 October 2025 involving three vehicle and causing injuries categorised as serious to one person and slight to another.
A70 between access to Proposed Development and Lugar	4.25 km	Mainly open farmland with occasional farms, homes, and other developments taking direct access (including direct field access).	- No footways. - A Core Path meets this section east of Lugar. - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 60mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	6 April 2023 involving two vehicles and causing injuries categorised as slight to three people. 18 January 2024 involving two vehicles and causing injuries categorised as serious to two people.
A70 through Lugar	1.4 km	Within settlement boundary of Lugar as defined by EAC LDP2.	Footway on northern side.	Single carriageway with one lane in each direction.	6 August 2023 involving two vehicles and



Section of Road	Length of Section	Adjoining Land Uses	Facilities for Non-motorised Users	Road Configuration	Injury-Causing Accidents (2023 – 2025)
		Fronted by homes, mainly on northern side.	- Footway on southern side for westernmost 450m or so. - No Core Paths meet this section. - Does not form part of the NCN.	- Subject to 30 mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	causing injuries categorised as serious to one person.
A70 between Lugar and Cumnock	1.1 km	Mainly open farmland with occasional farms and homes taking direct access	- Footway on northern side. - Footway on southern side for all but westernmost 450m or so. - No Core Paths meet this section. - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 40mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	None.
A70 between Ayr Road and eastern edge of Cumnock	1.4 km	- Within settlement boundary of Cumnock as defined by EAC LDP2. - Westernmost 600m or so falls within town centre boundary as defined by the LDP2. - Mainly commercial within the town centre. - Predominantly residential developments on both sides of the road east of the town centre.	- Footway on northern side. - Footway on southern side for all but easternmost 200m or so. - Signalised pedestrian crossing east of Roberston Avenue. - Signalised pedestrian crossings of each arm of A70 / Lugar Street junction. - No Core Paths meet this section. - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 30mph speed limit 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	None.



Section of Road	Length of Section	Adjoining Land Uses	Facilities for Non-motorised Users	Road Configuration	Injury-Causing Accidents (2023 – 2025)
A70 between Ayr Road in Cumnock and A76	1 km	- Within settlement boundary of Cumnock as defined by EAC LDP2. - Mix of East Ayrshire Community Hospital, commercial and residential on eastern half of this section, with wooded area on the western half.	- Footway on northern side. - Footway on southern side for all but western most 450m or so. - Traffic islands at occasional points to aid pedestrians crossing. - Pedestrian crossings of the Barony Campus arm of the A70 / Barony Campus signalised junction and of all four arms of A70 / foodstore signalised junction. - No Core Paths meet this section. - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 30 mph speed limit for all but westernmost 350 m or so which is subject to a 60 mph limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	25 January 2023 involving one vehicle and causing injuries categorised as slight.
A76 between Templeton and Dettingen roundabouts	2.7 km	- Fronted by open and wooded areas. - No direct access to any properties.	- No footways. - No Core Paths meet this section. There is a Core Path along Lugar Water, but the road bridges over both features. - Does not form part of the NCN.	- Single carriageway with one lane in each direction. - Subject to 60mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	27 February 2023 involving one vehicle and causing injuries categorised as slight. 21 September 2023 involving one vehicle and causing injuries categorised as serious.
A76 between Dettingen and	2.7 km	Fronted by open and wooded areas.	No footways.	Single carriageway with one lane in each direction.	20 September 2023 involving one vehicle and



Section of Road	Length of Section	Adjoining Land Uses	Facilities for Non-motorised Users	Road Configuration	Injury-Causing Accidents (2023 – 2025)
Skerrington roundabouts		No direct access to any properties.	- No Core Paths meet this section. - Does not form part of the NCN.	- Subject to 60 mph speed limit. 'Agreed Route' in Timber Transport Forum's Agreed Routes Map³ and so reasonable to expect HGV usage.	causing injuries categorised as slight.



- 10.4.2 Data was extracted from the traffic surveys and from TS's database as described in **Section 10.3**. The average vehicle movements during the weekday period 07:00 to 19:00 at each of the sections of road within the Study Area are summarised in **Table 10-3**.

Table 10-3: Observed Vehicle Movements

Location	Average 07:00 – 19:00 Weekday Vehicle Movements		Year of Observation
	All Vehicles	HGVs Only	
A70 between access to Proposed Development and Muirkirk	2,568	650	2026
A70 in Muirkirk west of B743	2,568	650	2026
A70 in Muirkirk east of B743	1,987	582	2026
A70 between Muirkirk and Glenbuck	1,987	582	2026
A70 between access to Proposed Development and Lugar	2,568	650	2026
A70 through Lugar	2,568	650	2026
A70 between Lugar and Cumnock	2,568	650	2026
A70 between Ayr Road and eastern edge of Cumnock	5,159	683	2026
A70 between Ayr Road in Cumnock and A76	8,075	894	2026
A76 between Templeton and Dettingen roundabouts	5,788	810	2025
A76 between Dettingen and Skerrington roundabouts	7,638	1,355	2025

Future Baseline in Absence of Proposed Development

- 10.4.3 The number of vehicle movements on the road network would likely increase as a result of traffic growth in the absence of the Proposed Development. Hence appropriate 'low' growth factors from the National Road Traffic Forecasts (NRTF) dataset were applied to the observed vehicle movements to make them representative of 2030, the year when it is estimated that construction would commence.
- 10.4.4 Those factors were 1.020 (for observations made in 2026) and 1.025 (for observations made in 2025). The resulting estimated 2030 vehicle movements for each survey location are shown in **Table 10-4**.

Table 10-4: Estimated 2030 Baseline Vehicle Movements

Location	Average 07:00 – 19:00 Weekday Vehicle Movements	
	All Vehicles	HGVs Only
A70 between access to Proposed Development and Muirkirk	2,619	663
A70 in Muirkirk west of B743	2,619	663



Location	Average 07:00 – 19:00 Weekday Vehicle Movements	
	All Vehicles	HGVs Only
A70 in Muirkirk east of B743	2,027	593
A70 between Muirkirk and Glenbuck	2,027	593
A70 between access to Proposed Development and Lugar	2,619	663
A70 through Lugar	2,619	663
A70 between Lugar and Cumnock	2,619	663
A70 between Ayr Road and eastern edge of Cumnock	5,262	697
A70 between Ayr Road in Cumnock and A76	8,236	912
A76 between Templeton and Dettingen roundabouts	5,933	830
A76 between Dettingen and Skerrington roundabouts	7,829	1,389

Road Capacity

- 10.4.5 The Design Manual for Roads and Bridges (DMRB) included a document ‘TA 46/97 Traffic Flow Ranges for Use in the Assessment of New Rural Roads’, which provided guidance on typical ranges of traffic flow for various road configurations. Although this document has been withdrawn from the DMRB, Transport Scotland state that it remains “*applicable to trunk roads projects in Scotland*”⁴.
- 10.4.6 Of the roads within the Study Area, only the A76 is a trunk road. However, it would be reasonable to apply the information in TA 46/97 to the sections of the A70 within the Study Area as well as the sections of the A76. TA 46/97 states that a single carriageway road with one lane in each direction (i.e. a road with the same configuration as the aforementioned sections of road) would be an appropriate road standard for a new road with an opening year Annual Average Daily Traffic (AADT) flow of up to 13,000 vehicles per day.
- 10.4.7 AADT is a measure of vehicle movement and equates to the number of vehicle movements on a road during the 24 hours of an average day. This is a different measure to that presented in **Table 10-3**, which shows vehicle movements over the period 07:00 – 19:00 on a weekday.
- 10.4.8 AADT data was extracted from the traffic counts and is shown in **Table 10-5** for both the year in which the data was observed and 2030. That table also shows a calculation of the proportion of the capacity of each section of road that is (or will be) used in both years.

⁴ <https://www.transport.gov.scot/transport-network/roads/design-of-trunk-roads/#64451>



Table 10-5: Estimate of Baseline Road Capacity Used

Section of Road	As observed		2030	
	AADT (Vehicles)	Capacity Used (Based on Capacity of 13,000 Vehicles AADT)	AADT (Vehicles)	Capacity Used (Based on Capacity of 13,000 Vehicles AADT)
A70 between access to Proposed Development and Muirkirk	2,823	22%	2,879	22%
A70 in Muirkirk west of B743	2,823	22%	2,879	22%
A70 in Muirkirk east of B743	2,088	16%	2,130	16%
A70 between Muirkirk and Glenbuck	2,088	16%	2,130	16%
A70 between access to Proposed Development and Lugar	2,823	22%	2,879	22%
A70 through Lugar	2,823	22%	2,879	22%
A70 between Lugar and Cumnock	2,823	22%	2,879	22%
A70 between Ayr Road and eastern edge of Cumnock	5,674	44%	5,787	45%
A70 between Ayr Road in Cumnock and A76	8,867	68%	9,044	70%
A76 between Templeton and Dettingen roundabouts	6,500	50%	6,663	51%
A76 between Dettingen and Skerrington roundabouts	8,566	66%	8,780	68%

Receptor Sensitivity

- 10.4.9 The sensitivity of receptors on the sections of road within the Study Area has been assessed and is shown in **Table 10-6**. This has been based on comparing the sensitivity definitions shown in **Table 10-5** with the characteristics of each section of road in the Study Area (summarised in **Table 10-2**) to determine the sensitivity of receptors on each section of road to each potential impact. **Table 10-6** also shows which of the two rules in the IEMA Guidelines (described in **Section 10.3**) each section of road would be assessed against, accounting for the presence of factors described in the IEMA Guidelines also listed in **Section 10.3**.



Table 10-6: Sensitivity of Receptors by Potential Impact

Section of Road	Receptor Sensitivity by Potential Impact							Rule to be Assessed Against
	Severance	Road Vehicle Driver and Passenger Delay	Non-Motorised User Delay	Non-Motorised User Amenity	Fear and Intimidation of and by Road Users	Road User and Pedestrian Safety	Hazardous / Large Loads	
A70 between access to Proposed Development and Muirkirk	Negligible as road passes through a rural area.	Low as road network generally uncongested.	Negligible as there is little frontage development and little demand to walk along or cross the road.			Low as no accident cluster locations have been identified on this section.	Negligible as no AILV movements are proposed on this section.	1
A70 in Muirkirk west of B743	Low as there is mainly development on only one side of the road but there are facilities to aid pedestrians crossing.	Low as road network generally uncongested.	Moderate as there is some usage by non-motorised users but facilities are available to aid such users.			Low as no accident cluster locations have been identified on this section.	Negligible as no AILV movements are proposed on this section.	2
A70 in Muirkirk east of B743	Moderate as there is some development on each side of the road but there are facilities to aid pedestrians crossing.	Low as road network generally uncongested.	Moderate as there is some usage by non-motorised users but facilities are available to aid such users.			Low as no accident cluster locations have been identified on this section.	Negligible as no AILV movements are proposed on this section.	2



Section of Road	Receptor Sensitivity by Potential Impact							Rule to be Assessed Against
	Severance	Road Vehicle Driver and Passenger Delay	Non-Motorised User Delay	Non-Motorised User Amenity	Fear and Intimidation of and by Road Users	Road User and Pedestrian Safety	Hazardous / Large Loads	
A70 between Muirkirk and Glenbuck	Negligible as road passes through a rural area.	Low as road network generally uncongested.	Negligible as there is little frontage development and little demand to walk along or cross the road.		Low as no accident cluster locations have been identified on this section.		Negligible as no AILV movements are proposed on this section.	1
A70 between access to Proposed Development and Lugar	Negligible as road passes through a rural area.	Low as road network generally uncongested.	Negligible as there is little frontage development and little demand to walk along or cross the road.		Low as no accident cluster locations have been identified on this section.		Low as only some temporary restrictions may be required.	1
A70 through Lugar	Low as there is mainly development on only one side of the road but there are facilities to aid pedestrians crossing.	Low as road network generally uncongested.	Moderate as there is some usage by non-motorised users but facilities are available to aid such users.		Low as no accident cluster locations have been identified on this section.		Moderate as works would be required to create an overrun area north of the A70 (as described in Technical Appendix 10.1).	2
A70 between Lugar and Cumnock	Negligible as road passes through a rural area.	Low as road network generally uncongested.	Negligible as there is little frontage development and little demand to walk along or cross the road.		Low as no accident cluster locations have been		Low as only some temporary restrictions	1



Section of Road	Receptor Sensitivity by Potential Impact							
	Severance	Road Vehicle Driver and Passenger Delay	Non-Motorised User Delay	Non-Motorised User Amenity	Fear and Intimidation of and by Road Users	Road User and Pedestrian Safety	Hazardous / Large Loads	Rule to be Assessed Against
						identified on this section.	may be required.	
A70 between Ayr Road and eastern edge of Cumnock	Moderate as there is some development on each side of the road but facilities to aid pedestrians crossing.	Low as road network generally uncongested.	Moderate as there is some usage by non-motorised users but facilities are available to aid such users.			Low as no accident cluster locations have been identified on this section.	Negligible as no AILV movements are proposed on this section.	2
A70 between Ayr Road in Cumnock and A76	Moderate as there is some development on each side of the road but facilities to aid pedestrians crossing	Low as road network generally uncongested.	Moderate as there is some usage by non-motorised users but facilities are available to aid such users.			Low as no accident cluster locations have been identified on this section.	Negligible as no AILV movements are proposed on this section.	2
A76 between Templeton and Dettingen roundabouts	Negligible as road passes through a rural area.	Low as road network generally uncongested.	Negligible as there is no frontage development and little demand to walk along or cross the road.			Low as no accident cluster locations have been identified on this section.	Low as only some temporary restrictions may be required.	1



Section of Road	Receptor Sensitivity by Potential Impact							Rule to be Assessed Against
	Severance	Road Vehicle Driver and Passenger Delay	Non-Motorised User Delay	Non-Motorised User Amenity	Fear and Intimidation of and by Road Users	Road User and Pedestrian Safety	Hazardous / Large Loads	
A76 between Dettingen and Skerrington roundabouts	Negligible as road passes through a rural area.	Low as road network generally uncongested.	Negligible as there is no frontage development and little demand to walk along or cross the road.		Low as no accident cluster locations have been identified on this section.		Low as only some temporary restrictions may be required.	1



- 10.4.10 The sections of the A70 through Cumnock, Lugar and Muirkirk have been identified as being of 'high sensitivity' for the purposes of 'Rule 2' reflecting the presence of potentially sensitive receptors such as homes and pedestrians. In keeping with the guidance referred to in **Section 10.3**, these sections will be subject to 'Rule 2'. All other sections are considered to be of lower sensitivity and therefore will be subject to 'Rule 1'.

10.5 Embedded and Standard Mitigation

- 10.5.1 Embedded mitigation measures are those measures that are inherent to the Proposed Development. This includes mitigation by design (also known as primary mitigation), implemented through design iteration works as described in **Chapter 3: Design Evolution and Alternatives**.
- 10.5.2 A CTMP would be prepared, which would describe measures that would be implemented to control construction-related vehicles travelling to and from the Proposed Development. The submission of a CTMP could be made a condition of any consent granted for the Proposed Development. The types of matters that would be covered in the CTMP include:
- Project Information:
 - Details of type and number of vehicle movements expected;
 - Details of the routes expected to be taken by HGVs; and
 - Details of AILV movements (including timing, routes, escorts, notification proposals and extent of any accommodation works).
 - Physical measures:
 - Arrangements for on-site temporary parking areas;
 - Arrangements for wheel cleaning prior to entering public road;
 - Sheeting of HGVs to prevent dust; and
 - Any temporary speed reductions that may be required along with measures (such as vehicle activated signs) to encourage compliance.
 - Communication measures:
 - Arrangements for communicating with interested parties, including elected representatives and community councils;
 - Arrangements to communicate with local farms to understand timings when they have to take livestock across the A70 and to identify suitable coordination measures;
 - Arrangements to agree protocol with emergency services; and
 - Arrangements for disseminating project information, including weekly updates of expected vehicle movements and work locations.
 - Enforcement measures:
 - Measures to encourage compliance with the identified routes;
 - Timing of deliveries to avoid any sensitive times (e.g. school start and finish times);
 - Code of conduct for HGV drivers;



- ‘Tool box talks’ on relevant subjects, such as the British Horse Society’s guidance document to drivers of large vehicles;
 - A requirement that all HGVs operated by the Principal Contractor (PC) must have Global Positioning System (GPS) trackers, allowing their speed and routing to be recorded;
 - Contingencies for unobstructed access for emergency services; and
 - Procedures for dealing with non-compliance with the CTMP.
 - Maintenance measures:
 - Arrangements for liaison regarding winter maintenance;
 - Arrangements for cleaning any sections of public road affected by material deposited from vehicles related to the construction of the Proposed Development;
 - Arrangements for before-construction and after-construction road condition surveys, including an agreement under Section 96 of the Roads (Scotland) Act 1984; and
 - Arrangements for remediation measures.
 - Management of CTMP:
 - Arrangements for monitoring and updating the CTMP;
 - Confirmation of a named person with responsibility for implementation of the CTMP (including contact details); and
 - Development of a Travel Plan for staff, aimed at reducing the number of single-occupant car movements to and from the Proposed Development.
- 10.5.3 A trial run would be undertaken of the AILVs transporting the wind turbine components, which would confirm the accommodation works needed (such as removal of street furniture).

10.6 Scope of Assessment

Construction

Number of Construction Vehicle Movements

- 10.6.1 **Chapter 2** describes an 18- to 24-month construction programme. The shorter duration has been assumed for this assessment because it results in the same number of construction vehicle movements occurring over a shorter period, hence representing a conservative assessment.
- 10.6.2 The amount of material (and the number of items such as plant) required to be delivered to the Site has been calculated for each of the tasks shown in the programme based on dimensions informed by the design of the Proposed Development. The number of staff likely to be present during each task has also been estimated based on professional judgement and experience of other similar projects.
- 10.6.3 The number of HGV movements (and of AILVs) has been calculated for each task based on typical HGV capacities for the materials (or items of plant) concerned. The calculation assumes, where relevant, 8 m³ of stone per HGV. The number of car and light van movements has been estimated based on 1.5 staff per vehicle, which allows for a mix between single occupancy and shared vehicles.



10.6.4 The resulting number of vehicle movements for each task in the construction programme is shown in **Table 10-7**.

Table 10-7: Vehicle Movements by Construction Programme Task

Task	Starts in Month	Duration (Months)	Total HGV Movements ⁵	Total Car and Light Van Movements ⁵	Total Movements ⁵
Mobilisation	1	1	3,808	268	4,076
On-site access tracks	1	6	9,424	3,360	12,304
Temporary Construction Compounds	3	3	2,572	1,600	4,172
Crane Hardstandings	5	5	11,082	1,868	12,950
Substation civils works and installation	6	7	1,932	1,868	3,800
BESS civils works and installation	6	6	1,218	1,600	2,818
On-site Cabling	6	5	1,854	800	2,654
Turbine Foundations	8	6	8,538	2,560	11,098
Turbine Delivery and Erection	10	5	286	1,334	1,620
Commissioning and testing	15	3	4	640	644
Reinstatement	17	2	122	534	656
Total			40,840	15,952	56,792

10.6.5 Construction of the crane hardstandings would generate the highest number of HGV movements. The peak number of vehicle movements during each month of construction would depend on the overlap of construction activities. Hence the vehicle movements shown in **Table 10-7** have been allocated to the construction programme shown in **Chapter 2**. The resulting monthly vehicle movement estimates are presented in **Table 10-8** and on **Graph 10-1**.

10.6.6 **Table 10-8** and **Graph 10-1** also show the estimated number of daily vehicle movements based on an assumption of 20 working days per month (i.e. four weeks of Monday to Friday working per month). In reality, most months will have more than 20 working days and some activities may occur on Saturdays, hence the monthly vehicle movements may be spread over more working days than assumed. Using a 20-day month therefore provides a conservative assessment.

⁵ A movement is an arrival or a departure. So, for example, a vehicle arriving, unloading and departing would equate to two movements.



- 10.6.7 The data in **Table 10-8** shows that months six and seven would be the busiest months for vehicle movements. During those months, there would be an estimated average of 309 vehicle movements each working day, of which on average 232 would be HGVs. Across the entire construction programme, there is estimated to be an average of 158 vehicle movements each working day, of which 113 would be HGVs. This information is also shown on **Graph 10-1**.



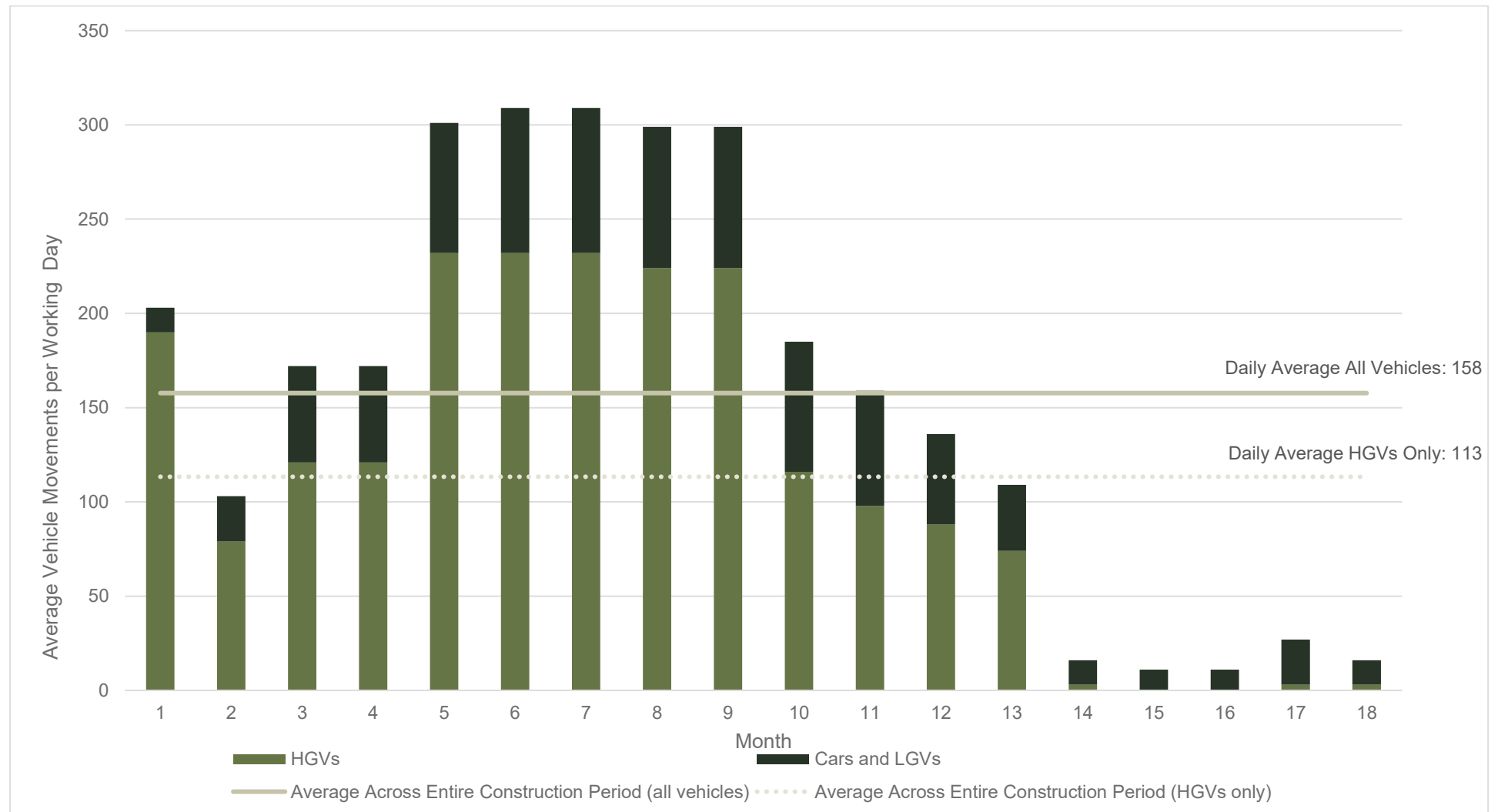
Table 10-8: Number of Vehicle Movements Per Month During Construction

Activity	Vehicle Type	Number of Vehicle Movements (Sum of Arrivals and Departures) Per Month in Construction Programme*																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Mobilisation	HGV	3,808																	
On-site access tracks	HGV		1,571	1,571	1,571	1,571	1,571	1,571											
Temporary Construction Compounds	HGV			857	857	857													
Crane Hardstandings	HGV					2,216	2,216	2,216	2,216	2,216									
Substation civils works and installation	HGV						276	276	276	276	276	276	276						
BESS civils works and installation	HGV						203	203	203	203	203	203							
On-site Cabling	HGV						371	371	371	371	371								
Turbine Foundations	HGV								1,423	1,423	1,423	1,423	1,423	1,423					
Turbine Delivery and Erection	HGV										57	57	57	57	57				
Commissioning and testing	HGV															1	1	1	
Reinstatement	HGV																	61	61
Staff Movements	Car and LGVs	268	480	1,013	1,013	1,387	1,547	1,547	1,494	1,494	1,387	1,227	960	693	267	213	213	480	267
Total Vehicle Movements		4,076	2,051	3,441	3,441	6,031	6,184	6,184	5,983	5,983	3,717	3,186	2,717	2,174	324	215	215	543	328
Total HGV Movements		3,808	1,571	2,428	2,428	4,644	4,637	4,637	4,489	4,489	2,330	1,959	1,756	1,480	57	1	1	62	61
Total Car and LGV Movements		268	480	1,013	1,013	1,387	1,547	1,547	1,494	1,494	1,387	1,227	960	693	267	213	213	480	267
Average Vehicle Movements per Working Day		204	103	172	172	302	309	309	299	299	186	159	136	109	16	11	11	27	16
Average HGV Movements per Working Day		190	79	121	121	232	232	232	224	224	117	98	88	74	3	0	0	3	3
Average Car and LGV Movements per Working Day		13	24	51	51	69	77	77	75	75	69	61	48	35	13	11	11	24	13

*Please note that minor variations due to rounding may occur.



Graph 10-1: Number of Average Daily Vehicle Movements Per Month During Construction



Route of Construction Vehicles

- 10.6.8 The exact routes taken by construction vehicles would depend on the locations of suppliers and staff, which would remain uncertain until later in the procurement process. During the busiest months of construction, many of the vehicle movements would be generated by the import of materials such as stone or concrete and would hence originate from suppliers such as quarries. Locations of nearby quarries are shown on **Figure 10.3** and the two nearest are Garpel Quarry and Sorn Quarry, which are around five and ten minutes' drive respectively from the Site along the A70 to the east.
- 10.6.9 Other vehicle movements would be generated from suppliers of items such as plant and from staff, both of which would likely be located in nearby towns such as Ayr, Kilmarnock (both of which would be around a 35-minute drive from the Site) and around Glasgow.
- 10.6.10 For this assessment, it has therefore been assumed that 75% of vehicle movements to and from the Proposed Development would use the A70 to the east (reflecting journeys with origins or destinations accessed via the A70 or M74 to the east), with the remainder using the A70 to the west. This split reflects the locations of the nearby quarries (shown on **Figure 10.3**) which are mainly to the east of the Proposed Development but acknowledges that some supplies and staff may come from points accessed via the A76 or A70 west of Cumnock.
- 10.6.11 Should materials be delivered from Garpel or Sorn quarries, then vehicles between those quarries and the Proposed Development would be on the A70 the east of the Proposed Development for only around 4 km (around a four to five minute drive time). For this assessment, however, it has been assumed that all vehicles to and from the east would use the entire section of the A70 to the east of the Proposed Development within the Study Area.

Comparison Against Future Baseline

- 10.6.12 The additional vehicle movements during the busiest months of construction (from **Table 10-7**) were compared to the future baseline vehicle movements (shown in **Table 10-4**) and the percentage increase in vehicle movements arising from the Proposed Development was calculated.
- 10.6.13 That comparison and calculation are shown in **Table 10-9** (and on



- 10.6.14 **Graph 10-2)** along with the relevant 'Rule 1' or 'Rule 2' threshold (as described in **Table 10-6**). **Table 10-9** also identifies which sections of road would experience an increase in vehicle movements during construction above the appropriate threshold and hence be subject to further assessment.



Table 10-9: Comparison of Additional Vehicle Movements Against Future Baseline

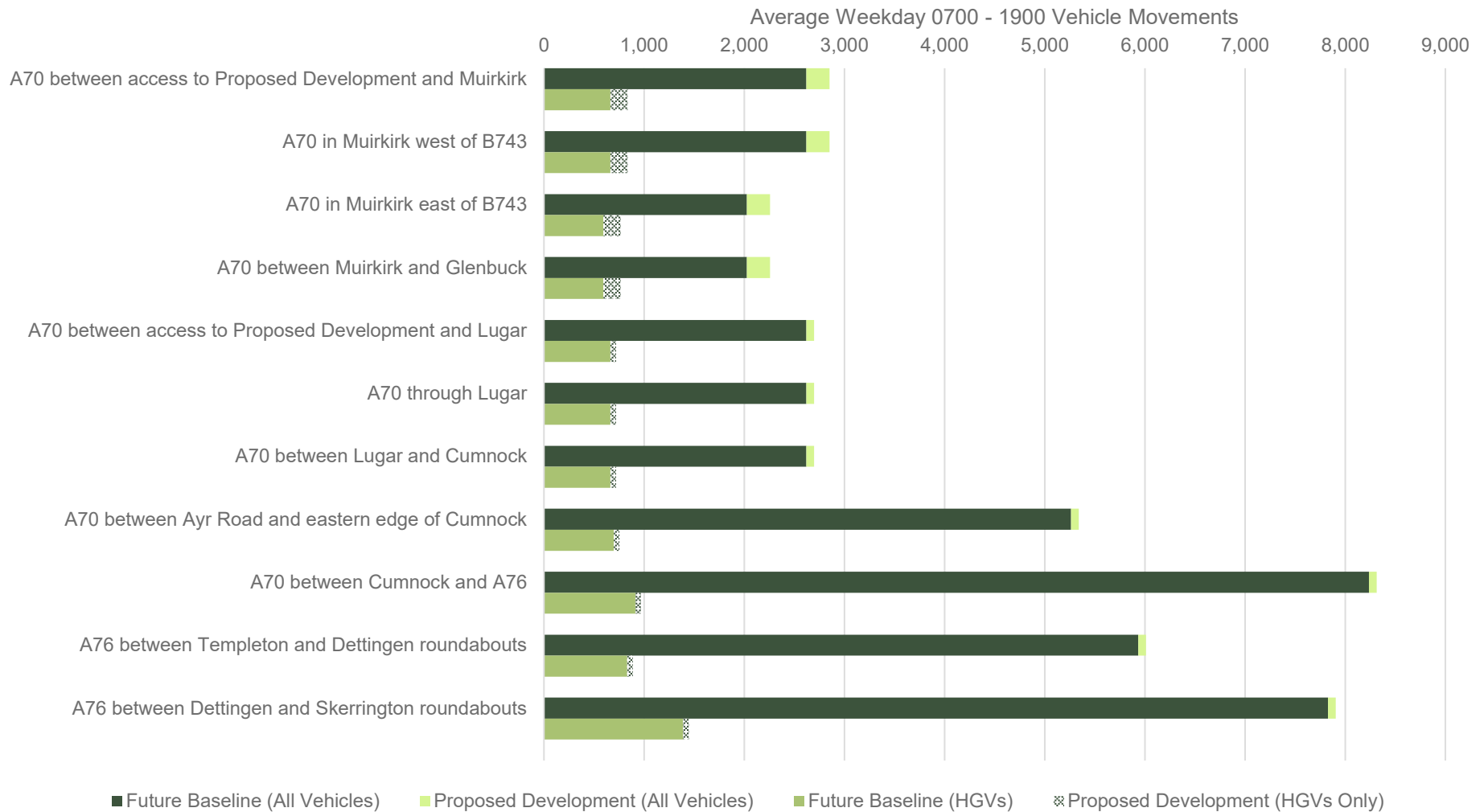
Section of Road	2030 Future Baseline Average 0700 – 1900 Weekday Vehicle Movements		Additional Vehicle Movements per Working Day During Busiest Months		Increase in Vehicle Movements		Rule 1 Breached?	Rule 2 Breached? (if Applicable)	Subject to Further Assessment?
	All Vehicles	HGVs Only	All Vehicles	HGVs Only	All Vehicles	HGVs Only			
A70 between access to Proposed Development and Muirkirk	2,619	663	232	174	9%	26%	No	Not applicable	No
A70 in Muirkirk west of B743	2,619	663	232	174	9%	26%	No	No	No
A70 in Muirkirk east of B743	2,027	593	232	174	11%	29%	No	Yes	Yes
A70 between Muirkirk and Glenbuck	2,027	593	232	174	11%	29%	No	Not applicable	No
A70 between access to Proposed Development and Lugar	2,619	663	77	58	3%	9%	No	Not applicable	No
A70 through Lugar	2,619	663	77	58	3%	9%	No	No	No
A70 between Lugar and Cumnock	2,619	663	77	58	3%	9%	No	Not applicable	No
A70 between Ayr Road and eastern edge of Cumnock	5,262	697	77	58	1%	8%	No	No	No
A70 between Ayr Road in Cumnock and A76	8,236	912	77	58	1%	6%	No	No	No
A76 between Templeton and Dettingen roundabouts	5,933	830	77	58	1%	7%	No	Not applicable	No



Section of Road	2030 Future Baseline Average 0700 – 1900 Weekday Vehicle Movements		Additional Vehicle Movements per Working Day During Busiest Months		Increase in Vehicle Movements		Rule 1 Breached?	Rule 2 Breached? (if Applicable)	Subject to Further Assessment?
	All Vehicles	HGVs Only	All Vehicles	HGVs Only	All Vehicles	HGVs Only			
A76 between Dettingen and Skerrington roundabouts	7,829	1,389	77	58	1%	4%	No	Not applicable	No



Graph 10-2: Comparison of Additional Vehicle Movements Against Future Baseline



Sections of Road to be Assessed

- 10.6.15 **Table 10-9** shows that only the section of the A70 in Muirkirk east of the B743 would experience an increase in vehicle movements during construction large enough to warrant further assessment.
- 10.6.16 The IEMA Guidelines state “*It should be noted that the Rule 1 and Rule 2 ‘criteria’ process may not be appropriate for some impacts, and it is generally accepted by regulators and practitioners that it should not be applied to assessments of air quality, noise, road safety and driver delay*”. **Chapter 9: Noise** considers noise issues, and air quality is discussed in **Technical Appendix 2.1**.
- 10.6.17 **Table 10-9** shows that those sections of road within the Study Area that do not breach the relevant Rule 1 or Rule 2 thresholds are, with one exception, expected to experience an increase of vehicle movements arising from construction of 9% or less during the busiest months. Paragraph **10.3.20** quoted from the IEMA Guidelines that “*projected changes in traffic of less than 10% create no discernible environmental impact*.” The small increases in vehicle movements on these sections of road are therefore not considered to warrant further assessment on the matters of road safety and driver delay.
- 10.6.18 The section of the A70 between Muirkirk and Glenbuck would experience an increase in vehicle movements of 11% during the busiest months. Although this increase would be greater than the 10% value referenced in the IEMA Guidelines, it exceeds it by only one percentage point and the increase outwith the busiest months would be lower.
- 10.6.19 Furthermore, this section of road has substantial spare capacity (as demonstrated in **Table 10-5**) and does not have any accident cluster sites. For these reasons, the increase in vehicle movements on this section of road is also not considered to warrant further assessment on the matters of road safety and driver delay.

Potential effects from AILV movements

- 10.6.20 The peak months for vehicle movements (shown in **Table 10-8**) would occur prior to the movements of the AILVs delivering the turbine components. There would be the potential for effects also to arise from these AILV movements.
- 10.6.21 The ‘Turbine Delivery and Erection’ task in **Table 10-8** includes AILVs delivering the wind turbine components. There would likely be ten components per wind turbine that would require AILV movements: the wind turbine blades (three movements per wind turbine), wind turbine tower sections (typically five per wind turbine), transformer and nacelle (each one per wind turbine).
- 10.6.22 There would therefore be a total of 140 AILV movements delivering the wind turbine components and a further 140 movements of the unladen wind turbine components vehicles returning to the port (it is not anticipated that these would be classed as AILVs when travelling unladen). A main crane and two assembly / support cranes would be required. These would likely be classed as AILVs too and would account for six movements (three to, and three from, the Site). These vehicles have been included in the ‘Turbine Delivery and Erection’ task in **Table 10-8**.
- 10.6.23 It is common that AILVs travel in convoys of up to three vehicles. The 140 movements of the AILVs delivering the wind turbine components would therefore translate to 47 convoys. The ‘Turbine Delivery and Erection’ task in **Table 10-8** would occur over around five months, meaning that, on average, there would be around nine AILV convoys per month and hence around three days between convoys.



- 10.6.24 The AILV convoys would be accompanied by a handful of escort vehicles (such as police cars and motorbikes) and support vehicles (such as vans from the haulier). The number of such vehicles would be minor and has not been included in the numbers in **Table 10-8**.
- 10.6.25 The exact timing of the movement of these AILVs would be a matter to be agreed with the relevant roads authorities and the police. However, it would be in all parties' interests for the AILVs to move at a time that minimised impacts on other road users and so some AILV movements may take place outwith normal construction hours at the Site.
- 10.6.26 Paragraph 6 of Schedule 5 of The Road Vehicles (Authorisation of Special Types) (General) Order 2003 gives the police the power to vary the time, date or route of a proposed AILV movement and halt the AILV in place on, or adjacent to, the road on which the AILV is travelling in the interests of road safety or to avoid undue traffic congestion.
- 10.6.27 There would be some disruption to other road users as each AILV convoy passed, although such disruption would be relatively short-lived. For example, pedestrians would be prevented from crossing the road at a particular point only for the length of time it would take for a convoy to pass.
- 10.6.28 Signage would be erected at points along the entire route warning of the AILV movements and advance notice of their movements would be publicised, which would give other road users reasonable opportunity to alter their journey to avoid being delayed by the AILV movements.
- 10.6.29 Given the foregoing, any effects arising from the passage of the AILVs would be short-lived and are not considered to be significant.
- 10.6.30 The report in **Technical Appendix 10.1** shows that works would be required at the following locations to create overrun areas adjacent to the existing carriageway to accommodate the AILVs:
- at several locations on Loganhill Road between the A76 and Glenmuir Water Road;
 - at the junction of Glenmuir Road and the A70; and
 - on the A70 at the eastern edge of Lugar.
- 10.6.31 These works are also planned for the consented Hare Craig Wind Farm, which is due to start construction in 2027. It is possible that these works could remain in place after construction of the Hare Craig Wind Farm is complete and be used by the AILVs travelling to the Proposed Development.
- 10.6.32 However, should these works be removed once construction of the Hare Craig Wind Farm is complete, then they would have to be reinstated to allow access to the Proposed Development by AILVs. Construction of these works would generate additional vehicle movements as items like stone and plant are delivered. However, there would be fewer such movements when compared to the construction of the Proposed Development and the effects of them would be not significant.
- 10.6.33 There may be some temporary traffic management measures required to construct these works, such as traffic control where the works interact with the public road. Any such measures would be short-lived and, while they may cause some delays to other road users, would not be expected to cause any significant effects.



Operation

- 10.6.34 As described in the Scoping Report, transport effects during operation are scoped out of the assessment.

Decommissioning

- 10.6.35 As described in **Chapter 2**, effects associated with the construction phase can be considered to be representative of reasonable worst-case decommissioning effects, therefore no separate assessment of the decommissioning phase is presented in this chapter. Furthermore, as set out in **Technical Appendix 1.1**, decommissioning phase impacts were scoped out of assessment at Scoping stage.

10.7 Assessment of Potentially Significant Effects

- 10.7.1 **Table 10-9** presents an assessment of the effects of the increase in vehicle movements during the busiest months of construction on the section of the A70 in Muirkirk east of the B743. The effects have been assessed on the basis that the mitigation measures listed in **Section 10.4.12** of this chapter would be implemented.



Table 10-10: Assessment of Effects of Additional Construction Vehicle Movements

Location	Increase in Vehicle Movements	Severance	Road Vehicle Driver and Passenger Delay	Non-Motorised User Delay	Non-Motorised User Amenity	Fear and Intimidation of and by Road Users	Road User and Pedestrian Safety	Hazardous / Large Loads	Overall Significance
A70 in Muirkirk east of B743	- All: 232 (11%) - HGVs: 174 (29%) - Increase equates to over three minutes between successive additional vehicle movements (on average over the period 07:00 - 19:00)	- This section has a moderate sensitivity to Severance. - The increase in vehicle movements of 11% would equate to a negligible adverse impact. - A negligible impact on a receptor of moderate sensitivity is considered to be a negligible effect (not significant).	- This section has a low sensitivity to Road Vehicle Driver and Passenger Delay - The additional vehicle movements are considered to represent a small adverse impact. - A small impact on a receptor of low sensitivity is considered to be a minor adverse effect (not significant).	- This section has a moderate sensitivity to Non-Motorised User Delay. - The additional vehicle movements are considered to represent a small adverse impact. - A small impact on a receptor of moderate sensitivity is considered to be a minor adverse effect (not significant).	- This section has a moderate sensitivity to Non-Motorised User Amenity. - The additional vehicle movements are considered to represent a small adverse impact. - A small impact on a receptor of moderate sensitivity is considered to be a minor adverse effect (not significant).	- This section has a moderate sensitivity to Fear and Intimidation. Table 10-11 shows that the additional vehicle movements represent a negligible adverse impact. - A negligible impact on a receptor of moderate sensitivity is considered to be a negligible effect (not significant).	- This section has a low sensitivity to Road Safety. - The additional vehicle movements are considered to represent a small adverse impact. - A small impact on a receptor of low sensitivity is considered to be a minor adverse effect (not significant).	No ALVs are expected to use this section hence no effect is expected.	Not significant

Table 10-11: Calculation of Level of Fear and Intimidation

Location	Future Baseline							Future Baseline and Proposed Development								Impact Magnitude	
	Average 18-hour Traffic Flow (All Vehicles, Per Hour) (a)	Total 18-Hour HGVs (b)	Average Vehicle Speed (mph) (c)	Degree of Hazard Score				Level of Fear and Intimidation	Average 18-hour Traffic Flow (All Vehicles Per Hour) (a)	Total 18-Hour HGVs (b)	Average Vehicle Speed (mph) (c)	Degree of Hazard Score					Level of Fear and Intimidation
				a	b	c	Total					a	b	c	Total		
A70 in Muirkirk east of B743	128	669	31	0	0	20	20	Small	141	843	31	0	0	20	20	Small	Negligible



- 10.7.2 The assessment in **Table 10-10** shows that no significant effects are expected on users of the transport network arising from the vehicle movements during the busiest months of the construction of the Proposed Development. The vehicle movements would be even lower during the other months of construction and hence there would be lesser effects during those months.

10.8 Additional Mitigation and Enhancement

- 10.8.1 The preceding assessment has shown that no additional mitigation is required beyond that described in **Section 10.4.12**.

10.9 Residual Effects

- 10.9.1 No significant residual effects are expected on traffic and the transport network during the construction, operation and decommissioning of the Proposed Development.

10.10 Cumulative Assessment

Other Wind Farm Developments

- 10.10.1 **Chapter 4: Landscape and Visual Impact Assessment** contains a list of other wind farm developments that could cause cumulative effects with the Proposed Development. These cumulative effects could arise from vehicle movements associated with those developments being on the same parts of the road network at the same time as vehicle movements associated with the Proposed Development.
- 10.10.2 Vehicle movements generated by any potential cumulative developments which were operational during the period of the traffic surveys would be included in the baseline vehicle movements and therefore no specific allowance needs to be made for them. Insufficient information is available at the time of writing about potential cumulative developments that are at the scoping stage and so such developments have not been included as potential cumulative developments in this assessment.
- 10.10.3 The cumulative developments listed in **Chapter 4** have been considered as potential cumulative developments for this assessment if they are:
- consented, but not under construction; or
 - the subject of an undetermined consent application.
- 10.10.4 The cumulative developments listed in **Chapter 4** were reviewed, and the following developments were identified as meeting the above criteria and as having the potential to affect the sections of the A70 in the Study Area:
- Bankend Rig III;
 - Bodinglee;
 - Hagshaw Western Expansion;
 - Hare Craig;
 - Hawkwood; and
 - The Drum.



- 10.10.5 Kennoxhead Extension II would affect the A70 but only the section between the access to that development (immediately to the west of Glespin) and junction 12 of the M74 and not any sections of the A70 in the Study Area.
- 10.10.6 However, cumulative effects would arise from the Proposed Development and these developments only if their construction periods overlapped. The National Energy System Operator's (NESO) Transmission Entry Capacity (TEC) register has been consulted to ascertain potential grid connection dates for these developments and hence identify if construction of them could overlap with that of the Proposed Development. The register is described by NESO as "*A list of projects that hold contracts for Transmission Entry Capacity (TEC) with us. These include existing and future connection projects and projects that can be directly connected to the National Electricity Transmission System (NETS)*".
- 10.10.7 The version of the TEC register dated 7 July 2026 shows the following connection dates for the above developments:
- Bankend Rig III - 30 April 2030;
 - Bodinglee – 30 April 2029;
 - Hagshaw Western Expansion – 01 July 2028;
 - Hare Craig – 01 July 2028;
 - Hawkwood – 30 April 2030; and
 - The Drum – 31 October 2037.
- 10.10.8 As construction of the Proposed Development is expected to start in 2030, only the Bankend Rig III and Hawkwood developments are scheduled to be constructed at the same time as the Proposed Development. Even though they would overlap, construction of both the Bankend Rig III and Hawkwood developments would be close to being complete by the time construction of the Proposed Development started and there would be an overlap of, at most, four months between the three developments.
- 10.10.9 Information submitted with the application for the Bankend Rig III development shows that there would be between 76 and 226 vehicle movements per month in the final four months of construction of that development. The corresponding figures for the Hawkwood development were 50 to 165. These would translate to a maximum of around 20 additional vehicle movements per working day and would not be expected to cause significant cumulative effects when considered in conjunction with the vehicle movements arising from the Proposed Development.
- 10.10.10 There are several more potential cumulative developments referred to in **Chapter 4** that would affect the same sections of the A76 as the Proposed Development. Many of those developments do not yet have planning consent. There is no certainty that they would be consented nor is there any certainty that any of those which are (or may become) consented would be constructed. Furthermore, there is no certainty that those which proceed to construction would be constructed at around the same time as the Proposed Development.
- 10.10.11 The construction vehicle movement estimates presented in the consent application documents for these other developments are often based on conservative assumptions that all stone is imported and are for the peak months of construction. Aggregating these forecasts would, in effect, assume that all potential developments are consented and constructed, that their construction programmes overlap, and that each development experiences its peak traffic generating period



simultaneously. Such an outcome would be unlikely and would not represent reasonably foreseeable future conditions on the road network.

- 10.10.12 Given these uncertainties, it would be reasonable for the CTMP for the Proposed Development to present a review of potential developments that could cause cumulative effects with the Proposed Development. At the time that document was prepared, there would be more certainty about the timing of the construction of the Proposed Development and of the other potential cumulative developments. Should that CTMP identify that peak vehicle movement periods for several developments would coincide, then it would present measures (such as agreements on scheduling) to ensure that any potential cumulative effects were avoided or sufficiently mitigated.
- 10.10.13 Cumulative effects are therefore considered to be not significant, on the basis that the CTMP is implemented as described above.

Other Non-Wind Farm Developments

- 10.10.14 EAC's planning portal was reviewed and no other planning applications were identified which would cause a material increase in vehicle movements on the sections of road in the Study Area.

Assumed Overhead Line Grid Connection

Background

- 10.10.15 As described in **Chapter 2**, this EIA Report includes an assessment of the effects of an assumed OHL which would likely connect the Proposed Development to the consented Glenmuckloch Substation, located approximately 8 km to the south-east of the Proposed Development. The OHL would be the subject of a separate consent application in due course once its exact alignment had been fixed.
- 10.10.16 **Figure 2.16** shows the indicative routeing corridor of the OHL and shows that it runs initially approximately southwards from the Proposed Development then runs eastwards, approximately parallel to and to the north of the A76 and the Glasgow South Western railway line.
- 10.10.17 As the OHL would be constructed in a linear fashion, it would be accessed from different locations depending on the work being undertaken at any one time. Works on the OHL within the Proposed Development (and those accessible from it) would be accessed from the entrance to the Proposed Development on the A70. Works at other locations would be accessed from existing accesses or roads reached from the A76.

Potential Effects

- 10.10.18 Construction of the OHL would generate vehicle movements on the public road network arising from staff travelling to and from the various work sites as well as the delivery and removal of plant, components, materials and supplies. These activities would lead to additional cars, vans, LGVs and HGVs on the road network. During operation there would be only the occasional maintenance or inspection vehicle movement so no significant effects are likely. The consideration of potential for significant effects is therefore limited to the potential effects during construction only.
- 10.10.19 Construction of the OHL would require temporary access to each installation location along the route. These accesses would aim to use existing field or private accesses where possible, although there may be a need for improvements to some



of these (to widen them or provide a suitable running surface for example). Temporary trackway pads would likely be provided where required to provide a suitable vehicle route between accesses and work sites.

- 10.10.20 Vehicle movements would be generated by the delivery of components such as temporary trackways, poles, electric fittings, OHL cables and items such as plant and storage containers. These items would likely be delivered by HGVs and LGVs. Further vehicle movements would be generated by staff accessing each worksite and these are likely to be by vehicles such as vans and pick-up trucks.
- 10.10.21 The number of vehicle movements using any one access to the OHL on any one day would vary, but a typical working day would likely see something in the order of five to ten vehicle visits (so 10 to 20 vehicle movements, accounting for arrivals and departures).
- 10.10.22 Further vehicle movements would likely be generated at the start and end of the works as items such as storage containers and plant are delivered and then removed. There would be further movements throughout construction as consumables (such as fuel for plant) are delivered.

Assessment of Potential Effects

- 10.10.23 The number of vehicle movements generated by construction of the OHL would be unlikely to be noticeable to other users of the public road network, particularly on the A76 where (as shown in **Table 10-4**) there are expected to be around 7,800 vehicle movements during the period 0700 – 1900 on a weekday in 2030. Hence no significant effects on users of the transport network arising from construction of the OHL are considered to be likely.

10.11 Summary and Conclusions

- 10.11.1 This assessment has considered the potential effects on users of the transport network arising from the Proposed Development. The assessment has identified that vehicle movements would peak during months six and seven of construction.
- 10.11.2 The effects of these vehicle movements, and of the AILVs delivering the wind turbine components, have been assessed and found to be not significant. Also, no significant effects are expected when the Proposed Development is considered in combination with other planned developments.
- 10.11.3 No significant effects are considered likely from the construction of the off-site works to create overrun areas for the AILVs or from the construction of an OHL linking the Proposed Development to the proposed Glenmuckloch Substation, although these elements will be the subject of separate consent applications in due course.
- 10.11.4 The number of vehicle movements during the operation and decommissioning of the Proposed Development would be lower than those during construction and hence no significant effects are expected on users of the transport network during those phases.
- 10.11.5 A summary of the assessment is provided in **Table 10-12**.



Table 10-12: Summary Table

Description of Effect	Mitigation/Enhancement Measure(s)	Significance of Residual Effect	
		Level and Significance	Beneficial/ Adverse
During Construction & Decommissioning			
A70 in Muirkirk east of B743			
Severance	Implementation of measures in an agreed CTMP.	Negligible, Not Significant	n/a
Road Vehicle Driver and Passenger Delay		Minor, Not Significant	Adverse
Non-Motorised User Delay		Minor, Not Significant	Adverse
Non-Motorised User Amenity		Minor, Not Significant	Adverse
Fear and Intimidation		Negligible, Not Significant	n/a
Road Safety		Minor, Not Significant	Adverse
Hazardous Loads		None	n/a
All other sections of road in the Study Area fall below the threshold for assessment and no significant effects are expected.			
During Operation			
Scoped out of assessment – no significant effects expected.			
Cumulative Effects			
No significant effects expected			



10.12 References

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