

Chapter 11

Traffic and Transport

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11 Traffic and Transport

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11 Traffic and Transport

11.1 Executive Summary

- 11.1.1 This chapter assesses the effects of the Proposed Development on the surrounding road and transport network during construction, operation and decommissioning.
- 11.1.2 The assessment has been conducted with reference to relevant legislation and planning policy. The methodology and significance criteria used to assess the effects of the Proposed Development are industry standards as published by the Institute of Environmental Management and Assessment (IEMA).
- 11.1.3 An assessment of traffic volumes and vehicle types associated with the construction phase of the Proposed Development has been set in the context of existing traffic flows and movements. A baseline of existing traffic was established using a combination of historical and commissioned survey data.
- 11.1.4 A review of the proposed route options for abnormal load deliveries, which include turbine component delivery, was completed to minimise potential effects on the surrounding road network and establish that potential pinch points can be overcome.
- 11.1.5 Due to the nature of the operation of the Proposed Development, the majority of vehicular activity is during the construction phase with minimal traffic during the operational phase.
- 11.1.6 The traffic generated by construction of the Proposed Development (over a 24 month period) will result in a temporary increase in baseline traffic levels, with the peak traffic generation occurring in month 16.
- 11.1.7 The potential environmental effects associated with this increase in traffic have been assessed and are anticipated to give rise to effects that are classed as significant and which require mitigation, in accordance with IEMA guidelines.
- 11.1.8 Mitigation will be provided in the form of a Construction Traffic Management Plan (CTMP) which sets out proposed details for staff travel, heavy goods vehicle (HGV) routing and guidelines for deliveries to further reduce potential effects on the surrounding network.

11.2 Introduction

- 11.2.1 This chapter assesses the potential effects on the existing transport network and on sensitive receptors as a result of the construction, operation and decommissioning phases of the Proposed Development.
- 11.2.2 The key objectives of the chapter are to:
 - describe the assessment methodology and significance criteria used in completing the assessment of potential effects associated with increased traffic;
 - describe the current traffic and transport conditions;
 - identify and assess the likely environmental effects associated with increased traffic;
 - identify and describe the mitigation measures proposed to address any significant effects;
 - assess any residual effects post mitigation implementation; and
 - consider any potential cumulative effects.
- 11.2.3 This chapter sets out the baseline conditions for the transport network around the Proposed Development before going on to identify the potential environmental effects that could arise as a result of increased traffic. The traffic levels are then identified, and an assessment of effects is undertaken with mitigation proposed where required.



11.2.4 This chapter is supported by the following figures as contained within **Volume 2: Figures**:

- Figure 11.1: Study Area;
- Figure 11.2: Traffic Counter Locations; and
- Figure 11.3: Abnormal Loads Route.

11.2.5 The chapter is supported by the following appendices as contained within **Volume 4: Technical Appendices**:

- Appendix 11.1: Abnormal Loads Assessment;
- Appendix 11.2: Access Junction Design Drawings; and
- Appendix 11.3: Outline Construction Traffic Management Plan (CTMP).

11.3 Legislation, Policy and Guidelines

Legislation

11.3.1 This chapter has been prepared taking cognisance of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations).

Planning Policy

11.3.2 The Planning Statement associated with this Section 36 application sets out the planning policy framework that is relevant to the EIA. This chapter considers the relevant policies contained within National Planning Framework 4 (NPF4), Planning Advice Notes, the South Lanarkshire Local Development Plan (LDP) (2021), East Ayrshire Local Development Plan 2 (LDP2) (2024) and other relevant guidance.

Guidance

11.3.3 Recognisance has been taken of the following best practice guidelines/guidance etc:

- Guidelines for Traffic Impact Assessment, (Chartered Institution of Highways & Transport CIHT, 1998);
- Institute of Environmental Management and Assessment (IEMA) publication - “Environmental Assessment of Traffic and Movement” (IEMA, 2023); and
- Department for Transport (DfT) publication “Design Manual for Roads and Bridges” (DMRB, DfT, 2013).

11.4 Consultation

11.4.1 In undertaking the assessment, consideration has been given to the received scoping responses detailed in **Table 11.1**.

Table 11.1 – Consultation Responses

Consultee	Summary of Response	Where and How Addressed
Transport Scotland 13 March 2024	It is acknowledged that an initial abnormal loads assessment has been undertaken on the route outlined, as illustrated on Figure 3.5 of the 2024 Scoping Update Report. However, a full abnormal loads assessment assessing the route from the Port of Entry to the site access, updated as necessary, should be submitted as supporting information.	Abnormal Loads Assessment is provided in Appendix 11.1 .



Consultee	Summary of Response	Where and How Addressed
	<p>Any existing trunk road traffic data that may inform the traffic and transport assessment must be requested via traffic.data@mobiiie.co.uk. Transport Scotland would highlight that Department for Transport (DfT) traffic count data is not an appropriate source of information for the assessment of trunk road traffic impacts.</p> <p>Where no trunk road traffic data is available and traffic surveys are proposed, the scope of the traffic surveys must first be agreed with Transport Scotland.</p> <p>The 2022 Scoping Report proposes the use of a low growth factor from the National Road Traffic Forecast (NRTF) dataset to factor flows observed on non-trunk roads to the year of construction and opening and a high growth NRTF factor for flows observed on trunk roads and motorways. A full justification for the use of these factors should be provided in the EIA.</p> <p>Neither of the Scoping Reports specifically state what assessment will be carried out. This should be clearly specified in the EIA and should consider the methodology provided in the IEMA guidelines: 'Environmental Assessment of Traffic and Movement'.</p> <p>The potential impacts shall be updated to be consistent with the IEMA guidelines published in July 2023.</p> <p>It is noted that neither Scoping Report confirms anticipated assessment assumptions, e.g., the volume / percentage of construction material required to be transported to the Proposed Development site. Full details of these must be provided in the EIA, supported by appropriate justification. Regarding the volume of material required to be transported to site, Transport Scotland would advise that a worst-case scenario shall be assessed.</p> <p>The EIA chapter shall detail the potential number of daily, weekly, and total delivery numbers for the Proposed Development, providing confirmation of: estimated construction employee trips, the number, size, and weight of construction deliveries, and the anticipated schedule for deliveries.</p>	<p>Traffic data has been obtained from the Transport Scotland National Traffic Data System (NTDS) for the M74(T).</p> <p>No additional traffic surveys were required on the trunk road network.</p> <p>NRTF Low growth factors have been applied where necessary.</p> <p>Full assessment methodology is provided in Section 11.5.</p> <p>The potential impacts detailed in Section 11.5 are taken from the 2023 IEMA Guidelines.</p> <p>Assessment assumptions are detailed in Section 11.8.</p> <p>A full construction programme detailing the number of trips is provided in Tables 11.7 and 11.8.</p>



Consultee	Summary of Response	Where and How Addressed
	<p>The proposed construction traffic distribution and assignment shall be fully justified in the EIA chapter.</p> <p>The proposed hours of operation for the Proposed Development during the construction phase should be confirmed in the EIA.</p> <p>Section 11.2 of the 2024 Scoping Update Report states that “<i>potentially sensitive receptors will be identified</i>” in the EIA. These should be appropriately considered in the assessment of effects where required.</p> <p>Full details of cumulative impacts should be set out, including a detailed programme indicating the worst case combined trip generation and associated percentage impact relative to baseline traffic levels, both in terms of total traffic and the percentage increase in HGVs. Should impacts exceed assessment thresholds, full assessment of effects should be undertaken.</p>	<p>Construction traffic distribution is provided in Table 11.9.</p> <p>Proposed hours of operation during the construction phase are discussed in Section 11.8.</p> <p>Potentially sensitive receptors are considered and assessed where appropriate in Section 11.8.</p> <p>Cumulative effects are considered in Section 11.10.</p>
<p>South Lanarkshire Council (SLC)</p> <p>30 January 2023</p>	<p>Paragraph 3.2.17 of the Scoping Report proposes that LGVs and personnel vehicles use the existing Dungavel Forest access off the B743 in South Lanarkshire. It also proposed that LGVs and cars use existing entrances at Linburn Farm and Priesthill Farm; these two accesses are in East Ayrshire, however, could result in vehicle trips along the B743 within South Lanarkshire. It is noted that the B743 is considered a strategic route used for traffic diversions by South Lanarkshire and East Ayrshire whenever required due to closures on the A70 or A71. There are also concerns about the suitability of the route in parts in terms of its physical composition and geometry. Given the foregoing, the Council’s preference is that all construction traffic use the proposed route from Junction 11 (M74), via the existing haul road and windfarm tracks referred to above.</p> <p>For the avoidance of doubt, the B745 would not be accepted for use under any circumstances due to its condition and geometry; in some areas it is effectively single track. As such the B745 would need to be excluded from any potential ‘Agreed Route’.</p> <p>Delivery route plans to be included in the EIA report for abnormal loads from the M74 to each development area. Routes for HGV movements should also be detailed.</p> <p>An anticipated development programme to be included in the EIA, broken down to show monthly movements for HGV and abnormal loads.</p>	<p>Construction traffic routes to site are described in Section 11.5.</p> <p>The B745 is not considered an access route to the Proposed Development. A Construction Traffic Management Plan (CTMP) would be used to ensure traffic adhere to agreed haul routes. An outline CTMP is contained in Appendix 11.3.</p> <p>Abnormal loads routes and construction traffic routes are described in Section 11.5 and 11.7. Abnormal loads routes are also indicated on Figure 11.3.</p> <p>An indicative construction programme is provided in Table 11.8 and provides monthly vehicle movements.</p>



Consultee	Summary of Response	Where and How Addressed
	<p>An assessment of baseline traffic against anticipated trips for all construction vehicle movements at key locations along the route within South Lanarkshire. This will include the B743 assessment for potential use by cars and transit type small vans proposed in the Scoping Report. It should be noted that the Council may require subsequent assessment of the B743 route width to ensure two-way vehicles can pass without verge overrun, depending on the findings of the threshold assessment.</p> <p>Impact on existing walking and cycling routes to be assessed.</p> <p>Swept path analysis to identify pinch points requiring road widening, overrun areas and/or alterations to street furniture as part of an Abnormal Load Route Assessment (ALRA).</p> <p>If the B743 is being accepted as an access for cars and small, transit sized vans, the proposed access onto the B743, which is subject to the national speed limit, should benefit from a 4.5metre by 215 metre visibility splay in both directions. The Council would, therefore, be willing to consider a reduction in the visibility splay where the applicant can demonstrate, by means of a continuous 7-day vehicle speed survey, that the 85th percentile speed, that is the speed at or below which 85% of motorists consider it safe to travel at with regards to the prevailing road conditions, is lower than the signed speed limit in force on this section of road.</p>	<p>An assessment of traffic impacts per road link as a result of construction of the Proposed Development is provided in Table 11.10.</p> <p>Pedestrians and recreational road users are considered in the assessment of effects in Section 11.8.</p> <p>A full Abnormal Loads Assessment including swept paths and pinch points is provided in Appendix 11.1.</p> <p>Access junction drawings including visibility splays are provided in Appendix 11.2.</p>
<p>East Ayrshire Council (EAC)</p> <p>13 March 2024</p>	<p>The Planning Authority would note its comments from the previous scoping response (22/0003/S36SCP) remain valid unless otherwise updated herein based on the revised Phase 1 proposal currently under scoping consideration.</p> <p>The following comments are taken from the above referenced scoping response dated 25th October 2022:</p> <p>The Planning Authority would advise that the traffic assessment should be based on a worst-case scenario which assumes 100% of construction materials such as stone requiring to be imported to site. Any expected reduction in stone importation due to the use of borrow pits 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.</p> <p>It is welcomed that all abnormal loads and HGVs would access the site via the M74 and through existing accesses of other wind farm sites rather than on the local road network. Light vehicle and personnel vehicle uses on the local road network such as the B743 and A70 would be unlikely to have the same level of impacts as HGVs or abnormal loads would on these routes.</p>	<p>As a worst case scenario, 70% of material required to be imported has been assessed, as described in Section 11.8. This is considered to be a significant over-estimate of the volume of material that will require to be imported.</p> <p>Noted.</p>



Consultee	Summary of Response	Where and How Addressed
	<p>The Planning Authority would agree that the decommissioning phase of the Proposed Development can be scoped out of the traffic assessment as such impacts are likely to be similar to those during construction.</p> <p>The EIA Report should detail the port of entry and the delivery route for turbines and components to site.</p>	<p>Noted.</p> <p>Details of route to site for turbine components is provided in Appendix 11.1.</p>

11.5 Assessment Methodology and Significance Criteria

Study Area

- 11.5.1 The study area for the assessment of traffic and transport is indicated by **Figure 11.1** and has been identified using the IEMA Guidelines as an aide. The study area has been predicated on the access points to the site and the proposed road routes to the access points. To determine appropriate access routes, detailed consideration and assessment of the surrounding road network has been undertaken and the location of nearby sensitive receptors has been considered.
- 11.5.2 The results of the study have established that the most appropriate routes for general construction HGV traffic to reach the site are from either the east or west along the A71 depending on the point of origin of materials, before heading south on the B743 to one of the three site access points, or from the south via the A70 (east or west) and then north on the B743.
- 11.5.3 Two potential abnormal loads routes have been identified and assessed from the proposed Port of Entry (PoE) at King George V (KGV) Docks in Glasgow. These are provided in **Appendix 11.1** and illustrated in **Figure 11.3**.
- **Route 1** leaves the M74(T) at Junction 11 and then routes off-road through the existing Hagshaw Cluster via a network of existing access tracks, joining the A70 east of Muirkirk. Abnormal loads vehicles would then route westwards on the A70 through Muirkirk before turning right (north) just west of Smallburn using the site entrance to the former Burnfoot Moor Opencast Coal Site and following the existing tracks through and along the edge of forestry land, to join the B743 north of Muirkirk.
 - **Route 2** leaves the M74(T) at Junction 8 and travels west on the A71 to Strathaven before routing south on the B743.
- 11.5.4 Should stone require to be imported, it is currently unknown which quarry or quarries would be used, but it is considered most likely that access would be gained via the A70 or A71 from the east.
- 11.5.5 The study area therefore encompasses the following road network:
- The B743 between the A71 and Muirkirk.
 - Townhead Street (A723/A726 in the vicinity of Strathaven).
 - The A71 east of the B743 junction to the M74(T).
 - The A71 west of the B743 to Darvel.
 - The A70 east of Muirkirk to the M74(T).
 - The A70 west of Muirkirk to Cumnock.
 - The M74(T) between Junction 7 and Junction 12.
- 11.5.6 It is considered unlikely that there would be any significant effects on the road network outside of the study area identified above as traffic will be diluted across the road network beyond these points.



- 11.5.7 Taking into account the IEMA Guidelines for sensitive receptors, it is considered that the settlements of Strathaven, Stonehouse, Drumclog and Darvel on the A71 would be classed as sensitive receptors, plus the settlements of Cumnock, Lugar, Muirkirk, Glespin and Douglas on the A70, since there are likely to be pedestrians present in these areas and there are local services/amenities with direct frontage to the road. Townhead Street in Strathaven is also considered a sensitive receptor given its town centre location.
- 11.5.8 It is considered that the locations listed above are identified as sensitive receptors and therefore are subject to Rule 2 (10 % threshold) of the IEMA Guidelines. All other road links within the study area are subject to Rule 1 (30 % threshold).

Desk Study

- 11.5.9 A comprehensive desk-based study was undertaken to fully understand the surrounding road network including potential sensitive receptors and likely routes to site for construction materials, abnormal loads, and personnel.
- 11.5.10 Traffic data has been obtained from the Transport Scotland National Traffic Data System (NTDS) for the M74(T). Traffic data has been obtained for the A70 east of Glespin from the Department for Transport (DfT) website. Count data in the public domain contained within the EIA Report Traffic and Transport Chapter of the Mill Rig Wind Farm application has been used for Townhead Street.
- 11.5.11 Accident data for the trunk road (M74) within the study area has been requested from Transport Scotland (not received at the time of writing). Accident data for the remaining road links within the identified study area has been obtained from the Crashmap website (<https://www.crashmap.co.uk/Search>).

Field Surveys

- 11.5.12 Automatic Traffic Counter (ATC) surveys were undertaken at locations within the study area from the 09 to 15 June 2023. Traffic count data for the following road links has been obtained from these surveys:
- A70 west of Muirkirk;
 - B743;
 - A71 east of B743; and
 - A71 in Strathaven.
- 11.5.13 The traffic surveys also included speed surveys at the site access points on the B743 to inform junction design and visibility splay criteria. All traffic counter locations used within this assessment are shown in **Figure 11.2**.

Assessment of Potential Effects

- 11.5.14 The assessment of effects is based on the project description as outlined in **Chapter 3**.
- 11.5.15 Guidance for the assessment of the environmental effects of generated traffic is provided in the IEMA document, “Environmental Assessment of Traffic and Movement”. The document is the only guidance document currently available that sets out a methodology for assessing potentially significant environmental impacts where a Proposed Development is likely to give rise to changes in traffic flows.
- 11.5.16 The assessment is structured around the consideration of potential environmental effects relating to traffic and transport, as identified by the IEMA Guidelines and including the following:
- Severance of communities
 - Road vehicle driver and passenger delay
 - Non-motorised user delay and amenity
 - Fear and intimidation on and by road users



- Road user and pedestrian safety
- Hazardous and large loads

11.5.17 There are no hazardous loads associated with the Proposed Development.

11.5.18 The guidance suggests that in order to determine the scale and extent of the assessment and the level of impact the Proposed Development will have on the surrounding road network, the following two 'rules' should be followed.

- Rule 1 – Include road links where traffic flows are predicted to increase by more than 30%; and
- Rule 2 – Include any other specifically sensitive area where traffic flows are predicted to increase by 10% or more.

11.5.19 These rules are used to identify the road links within the study area where a full assessment of environmental effects associated with an intensification in road traffic may be required. It is noted that further consideration should be given to road user and pedestrian safety as well as driver delay effects even if the above thresholds are not exceeded.

Assessment of Significance

11.5.20 The following section sets out the methodology used to assess the significance of effects at locations along the proposed public road routes within the study area where total traffic levels or the level of HGV traffic exceed the screening thresholds set out by IEMA.

Sensitivity

11.5.21 The sensitivity to change in traffic levels of any given road segment and the receptors located along that road segment are generally assessed by considering the residual capacity of the network under existing conditions.

11.5.22 Where there is a high degree of residual capacity, the network may readily accept and absorb an increase in traffic and therefore, the sensitivity may be said to be low. Conversely, where the existing traffic levels are high compared to the road capacity, there is little spare capacity, and the sensitivity to change in traffic levels will be considered to be high.

11.5.23 Consideration has been given to the composition of the traffic on the road network, under both existing and proposed conditions. For example, LGVs have less effect on traffic and the road system than HGVs. Similarly, HGVs can have less effect than abnormal load vehicles, depending on the frequency of the abnormal loads.

11.5.24 The criteria that has been used to make judgements on the sensitivity of the receptor(s) and the magnitude of change are presented in **Table 11.2**.

Table 11.2 – Framework for Determining Sensitivity of Receptors

Sensitivity	Description
High	Receptors of high importance and value on international or national scales. Designated or heritage areas of unique value. Large settlements with a large number of public services and facilities, traffic control measures and regular use by pedestrians and cyclists. Minor and historic roads not generally suitable for frequent HGV traffic.
Medium	Receptors of some regional importance. Medium-sized settlements with some public services facilities and infrastructure and some traffic control measures, including some accommodation for pedestrians and cyclists. Roads generally capable of supporting regular HGV traffic.
Low	Receptors with low regional importance. Typically, small settlements with few facilities and no traffic control measures and with nearby trunk or A-class roads that are able to accommodate HGV traffic.
Negligible	Users not sensitive to transport effects. Includes very small settlements and roads with no significant settlements including new strategic trunk roads or motorways.



Magnitude

- 11.5.25 The magnitude of traffic effects is a function of the existing traffic volumes, the percentage increase and change due to a development, changes in the type of traffic and the temporal distribution of traffic (day of week, time of day). The determination of magnitude has been undertaken by reviewing the Proposed Development, establishing the parameters of the receptors that may be affected and quantifying these effects utilising IEMA Guidelines and professional judgement.
- 11.5.26 The criteria that have been used to make judgement on the magnitude of the effect on the receptor(s) is presented in **Table 11.3**.

Table 11.3 – Framework for Determining Magnitude of Effect

Magnitude	Description
Major	Generally, a rule of >90 % (or >70 % at sensitive receptors) change in traffic is considered to be a major magnitude.
Moderate	Generally, a rule of 60 % - 90 % (or 40 % - 70 % at sensitive receptors) change in traffic is considered to be a moderate magnitude.
Minor	Generally, a rule of 30 – 60 % (or 10 % - 40 % at sensitive receptors) change in traffic is considered to be a minor magnitude.
Negligible	Generally, a rule of <30 % (or <10 % at sensitive receptors) change in traffic is considered to be a negligible magnitude.

Significance

- 11.5.27 As a guide to inform the assessment, but not as a substitute for professional judgement, criteria for determining the significance of traffic related effects are set out in **Table 11.4**. This is based on combining the magnitude of the effect with the receptor sensitivity.

Table 11.4 – Significance Criteria Matrix

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

- 11.5.28 Significance is categorised as major, moderate, minor or negligible. Effects in the grey shaded cells are considered to be **Significant**. Effects judged to be of minor or negligible significance are considered **Not Significant**.

Limitations to Assessment

- 11.5.29 The assessment provided in this chapter is based upon average traffic flows obtained from the Transport Scotland National Traffic Data System (NTDS), the Department for Transport (DfT) database, and project specific 7-day ATC surveys. It is expected that there may be localised peaks and seasonal variation in baseline traffic flows on the road network within the study area.

11.6 Baseline Conditions

Site Access

- 11.6.1 Vehicular access to the site will be provided from the B743 at three locations shown on **Figure 1.2**. Access Points A and B serve the northern development area of the Proposed Development and are existing access points into Dungavel Forest. Access Point A is the most northerly of the three and



located approximately 1.6 km south of the B745. Access Point B is the central access point and located at Powbrone Bridge. Access Point C serves the southern development area (battery energy storage system (BESS) and solar) and is located to the north of an existing access to Linburn Farm.

- 11.6.2 The site entrances will include a permanent bellmouth and an initial section of widened track to allow abnormal loads to enter and egress from the B743 safely. The site entrance points have been designed to maximise visibility for vehicular movements entering and leaving the site, however, the final designs will be agreed with the relevant roads authorities to ensure suitable visibility splays are realised. Preliminary junction design drawings for the three access points are provided in **Appendix 11.2**. Two preliminary junction designs are provided for Access Point A to cover potential abnormal load access from either the south (Route 1) or from the north (Route 2).

Study Area Road Links

- 11.6.3 The following paragraphs detail the baseline conditions of the public road links within the study area which are included within the assessment

B743

- 11.6.4 The B743 is a good standard single-carriageway road which runs in a north-south direction between Strathaven on the A71 and Muirkirk on the A70. The B743 is generally subject to a 60 mph speed limit.
- 11.6.5 The B743 is a well-used route to travel between the A71 and A70. For the purposes of this assessment, the impact of Proposed Development traffic on the B743 will be considered against IEMA 'Rule 1' and the 30 % threshold of increase in total traffic or HGV levels (i.e. this road link is not considered specifically 'sensitive').
- 11.6.6 All general construction traffic will use the B743 to access the site, from the south via the A70 or from the north via the A71, depending on the origin of materials and construction staff.

A71

- 11.6.7 The A71 is a good standard single-carriageway road which runs in a south-west to north-east direction between the A77 on the outskirts of Kilmarnock and the M74(T) to the north-east of Stonehouse, passing through Drumclog and Strathaven in the vicinity of the site. The A71 is subject to a varying speed limit with sections of 30 mph through settlements and the National Speed Limit (60 mph) elsewhere in more rural locations. There is a limit of 50 mph between Stonehouse and Strathaven.
- 11.6.8 The A71 is a route well-used by HGV traffic and provides connections to the A77, A719, M74(T) and the B745 and B743 in the vicinity of the site. Some general construction traffic will use the A71 to route from the wider road network, approaching from the east or west, depending on the origin of materials and construction staff.
- 11.6.9 For the purposes of this assessment, the settlements of Darvel, Drumclog, Strathaven and Stonehouse are considered sensitive receptors and therefore the impact of Proposed Development traffic on the A71 will be assessed against IEMA 'Rule 2' and the 10 % threshold of increase in total traffic.

Townhead Street/A723

- 11.6.10 Townhead Street/A723 is a good standard single-carriageway road which extends north-east, becoming the A726 as it turns north out of the settlement limits of Strathaven. The road is subject to the national speed limit (60 mph) for the majority of its route, with the section through the settlement limits of Strathaven subject to a 30mph speed limit.
- 11.6.11 It is possible that a small proportion of construction staff and HGVs transporting material originating from the north-east of the site may utilise Townhead Street to route onto the A71 and B743 to reach the site access, therefore this road link is included within the assessment.



- 11.6.12 For the purposes of this assessment, the impact of Proposed Development traffic on Townhead Street will be considered as a sensitive receptor within Strathaven and therefore assessed against IEMA 'Rule 2' and the 10 % threshold of increase in total traffic.

A70

- 11.6.13 The A70 is a good standard single-carriageway road which runs in a south-west to north-east direction between Cumnock and the M74(T). The A70 is subject to a varying speed limit with sections of 30 mph through settlements and the National Speed Limit (60 mph) elsewhere in more rural locations.
- 11.6.14 Some general construction traffic may route from south of the site depending on the source of materials and would be required to use the A70 from either the south-east or south-west of the B743. The settlements of Douglas, Glespin, Lugar and Cumnock are considered as sensitive receptors therefore the impact of Proposed Development traffic on the A70 will be considered against IEMA 'Rule 2' and the 10 % threshold of increase in total traffic or HGV levels.

M74(T)

- 11.6.15 The M74(T) forms part of the strategic trunk road network and runs south eastbound from Tradeston in Glasgow to the English border. The M74(T) is a dual carriageway road with a National Speed Limit of 70 mph where it is classed as a motorway.
- 11.6.16 It is anticipated that a proportion of the general construction HGV traffic would use the M74(T) to route from the wider road network to access the site, either via the northern route, Route 2 (A71 and B743) or the southern route, Route 1, via the A70 and B743. General construction traffic approaching from the south would exit the M74(T) at Junction 12 and route to site via the A70 and B743.
- 11.6.17 All abnormal loads would travel down the M74(T) from KGV docks in Glasgow and exit at Junction 8 for Route 2 or Junction 11 for Route 1 (refer to **Figure 11.3**).
- 11.6.18 The impact of Proposed Development traffic on the M74(T) will be considered against IEMA 'Rule 1' and the 30 % threshold of increase in total traffic or HGV levels (i.e. this road link is not considered specifically 'sensitive').

Baseline Traffic Flows

- 11.6.19 **Table 11.5** indicates the baseline and projected two-way Average Daily Traffic (ADT) for routes within the study area and the percentage of traffic which is classified as HGVs. Traffic data has been factored up to 2025 baseline levels using the National Roads Traffic Forecast (NRTF) 'low growth' rate and forecast to a future year of 2027 (assumed as the year construction would begin). The NRTF low growth rates which have been applied are:
- 2023 to 2025: 1.011
 - 2024 to 2025: 1.005
 - 2025 to 2027: 1.010
- 11.6.20 The resultant baseline traffic flows are provided in **Table 11.5**.

Table 11.5 - Current and Future Year Baseline Traffic Flows

	2025 ADT	2025 HGV ADT	2027 ADT	2027 HGV ADT	% HGV
1. A70 west of Muirkirk	4,103	356	4,165	361	8.7%
2. B743	879	153	893	155	17.4%
3. A71 W of B743	5,378	928	5,459	942	17.3%
4. A71 in Strathaven	7,595	1,020	7,710	1,035	13.4%



	2025 ADT	2025 HGV ADT	2027 ADT	2027 HGV ADT	% HGV
5. Townhead Street	4,656	193	4,727	196	4.1%
6. M74(T) N (Junction 7)	68,395	10,807	69,433	10,971	15.8%
7. M74(T) S (Junction 12)	34,987	11,511	35,518	11,686	32.9%
8. A70 east of Glespin	2,442	294	2,479	298	12.0%

Road Safety

- 11.6.21 Five-year accident data for the M74 trunk road within the study area has been requested from Transport Scotland (not received at the time of writing). Crashmap data has been used for this road link in the interim. The Crashmap website (www.crashmap.co.uk) has also been utilised to identify the number of accidents that have occurred along the remaining road links within the identified study area, using the most recent available data (2019 – 2023). The results of this investigation are indicated by **Table 11.6** with additional commentary provided on fatal accidents, if applicable.

Table 11.6 – Accident Statistics

Road Link	Slight	Serious	Fatal	Comment
A70 (from the M74(T) to Cumnock)	12	12	0	The serious accidents on the A70 are well spread out with no particular clusters or hotspots identified.
B743	2	10	0	Serious accident at the location of Access Point B in 2021 involving one vehicle and one casualty. Remaining ‘serious’ accidents spread out along the B743.
A71 (from the M74(T) to Darvel)	16	9	0	Serious accident approximately 160 m east of the B743 in 2023 involving one vehicle and two casualties. Remaining ‘serious’ accidents spread out along the A71.
M74(T) (J7 to J12)	22	16	4	Fatal accident on the main carriageway at Junction 11 in 2019 involving one vehicle and one casualty. Fatal accident approximately 1.7 km north of Junction 11 in 2022 involving two vehicles and one casualty. Fatal accident on the M74 near Eastwood Road in 2021 involving four vehicles and two casualties. Fatal accident just south of Junction 10 in 2019 involving two vehicles and one casualty.

- 11.6.22 **Table 11.6** indicates that a total of 52 slight, 47 serious, and four fatal accidents (resulting in five fatalities) have occurred within the study area over the five year period assessed. The accidents are generally spread out across the road network with no identifiable ‘hotspots’ or clusters.

Future Baseline

- 11.6.23 If the Proposed Development was not implemented then it is likely that there would be no notable changes to the traffic and transport situation in the vicinity of the Proposed Development, other than changes to background traffic as a result of general traffic growth and any nearby committed developments.



11.7 Scope of the Assessment

- 11.7.1 The assessment is made with reference to the Proposed Development as described in **Chapter 3**.
- 11.7.2 Within the identified study area (described in **Section 11.5**), the following traffic and transport effects have been considered:
- effects on the road network as a result of traffic generated by the construction of the Proposed Development;
 - consideration of the effects of transporting abnormal loads to the Proposed Development; and
 - effects on the road network as a result of traffic generated by the operation of the Proposed Development.

General Construction Traffic

- 11.7.3 For a development of this nature there is a need to transport general construction materials (concrete, aggregates, pipes, cabling, electrical components etc.) to the site in standard Heavy Goods Vehicles (HGVs). This form of traffic results in a temporary intensification of HGV traffic on the public road network. The scale of intensification fluctuates depending on the size of the development and the phase of construction. Construction workers will also generate a small amount of traffic when commuting to/from the site during the construction and operational phases. General HGVs will access the site from the routes within the study area before accessing the site from the three access points on the B743.

Abnormal Loads

- 11.7.4 The most logistically challenging traffic and transport characteristic associated with wind farm developments is the need to transport the wind turbine components to the site. The preferred Port of Entry (PoE) for the turbine components has been identified as the King George V (KGV) Docks in Glasgow from where the abnormal loads vehicles would navigate onto the M8 motorway and then onto the M74 Trunk Road. The abnormal loads will then travel to the site by one of two potential routes, as indicated on **Figure 11.3**.
- Route 1: The abnormal loads will exit the M74 at Junction 11 and use a network of private haul roads within the Hagshaw Energy Cluster to join the A70 west of Glespin. The vehicles would then continue west on the A70 through Muirkirk then travel north (turning right) just west of Smallburn using the site entrance to the former Burnfoot Moor Opencast Coal Site and following the existing tracks through and along the edge of forestry land, to join the B743. From here the vehicles would continue north on the B743 to the required access point.
 - Route 2: The abnormal loads will exit the M74 at Junction 8 and continue south-west along the A71 through Stonehouse and Strathaven before turning onto the B743 and heading south to Access Point A.
- 11.7.5 The route via the trunk road network from the port of entry is generally of a suitable standard to accommodate the abnormal loads associated with the Proposed Development as it is a tried and tested route by numerous other wind farm developments.
- 11.7.6 Some mitigation measures will be required within the adopted road boundary at a number of locations on the local road network for both route options to accommodate the size of the turbine components for the Proposed Development.

Operational Stage

- 11.7.7 Once the Proposed Development is operational, the amount of traffic generated will be minimal and will relate to maintenance of the wind turbines, solar PV and BESS facilities. Vehicles used for maintenance are likely to be utility vehicles (typically 4x4s or light goods vehicles (LGVs)). There



may, on rare occasions, be the need for HGVs or abnormal load vehicles to access the site. Effects of the operational stage are discussed in **Section 11.8**.

Effects Scoped Out

- 11.7.8 On the basis of the desk-based study undertaken and experience from other relevant projects, the following topic areas have been scoped out of detailed assessment:

Decommissioning Phase

- 11.7.9 Planning permission for the Proposed Development is sought for a 40-year operational period, after which time the Proposed Development will be decommissioned unless a further application is submitted for an operational extension. Traffic associated with the decommissioning stage is anticipated to be significantly less than that generated during construction.
- 11.7.10 Given the timescales involved and the likelihood for changes to the baseline situation during this period, the transport and access effects of decommissioning are not assessed further, as agreed in the scoping opinion. The construction phase is however assessed which is considered to be the 'worst-case' scenario in terms of the number of traffic movements generated.

Peak Hour Congestion

- 11.7.11 The effect of construction related vehicles on the road network is considered unlikely to be significant in terms of peak hour congestion as deliveries will be spread out across the day. Therefore, detailed junction capacity assessments have not been undertaken. A full schedule of estimated HGV trips associated with the construction phase of the Proposed Development is provided in **Table 11.8**.

Access Tracks and Beyond the Study Area

- 11.7.12 The effect of increased traffic associated with the Proposed Development on existing access tracks within the site is not anticipated to have a discernible environmental effect and is, therefore not appraised in this chapter. The effects of the Proposed Development on the local public road network are included.
- 11.7.13 It is anticipated that the volume of traffic associated with the construction of the Proposed Development will not have a discernible effect on roads and sensitive receptors outwith the study area as the effects of traffic are diluted with increasing distance from the point of origin. A full schedule of estimated HGV trips associated with the construction phase of the Proposed Development is provided in **Table 11.8**.

11.8 Assessment of Potential Effects

Construction Phase

- 11.8.1 The construction traffic associated with the Proposed Development will comprise construction workers, HGVs/LGVs carrying construction materials, personnel and plant, and abnormal load vehicles carrying the main wind turbine components.
- 11.8.2 Estimates of traffic generation associated with the construction phase of the Proposed Development have been based on the following principal activities:
- Forestry felling;
 - The excavation of the borrow pit and extraction of aggregate for new tracks and hardstandings;
 - Installation of construction compound / storage area for site office facilities and storage of materials and components;
 - Construction of new permanent site tracks and the upgrading of existing sections of access track;



- Installation of hardstandings and outrigger pads for the support of the cranes that would be used for the erection of the turbines;
 - Construction of foundations for the support of the turbine structures;
 - Installation of on-site High Voltage (HV) cabling, communication cabling and earthing underground adjacent to access tracks;
 - Wind turbine delivery and erection;
 - Piling solar photovoltaic (PV) mounting frames;
 - Installation of solar PV panels, and ancillary equipment;
 - Installation of battery containers, modules and ancillary equipment;
 - Construction of substations;
 - Commissioning and testing of site mechanical and electrical equipment; and
 - Reinstatement, landscaping, removal of temporary site offices, reseeding verges and borrow pits and other areas within the site.
- 11.8.3 The works would mainly follow the order detailed above, but many would be carried out concurrently to reduce the overall length of the construction programme. There would be construction phasing, with civil engineering works progressing in some areas whilst turbines/solar panels/BESS are being erected elsewhere. To minimise disruption to land use, site restoration would be undertaken as early as possible in development areas.
- 11.8.4 Cabling would be required to be laid along a section of the B743 corridor. Appropriate traffic management measures would be implemented for the duration of the works and the B743 would remain open (although reduced to one carriageway) while the cables are installed.
- 11.8.5 At this stage, it is proposed that construction activities on-site shall only take place between the hours of 07:00 am to 19:00 Monday to Friday inclusive and 07:00 to 13:00 on a Saturday, with no construction works on Sundays or Bank Holidays, unless otherwise agreed with SLC and EAC. Outside of these hours, there may be a requirement to take advantage of low wind speeds for the erection of turbines. In addition, turbine erection works cannot suddenly cease – in the event of a delay or complication it may be necessary to continue works beyond normal hours until they can end safely. Other activities that may take place outside these hours are limited to emergency works and dust suppression, unless otherwise agreed in writing by SLC and EAC.
- 11.8.6 On average, it is expected that there will be approximately 30 personnel working on-site at any one time. It is important to note that the number of personnel on-site would vary during the construction process. It is expected that staff would travel to the site by private car or works minibus / pick-up. For the purpose of providing a robust assessment it is assumed that all staff would travel in separate vehicles.
- 11.8.7 To calculate a robust scenario, information was gathered regarding the materials required and the size of average loads associated with the construction vehicles (excluding staff vehicles). **Table 11.7** includes an estimate of construction vehicle numbers required for each task during the construction phase.
- 11.8.8 Felling numbers provided in **Table 11.7** indicate the total number of timber lorry loads associated with forestry felling during the 24 month construction phase.
- Felling Corridor (assumed to take place during months 1 to 6) – 1,288 one-way trips;
 - Brash and Stump removal (as a worst case scenario assumed to take place during months 1 to 6) – 156 one-way trips; and
 - Phase 1 Felling 2023 to 2028. The majority of the ‘Felling Corridor’ (felling area required to facilitate the safe construction of the Proposed Development) will be complete before the construction phase which is expected to commence in 2027. Phase 1 Felling is expected to be



completed by the end of 2028 (for further detail on felling, refer to **Chapter 13**). Therefore, the final year of Phase 1 felling trips have been applied to the first 12 months of the construction phase – 1,242 one-way trips.

- Phase 2 Felling 2028 to 2033. The first year of Phase 2 felling is anticipated to begin half way through the 24 month construction phase therefore the first year of Phase 2 felling trips have been applied to months 13 to 24 – 119 one-way trips.

Table 11.7 – Estimated number of HGV Trips During Construction

Construction Task	Vehicle Type	Approximate No. Of Loads
Forestry Felling	Timber Lorry	2,805
Site Access, Site Tracks, Hard Standings etc*	Stone Wagons	18,823
Misc. Material Deliveries	Various	30
Foundations	Concrete Wagons	2,363
Foundation Reinforcement Deliveries	Low Loader	180
Cabling	Various	112
Abnormal Loads	Abnormal Load Vehicles	162
Site Establishment, Plant, Fuel and Misc.	Flat Beds & Low Loaders Fuel and Misc. Wagons	36
Solar - Materials, Civil works and Misc	Various	460
BESS – Materials, Civil works and Misc	Various	334
Construction of Substation	Various	100
Total (one-way trips)		25,405
Total (two-way trips)		50,810

**assumes 70 % stone requirements are imported to the site which is considered a significant over-estimate.*

- 11.8.9 Four on-site borrow pits have been identified and it is estimated that a significant proportion of the required stone will be sourced from these locations, for use in constructing access tracks and hardstanding areas. The use of the borrow pits would help to reduce total HGV levels considerably as stone importation is the highest traffic generating activity indicated by **Table 11.7**. However, for the purposes of this assessment, a robust ‘worst-case’ scenario of 70% of stone sourced from off-site has been assessed.
- 11.8.10 In addition to the construction vehicles identified in **Table 11.7**, it is anticipated that there would be approximately 60 two-way daily private car / LGV (or works minibus trips) to the Proposed Development associated with construction staff. Furthermore, it is anticipated that the abnormal loads would require car or LGV escort vehicles while transporting the turbines, equating to approximately four vehicles per day during the turbine delivery period.
- 11.8.11 Using the indicative construction programme, the number of HGV deliveries anticipated at the site per month of the construction phase has been calculated as illustrated in **Table 11.8**. Months 1-6 of the construction programme are expected to be a period of forestry felling. During these months, approximately 344 one-way or 688 two-way (inbound and outbound) vehicle movements are expected per month. This equates to approximately 172 two-way movements per week, or 31 per day (approximately 15.5 inbound and 15.5 outbound trips). The peak traffic generating months associated with the Proposed Development will be from month 7 onwards as indicated in **Table 11.8**. Please note total one-way and two-way vehicle trip numbers in the table include forestry felling numbers over months 1-6 of the 24 month programme, as detailed in **paragraph 11.8.7** above.



Table 11.8 - Estimated No. of HGV Trips per Month

Task	Month																		
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Forestry Felling	103	103	103	103	103	103	10	10	10	10	10	10	10	10	10	10	10	10	2,805
Site Access, Site Tracks, Hard Standings etc*	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882									18,823
Misc. Material Deliveries	1	1	1	1	4	4	4	4	1	1	1	1	1	1	1	1	1	1	30
Foundations						394	394	394	394	394	393								2,363
Foundation Reinforcement Deliveries						30	30	30	30	30	30								180
Cabling							23	23	22	22	22								112
Abnormal Loads												33	33	32	32	32			162
Site Establishment, Plant, Fuel and Misc.	3	3	3	3	3	3	2	2	2	2	2	2	2	2	1	1			36
Solar and BESS							36	53	68	103	100	99	99	83	65	44	29	15	794
Construction of Substation												34	33	33					100
Total One-way Trips (inbound only)	1,990	1,990	1,990	1,990	1,993	2,417	2,381	2,398	2,409	2,444	558	179	178	161	109	88	40	26	25,405
Total Two-way Trips (inbound & outbound)	3,980	3,980	3,980	3,980	3,986	4,834	4,763	4,797	4,819	4,889	1,116	358	356	322	218	176	80	52	50,810

*assumes 70% stone requirements are imported to the site which is considered a significant over estimate.



- 11.8.12 The construction site may be operational 12 hours every weekday (07:00 to 19:00) and six hours on a Saturday (07:00 to 13:00), therefore, vehicles could be arriving or leaving at any time during the working week of 5.5 days. Construction vehicles would be arriving and departing the site at regular intervals during expected site working hours.
- 11.8.13 **Table 11.8** indicates that the HGV trips are relatively well spread out over the duration of the construction phase. Months 12 to 16 have the highest number of trips, associated with the importation of stone for the construction of the site access track network in combination with the construction of concrete foundations and construction of the solar and BESS development. In this regard, it should be noted that the numbers in **Table 11.8** assume a 'worst-case' scenario of 70% stone imported and no on-site batching of concrete. The last seven months of the construction phase have a low number of HGV trips when compared with the months with stone importation/access track construction. Month 16 indicates the highest number of vehicle movements (4,889) and therefore will be used as the worst case month for assessment.

Abnormal Load Movements

- 11.8.14 With regard to the movement of abnormal load vehicles, **Table 11.8** indicates that abnormal loads would only be transported over five months of the 24-month construction phase (months 18 to 22). Assuming 33 abnormal load vehicle trips per month, this equates to approximately eight movements per week. It is noted that abnormal load vehicles would retract to the size of an HGV for their return journey once the loads have been delivered to the destination.
- 11.8.15 The movement of abnormal loads may be spread out evenly across the associated months or concentrated over 2 – 3 day periods within the months, therefore meaning that there would be no movements on the remaining days of the week. Nevertheless, abnormal load vehicles are restricted in the hours that they can operate. Considering these restrictions, a maximum of four abnormal loads would be transported on any given day.. The schedule of abnormal load movements would be dependent on the availability and approval of the police escorts.
- 11.8.16 Given this low number of vehicles and the short duration over which abnormal load vehicles would be on the local road network, this number of abnormal load vehicles would not give rise to any significant environmental effects within the study area. As a result, no further assessment of the effects associated with abnormal load vehicles has been undertaken.

'Worst Case' Assessment

- 11.8.17 The 'worst-case' months for construction HGV traffic levels are Months 12 to 16 with an estimated 4,889 two-way (inbound plus outbound) HGV trips in the peak month (month 16). Assuming four weeks per month, this equates to approximately 1,222 two-way HGVs per week (approximately 611 inbound and 611 outbound). The level of trip generation in Month 16 is therefore used to assess the impact and effect of the Proposed Development on the transport network.
- 11.8.18 The daily two-way vehicle trip generation for the peak months is estimated to be approximately 222 two-way trips (assuming 5.5 days per week). This equates to approximately 19 HGV trips per hour (9.5 inbound and 9.5 outbound) assuming a 12-hour working day. It is important to note that this represents the 'worst-case' scenario over a temporary period that is considered very unlikely in practice as the vast majority of stone for access tracks and hardstandings is expected to be won on site, with concrete also batched on site.

Staff Movements

- 11.8.19 In addition to the construction vehicles illustrated in **Table 11.7**, it is anticipated that there would be approximately 60 two-way daily private car/ work van trips to the site associated with construction staff (depending on the stage of construction). This equates to a maximum of 30 arrivals and 30 departures at the start and end of the working day, assuming that no car-sharing will occur among staff. This represents a small volume of traffic on an existing road network which does not suffer from congestion. Notwithstanding this, the likely environmental effect of this level of trip generation has been considered in the assessment.



Construction Traffic Distribution

- 11.8.20 To assess the impact of construction traffic it is necessary to determine the distribution of trips generated. At this stage, the source of the construction materials is unknown, although it is anticipated that the majority of construction vehicles will arrive via the A71 (east) or A70 (east) from the trunk road network and there are numerous possibilities for material sources and residential areas to draw staff via this direction. A proportion of general construction traffic (HGVs and staff) could originate from the west on the A70 or A71, given the proximity to the large population centres of Kilmarnock and Ayr. It is also possible that a small proportion could also originate from East Kilbride, routing south via the A726 and Townhead Street through Strathaven then the B743 to access the site.
- 11.8.21 Based on these assumptions and to assess a robust scenario, a distribution of 100 % of HGVs and staff vehicles has been applied along the M74(T) from the north and south. 40% of traffic has been assumed to originate along the A70 west of Muirkirk and 70% from the A70 east (from the M74(T)). 100% of all construction traffic has been applied to the B743 as all traffic will use this road link to access the site. 40% of traffic has been assumed to originate along the A71 west of Strathaven and 70% on the A71 east of Strathaven. In addition, it has been assumed that 10 % of construction traffic will route to the A71 via Townhead Street in Strathaven.
- 11.8.22 It is important to note that this represents a worst-case scenario for each road link in isolation and this impact would not occur in reality as the total traffic distribution between all links could not exceed 100 %. **Table 11.9** below indicates the theoretical worst-case distribution of traffic across each counter location.

Table 11.9 – Construction Traffic Distribution on Routes within the study area

	1.A70 W of Muirkirk	2.B743	3.A71 W of B743	4.A71 E of B743	5. Townhead Street	6.M74 N (J7)	7.M74 S (J12)	8.A70 East
Percentage Distribution of Staff and HGVs	40%	100%	40%	70%	10%	100%	100%	70%
No. of construction HGV movements	89	222	89	156	22	222	222	156
No. of construction staff movements (private car)	24	60	24	42	6	60	60	42
Total no. of construction daily movements	113	282	113	198	28	282	282	198

Construction Traffic Impact

- 11.8.23 **Table 11.10** details the daily percentage increases in traffic flows associated with the construction of the Proposed Development at the traffic counters within the study area during the worst-case month (Month 16). The location of the traffic counters is illustrated on **Figure 11.2**.



Table 11.10 – Construction Traffic Impacts on Routes within the Study Area

	1.A70 W of Muirkirk	2.B743	3.A71 W of B743	4.A71 E of B743	5. Townhead Street	6.M74 N (J7)	7.M74 S (J12)	8.A70 East
2027 ADT	4145	888	5433	7673	4,704	69094	35345	2467
2027 HGV	359	154	937	1030	195	10917	11629	297
2027 ADT + Proposed Development total traffic (HGVs + staff vehicles)	4258	1170	5545	7870	4732	69376	35627	2665
2027 HGV count + Proposed Development HGV traffic	448	376	1026	1186	217	11139	11851	452
Percentage increase in total traffic due to the Proposed Development	2.7%	31.8%	2.1%	2.6%	0.6%	0.4%	0.8%	8.0%
Percentage increase in HGV traffic due to the Proposed Development	24.7%	144.1%	9.5%	15.1%	11.4%	2.0%	1.9%	52.4%

- 11.8.24 **Table 11.10** indicates that, as a worst-case, the temporary increase in daily total traffic levels along the B743 would be 31.8 % and the temporary increase in daily HGV levels would be 144.1 %. This level of increase is not surprising, given that baseline HGV levels are relatively low along this link. Notwithstanding this, the increase in HGV levels exceeds the <30 % stipulated for IEMA Guidelines ‘Rule 1’, therefore, a full assessment of environmental effects has been undertaken for the B743 below.
- 11.8.25 **Table 11.10** indicates that the temporary increase in daily HGV levels on the A70 during the worst-case month of the construction stage would be 24.7% west of Muirkirk and 52.4% approaching from the east. This exceeds the 10% Rule 2 threshold applied at both counter locations on the A70. The road is considered a sensitive receptor due to the settlements of Douglas, Glespin, Muirkirk, Lugar and Cumnock along the route and a full assessment of effects has been undertaken.
- 11.8.26 The temporary increase in daily total traffic levels along the A71 to the west of the B743 and the A71 east of the B743 would be 2.1 % and 2.6 % respectively. The corresponding temporary increase in HGV levels would be 9.5% and 15.1% respectively. The increase in HGV traffic on the A71 east of the B743 exceeds the Rule 2 threshold of 10% for sensitive receptors (Strathaven and Stonehouse) therefore a full assessment of effects has been undertaken.
- 11.8.27 In addition, the worst-case increase in daily total traffic for Townhead Street would be 0.6 % and 11.4% for HGV traffic, again exceeding the 10% threshold for sensitive receptors, therefore a full assessment of effects has been undertaken for Townhead Street. It should be noted that the 11.4% in HGV traffic equates to 22 HGV vehicles over a 12 hour period.
- 11.8.28 **Table 11.10** indicates that any increases in total or HGV traffic on the M74(M) due to construction of the Proposed Development would be negligible (<10%) and **not significant** according to IEMA guidance.



Assessment of Predicted Construction Effects

Severance of Communities

- 11.8.29 The IEMA Guidelines state that “*Severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure*”.
- 11.8.30 The potential for traffic associated with the Proposed Development to cause severance is assessed on a case-by-case basis using professional judgement where non-negligible traffic increases are predicted on roads through residential settlements.
- 11.8.31 Increased severance can result in the isolation of areas of a settlement or individual properties. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. Severance effects could equally be applied to residents, motorists or pedestrians. **Table 11.11** provides a summary of the assessment of the effect of severance for each road link.

Table 11.11 - Assessment of Severance of Communities

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1. A70 west of Muirkirk	24.7% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	The A70 from the south-west routes through the village of Lugar and the town of Cumnock. Residents and pedestrians may be sensitive to an increased severance effect however the anticipated increase on 89 HGVs over a 12 hour period is unlikely to give rise to a significant severance effect.	Moderate/ Minor – Not Significant
2. B743	144.1% increase in HGV = Major (>90%)	Negligible	Outwith the village of Muirkirk there are no settlements or areas likely to experience an adverse severance effect due to increased traffic flows. Construction traffic will not route through Muirkirk via the B743 but will bypass to the west via tracks not part of the public road network.	Minor – Not Significant
4. A71 Strathaven	15.1% increase in HGV = Minor (10-40% at sensitive receptors)	High	The A71 is primarily a residential street and a main bus route through the centre of Strathaven. Residents, pedestrians and local motorists may be sensitive to an increased severance effect. The effect is much less significant in the village of Stonehouse as the A71 bypasses the centre of the town.	Moderate - Significant
5. Townhead Street	11.4% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	Townhead Street is a residential street which routes through the centre of Strathaven therefore pedestrian activity is likely, however the anticipated increase of 22 HGV trips over 12 hours is unlikely to give rise to an increased severance effect.	Moderate/ Minor – Not Significant
8. A70 east	52.4% increase in HGV = Moderate (40-70% at sensitive receptors)	High	From the M74, the route to site via the A70 travels through the settlements of Douglas, Glespin and Muirkirk, which may experience an increased severance effect due to an increase in HGV traffic.	Major/ Moderate – Significant



Road Vehicle and Passenger Delay

- 11.8.32 Some driver delay may be experienced when traffic is accessing the site. The IEMA Guidelines advise that “delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system”.
- 11.8.33 Traffic delay to non-development traffic can occur at several points on the network surrounding the Proposed Development, including:
- at the site access points where there will be additional turning movements;
 - at junctions along the local road network which might be affected by increased traffic; and
 - at side roads where the ability to find gaps in traffic may be reduced, thereby lengthening delays.
- 11.8.34 **Table 11.12** provides a summary of the assessment of the effect of road vehicle and passenger delay for each road link.

Table 11.12: Assessment of Road Vehicle and Passenger Delay

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1. A70 west of Muirkirk	24.7% increase in HGV = Minor (10-40% at sensitive receptors)	Low	Delay to non-development traffic on the A70 is unlikely to be significant. The A70 is a good standard single carriageway with relatively low baseline levels of traffic therefore sufficient capacity to accommodate additional traffic without incurring delay.	Minor – Not Significant
2. B743	144.1% increase in HGV = Major (>90%)	Medium	Baseline traffic on the B743 is low therefore the road has sufficient capacity to accommodate additional traffic. Delay to non-development traffic may occur near the three access junctions.	Major/ Moderate – Significant
4. A71 Strathaven	15.1% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	Through Strathaven there are several side roads and residential access points fronting the road, therefore the possibility for an increased driver and passenger delay effect, however this only applies to a short section of road within the town. Outwith the town delays are unlikely. The effect is much less significant in the village of Stonehouse as the A71 bypasses the centre of the town.	Moderate/ Minor – Not Significant
5. Townhead Street	11.4% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	On street parking on Townhead Street currently reduces the road width and additional HGV movements may add to delay on this route however the low number of anticipated daily HGVs (22) is unlikely to give rise to significant delay effects.	Moderate/ Minor – Not Significant
8. A70 east	52.4% increase in HGV = Moderate (40-70% at sensitive receptors)	Low	Delay to non-development traffic on the A70 is unlikely to be significant. The A70 is a good standard single carriageway with relatively low baseline levels of traffic therefore sufficient capacity to accommodate additional traffic without incurring delay.	Minor – Not Significant



Non-Motorised User Delay and Amenity

- 11.8.35 The IEMA Guidelines advise that “The assessment of pedestrian delay serves as a proxy for the delay that other modes of non-motorised users may experience when crossing roads”.
- 11.8.36 Traffic volume, composition, speed, pedestrian footways and crossings all contribute to the level of general pleasantness or fear, intimidation and delay experienced by pedestrians and other vulnerable road users. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads or walk along the side of roads.
- 11.8.37 Pedestrian amenity is generally defined as the relative pleasantness of a journey affected by traffic flow, traffic composition and pavement width/separation from traffic. In terms of pedestrian amenity, the IEMA guidelines suggest 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. **Table 11.13** provides a summary of the assessment of the effect of non-motorised user delay and amenity for each road link.

Table 11.13 - Assessment of Non-Motorised User Delay and Amenity

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1. A70 west of Muirkirk	24.7% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	The A70 from the south-west routes through the village of Lugar and the town of Cumnock. Pedestrians may be sensitive to an increased delay and loss of amenity effect however, the anticipated increase of 89 HGVs over a 12 hour period is unlikely to give rise to a significant effect.	Moderate/ Minor – Not Significant
2. B743	144.1% increase in HGV = Major (>90%)	Medium	There are very few isolated properties accessed from the B743, and no facilities which would generate pedestrian movements however the route may be used by recreational users such as cyclists who would experience a loss of amenity due to increased HGV traffic.	Major/ Moderate – Significant
4. A71 Strathaven	15.1% increase in HGV = Minor (10-40% at sensitive receptors)	High	The A71 is primarily a residential street and a main bus route through the centre of Strathaven. Pedestrians may be sensitive to an increased delay and loss of amenity effect. The effect is much less significant in the village of Stonehouse as the A71 bypasses the centre of the town.	Moderate - Significant
5. Townhead Street	11.4% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	Townhead Street is a residential street which routes through the centre of Strathaven therefore pedestrian activity is likely, however the anticipated increase of 22 HGV trips over 12 hours is unlikely to give rise to an increased delay and loss of amenity effect.	Moderate/ Minor – Not Significant
8. A70 east	52.4% increase in HGV = Moderate (40-70% at sensitive receptors)	High	From the M74, the route to site via the A70 travels through the villages of Douglas, Glespin and Muirkirk, both of which may experience an increased delay and loss of amenity effect due to an increase in HGV traffic.	Major/ Moderate - Significant



Fear and Intimidation on and by Road Users

11.8.38 IEMA guidelines state that “a further environmental impact that affects people is the fear and intimidation created by all moving objects”, with the extent of fear and intimidation dependent upon:

- The total volume of traffic;
- The heavy vehicle composition;
- The speed these vehicles are passing; and
- The proximity of traffic to people.

11.8.39 **Table 11.14** provides a summary of the assessment of the effect of fear and intimidation on and by road users for each road link.

Table 11.14: Assessment of Fear and Intimidation on and by Road Users

Road Link	Magnitude of Change	Sensitivity	Justification	Significance
1. A70 west of Muirkirk	24.7% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	The A70 from the south-west routes through the village of Lugar and the town of Cumnock where pedestrian activity is likely however, the anticipated increase of 89 HGVs over a 12 hour period is unlikely to give rise to a significantly increased fear and intimidation effect.	Moderate/ Minor – Not Significant
2. B743	144.1% increase in HGV = Major (>90%)	High	Recreational road users on the B743 would be susceptible to an increased fear and intimidation effect caused by increased HGV traffic during the construction phase.	Major - Significant
4. A71 Strathaven	15.1% increase in HGV = Minor (10-40% at sensitive receptors)	High	A short section of the A71 routes through the centre of Strathaven where pedestrian movement is likely which may be susceptible to an increased fear and intimidation effect. An increased fear and intimidation effect is also possible on the A71 in Stonehouse.	Moderate - Significant
5. Townhead Street	11.4% increase in HGV = Minor (10-40% at sensitive receptors)	Medium	Townhead Street is a residential street which routes through the centre of Strathaven therefore pedestrian activity is likely, however the anticipated maximum increase of 22 HGV trips over 12 hours is unlikely to give rise to an increased fear and intimidation effect.	Moderate/ Minor – Not Significant
8. A70 east	52.4% increase in HGV = Moderate (40-70% at sensitive receptors)	High	From the M74, the route to site via the A70 travels through the villages of Douglas, Glespin and Muirkirk, both of which may experience an increased fear and intimidation effect due to an increase in HGV traffic.	Major/ Moderate - Significant



Road User and Pedestrian Safety

- 11.8.40 The most recently available accident data for the road links within the study area has been summarised in **Table 11.6**. The data from 2019 to 2023 indicates that there does not appear to be any road safety issues in the immediate vicinity of the site which would raise concerns in respect to bringing forward the Proposed Development.
- 11.8.41 An approximate calculation has been undertaken to quantify the level of accident risk that could be expected due to an increase in traffic associated with the Proposed Development. The likelihood of an accident occurring is commonly expressed in accidents per million vehicle-km. Accidents that are appraised in relation to transport are predominantly those in which personal injury is sustained by those involved (personal injury accidents (PIAs)).
- 11.8.42 For the purpose of this calculation, it has been assumed that the length of road under detailed assessment within the study area is approximately 16.9 km for the A70 west of Muirkirk, 20 km for the B743, 9.1 km for the A71 east of the B743, 2.4 km for Townhead Street, and 19.7 km for the A70 east of Muirkirk.
- 11.8.43 The roads within the study area can generally be classified as ‘rural typical single carriageway’ in accordance with the criteria set out within DMRB. Accident rates from the DMRB for this standard of road are:
- Rural typical single carriageway: 0.381 PIA per million vehicle-km.
- 11.8.44 Assuming a two-way trip on the 68.1 km route for each of the 25,405 vehicles during the construction phase, equates to a total distance travelled of 3,460,188.24 km. It should be noted that traffic from the Proposed Development will only travel on a proportion of the network for any one trip so the actual distance travelled will be much less.
- 11.8.45 Based on the rate above; this suggests 1.3183 PIA during the construction phase. It is considered that the magnitude of this effect is negligible but receptor sensitivity to this effect is always considered as high. When combined, the effect can be classified as Minor and **Not Significant**.

Hazardous and Large Loads

- 11.8.46 There are no hazardous loads associated with the Proposed Development.
- 11.8.47 IEMA guidelines state that “*The movement of large (abnormal) loads is regulated by National Highways and will be subject to separate agreement with the relevant highway authorities and police*”. The number and schedule of abnormal load trips associated with the Proposed Development is detailed in **Table 11.8** and equates to eight abnormal loads per week over months 18 to 22 of the construction programme. This impact is considered to be negligible and **Not Significant**.

Operational Phase

- 11.8.48 The operational lifetime of the Proposed Development is intended to be 40 years from the date of final commissioning to commencement of decommissioning. Once operational, it is envisaged that the level of traffic associated with the Proposed Development will be minimal.
- 11.8.49 The Proposed Development would be maintained throughout its operational life by a service team. The service team would comprise operation management, operations technicians and support functions undertaking the scheduled and unscheduled maintenance throughout the year. This team would either be employed directly by the Applicant or by the turbine manufacturer. Management of the Proposed Development would typically include wind turbine, solar, BESS and substation maintenance, health and safety inspections and civil maintenance of tracks, drainage and buildings. Maintenance visits would include but not limited to the following:
- Civil maintenance of tracks and drainage;
 - Scheduled routine maintenance and servicing;
 - Unplanned maintenance or call outs;



- High Voltage (HV) and electrical maintenance; and
- Blade inspections.

- 11.8.50 In the unlikely event that a major turbine component requires replacement, any areas of the hardstanding previously restored to prior condition may have to be temporarily re-constructed to allow maintenance to occur. These areas will then be restored again upon completion of the works. Re-construction and re-restoration of hardstanding areas will be dependent on the nature of maintenance works. Maintenance vehicles will make use of the access tracks which will be retained throughout the operational phase to allow access.
- 11.8.51 The vehicles used for general maintenance visits are likely to be 4x4 vehicles and there may also be the occasional need for an HGV to access the site for specific maintenance and/or repairs.
- 11.8.52 It is considered that there will be **no significant effects** resulting from operational traffic and therefore no detailed assessment of the operational phase of the Proposed Development is required in accordance with IEMA guidance.

11.9 Mitigation

- 11.9.1 The Applicant commits to preparing and implementing a comprehensive Construction Traffic Management Plan (CTMP) which is intended to mitigate the identified effects by ensuring that they are minimised as far as possible within the study area to a level which is considered to be **Not Significant**. An outline CTMP is included in **Appendix 11.3**.
- 11.9.2 The CTMP will identify measures to reduce the number of construction vehicles as well as considering reducing or avoiding the impact of vehicles through construction programming / routing and identification of an individual with responsibilities for managing traffic and transport impacts and effects.
- 11.9.3 The CTMP will also identify measures to reduce and manage construction staff travel by private car, particularly single occupancy trips. The CTMP would be developed during the detailed design phase of the Proposed Development. Potential measures could include (but are not limited to) the following actions:
- Immediately upon commencement, all deliveries, operatives and visitors to the site would report to the security gate. This would be communicated to all early works contractors at their pre-start meeting;
 - The Principal Contractor would develop a logistics plan highlighting the access point for the project, loading bay, pedestrian / vehicular segregation, welfare, storage, security and material handling that would be enforced following full site establishment;
 - Approved haul routes would be identified to the site and protocols put in place to ensure that HGVs adhere to these routes;
 - All contractors would be provided with a site induction pack containing information on delivery routes and any restrictions on routes;
 - Temporary construction site signage would be erected along the identified construction traffic routes to warn people of construction activities and associated construction vehicles;
 - A construction traffic speed limit (for example, 20 mph) would be imposed through sensitive areas;
 - The construction material 'lay down' areas would allow for a staggered delivery schedule throughout the day, avoiding peak hours (i.e. 8 am – 9 am and 5 pm – 6 pm);
 - All contractors would be required to give details of proposed timing of material deliveries to the site. At this stage, they would be given a specific area for delivery;



- The CTMP and the control measures therein would be included within all trade contractor tender enquiries to ensure early understanding and acceptance / compliance with the rules that would be enforced on this project;
- Under no circumstances would HGVs be allowed to lay-up in surrounding roads. All personnel in the team would be in contact with each other and with site management, who in turn would have mobile and telephone contact with the subcontractors;
- Roads would be maintained in a clean and safe condition; and
- A wheel washing facility would be installed on-site during the construction phase in order to reduce mud and debris being deposited onto the local road network.

11.10 Cumulative Assessment

- 11.10.1 Cumulative effects have been considered for other developments in the vicinity of the Proposed Development that are consented or at planning application stage and may share construction traffic routes with the Proposed Development. Wind farms that are currently under construction, operational or have fewer than three turbines have been excluded as it can be assumed that there will be a very minimal number of trips or no overlap in vehicle trip generation with the Proposed Development.
- 11.10.2 The potential for cumulative effects has been assessed by reviewing data available from the Traffic and Transport Chapters within the respective ES/EIA Reports for the relevant developments.
- 11.10.3 Whilst the wind farm developments identified may share a similar route for abnormal load vehicles, abnormal load deliveries would not be permitted to occur at the same time so there is no scope for a cumulative effect of abnormal load movements. Therefore, a cumulative abnormal load assessment has not been undertaken.

Consented Developments

Bankend Rig II

- 11.10.4 In May 2021 consent was granted for Bankend Rig II Wind Farm comprising three additional turbines of 126.5 m. An application was then submitted in July 2021 to amend the approval to increase the tip height to 200-250 m. This application is recommended for approval subject to legal agreements being concluded. The Traffic and Transport EIA Report chapter outlines that the wind farm will take access from the C135 off the A71 and the potential abnormal loads routes would be from Junction 8 of the M74. The route is very similar to that for the Proposed Development and there is the potential for overlap on the A71 for general construction traffic and potentially abnormal loads.
- 11.10.5 The chapter concludes that during the peak month 4 of construction, Bankend Rig II would contribute a maximum of 6 additional HGVs per day to the A71 which is a negligible increase.
- 11.10.6 Notwithstanding this, programming through the CTMPs for both developments would aim to ensure that the peak traffic generating months do not coincide. As a result, it is concluded that cumulative effects with Bankend Rig II Wind Farm would be Negligible and **Not Significant**.

Hare Craig

- 11.10.7 Granted consent in July 2022, Hare Craig Wind Farm would comprise eight turbines and is located 5.5 km south-east of the Proposed Development site. In December 2022 a further application was submitted to increase the tip height of one turbine. The Traffic and Transport EIA Report chapter outlines that the wind farm will take access from the A70 and has estimated that 20 % of general construction traffic would use the B743 from Strathaven. This indicates a potential small overlap of general construction traffic on the B743. Abnormal loads are expected to come from the Port of Ayr and the A70, so these routes would not overlap.
- 11.10.8 The chapter concludes that during the peak month (month 1) of construction, Hare Craig would contribute a maximum of 10.2 % additional HGV traffic along the B743 (an additional 11 HGVs per day). This is not a significant volume of HGV traffic, notwithstanding this, programming through the



CTMPs for both developments would aim to ensure that the peak traffic generating months do not coincide. As a result, it is concluded that cumulative effects with Hare Craig Wind Farm would be Negligible and **Not Significant**.

Kennoxhead Extension II

- 11.10.9 Kennoxhead Wind Farm Extension II (Penbreck) gained consent in 2023 and comprises 9 turbines. The development forms the second extension to the operational Kennoxhead Wind Farm, the first extension, Kennoxhead Wind Farm Extension is already under construction. The site will primarily be accessed via the B7078 from the M74 although it is noted in the Traffic and Transport EIA Report chapter that 20% of construction traffic and 100% of staff trips may travel to the site via the A70. This would equate to 60 two-way staff trips and 28 two-way HGV movements per day during the peak traffic generating months of construction (months 1 and 2).
- 11.10.10 It is unlikely that the peak traffic generating months would coincide with the Proposed Development as construction of Kennoxhead Extension II is expected to commence in 2025.

Mill Rig

- 11.10.11 Approval was granted in September 2022 for six turbines and associated works at Mill Rig Wind Farm, located 4.5 km north-west of the Proposed Development site. The Traffic and Transport EIA Report chapter outlines that the wind farm will take access from the C135 off the A71 and the potential abnormal loads route would be from Junction 8 of the M74. The route is similar to that for the Proposed Development and there is the potential for overlap on the A71 for general construction traffic and abnormal loads.
- 11.10.12 The chapter concludes that during the peak months 5 and 6 of construction, Mill Rig would contribute a maximum of 68 additional HGVs at the traffic counters along the A71. Construction of Mill Rig is expected to commence in 2025 with the development anticipated to be operational in 2026 so even with delays, the site is likely to be operational before the construction of the Proposed Development and cumulative effects are therefore **Not Significant**.

Developments in Planning

Bankend Rig III

- 11.10.13 The proposed Bankend Rig III Wind Farm is located to the south and east of the operational Bankend Rig Wind Farm and comprises 10 turbines with a blade to tip height of 250 m. The Traffic and Transport EIA Report chapter, submitted in January 2024 as part of the planning application, indicates that access will be taken from the A71 via the existing Bankend Rig Windfarm, and also via an access on the B743. The route is very similar to that for the Proposed Development and there is the potential for overlap on the A71 and B743 for general construction traffic and abnormal loads.
- 11.10.14 The chapter concludes that during the peak month 4 of construction, Bankend Rig III would contribute a maximum of 89 additional HGV trips along the A71 from the east, and 45 additional HGV trips on the A71 from the west, plus 71 daily HGV trips on the B743 from the north and 36 from the south.
- 11.10.15 It is unlikely that the peak traffic generating months of construction would overlap with the Proposed Development, as the developments have quite different grid connection dates, nevertheless, programming through the CTMPs for both developments would aim to ensure that the peak traffic generating months do not coincide. As a result, it is concluded that cumulative effects with Bankend Rig III Wind Farm will be Negligible and **Not Significant**.

Bodinglee Wind Farm

- 11.10.16 An application was submitted in June 2023 for the 37 turbine Bodinglee Wind Farm. The site is located south of Douglas on both sides of the M74. Bodinglee West will be accessed from the existing Andershaw Wind Farm access junction from the B7078 and Bodinglee East will be accessed via a proposed upgraded access from the B7078 to Maidengill, which will be used for all deliveries that can be made via the Maidengill underpass. The Maidengill access to Bodinglee East will be used during construction and operation and will provide a link between the two areas of the site, via the



B7078. A newly constructed access junction on the A70 in Uddington will be constructed will be used for HGV and AIL deliveries where access via the Maidengill underpass would be unsuitable.

- 11.10.17 Due to the access locations, there is unlikely to be any overlap in construction traffic routes with the Proposed Development (with the exception of the M74 which has sufficient residual capacity to accommodate construction traffic from both developments) and therefore cumulative effects will be Negligible and **Not Significant**.

Hawkwood Wind Farm

- 11.10.18 An application was submitted to South Lanarkshire Council in November 2024 for a five turbine development located in proximity to the Proposed Development. The Hawkwood development also takes access via the B743 therefore sharing similar access routes for general construction traffic.
- 11.10.19 Information from the Traffic and Transport EIA Report chapter for the Hawkwood development indicates that during the peak months of construction (months 4, 5 and 6), construction of the development would contribute an additional 44 HGVs to the B743 (north) and 22 HGVs to the B743 (south). The development would also add 55 HGVs to the A71 east of Strathaven and 28 west of Strathaven.
- 11.10.20 The anticipated year of construction for the Hawkwood development is stated as 2029 therefore the peak traffic generating months of construction would be unlikely to overlap; nevertheless, programming through the CTMPs for both developments would aim to ensure that the peak traffic generating activities would not coincide.

Summary Of Cumulative Assessment

- 11.10.21 In summary, it is highly unlikely that the peak construction phase associated with another wind farm development in the area would overlap with the peak construction phase of the Proposed Development as the applications are at different stages in the planning process and each development has varying lengths of construction phase and different grid connection dates. The high traffic generating activities, such as the importation of stone and concrete, only occur over a few months of the whole construction phase for each development. It is also most likely that the vast majority of stone required for each of these projects will be won on site and not imported as per the 'worst-case' traffic assessment numbers.
- 11.10.22 Notwithstanding this, the worst-case scenario considered in this chapter will remain to be a robust assessment of the impact along the road links within the study area.

11.11 Residual Effects

- 11.11.1 The assessment has been carried out considering the peak month in construction traffic and it is important to recognise that all effects associated with increased construction traffic would be temporary in nature, and that this assessment has considered the worst-case possible impact at each location.
- 11.11.2 Residual effects after implementation of the CTMP are considered to be **Minor** and **Not Significant**.

11.12 Summary

- 11.12.1 This assessment has considered the effects on the local road network of HGV traffic associated with the construction phase of the Proposed Development.
- 11.12.2 The study area has been predicated on the access points to the site and the proposed road routes to the access points. The study area road links include the M74(T), A70, A71, B743 and Townhead Street in Strathaven.
- 11.12.3 The peak traffic generating month of the 24 month construction programme is anticipated to be month 16 during which 2,444 HGVs would access the site equating to 222 daily total HGV trips (111 inbound plus 111 outbound).



- 11.12.4 The 162 abnormal loads deliveries are expected to average 33 trips per month and will route to site via one of two potential options, from the north via the A71 and B743, or from the south via the existing Hagshaw Cluster, the A70, and the B743.
- 11.12.5 It is noted that the assessment has been based on the robust assumption that 70% of stone requirements will be imported to the site. In practice, a much higher percentage of stone is expected to be sourced on site as initial investigations have indicated that the identified borrow pits on site will provide the majority of the required stone quantity. This means that HGV levels over the peak construction months are most likely to be considerably less than that assessed.
- 11.12.6 A robust assessment was undertaken based on a conservative approach for the total construction traffic movements and the worst-case scenario for each road link. The following traffic distribution assumptions were applied:
- A70 west of Muirkirk: 4% of HGV and staff trips;
 - B743: 100% of HGV and staff trips;
 - A71 west of B743: 40% of HGV and staff trips;
 - A71 east of B743: 70% of HGV and staff trips;
 - Townhead Street: 10% of HGV and staff trips;
 - M74 North: 100% of HGV and staff trips;
 - M74 South: 100% of HGV and staff trips; and
 - A70 east of Muirkirk: 70% of HGV trips and staff trips.
- 11.12.7 It is important to note that this represents a worst-case scenario for each road link in isolation and this impact would not occur in reality as the total traffic distribution between all links could not exceed 100%. The impact of construction traffic could increase **total** traffic flows along the road links within the study area by the following:
- 2.7% on the A70 west of Muirkirk;
 - 31.8% on the B743;
 - 2.1% on the A71 west of B743;
 - 2.6% on the A71 east of B743;
 - 0.6% on Townhead Street;
 - 0.4% on the M74 North;
 - 0.8% on the M74 South; and
 - 8.0% on the A70 east of Muirkirk.
- 11.12.8 The percentage increase in HGVs associated with the worst-case month of the construction programme for the Proposed Development could increase **HGV traffic** levels by the following:
- 24.7% on the A70 west of Muirkirk;
 - 144.1% on the B743;
 - 9.5% on the A71 west of B743;
 - 15.1% in the A71 east of B743;
 - 11.4% on Townhead Street;
 - 2.0% on the M74 North;
 - 1.9% on the M74 South; and
 - 52.4% on the A70 east of Muirkirk.



- 11.12.9 The large percentage increase in total and HGV traffic on the B743 and is amplified due to low baseline levels of total and HGV traffic using this road.
- 11.12.10 The significance of the predicted effects of the Proposed Development on the traffic and transport resource during the construction phase has been discussed in this chapter and is summarised in **Table 11.15**.
- 11.12.11 The Applicant commits to mitigation in the form of implementing a suitable CTMP. An outline CTMP is provided in **Appendix 11.3**.
- 11.12.12 No significant residual effects from construction traffic are predicted to arise either as a result of the Proposed Development in isolation or cumulatively when other developments are considered following implementation of the CTMP.



Table 11.15 – Summary Table

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
During Construction & Decommissioning					
Severance	Major/Moderate	Adverse	Implementation of CTMP	Minor	Adverse
Road Vehicle Driver and Passenger Delay	Major/Moderate	Adverse	Implementation of CTMP	Minor	Adverse
Non-Motorised User Delay and Amenity	Major/Moderate	Adverse	Implementation of CTMP	Minor	Adverse
Fear and Intimidation	Major	Adverse	Implementation of CTMP	Minor	Adverse
Road User and Pedestrian Safety	Minor	Adverse	Implementation of CTMP	Negligible	Adverse
Hazardous and Large Loads	Negligible	Adverse	Not Required	Negligible	Adverse
During Operation					
All operational traffic effects	Negligible	Adverse	Not Required	Negligible	Adverse
Cumulative Effects					
All cumulative effects	Negligible	Adverse	Not Required	Negligible	Adverse



11.13 References

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