Appendix 15.1: Transport Assessment

This page is intentionally blank.

Pell Frischmann

Shepherds' Rig Wind Farm

Appendix 15.1: Transport Assessment

May 2026

10110913

Report Ref.		**Shepherds' Rig Technical Appendix 15.1 - Transport Assessment_Rev 1**				
File Path		**https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/10110913 Boralex Shepherds Rig S36C Update/01 - WIP/Reports/TA/Shepherds' Rig Technical Appendix 15.1 - Transport Assessment_rev 1.docx**				
Rev	**Suit**	**Description**	**Date**	**Originator**	**Checker**	**Approver**
0		Draft	24/04/2026	S Cochrane	E Moran	G Buchan
1		Update following client comments	28/05/2026	S Cochrane	E Moran	G Buchan
Ref. reference. Rev revision. Suit suitability.						

Prepared for

SETT Wind Development Limited

Lindarets House
Spring Lane
Ringwood
Hampshire
England
BH24 3FH

Prepared by

Pell Frischmann Consultants Limited

93 George Street
Edinburgh
EH2 3ES

Pell Frischmann

Contents

Figures

Tables

Annexes

1 Introduction

1.1 Purpose of the Report

Pell Frischmann Consultants Limited (PF) has been commissioned by SETT Wind Development Limited ("the Applicant") to undertake a Transport Assessment (TA) for amendments to the previously consented Shepherd's Rig Wind Farm (hereafter referred to as the "Consented Development"). The Applicant is applying to the Scottish Ministers for consent under Section 36C of the Electricity Act 1989 (as amended) to vary the Consented Development by reducing the number of turbines (and associated hardstandings), whilst increasing the height of the remaining turbines. The proposed variations to the Consented Development are referred to as "Proposed Varied Development", with additional information on the proposals detailed below.

The Consented Development included 17 wind turbines with 15 turbines at a maximum tip height of 149.9 metres (m) and two turbines at a maximum tip height of 125 m. The Proposed Varied Development would comprise 11 wind turbines at a maximum tip height of 220 m.

In addition to a reduction in the number of turbines, and an increase in maximum tip height, the Applicant proposes to:

- Increase the size of associated crane hardstandings to accommodate the eleven larger turbines;
- Relocate eight turbines beyond the micrositing allowance of the Consented Development, but within the same pattern of development;
- Amend parts of the track layout to reflect turbine removal and relocation (as outlined above);
- Amend the number and location of required watercourse crossings to accommodate the revised track layout;
- Relocate the southern temporary construction compound slightly beyond micrositing allowance of the Consented Development;
- Increase the size and capacity of the associated Battery Energy Storage System (BESS) from 6 MW to 50 MW;
- Remove the previously proposed permanent anemometer mast; and
- Increase the period of consent from 30 to 40 years.

The site of the Proposed Varied Development remains the same as the Consented Development and is located in the Dumfries and Galloway Council (DGC) administrative area approximately 5 kilometres (km) to the east of Carsphairn and 10 km north of St John's Town of Dalry.

The report identifies the key transport and access issues associated with the Proposed Varied Development, including route for Abnormal Indivisible Loads (AILs). The TA identifies where the Proposed Varied Development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report. The findings of this report have informed the assessment of traffic and transport related effects in Environmental Impact Assessment (EIA) Report **Volume 1: Chapter 15: Traffic and Transport.**

1.2 Report Structure

Following this introduction, the TA report is structured as follows:

- Chapter Two describes the Proposed Varied Development;
- Chapter Three reviews the relevant transport and planning policies;
- Chapter Four sets out the methodology used within this assessment;
- Chapter Five describes the baseline transport conditions;
- Chapter Six describes the trip generation and distribution of traffic in the Study Area;

- Chapter Seven summarises the traffic impact assessment;
- Chapter Eight considers mitigation proposals for development related traffic within the study network; and
- Chapter Nine summarises the findings of the TA and outlines the key conclusions.

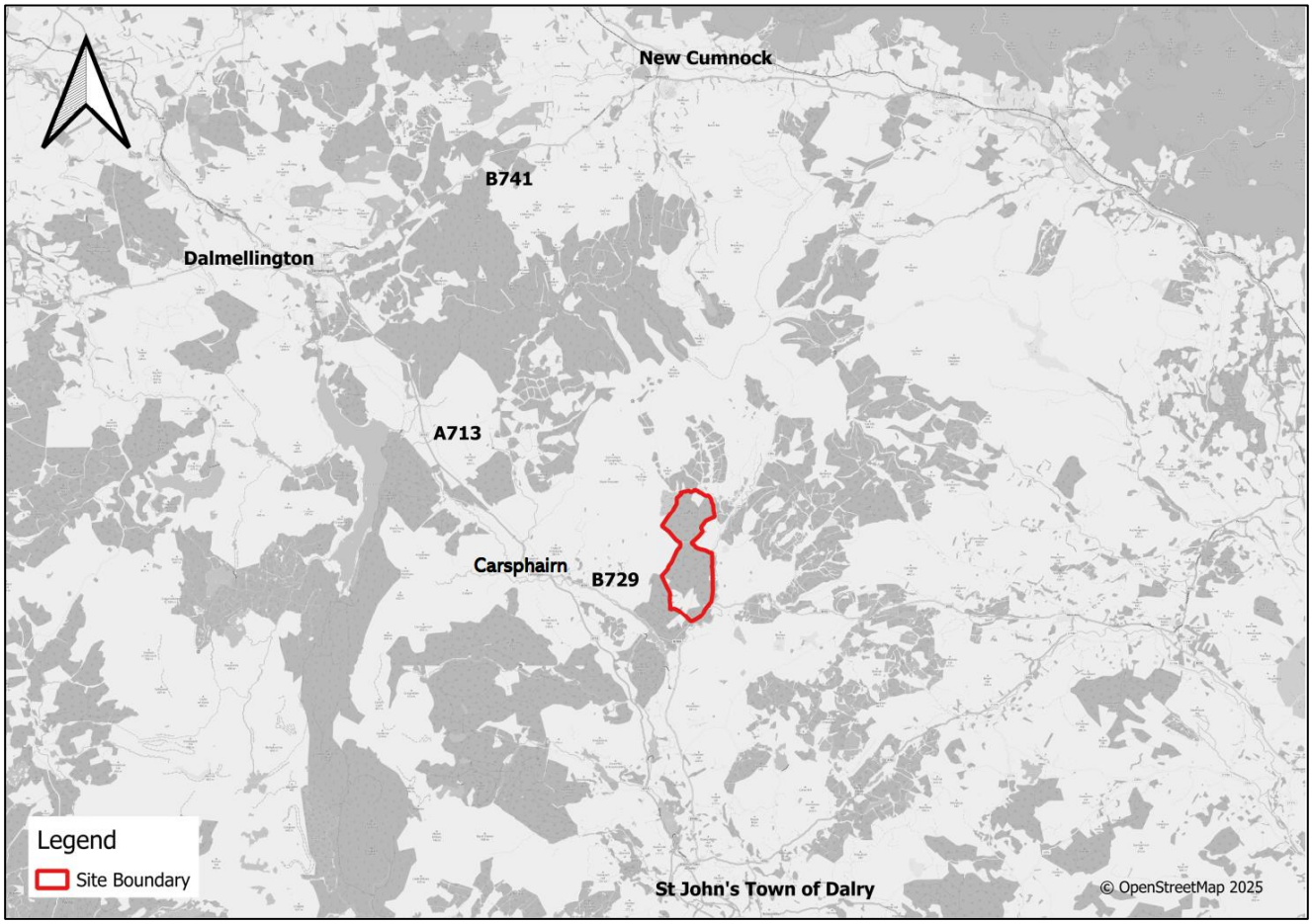
2 Site Background

2.1 Site Location

The site lies approximately 2 km to the north of the Glenken valley, which contains a sequence of lochs and associated hydro schemes and is adjacent to the upper valley of the Water of Ken which lies close-by to the east. The site lies approximately 3 km to the southeast of the summit of Cairnsmore of Carsphairn. The site covers an area of approximately 752 hectares (ha) and is centred on approximate national grid reference (eastings) 262319 and (northings) 593591. The site comprises commercial coniferous woodland plantation and is bounded to the north and north-east by further forestry and to the west, east and south-east by open moorland.

The site location can be seen in **Figure 1**.

Figure 1 Site Location



2.2 The Proposed Varied Development

The Proposed Varied Development will comprise up to 11 wind turbines, each up to 220 metres (m) blade tip height, as well as associated infrastructure. Its total wind energy generating capacity is anticipated to be in the region of 77 MW, based on the candidate turbine type.

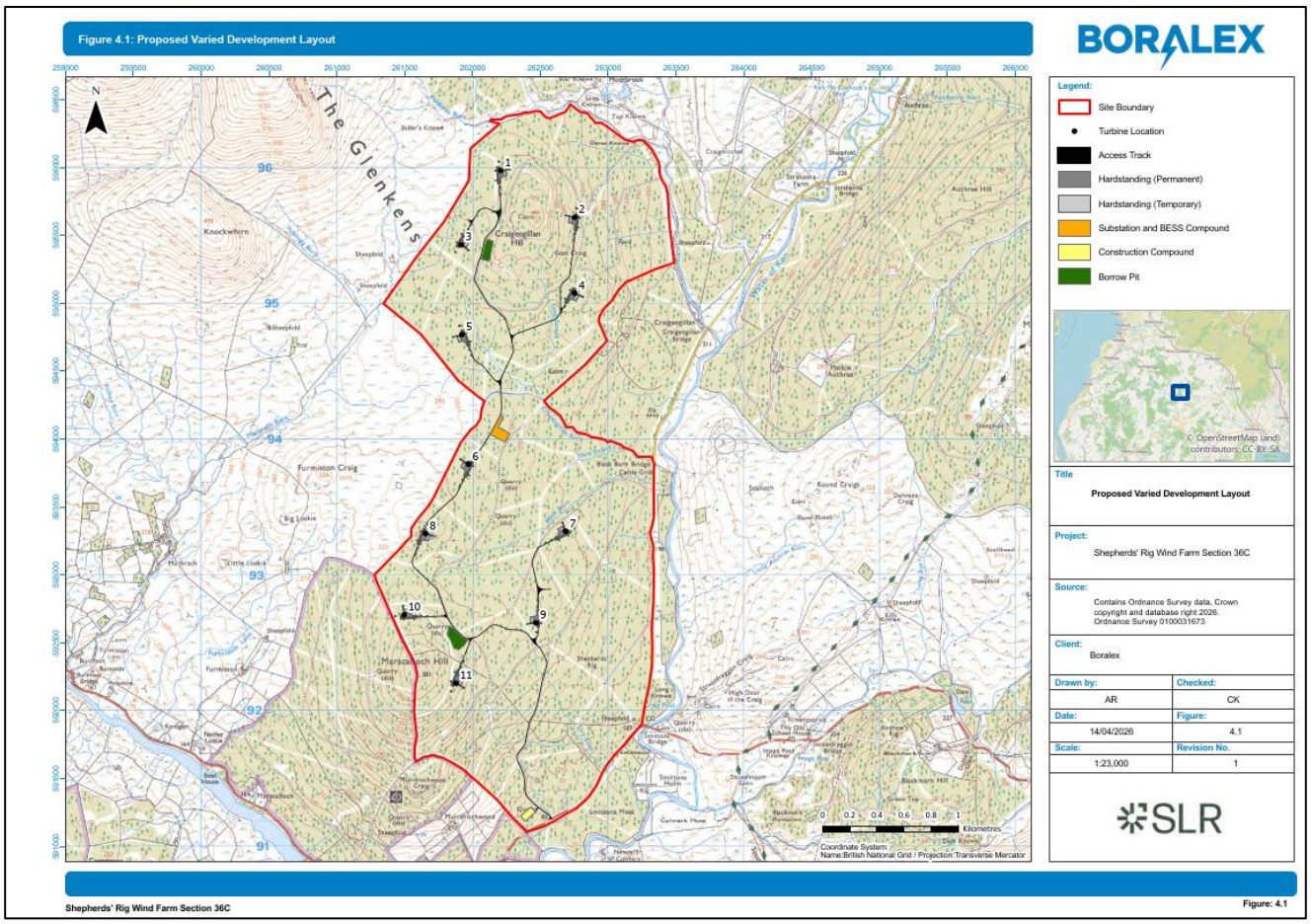
In addition to the turbines, the Proposed Varied Development will comprise the following:

- turbine foundations;
- crane hard standings;
- a BESS facility;
- on-site access tracks between turbines and from the point of access to the turbines;

- on-site substation and maintenance building with welfare facility and associated communications equipment;
- on-site electrical cabling between the turbines and the substation and BESS;
- a temporary construction compound;
- a temporary concrete batching plant;
- two borrow pits to provide aggregate for the construction of the Proposed Varied Development; and
- habitat enhancement areas including forest to bog peatland restoration and native riparian planting.

The Proposed Varied Development is shown in**Figure** 2**Figure 2**.

Figure 2 Proposed Varied Development Layout



A complete description of the Proposed Varied Development is provided in EIA Report Volume 1: **Chapter 4: Description of the Proposed Varied Development**.

2.3 Access Arrangements

The Proposed Varied Development will be accessed directly from the B729 from an existing access junction, currently used for timber extraction located to the north-east of Kendoon Loch. The access junction will be upgraded as necessary to provide access to the site for all AILs associated with the turbine deliveries, as well as access for heavy goods vehicles (HGVs) delivering construction materials and general site traffic.

The proposed site access junction is provided in **Annex A**. Loads will then proceed to the proposed turbine locations using a combination of upgraded and new access tracks.

Construction traffic associated with the Proposed Varied Development will generally originate from the north and south, joining the Study Area on the A713. All AIL traffic will access from the Port of Entry (PoE) at King George

V Docks in Glasgow, utilising sections of proven AIL routes used during the construction of other wind farms in the area.

2.4 Candidate Turbine

The Applicant has indicated that they would like to consider the Nordex N163 with a blade tip height of 220 m for the purposes of this assessment. All turbines would have a rotor diameter of 163 m. At the time of writing detailed component information for all N163 components was unavailable.

A detailed Route Survey Report (RSR) has been prepared and appends this TA as **Annex B**. This has been undertaken for a Vestas V172 and therefore represents a suitably robust assessment scenario.

The selection of the final turbine model and specification will be subject to a commercial procurement process following consent of the application. The assumed dimensions may therefore vary slightly from those assumed as part of this assessment; however, the turbine tip height will be no greater than 220 m.

With regards to the equipment used to transport the turbine components, to provide a robust assessment scenario based upon the known issues along the access routes and constraints in moving larger loads, it has been assumed that all blades would be carried on a Superwing Carrier trailer to reduce the need for mitigation in constrained sections of the route.

Where constraints are extreme, loads would be transferred onto a blade lifting trailer. This trailer has the ability to lift blades up to a maximum angle of 60 degrees, lifting blades over potential constraints and shortening the length plan view.

Towers would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing, and top towers would be carried on a six-axle step frame trailer.

Examples of the vehicles and trailers that are likely to transport loads are shown in **Figure 3** to **Figure 5.**

Figure 3 Superwing Carrier Trailer

Figure 4 Blade Lifting Trailer

Figure 5 Clamp Tower Trailer

3 Policy Context

3.1 Introduction

An overview of relevant transport planning policies has been undertaken and is summarised below for national and local government policies.

3.2 National Policy

3.2.1 National Planning Framework 4 (2023)

The National Planning Framework 4 (NPF4) was approved by Scottish Parliament on 11 January 2023 and was adopted by Scottish Ministers on 13 February 2023. NPF4 sets out the Government's plan looking forward to 2045 that will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities. It is part of the development plan and so influences planning decisions across Scotland.

NPF4 puts the climate and nature crises at the heart of the Scottish planning system and was adopted in February 2023.

Policy 11: Energy within the NPF4 notes that: *"Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:*

- *Wind farms including repowering, extending, expanding and extending the life of existing wind farms; and*
- *Energy storage, such as battery storage and pumped storage hydro.*
- *In addition, project design and mitigation will demonstrate how the following impacts are addressed:*
  - *Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
  - *Public access, including impact on long distance walking and cycling routes and scenic routes;*
  - *Impacts on road traffic and on adjacent trunk roads, including during construction; and*
  - *Cumulative impacts."*

The assessment undertaken as part of this TA and the associated EIA Report **Chapter 15** has taken cognisance of this and provided appropriate mitigation where necessary.

3.2.2 Transport Assessment Guidance (2012)

Transport Scotland's (TS) Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of TAs for development proposals in Scotland such that the likely transport impacts can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.

The document notes that a TA will be required where a development is likely to have significant transport impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

3.2.3 Onshore Wind Policy Statement (2022)

The Scottish Government's Onshore Wind Policy Statement was published in December 2022 and sets out an ambition of *"20 GW of installed onshore wind capacity in Scotland by 2030."*

With regards to transport of Abnormal Loads and Police Escorts, the statement notes that:

"Under the Road Traffic Act 1988, any abnormal load movement on public road in Scotland must be escorted by a specially trained police officer. This puts additional pressure on both Police Scotland and hauliers, as well as the wind energy sector's ability to deploy at scale in Scotland.

In order to meet our legally-binding net-zero targets, it is estimated that 3400 turbines will be installed in Scotland between now and 2030, this is the equivalent of a new turbine being installed every day between 2025-2030. Given this, and the significant issues surrounding the transportation of components, this issue has been brought into fresh focus, as we consider it could have serious implications on the delivery of our renewable energy pipeline and subsequent threat to our 2030 net-zero targets.

To this end, the Scottish Government is working directly with senior members of Police Scotland and the renewables and haulier industries. We have come together to consider this issue and to determine what actions must be taken, both short term and long-term, to relieve the pressure on Police Scotland resources to ensure turbines components can be efficiently and effectively conveyed to site."

3.3 Local Policy & Guidance

3.3.1 The Dumfries and Galloway Local Development Plan 2 (LDP2)

The DGC Local Development Plan - The Local Development Plan 2 (LDP2) was adopted on 3 October 2019 and replaces the adopted 2014 LDP. The LDP2 is the established planning policy for Dumfries and Galloway and sets out a settlement strategy and spatial framework for how the Council foresees development occurring in the forthcoming twenty-year period.

Policy IN2: Wind Energy outlines the following in relation to transport implications associated with the development of wind farms:

"The Council will support wind energy proposals that are located, sited and designed appropriately. The acceptability of any proposed wind energy development will be assessed against the following considerations:

Cumulative impact

The extent of any cumulative detrimental landscape or visual impact or impacts on existing patterns of development from two or more wind energy developments and the potential for mitigation.

Impact on local communities and residential interests

The extent of any detrimental impact on communities, individual dwellings, residents and local amenity, including assessment of the impacts of noise, shadow flicker, visual dominance and the potential for associated mitigation.

Impact on infrastructure

The extent to which the proposal addresses any detrimental impact on road traffic, adjacent trunk roads and telecommunications, particularly ensuring transmission links are not compromised.

Other impacts and considerations

a) the extent to which the proposal avoids or adequately resolves any other significant adverse impact on the natural environment, including biodiversity, forests and woodland, carbon-rich soils, hydrology, the water environment and flood risk, the historic environment, cultural heritage, tourism and recreational interests and public access.

b) the extent to which the proposal addresses any physical site constraints and appropriate provision for decommissioning and restoration."

3.3.2 LDP2 'Wind Energy Development: Development Management Considerations' Supplementary Guidance (February 2020 and March 2025 Update)

The "Wind Energy Development: Development Management Considerations" Supplementary Guidance (SG) for the Dumfries and Galloway Local Development Plan 2 (LDP2) addresses various aspects of wind energy

development, including transportation-related factors. While the SG primarily focuses on minimising the environmental impact of wind energy projects, it acknowledges the inherent connection between these developments and transport infrastructure and usage.

The SG recognizes that wind energy developments can have significant implications for the existing transport network, especially during construction. These impacts include:

- Abnormal load impact on public roads: The transportation of large turbine components often requires using specialized vehicles and routes, putting stress on the road infrastructure.
- Increased traffic volume: Construction activities can generate a substantial increase in traffic on local roads, potentially affecting residents' amenity and safety.
- Potential damage to road surfaces: Heavy vehicles used for construction can cause damage to road surfaces, requiring repairs and maintenance.
- To mitigate these impacts, the SG sets out several requirements for developers:
- Traffic Management Plan: Developers must prepare a detailed Traffic Management Plan in consultation with the Council as the roads authority, outlining measures to minimize disruption and ensure safety during the transportation of abnormal loads.
- Road Repair Agreement: Developers are required to enter into a Section 75 or other legal agreement to cover the cost of repairing any damage to public roads caused by their operations.
- For turbines over 180 m, the Council may require physical "dry runs" of blade transporters before final traffic management approval is granted.
- Consideration of Resident Amenity: Developers should demonstrate how they have considered and minimized the impact of construction traffic on residents living near the transportation routes

3.4 Policy Summary

The Proposed Varied Development can align with the stated policy objectives and the design of the site and proposed mitigation measures will ensure compliance with national and local objectives.

4 Study Methodology

4.1 Introduction

There are three phases of the Proposed Varied Development which have been considered in this assessment and are as follows:

- The Construction Phase;
- The Operational Phase; and
- The Decommissioning Phase.

4.2 Project Phases – Transport Overview

Of the three phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the road network and sensitive receptors. Construction plant, bulk materials and wind turbine components will be transported to site, potentially resulting in a significant increase in traffic on the study network.

The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

The decommissioning phase involves fewer trips on the road network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.

It should be noted, however, that construction effects are short lived and transitory in nature, whilst the operational phase assessment has been assumed to be based on typical operating conditions with occasional operational and maintenance traffic.

4.3 Scoping Discussions

The Applicant submitted a Scoping Report to the Energy Consents Unit (ECU) in respect of the EIA which included a section considering traffic and transport. A full review of that Scoping Opinion and other correspondence relating to the scope of the study including pre-application advice is provided in the EIA Report **Chapter 15: Traffic and Transport**.

5 Baseline Conditions

5.1 Study Area Determination

The Study Area includes local roads that are likely to experience increased traffic flows resulting from the Proposed Varied Development. The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials. Locally sourced material will be used where feasible and traffic will avoid impacting on local communities as far as is possible.

Access to the site will be taken from an existing junction on the B729, which connects onto the A713. All vehicular traffic will use this access including AILs.

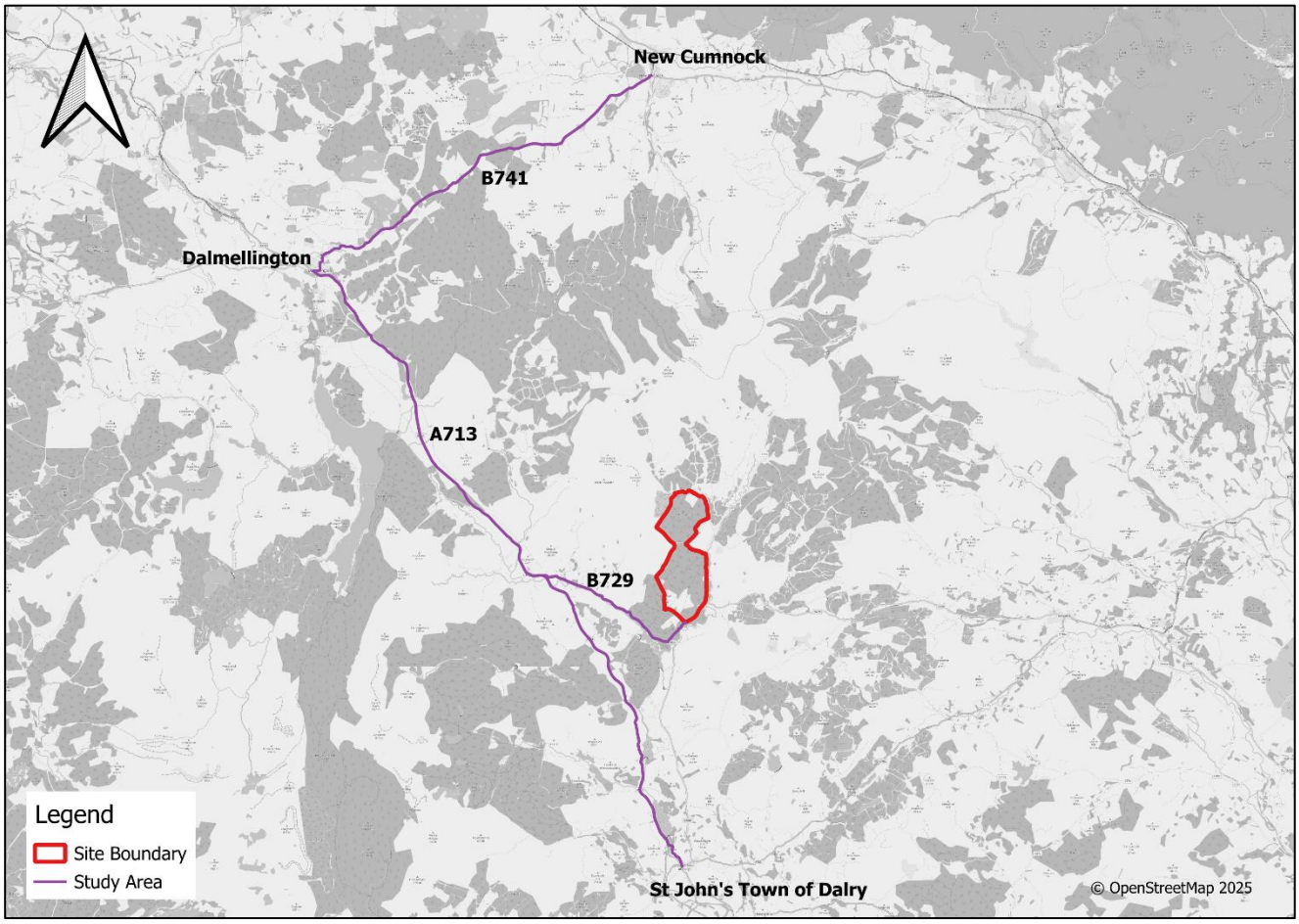
The likely PoE used for the discharging of wind turbine components will be King George V Docks in Glasgow. Full details of the AIL route are provided later in the report and within **Annex B**.

Based on the above, the Study Area for this assessment is as follows:

- A713 between Dalmellington and St Johns Town of Dalry;
- B741 between Dalmellington and New Cumnock; and
- B729 between the site access junction and its junction with the A713.

Effects associated with construction traffic generated by the Proposed Varied Development would be most pronounced in close proximity to the site access junction and on the final approaches to the site. As vehicles travel away from the Proposed Varied Development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the Study Area identified above. The Study Area is shown in **Figure 6**.

Figure 6 Study Area



5.2 Pedestrian and Cyclist Networks

There are no dedicated pedestrian facilities in the immediate vicinity of the site, reflecting its rural setting. Further away from the Proposed Varied Development in the wider Study Area, there are pedestrian facilities within the settlements of Dalmellington, Carsphairn, New Cumnock and St John's Town of Dalry.

The level of pedestrian infrastructure in the immediate vicinity of the site is commensurate with the scale of the local settlements and their rural setting.

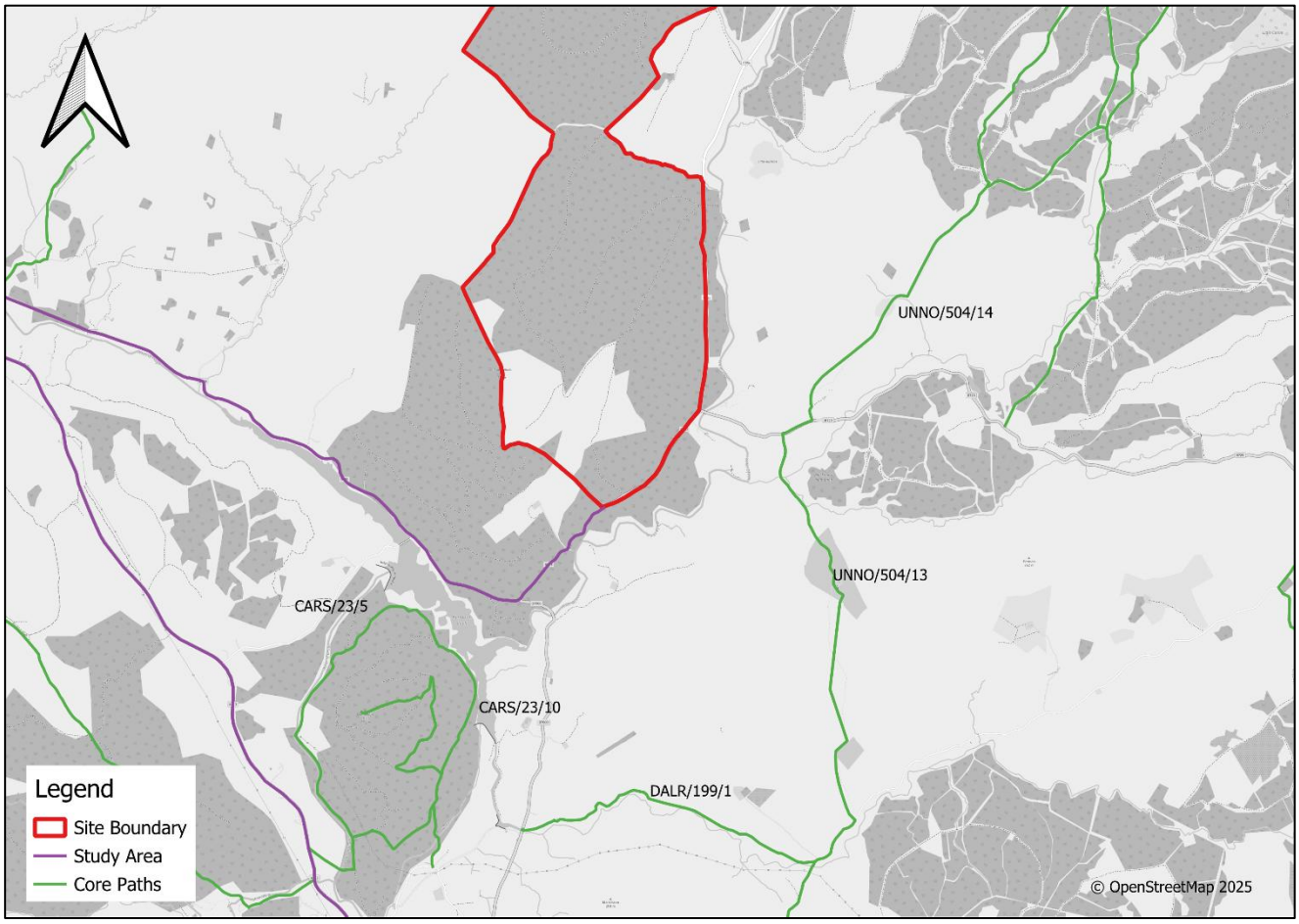
A review of the DGC Core Path Map[1] indicates a number of Core Paths in the vicinity of the site, which are provided below:

- Southern Upland Way (UNNO/504/13 and UNNO/504/14). This path is approximately 340 km in length and routes from Portpatrick on the west coast to Cockburnspath in the east.
- Dundeugh Hill (CARS/23/5 and CARS/23/10). This path is a circular forest walk approximately 6 km in length within Dundeugh Forest.
- Kendoon Youth Hostel to Butterhole Bridge (DALR/199/1). This path is approximately 3 km in length and acts as a link between the Southern Upland Way and B7000.

The Core Path Network within the vicinity of the site can be seen in **Figure 7**.

[1] Dumfries & Galloway Council, Core Path Plan: https://new.dumgal.gov.uk/leisure-sport-culture/parks-outdoor-spaces/core-paths [Accessed April 2026]

Figure 7 Core Path Network



A review of the Walk Wheel Cycle Trust (formerly Sustrans) National Cycle Network (NCN) map[2] indicates that there are no NCN routes within the vicinity of the Proposed Varied Development.

5.3 Road Access

A713

The A713 is a major road of approximately 64 km in length and 6.5 m in width. It is a two-way single carriageway road and runs through Dumfries and Galloway, connecting Ayr and Castle Douglas. The road is generally subject to a 60 miles per hour (mph) speed limit, reducing through settlements, with speeds ranging from 30 mph, 40 mph and 50 mph. The A713 in the vicinity of the site, between Castle Douglas and Loch Muck is maintained by DGC, while the northern section is maintained by the Ayrshire Roads Alliance (ARA).

B729

The B729 is a 46 km road linking with the A713 in the vicinity of Carsphairn to the west, with the A76 at Holywood in the southeast. The road is a single carriageway road of varying widths through its length. From its junction with the A713 through to the proposed site access, the road is a single track road with passing places and a 60 mph speed limit in place. The road is maintained by DGC and appears to be in a mostly reasonable condition.

B741

The B741 is a two-way single carriageway B-road through East Ayrshire approximately 50 km in length. It starts at a junction on the A76 in New Cumnock and ends at a T-junction on the A77 north of Girvan. The B741 within

[2] https://www.walkwheelcycletrust.org.uk/ [Accessed April 2026]

the Study Area is maintained by the ARA and appears to be in a mostly reasonable condition. The road is subject to a 60 mph speed limit in rural areas, reducing to 30 mph in settlements.

General Road Suitability

The Agreed Timber Route Map[3] has been developed by The Timber Transport Forum who are a partnership of the forestry and timber industries, local government, national government agencies, timber hauliers and road and freight associations. One of the key aims of the forum is to minimise the impact of timber transport on the public road network, on local communities and the environment and a way of achieving this is to categorise the roads leading to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles i.e. HGVs. The routes are categorised into four groups, namely; 'Agreed Routes', 'Consultation Routes', 'Severely Restricted Routes' and 'Excluded Routes'.

'Agreed Routes' are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Those links classed as 'Consultation Routes' are categorised as a route which is key to timber extraction, but which are not up to 'Agreed Route' standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified as 'Consultation Routes' by default unless covered by one of the other classifications. 'Severely Restricted Routes' are not normally to be used for timber transport in their present condition. These routes are close to being Excluded Routes. Consultation with the local authority is required prior to use. Finally, 'Excluded Routes' should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.

Roads within the Study Area form part of the route network used for the extraction of timber and are therefore regularly used by HGV traffic. This includes part of the A713, between Dalmellington and Errif, which is an 'Agreed Route' and the B729 and B741 which are 'Consultation Routes'.

5.4 Existing Traffic Conditions

In order to assess the impact of development traffic on the Study Area, baseline traffic data has been used from a combination of Automatic Traffic Counts (ATCs) undertaken for the Consented Development and from the Department for Transport (DfT) database, with 2024 data utilised.

The traffic count sites used are as follows:

1. B729, north of B7000 Junction (Commissioned ATC Survey, 2018);
2. B729, east of A713 Junction (Commissioned ATC Survey, 2018);
3. A713, between Dalmellington and Carsphairn (Commissioned ATC Survey, 2024);
4. A713, north of Dalmellington (Commissioned ATC Survey, 2024);
5. A713, at St John's Town of Dalry (DfT Count Site: 30886, 2024); and
6. B741, east of Dalmellington (Commissioned ATC Survey, 2024).

The traffic counters allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / light good vehicles (LGVs) and HGVs (all goods vehicles >3.5 tonnes gross maximum weight).

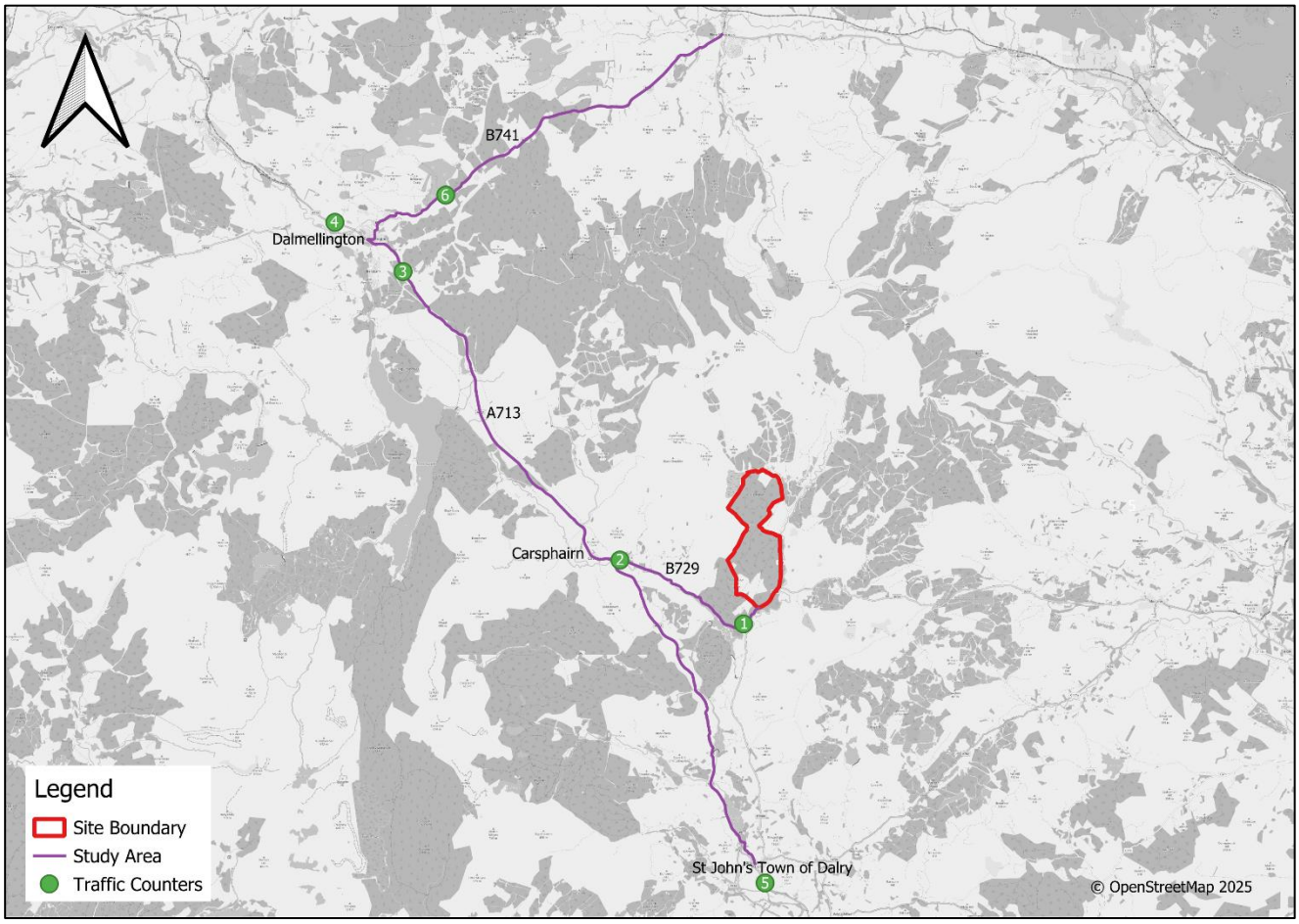
A National Road Traffic Forecast (NRTF) growth factor was applied to the survey data to bring the traffic data up to the base year of 2026. The NRTF Low Growth factor for 2018 to 2026 is 1.052, and for 2024 to 2026 is 1.011.

These sites were identified as being areas where sensitive receptors on the access route would be located. A full receptor sensitivity and effect review is prepared in EIA Report **Chapter 15**.

The locations of the traffic sites are illustrated in **Figure 8**.

[3] https://timbertransportforum.org.uk/ [Accessed April 2026]

Figure 8 Traffic Count Locations



The 24-hour two-way average traffic flows for each of the traffic count locations are presented in **Table 1**.

Table 1 24-Hour Two Way Average Traffic Data (2026)

Site ID	Survey Location	Cars & Lights	HGV	Total	% HGV
1	B729, north of B7000 Junction	101	58	159	36.4%
2	B729, east of A713 Junction	106	45	151	29.9%
3	A713, between Dalmellington and Carsphairn	1,726	78	1,804	4.3%
4	A713, Dalmellington	3,845	103	3,948	2.6%
5	A713, at St John's Town of Dalry	2,439	318	2,757	11.6%
6	B741, east of Dalmellington	887	33	920	3.6%

Please note minor variances due to rounding may occur.

The 2024 ATC survey locations which provided traffic volume data were also used to obtain speed statistics. The two-way seven-day average and 85th percentile speeds observed at the count sites are summarised in **Table 2**.

Table 2 Speed Summary

Site ID	Survey Location	Count Source	Mean Speed (mph)	85%ile (mph)	Speed Limit (mph)
3	A713, between Dalmellington and Carsphairn	Commissioned ATC	42.4	49.3	60
4	A713, Dalmellington	Commissioned ATC	55.5	63.4	60

Site ID	Survey Location	Count Source	Mean Speed (mph)	85%ile (mph)	Speed Limit (mph)
6	B741, east of Dalmellington	Commissioned ATC	37.8	45.3	60

Speed data obtained June 2024

The speed survey data indicates that for the most part, speed limits are being adhered to on the A713, with the exception of the 85th percentile speed at Dalmellington, exceeding the speed limit by approximately 5%. On the B741, recorded speeds are well within the speed limit, with both the average (mean) and 85th percentile speeds recorded below the posted speed limit of 60 mph.

5.4.1 Accident Review

Personal Injury Accident (PIA) data for the five-year period commencing 01 January 2020 through to the 31 December 2024 was obtained from the online resource CrashMap[4] which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.

TA Guidance[5] requires an analysis of the accident data on the road network in the vicinity of any development to be undertaken for at least the most recent three-year period, or preferably a five-year period, particularly if the site has been identified as being within a high accident area. Whilst the Study Area has not been identified as having a high accident rate, a five-year review has been undertaken to ensure a comprehensive assessment has been undertaken.

The PIA statistics are categorised into three categories, namely:

- A "Slight" PIA, examples include a sprain, bruise or cut which is not considered to be severe, or slight shock requiring roadside attention;
- A "Serious" PIA, examples include fractures, concussion, internal injuries, crushings, severe cuts and lacerations, severe general shock requiring treatment; and
- A "Fatal" PIA, for those accidents that result in a death.

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

The locations and severity of the recorded accidents within the Study Area are summarised in **Table 3** while **Figure 9** shows their locations.

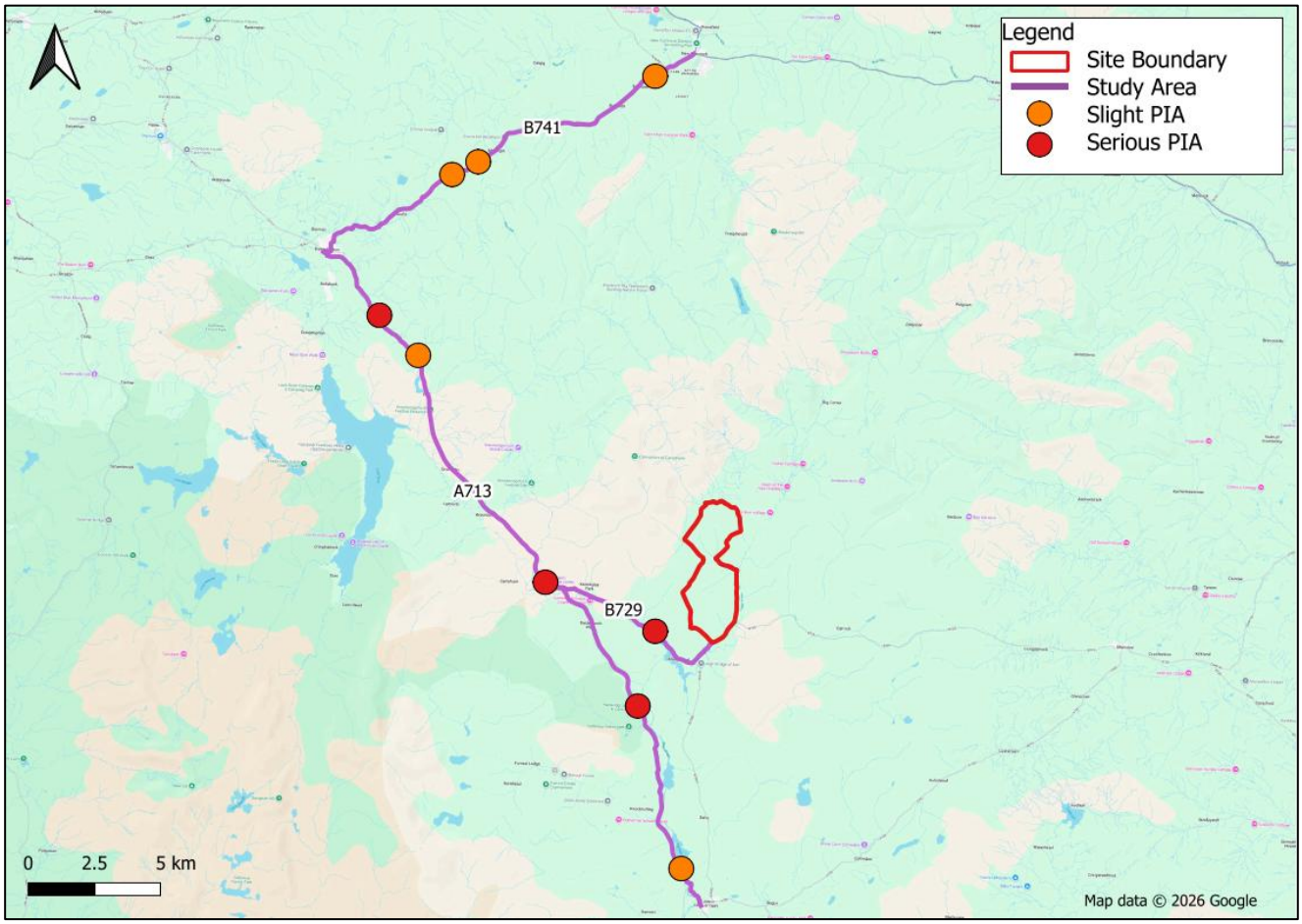
Table 3 Personal Injury Accident Summary

Road Link	Slight	Serious	Fatal	No of PIAs involving an HGV
A713	2	3	0	2
B729	0	1	0	1
B741	3	0	0	0
Total	**5**	**4**	**0**	**3**
Percentage of total accidents	***56%***	***44%***	***0%***	***33%***

[4] https://www.crashmap.co.uk [Accessed April 2026]

[5] https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf

Figure 9 PIA Locations



A general summary of the accidents is as follows:

A713

- There were a total of five PIAs recorded on the A713 within the five year period between 2020 and 2024. Of these, two were considered to be "slight" and three were classified as "serious".
- Two of the incidents along the A713, between the B729 and St John's Town of Dalry, involved a motorcycle and both accidents were recorded as "serious". One of the PIAs was a single vehicle accident, while the other was a two vehicle accident involving an HGV. Both accidents occurred on or on the approach to a bend.
- There was a total of two accidents involving an HGV, the aforementioned one with the motorcycle, and another involving a car, which was also recorded as "serious".
- There were no accidents recorded involving a young driver (under 25).
- There were no accidents involving a child casualty, pedestrian or cyclist.

B729

- There was only one incident on the B729 and it was classified as "serious". The incident involved a car and an HGV. The incident did not occur in the vicinity of the site access.

B741

- There were three recorded incidents on the B741 in the five-year period between 2020 and 2024. All of these incidents were recorded as being "slight".
- There were no child, cyclist or pedestrian casualties involved and none of the incidents involved an HGV or motorcycle.
- One of the incidents involved a young driver (under 25). This incident involved a single car and resulted in one casualty.

PIA Summary

The analysis indicates that there were a total of nine PIA incidents within the five year period between 2020 and 2024. Most recorded accidents are categorised as being "slight" (56%) with 44% of incidents recorded as "serious". There were no fatalities.

Most accidents occurred on a bend or on approach to a junction, where there is an increased interaction between vehicles.

There were no clusters of accidents recorded within the Study Area.

There were no accidents recorded within the vicinity of the Proposed Varied Development or the proposed access location.

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

5.5 Future Baseline

Construction of the Proposed Varied Development is anticipated to commence in 2028 if planning permission is granted and is expected to last approximately 21 months depending on weather conditions and ecological considerations. The main construction phase which will be the most onerous in terms of construction activities will last in the order of 16 months.

To assess the likely effects during the construction phase, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows. The NRTF low growth factor for 2026 to 2028 is 1.010. This factor was applied to the 2026 traffic data presented in **Table 1** to estimate the 2028 Base traffic flows presented in **Table 4**.

Table 4 Future Baseline Daily Two-Way Traffic (2028)

Site ID	Survey Location	Cars & Lights	HGV	Total	% HGV
1	B729, north of B7000 Junction	102	58	160	36.4%
2	B729, east of A713 Junction	107	46	153	29.9%
3	A713, between Dalmellington and Carsphairn	1,743	79	1,822	4.3%
4	A713, Dalmellington	3,883	104	3,987	2.6%
5	A713, at St John's Town of Dalry	2,463	322	2,785	11.6%
6	B741, east of Dalmellington	896	34	929	3.6%

Please note minor variances due to rounding may occur.

5.6 Committed Developments

5.6.1 Onshore Wind Farm and Energy Related Planning Applications

A review of DGC's online planning portal[6] and Scottish Governments ECU portal[7] was undertaken to identify any consented developments within the vicinity of the Proposed Varied Development which would generate significant traffic within the same Study Area and should be included within the assessment.

[6] https://eaccess.dumgal.gov.uk/online-applications/spatialDisplay.do?action=display&searchType=Application [Accessed April 2026]
[7] https://www.energyconsents.scot/ApplicationSearch.aspx?T=1 [Accessed April 2026]

TA Guidance[8] advises that only those projects with extant planning permission or local development plan allocations within an adopted or approved plan require to be included in any assessment. Those projects in scoping or at the application stage should not be included in cumulative assessments as they have yet to be determined. When considering traffic impacts specifically in relation to the construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in the assessment.

Table 5 shows the consented wind farm schemes that have been given further consideration.

Table 5 Committed Development Review

Planning Reference	Scheme Name	Status	Included as Committed Development
ECU00001950	North Kyle Energy Project (36 month construction phase)	Consented 8 December 2021 – Commencement of development no later than six years from date of consent.	No – Currently under construction and current information indicates that this will be completed in the next 12 to 18 months. The development would be completed prior to the commencement of the Proposed Varied Development.
PPA-190-2080	Overhill Wind Farm (13 month construction phase)	Consented at Appeal 16 September 2020 – Commencement of development no later than five years from the date of consent.	No – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Proposed Varied Development.
EC00005256 / ECU00002102	Enoch Hill 2 Wind Farm (12 month construction phase)	Consented 8 December 2021 – Commencement of development no later than six years from date of consent.	Yes – Potential for construction phases to overlap if construction commences at the end of the commencement period and the Proposed Varied Development is consented and begins construction in 2028.
PPA-170-2179	Manquhill Wind Farm (12 month construction phase)	Consented at Appeal 8 July 2024 – Commencement of development no later than five years from the date of consent.	Yes – Potential for construction phases to overlap if construction commences at the end of the commencement period and the Proposed Varied Development is consented and begins construction in 2028.
PPA-170-2160	Cornharrow Wind Farm (12 month construction phase)	Consented at Appeal 6 July 2022 – Commencement of development no later than three years from the date of consent.	No – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Proposed Varied Development.
23/1686/S42	Glenshimmeroch Wind Farm (12 month construction phase)	Consented 12 December 2023 – Commencement of development no later than five years from the date of consent.	Yes – Potential for construction phases to overlap if construction commences at the end of the commencement period and the Proposed Varied Development is consented and begins construction in 2028.
PPA-170-2153 PPA-170-2178 (Combined due to falling within same site boundary)	Margree Wind Farm (12 month construction phase) Divot Hill Wind Farm (12 month construction phase)	Consented at Appeal on 21 March 2022 – Commencement of development no later than three years from the date of consent. Consented at Appeal on 10 July 2024 respectively – Commencement of development no later than five years from the date of consent.	Yes – Potential for construction phases to overlap if construction commences at the end of the commencement period and the Proposed Varied Development is consented and begins construction in 2028.

[8] https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements

Planning Reference	Scheme Name	Status	Included as Committed Development
23/2600/S36	Windy Standard III Wind Farm (15 month construction phase)	Consented 30 May 2024 – Commencement of development no later than six years from date of consent.	No – Currently under construction and current information indicates that this will be completed in the next 12 to. The development would be completed prior to the commencement of the Proposed Varied Development.
ECU00003324	Windy Standard I Re-powering (22 month construction phase)	Consented 26 August 2025 – Commencement of development no later than five years from date of consent.	Yes – Potential for construction phases to overlap if construction commences at the latter end of the commencement period and the Proposed Varied Development is consented and begins construction in 2028.
ECU00003461	Cloud Hill Wind Farm (18 month construction phase)	Consented 16 December 2025 – Commencement of development no later than five years from date of consent.	No – There are no shared sections of the respective study areas.
ECU00001785	Troston Loch Wind Farm (15 month construction phase)	Consented 18 December 2020 – Commencement of development no later than six years from date of consent.	No – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Proposed Varied Development.
ECU00001773	Benbrack Wind Farm (12 month construction phase)	Consented 5 November 2019 – Commencement of development no later than five years from date of consent.	No – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Proposed Varied Development.
15/P/2/0337	Lorg Wind Farm (12 month construction phase)	Consented 18 July 2019 – Commencement of development no later than five years from date of consent.	No – The commencement period has now lapsed. It is acknowledged that a new varied application has been submitted, however this has yet to be determined and therefore cannot be included.
ECU00001801	Sanquhar II Wind Farm (24 month construction phase)	Consented 31 August 2023 – Commencement of development no later than five years from date of consent.	No – There are no shared sections of the respective study areas.
22/0221/S42 / 10/P/2/0021	Knockman Hill Wind Farm (12 month construction phase)	Consented 28 January 2025 – Commencement of development no later than three years from date of consent.	No – Potential for construction phases to overlap if construction commences at the end of the commencement period and the Proposed Varied Development is consented and begins construction in 2027. It cannot be included however as no construction traffic data was provided within the application, furthermore, it is unlikely that there would be any shared sections of the respective study areas based on what information is available.
PPA-170-2146	Fell Wind Farm (12 month construction phase)	Consented at Appeal 2 November 2021 – Commencement of development no later than three years from the date of consent.	No – The commencement period has now lapsed. It is acknowledged that a new varied application has been submitted, however this has yet to be determined and therefore cannot be included.
ECU00002221 / ECU00001856	Lethan Wind Farm / Lethan Wind Farm Extension	Consented 18 June 2020 – Commencement of development no later than six years from the date of consent and consented 8 August	No – There are no shared sections of the respective study areas.

Planning Reference	Scheme Name	Status	Included as Committed Development
		2024 – Commencement of development no later than five years from the date of consent.	
ECU00004523	Knockkippen Wind Farm	Consented 30 April 2025 – Commencement of development no later than five years from the date of consent.	No – There are no shared sections of the respective study areas.

In addition to the above and whilst not technically a committed development, cognisance to the proposed Lorg Wind Farm Grid Connection (previously known as Lorg and Longburn) has been given consideration within this assessment. Available information from the ECU (ECU00001789) suggests that the majority of the construction works would be completed by Q4 of 2027, with only commissioning works and re-instatement works taking place in Q1 of 2028, which would be undertaken by car / LGVs only, with no HGV movements anticipated. Based on this information, it is not considered necessary to include the scheme within the cumulative development assessment.

Based on the information provided in **Table 6** above, the following projects will be considered further within the cumulative development assessment within **Chapter 15: Traffic and Transport**.

- Enoch Hill 2 Wind Farm;
- Manquhill Wind Farm;
- Glenshimmeroch Wind Farm;
- Margree Wind Farm; and
- Windy Standard I Re-Powering.

Should the above or any other schemes be consented and constructed at the same time as the Proposed Varied Development, the Applicant would welcome the opportunity to engage with other developers in consultation with DGC to ensure appropriate traffic management measures would be implemented to minimise any cumulative impacts. In the event of all the sites being constructed at the same time it is suggested this would be mitigated through the use of an overarching Traffic Management and Monitoring Plan (TMMP) for all of the sites and by introducing a phased delivery plan which would be agreed with DGC and Police Scotland.

Furthermore, it is extremely unlikely that peak traffic conditions would occur should more than one scheme be constructed at the same time, due to differences in construction programmes, material supplies and developer resources.

5.6.2 Other Planning Applications

A review of the DGC online planning portal was also undertaken for other developments with planning consent, which should be considered within this assessment. The review examined consented developments whose trips are considered significant in scale (i.e., has associated traffic impact of over 30%).

The review did not identify any other significant traffic generating developments in the Study Area that may occur during the construction phase associated with the Proposed Varied Development.

It should be noted that the use of NRTF growth assumptions has provided a basis for general local development growth within the Study Area.

6 Trip Generation and Distribution

6.1 Construction Phase

6.1.1 Trip Derivation

During the construction phase, the following traffic will require access to the site:

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

Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Varied Development, based on the assumptions detailed in the following sections. It should be noted that there may be variations in the following calculations due to rounding, which are not considered significant.

Note the whole construction phase is estimated to last in the order of 21 months, which allows for the commencement of off-site access remedial works at the start of the programme and a commissioning and testing period at the end of the programme. The main construction phase which will be the most onerous in terms of construction activities will last in the order of 16 months, and it is within this period that the potential impact has been assessed both within this report and within EIA **Chapter 15**.

6.1.2 Construction Staff

Staff will arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce on-site will depend on the activities undertaken, but, based on previous wind farm construction site experience for a project of this scale which suggests four staff per turbine during the short peak period of construction is likely, the maximum number of staff expected on-site could be around 44 per day.

For the purposes of estimating traffic movements, it was assumed that 40% of staff would be transported by minibus and 60% would arrive by car (single car occupancy was assumed as the worst case at this stage with potentially fewer movements through car sharing).

Based on these assumptions, staff transport cars and light vehicles would account for a maximum of 44 vehicle movements (11 inbound trips and 11 outbound trips) per day during the peak period of construction

6.1.3 Abnormal Indivisible Loads

The wind turbines are broken down into components for transport to the site. The nacelle, blade and tower sections are classified as AILs due to their weight, length, width and height when loaded. For the purposes of the assessment, the 'worst case' numbers of components requiring transport are illustrated in **Table 6**.

Table 6 Turbine Components

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	6
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1

Component	Number of Components per Turbine
Site Parts	0.25 (parts shared between 4 wind turbines on one delivery)

In addition to the wind turbine deliveries, up to two high-capacity erection cranes would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on site. Smaller erector cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the wind turbines.

Escort vehicles would accompany the AIL convoys to support the traffic management measures. Up to three vehicles would be deployed and it is assumed that three AIL turbine component loads would be delivered per convoy. This would result in 45 convoys on the network (excluding cranes), with a total of approximately 268 escort vehicle movements (134 inbound trips and 134 outbound trips).

Wind turbine components that do not classify as AILs, would be delivered in addition to these, resulting in a further approximately 72 movements (36 inbound trips and 36 outbound trips). All of these deliveries are expected to occur over a period of approximately six months.

The escort vehicles have been assumed to be police cars and light goods vehicles. Motorcycles may be deployed, depending upon Police resources.

6.1.4 General Deliveries

Throughout the construction phase, general deliveries will be made to the site by HGV. These would include fuel, site office supplies and staff welfare. At height of construction, it is assumed that up to 40 journeys to site are made (20 in and 20 out) per month.

6.1.5 Timber Extraction

There will be a requirement for timber felling and extraction associated with the construction of the Proposed Varied Development. It is currently estimated that there will be in the order of 226 ha of timber to be felled.

It has been assumed that the felling will commence in month one of the construction programme and will occur over a period of nine months, with current estimates based on the quality of the timber suggesting that approximately 93,800 tonnes (t) will be extracted from the site. Note this is subject to change following the preparation of a detailed felling plan.

For the purposes of the assessment, it has been assumed that all timber extracted will be done using a dedicated timber articulated lorry, which has a payload capacity of approximately 25 t.

Based on the above, it is therefore assumed that a total of 7,504 vehicle movements (3,752 inbound trips and 3,752 outbound trips) will be required to extract the timber from the site.

6.1.6 Material Deliveries

Various materials will need to be delivered to site to construct the site-based infrastructure. At the outset of the construction works, HGV deliveries will deliver plant and initial material deliveries to the site to enable the formation of the site compound and to deliver construction machinery.

The site is large enough to warrant on-site batching of concrete. All wind turbine, substation foundation concrete will be mixed on-site, with deliveries of cement powder, water (if not sourced from site), sand and aggregates being delivered by HGV from local suppliers, located to either the north or south of the Proposed Varied Development.

The estimated total volume of concrete required on-site is 17,534m³, based upon expected wind turbine foundation, substation foundation and miscellaneous uses across the Proposed Varied Development. The individual deliveries associated with the raw materials have been estimated and result in two-way trips of 77

cement tankers, 366 sand tippers and 445 water tankers (note, aggregates are included in **Table 8**). A summary of the vehicle movements associated with the production of concrete on-site is detailed in **Table 7**.

Table 7 Concrete Material Deliveries

Element	Volume / Installation (m^3)	Inbound Trips	Total Movements
Cement	4,636	39	78
Sand	2,046	183	366
Water	6,677	223	446

Steel reinforcement required in the foundations across the Proposed Varied Development for wind turbines, substation etc. are estimated to total 2,046 tonnes, resulting in a total of 140 vehicle movements (70 inbound trips and 70 outbound trips.

The proposed access track widths will vary on site but will generally be in the order of 6 m in width and would be designed to accommodate 13 tonne axle loads. In addition to the access tracks, crane hardstands will be constructed to enable the wind turbine erection process. The borrow pit assessment undertaken has confirmed that the volume of material suitable to be used on site is in excess of the volume of aggregate material required, with a surplus of material estimated to be in the order of 84,128 m^3. Nevertheless, as per the requirements set out within the Scoping Opinion by DGC a worst-case assessment has been undertaken whereby all aggregate materials are imported to the site from local quarries, with potential suppliers located to the north and south of the Proposed Varied Development. The estimate of 100% imported material is detailed in **Table 8**.

Table 8 Aggregate Material Deliveries

Element	Volume / Installation (m^3)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Stone / Aggregates	117,257	257,964	20	12,899	25,798

Note, this includes aggregate materials required for the on-site concrete batching requirements

Geotextile will be delivered to site in rolls. A total of 46 large rolls may be required at site and will be delivered by HGV which will result in 16 vehicle movements (8 inbound trips in and 8 outbound trips).

Cables will connect each wind turbine to the substation compound. Trip estimates for the cable materials are provided below in **Table 9** and **10**. Between six and eight cables are to be provided within each cable trench and will be backfilled with cable sand.

Table 9 Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Movements
Cables	88,376	500	177	20	40

Table 10 Cable Sand Trip Estimate

Element	Volume (m^3)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Cable Sand	3,728	5,965	20	299	598

One substation building will be constructed on the site. This will require deliveries of building materials and structural elements and will result in 250 vehicle movements (125 inbound trips in and 125 outbound trips). Battery storage deliveries will result in a further 116 HGV vehicle movements for battery, invertor and cabin / building deliveries etc (58 inbound trips in and 58 outbound trips).

The resulting traffic generation estimates have been plotted onto the indicative construction programme to illustrate the peak journeys on the network. **Table 11** illustrates the trip generation throughout the construction programme for each month, showing two-way construction vehicle movements, i.e. an inbound and outbound trip.

Table 11 Construction Traffic Profile (Two-Way Trips) – Scenario 1: 100% Import of Materials

Activity	Class	Month													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Site Establishment & Remediation	HGV	60	40												
Plant Deliveries	HGV	30	20												
Timber Felling	HGV	834	834	834	834	834	834	834	834	834					
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV						3,685	3,685	3,685	3,685	3,685	3,685	3,685		
Concrete Batching Deliveries	HGV							131	131	131	131				
Reinforcement	HGV							70		70					
Cable & Ducting Deliveries	HGV									24	24	24			
Cabling Sand	HGV									100	100	100	100	100	100
Geotextile Deliveries	HGV							5	5	5					
Substation	HGV							63		63		63		63	
AIL Cranage	HGV													20	
AIL Deliveries	HGV													56	56
AIL Escorts	Car & LGV													45	45
Battery Storage	HGV											39	39	39	
Commissioning & Testing	Car & LGV														
Staff	Car & LGV	176	264	484	748	968	968	968	968	968	968	968	968	968	968
Total HGV	HGV	964	934	874	874	874	4,560	4,828	4,696	4,952	3,982	3,952	3,864	318	196
Total Cars / LGV	Car & LGV	176	264	484	748	968	968	968	968	968	968	968	1,014	1,014	1,014
Total Movements per Month		1,140	1,198	1,358	1,622	1,842	5,528	5,796	5,664	5,920	4,950	4,920	4,878	1,330	1,210
Total HGV per Day		**44**	**44**	**40**	**40**	**40**	**208**	**220**	**214**	**226**	**182**	**180**	**176**	**16**	**10**
Total Cars / LGV per Day		**8**	**12**	**22**	**34**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**48**	**48**	**48**
Total per Day		**52**	**56**	**62**	**74**	**84**	**252**	**264**	**258**	**270**	**226**	**224**	**222**	**62**	**56**

Please note minor variances due to rounding may occur.
Calculations assume that there are 22 working days per month.
Continues over the page.

Activity	Class	Month						
		15	16	17	18	19	20	21
Site Establishment & Remediation	HGV							60
Plant Deliveries	HGV						20	30
Timber Felling	HGV							
General Site Deliveries	HGV	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV							
Concrete Batching Deliveries	HGV							
Reinforcement	HGV							
Cable & Ducting Deliveries	HGV							
Cabling Sand	HGV							
Geotextile Deliveries	HGV							
Substation	HGV							
AIL Cranage	HGV				20			
AIL Deliveries	HGV	56	56	56	56			
AIL Escorts	Car & LGV	45	45	45	45			
Battery Storage	HGV							
Commissioning & Testing	Car & LGV					60	60	40
Staff	Car & LGV	968	968	748	748	748	484	264
Total HGV	HGV	96	96	40	116	40	60	130
Total Cars / LGV	Car & LGV	1,014	1,014	794	748	808	544	304
Total Movements per Month		1,110	1,110	834	864	848	604	434
Total HGV per Day		**6**	**6**	**2**	**6**	**2**	**4**	**6**
Total Cars / LGV per Day		**48**	**48**	**38**	**34**	**38**	**26**	**14**
Total per Day		**52**	**52**	**38**	**40**	**40**	**28**	**20**

Please note minor variances due to rounding may occur.
Calculations assume that there are 22 working days per month.

The peak of construction activity is expected to occur in months nine when there will be a total of 5,920 vehicle movements, which equates to 270 vehicle movements per day, comprising 226 two-way HGV movements and 44 two-way car / LGV movements.

This would equate to approximately 22 two-way total vehicles movements or 18 two-way HGV movements per hour, across a typical 12-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.

With regards to a comparison between the Proposed Varied Development and the Consented Development, which had an estimated 1,875 total vehicle movements in the peak month, there would be an increase of 4,045 vehicle movements in the month, or approximately 184 per day.

It should however be noted that the Proposed Varied Development's trip generation assumes that 100% of all aggregate materials would be imported to the site from nearby quarries and should therefore be considered an over estimate of the number of HGV movements that will travel to and from the site during the peak month of activity, while the Consented Development assumed that all aggregate would be sourced from the on-site borrow pits, except for concrete which assumed that ready-mix was delivered. As previously advised, the borrow pit assessment undertaken has confirmed that the volume of material suitable to be used on-site is in excess of the volume of material required.

The resulting traffic generation, whereby on-site borrow pits are used to provide the on-site aggregate materials, with the exception of that to be used within concrete batching have been plotted onto the indicative construction programme to illustrate the peak journeys on the network, to allow a comparison to be made, given that this is what will actually take place. **Table 12** illustrates the trip generation throughout the construction programme for each month, showing two-way construction vehicle movements, i.e. an inbound and outbound trip, utilising on-site borrow pits.

Table 12 Construction Traffic Profile (Two-Way Trips) – Scenario 2: Utilising On-site Borrow Pits

Activity	Class	Month													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Site Establishment & Remediation	HGV	60	40												
Plant Deliveries	HGV	30	20												
Timber Felling	HGV	834	834	834	834	834	834	834	834	834					
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries for Concrete Batching	HGV						196	196	196	196	196	196	196		
Concrete Batching Deliveries	HGV							131	131	131	131				
Reinforcement	HGV							70		70					
Cable & Ducting Deliveries	HGV									24	24	24			
Cabling Sand	HGV									100	100	100	100	100	100
Geotextile Deliveries	HGV							5	5	5					
Substation	HGV							63		63		63		63	
AIL Cranage	HGV													20	
AIL Deliveries	HGV													56	56
AIL Escorts	Car & LGV													45	45
Battery Storage	HGV											39	39	39	
Commissioning & Testing	Car & LGV														
Staff	Car & LGV	176	264	484	748	968	968	968	968	968	968	968	968	968	968
Total HGV	HGV	964	934	874	874	874	1,070	1,338	1,206	1,462	492	462	376	318	196
Total Cars / LGV	Car & LGV	176	264	484	748	968	968	968	968	968	968	968	1,014	1,014	1,014
Total Movements per Month		**1,140**	**1,198**	**1,358**	**1,622**	**1,842**	**2,038**	**2,306**	**2,174**	**2,430**	**1,460**	**1,430**	**1,388**	**1,330**	**1,210**
Total HGV per Day		**44**	**44**	**40**	**40**	**40**	**50**	**62**	**56**	**66**	**24**	**22**	**18**	**16**	**10**
Total Cars / LGV per Day		**8**	**12**	**22**	**34**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**48**	**48**	**48**
Total per Day		**52**	**56**	**62**	**74**	**84**	**94**	**106**	**100**	**110**	**68**	**66**	**64**	**62**	**56**

Please note minor variances due to rounding may occur.
Calculations assume that there are 22 working days per month.
Continues over the page.

Activity	Class	Month						
		15	16	17	18	19	20	21
Site Establishment & Remediation	HGV							60
Plant Deliveries	HGV						20	30
Timber Felling	HGV							
General Site Deliveries	HGV	40	40	40	40	40	40	40
Bulk Material Deliveries for Concrete Batching	HGV							
Concrete Batching Deliveries	HGV							
Reinforcement	HGV							
Cable & Ducting Deliveries	HGV							
Cabling Sand	HGV							
Geotextile Deliveries	HGV							
Substation	HGV							
AIL Cranage	HGV				20			
AIL Deliveries	HGV	56	56	56	56			
AIL Escorts	Car & LGV	45	45	45	45			
Battery Storage	HGV							
Commissioning & Testing	Car & LGV					60	60	40
Staff	Car & LGV	968	968	748	748	748	484	264
Total HGV	HGV	96	96	40	116	40	60	130
Total Cars / LGV	Car & LGV	1,014	1,014	794	748	808	544	304
Total Movements per Month		**1,110**	**1,110**	**834**	**864**	**848**	**604**	**434**
Total HGV per Day		**6**	**6**	**2**	**6**	**2**	**4**	**6**
Total Cars / LGV per Day		**48**	**48**	**38**	**34**	**38**	**26**	**14**
Total per Day		**52**	**52**	**38**	**40**	**40**	**28**	**20**

Please note minor variances due to rounding may occur.
Calculations assume that there are 22 working days per month.

The peak of construction activity in the scenario where on-site borrow pits are used, will still occur in month nine, when there will be a total of 2,430 vehicle movements, which equates to 110 vehicle movements per day, comprising 66 two-way HGV movements and 44 two-way car / LGV movements.

This would equate to under ten two-way total vehicles movements or under six two-way HGV movements per hour, across a typical 12-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.

This would equate to a reduction in 3,490 total vehicle movements in the peak month, or 158 per day.

With regards to a comparison between the Proposed Varied Development and the Consented Development, which had an estimated 1,875 total vehicle movements in the peak month, there would be an increase of 555 vehicle movements in the month, or approximately 25 per day.

6.1.7 Distribution of Construction Trips

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

- All construction traffic enters the site via the B729 from a southerly direction;
- Deliveries associated with concrete materials, such as cement powder and water, will be sourced from concrete suppliers, which for the purpose of this assessment will originate from the A713 to the north, travelling through to the site via the A77 (outwith Study Area), A713 and B729;
- For the purpose of this assessment, it is proposed that 100% of access track aggregate, hardstanding aggregate, concrete aggregate and sand requirements will be sourced from local quarries, which are assumed to originate either from the north or south on the A713. From the north these would route to the site via the B741, A713 and B729, while from the south these would route via the A713 and B729. The contractor will confirm final quarry and material sourcing with DGC in the Construction Traffic Management Plan (CTMP);
- HGV deliveries associated with cabling and associated materials, etc. will arrive from the north, travelling through to the site via the M77 (outwith Study Area), A713 and B729;
- Staff working at the site are likely to be based locally. It is assumed that 60% will come from the north, from Ayr and the surrounding area, 30% will come from the south, from the Dumfries area and 10% will come from the north-east from the New Cumnock area;
- General site deliveries will be from the north from Ayr via the A713 and B729 to the site. These are generally smaller rigid HGV vehicles;
- The destination of timber is unknown at this time, however for the purposes of the assessment, it has been assumed that this would depart the site via the B729, with 50% heading north on the A713 and 50% south.

Given the uncertainty around the source of aggregate materials at this time, those vehicle movements associated with the movement of aggregate materials have been assigned to the network on both the northern and southern A713 corridors. Rather than split these 50 / 50 and potentially minimise the potential impact on an area, the total has been assigned to each route option, to ensure a suitably robust assessment has been undertaken.

For the purposes of preparing EIA Report **Chapter 15** and this TA, it has been assumed that all AIL traffic will access the site via the following route:

- Loads would depart KGV Dock and travel west on Kings Inch Drive before turning left onto Mayo Avenue;
- Loads would join the eastbound M8 and continue to Junction 8;
- Loads would leave the M8 and join the M73 travelling south;
- At Junction 4, loads would join the westbound M74;
- Loads would depart the M74 at Junction 1 and join the M8 westbound before leaving at Junction 22 and join the M77 travelling southbound;
- Loads would continue southbound on the M77 / A77 until Bankfield Roundabout south of Ayr, where they would turn left onto the A713;
- Loads would proceed southbound on the A713 to the south of Carsphairn, where they would turn left onto the B729; and

- At the junction between the B729 and B700, the loads will keep left continuing on the B729 to the proposed site access junction.

The proposed AIL access route is illustrated in **Figure 10 to 12** and has been considered, within the AIL RSR, provided in **Annex B**.

Figure 10 AIL Component Delivery Route – Section 1

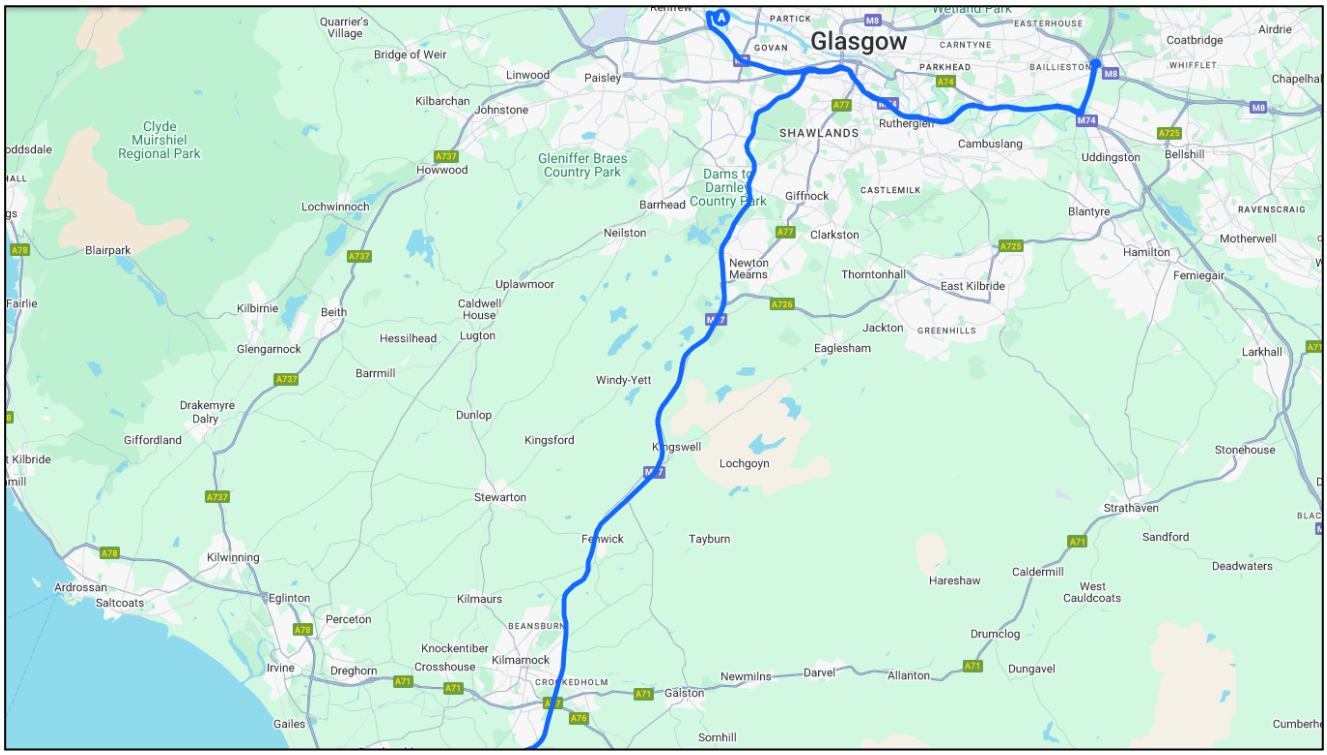


Figure 11 AIL Component Delivery Route – Section 2

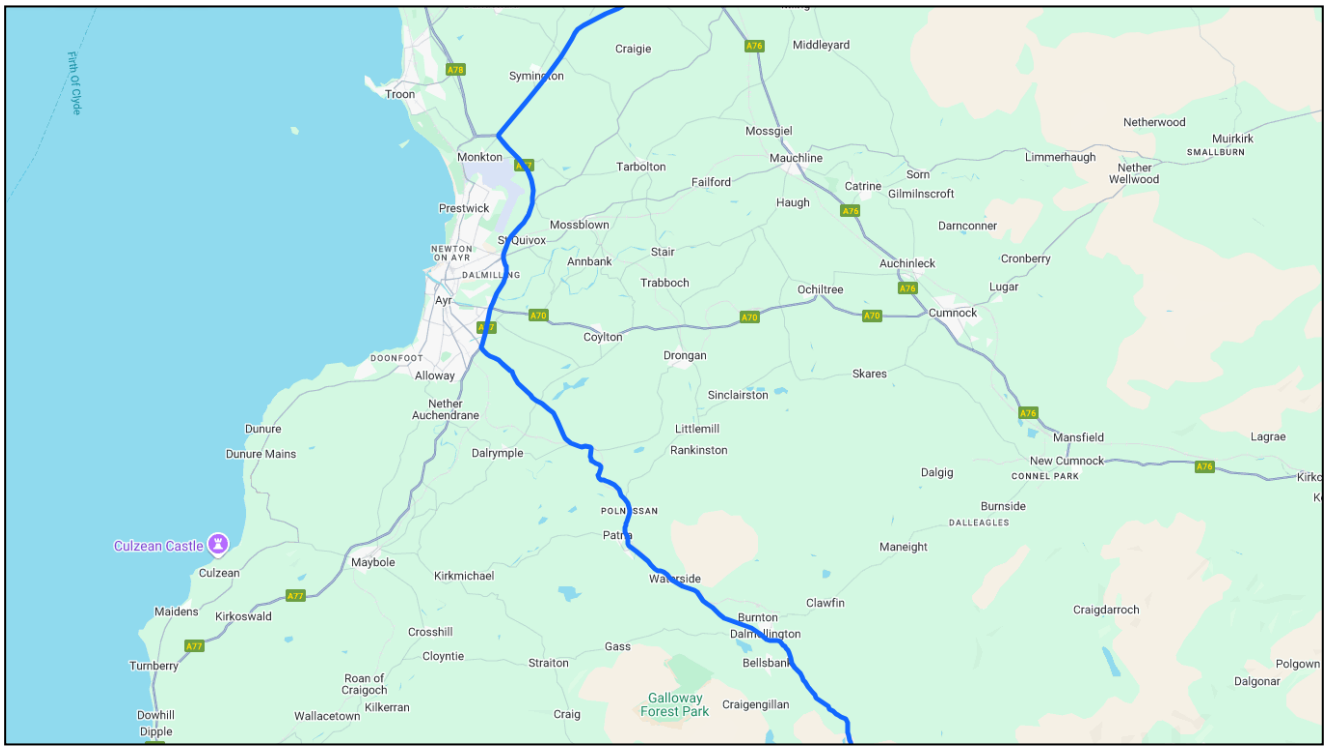
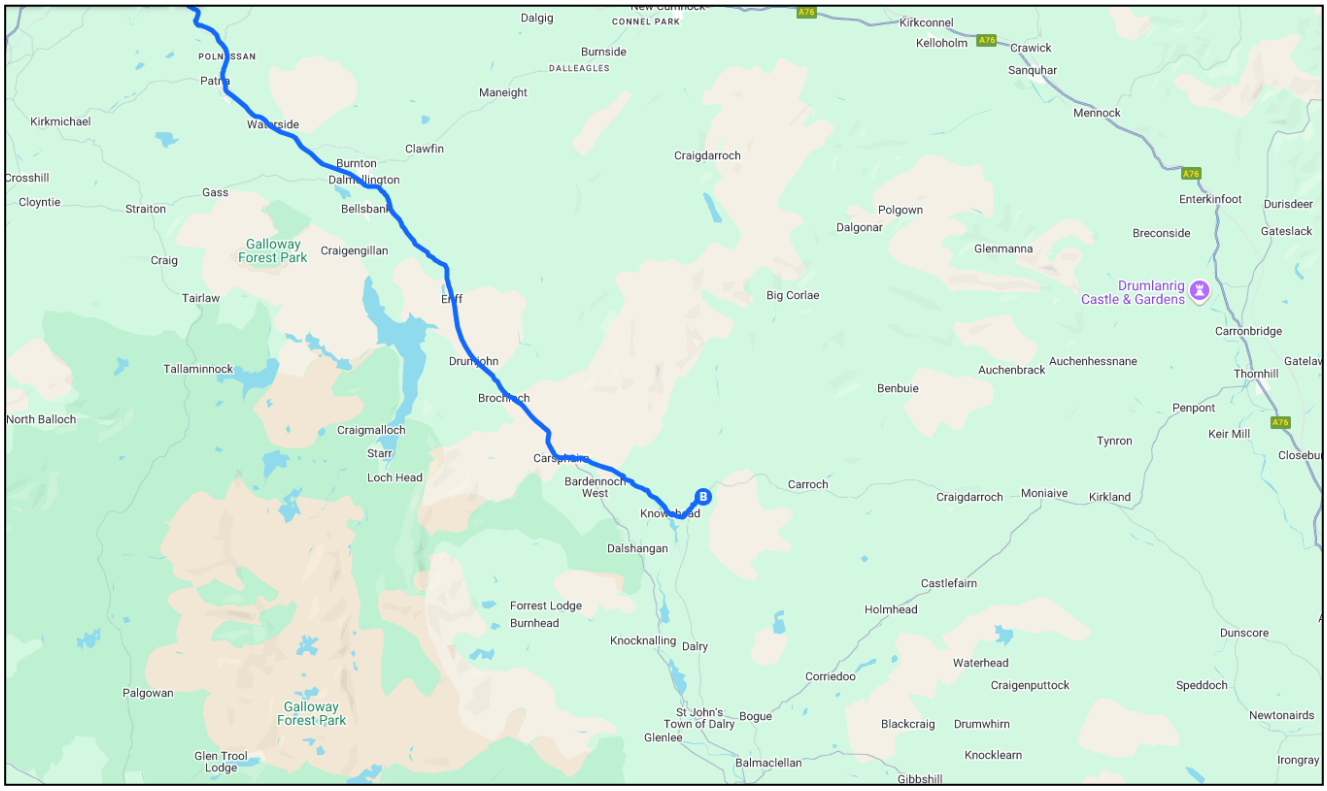


Figure 12 AIL Component Delivery Route – Section 3



6.1.8 Peak Construction Traffic

Following the distribution and assignment of traffic flows to the Study Area network, the resultant daily traffic during the peak of construction (month nine) are summarised in **Table 13** for the scenario whereby 100% of aggregate materials are brough to the site, while **Table 14** illustrates the scenario with the use of on-site borrow pits.

Table 13 Peak Construction Traffic (month nine) – Scenario 1: 100% Import of Materials

Site ID	Survey Location	Cars & Lights	HGV	Total
1	B729, north of B7000 Junction	44	226	270
2	B729, east of A713 Junction	44	226	270
3	A713, between Dalmellington and Carsphairn	32	208	240
4	A713, Dalmellington	26	28	55
5	A713, at St John's Town of Dalry	14	192	206
6	B741, east of Dalmellington	4	178	182

Please note that variances may occur due to rounding.

Table 14 Peak Construction Traffic (month nine) – Scenario 2: Utilising On-site Borrow Pits

Site ID	Survey Location	Cars & Lights	HGV	Total
1	B729, north of B7000 Junction	44	66	110
2	B729, east of A713 Junction	44	66	110
3	A713, between Dalmellington and Carsphairn	32	44	76
4	A713, Dalmellington	26	22	48
5	A713, at St John's Town of Dalry	14	36	50

Site ID	Survey Location	Cars & Lights	HGV	Total
6	B741, east of Dalmellington	4	22	26

Please note that variances may occur due to rounding.

6.2 Operational Phase

In the operational phase, it is envisaged that the level of traffic associated with the Proposed Varied Development will equate to on average two vehicle trips per week which is considered negligible and therefore no detailed assessment of the operational phase of the Proposed Varied Development is proposed.

6.3 Decommissioning Phase

Prior to decommissioning of the site, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

The decommissioning phase would result in fewer trips on the road network than the construction or operational phase as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up on site to allow transport by a reduced number of HGVs.

7 Traffic Impact Assessment

7.1 Construction Impact – Scenario 1: 100% Import of Materials

The peak month (month nine) traffic data was combined with the future year (2028) traffic data to allow a comparison between the baseline results to be made, for the scenario whereby 100% of aggregate materials are imported to the site. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in **Table 15**.

Table 15 2028 Baseline + Construction Development – Flows and Impact (Scenario 1: 100% Import of Materials)

Site ID	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	B729, north of B7000 Junction	146	284	430	43.14%	386.73%	168.29%
2	B729, east of A713 Junction	151	272	423	41.00%	494.66%	176.47%
3	A713, between Dalmellington and Carsphairn	1,775	287	2,062	1.84%	264.55%	13.17%
4	A713, Dalmellington	3,910	132	4,042	0.68%	27.02%	1.37%
5	A713, at St John's Town of Dalry	2,477	514	2,991	0.57%	59.69%	7.40%
6	B741, east of Dalmellington	900	212	1,112	0.49%	528.24%	19.63%

The total traffic movements are predicted to increase by a maximum of 176.47% on the B729, east of the A713 junction, where all vehicular traffic travelling through to the site will use. On the rest of the Study Area, the highest total traffic increase is 168.29%, which occurs on the B729 north of the B7000 junction.

Table 15 shows that highest HGV traffic movements increase will occur on the B741, east of Dalmellington, where HGV movements associated with aggregate movements would occur if a quarry to the north was used. At this location, it is estimated to increase by 528.24%. Whilst this increase could be considered statistically significant high, this is due to the low level of HGVs currently using this road. To put the increase into perspective, the B741 will see an additional 178 HGV movements per day or approximately 15 HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

The next highest HGV traffic movement increase would occur on the B729, east of the A713, where it is estimated to increase by 494.66%. To put the increase into perspective, the B729 will see an additional 226 HGV movements per day or approximately 19 HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

A review of existing theoretical road capacity has been undertaken using The NESA Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the Study Area. The results are summarised in **Table 16**.

Table 16 2028 Peak Traffic Flow Capacity Review (Scenario 1: 100% Import of Materials)

Site ID	Survey Location	2028 Baseline Flow	2028 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	B729, north of B7000 Junction	160	430	3,360	87.2%
2	B729, east of A713 Junction	153	423	19,200	97.8%
3	A713, between Dalmellington and Carsphairn	1,822	2,062	21,600	90.5%
4	A713, Dalmellington	3,987	4,042	21,600	81.3%
5	A713, at St John's Town of Dalry	2,785	2,991	21,600	86.2%
6	B741, east of Dalmellington	929	1,112	19,200	94.2%

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

7.2 Construction Impact – Scenario 2: Utilising On-site Borrow Pits

The peak month (month nine) traffic data was combined with the future year (2028) traffic data to allow a comparison between the baseline results to be made, for the scenario whereby on-site borrow pits will be used to source aggregate materials. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in **Table 17**.

Table 17 2028 Baseline + Construction Development – Flows and Impact (Scenario 2: Utilising On-site Borrow Pits)

Site ID	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	B729, north of B7000 Junction	146	125	271	43.14%	113.72%	68.84%
2	B729, east of A713 Junction	151	112	263	41.00%	145.45%	72.19%
3	A713, between Dalmellington and Carsphairn	1,775	127	1,902	1.84%	61.05%	4.39%
4	A713, Dalmellington	3,910	132	4,042	0.68%	27.02%	1.37%
5	A713, at St John's Town of Dalry	2,477	356	2,833	0.57%	10.57%	1.72%
6	B741, east of Dalmellington	900	54	954	0.49%	59.35%	2.63%

The total traffic movements are predicted to increase by a maximum of 72.19% on the B729, east of the A713 junction, where all vehicular traffic travelling through to the site will utilise. On the rest of the Study Area, the highest total traffic increase is 68.84%, which occurs on the B729 north of the B7000 junction leading through to the proposed site access junction.

Table 17 shows that highest HGV traffic movements increase will occur on the B729, east of the A713 junction, where all vehicular traffic travelling through to the site will utilise. At this location, it is estimated to increase by 145.45%. Whilst this increase could be considered statistically significant high, this is due to the low level of HGVs currently using this road. To put the increase into perspective, the B729 will see an additional 66 HGV movements per day or under six HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

The next highest HGV traffic movement increase would occur on the B729, north of the B7000 junction, where it is estimated to increase by 113.72%. To put the increase into perspective, the B729 will see an additional 66 HGV movements per day at this location or under six HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

A review of existing theoretical road capacity has been undertaken using The NESA Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the Study Area. The results are summarised in **Table 18**.

Table 18 2028 Peak Traffic Flow Capacity Review (Scenario 2: Utilising On-site Borrow Pits)

Site ID	Survey Location	2028 Baseline Flow	2028 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	B729, north of B7000 Junction	160	271	3,360	91.9%
2	B729, east of A713 Junction	153	263	19,200	98.6%
3	A713, between Dalmellington and Carsphairn	1,822	1,902	21,600	91.2%
4	A713, Dalmellington	3,987	4,042	21,600	81.3%

Site ID	Survey Location	2028 Baseline Flow	2028 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
5	A713, at St John's Town of Dalry	2,785	2,833	21,600	86.9%
6	B741, east of Dalmellington	929	954	19,200	95.0%

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

8 Proposed Mitigation Measures

8.1 Construction Phase

8.1.1 Construction Traffic Management Plan (CTMP)

During the construction phase, a project website, blog or X (previously Twitter) feed will be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This would be agreed with DGC and TS.

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

- Agree AIL route modifications and improvements with DGC and TS. Works which will be required to facilitate turbine deliveries are outlined in the RSR, which is presented in **Annex B**;
- Where possible, the detailed design process will minimise the volume of material to be imported to site to help reduce HGV numbers;
- A Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Transport Management Plan for AIL deliveries;
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the site entrance, depending on the views of DGC;
- Normal site working hours will be limited to between 0700 and 1900 Monday to Friday and 0700 and 1900 on Saturdays, though component delivery and turbine erection may take place outside these hours i.e. depending on when police escort is available;
- Appropriate traffic management measures will be put in place on the A713 and B729 leading through to the site, to avoid conflict with general traffic, subject to the agreement of DGC. Typical measures will include HGV turning and crossing signs and / or banksmen at the site access and warning signs;
- Provide construction updates on the project website, social media feeds and a newsletter to be distributed to residents within an agreed distance of the site;
- Adoption of a voluntary reduced speed limits, for example on the B729 and at other locations to be agreed with DGC and if necessary, TS;
- All drivers will be required to attend an induction to include:
  - A toolbox talk safety briefing;
  - The need for appropriate care and speed control;
  - A briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through the villages); and
  - Identification of the required access routes and the controls to ensure no departure from these routes.

DGC is likely to request that an agreement to cover the cost of abnormal wear on its network is made. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline will inform any change in the road condition during the construction phase. Any necessary repairs will be coordinated with DGC's roads team. Any damage caused by traffic associated with the Proposed Varied Development during the construction phase that would be hazardous to public traffic will be repaired immediately.

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

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

Before the AILs traverse the route, the following tasks will be undertaken to ensure load and road user safety:

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

8.2 Abnormal Load Traffic

8.2.1 Abnormal Load Management Plan

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

All abnormal load deliveries will be undertaken at appropriate times (to be discussed and agreed with DGC, TS and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods before peak times while general construction traffic would generally avoid the morning and evening peak periods.

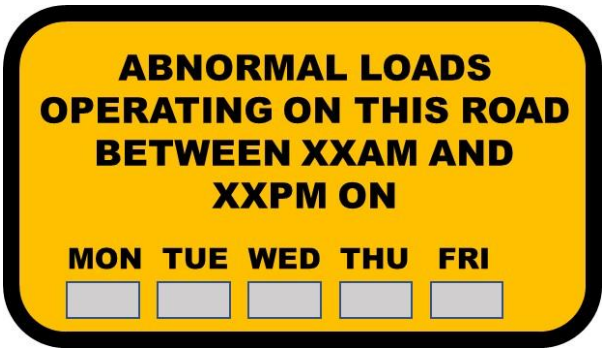
The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances.

- On sections of single carriageway road or narrow road sections, for example on the A713 and B729:
- At locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- Where traffic turns at a road junctions, requiring other traffic to be restrained on other approach arms; and
- In locations where high speeds of general traffic are predicted.

Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers and an example is illustrated in **Figure 13**. Flip up panels (shown in grey) will be used to mask over days where convoys would not be operating. When no convoys are moving, the sign will be bagged over by the Traffic Management contractor.

Figure 13 Example Information Sign



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

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

The Abnormal Load Transport Management Plan will also include:

- Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;
- A diary of proposed delivery movements to liaise with the communities to avoid key dates;
- A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- Proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

8.2.2 Public Information

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

Information will relate to expected vehicle movements from the PoE through to the site access junction. This will assist residents in understanding the timing of the convoy movements and may help reduce any potential conflicts.

The Applicant will also ensure information is distributed through its communication team via the project website, local newsletters, and/or social media.

8.2.3 Convoy System

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

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

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

8.3 Outdoor Access Management Plan (OAMP)

Within the site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of Core Paths / paths, cycle routes and public roads. An Outdoor Access Management Plan (OAMP) will be developed and secured via a planning condition.

Users of the paths etc. will be separated from construction traffic wherever possible. Crossing points will be provided where required, with path users having right of way and temporary diversions will be provided where necessary. Appropriate Traffic Signs Manual Chapter 8[9] compliant temporary road signage will be provided to assist at these crossings for the benefit of all users.

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

[9] https://assets.publishing.service.gov.uk/media/5a74adeaed915d7ab83b5ab2/traffic-signs-manual-chapter-08-part-01.pdf

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

A scoping response has been received from The British Horse Society, and as such measures implemented on similar schemes will be given consideration as part of the Proposed Varied Development. These measures are predominantly focused around the interactions between HGV traffic and horses. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

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

- something approaching them, which is unfamiliar and intimidating;
- a large moving object, especially if it is noisy;
- lack of space between the horse and the vehicle;
- the sound of air brakes; and
- anxiety on the part of the rider.

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

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

8.4 Staff Travel Plan

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

- Appointment of a Travel Plan Coordinator (TPC);
- Provision of public transport information;
- Mini-bus service for transport of site staff;
- Promotion of a car sharing scheme;
- Car parking management; and
- Restrictions on parking, for example on the public road network and verges in the vicinity of the site entrance.

8.5 Operational Phase Mitigation

Site entrance roads will be well maintained and monitored during the operational life of the Proposed Varied Development. Regular maintenance will be undertaken to keep the site access track drainage systems fully operation and to ensure there are no run-off issues onto the public road network.

9 Summary and Conclusions

Pell Frischmann has been commissioned by SETT Wind Development Limited (the Applicant) to undertake a Transport Assessment for the amendments to the previously consented Shepherd's Rig Wind Farm located in the Dumfries and Galloway Council administrative area approximately 10 km north of St John's Town of Dalry.

The Proposed Varied Development will be accessed directly from the B729 from an existing upgraded access junction, currently used for timber extraction located to the north-east of Kendoon Loch. Loads will then proceed to the proposed turbine locations using a combination of private upgraded and new access tracks. The access junction will provide access to the site for all AILs associated with the turbine deliveries, as well as access for HGVs delivering construction materials and general site traffic.

Existing traffic data from DfT was supplemented by new ATC surveys, with the data used to establish a base point for determining the impact during the construction phase and was factored to future levels (2028) to help determine the impact of construction traffic on the road network.

The peak of construction activity is expected to occur in month nine when there will be a total of 5,920 vehicle movements, which equates to 270 vehicle movements per day, comprising 226 two-way HGV movements and 44 two-way car / LGV movements. This would equate to approximately 22 two-way total vehicles movements or 18 two-way HGV movements per hour, across a typical 12-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.

With regards to a comparison between the Proposed Varied Development and the Consented Development, which had an estimated 1,875 total vehicle movements in the peak month, there would be an increase of 4,045 vehicle movements in the month, or approximately 184 per day.

It should however be noted that the Proposed Varied Development's trip generation assumes that 100% of all aggregate materials would be imported to the site from nearby quarries and should therefore be considered an over estimate of the number of HGV movements that will travel to and from the site during the peak month of activity, while the Consented Development assumed that all aggregate would be sourced from the on-site borrow pits, except for concrete which assumed that ready-mix was delivered. As previously advised, the borrow pit assessment undertaken has confirmed that the volume of material suitable to be used on-site is in excess of the volume of material required. Should that be the case there would be a total of 110 vehicle movements per day, comprising 66 two-way HGV movements and 44 two-way car / LGV movements. This would equate to under ten two-way total vehicles movements or under six two-way HGV movements per hour, across a typical 12-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.

With regards to a comparison between the Proposed Varied Development and the Consented Development, which had an estimated 1,875 total vehicle movements in the peak month, there would be an increase of 555 vehicle movements in the month, or approximately 25 per day.

In addition, a review of the theoretical road capacity was undertaken for the Study Area which showed that with the addition of construction traffic associated with the Proposed Varied Development, there was significant spare capacity within the road network.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction phase traffic flows for both general construction traffic and abnormal loads associated with the delivery of the turbine components. It is considered that these can be secured by condition with Dumfries and Galloway Council.

The Proposed Varied Development will lead to a temporary increase in traffic volumes within the Study Area during the construction phase only, however this can be appropriately and effectively managed. It is therefore concluded that there are no transport related matters which would preclude the consenting and construction of the Proposed Varied Development site.

Annex A: Indicative Junction Layout

BORALEX

Legend:

- Proposed Site Access Track
- Abnormal Load Over-run Area
- Abnormal Load Clearance Area

Title

Indicative Site Access Junction

Project:

Shepherds' Rig Wind Farm Section 36C

Source:

Pell Frischmann

Client:

Boralex

Drawn by:	Checked:
SM	SM
Date:	Figure:
17/03/2026	4.6
Scale:	Revision No.
1:1000	1

Pell Frischmann

Annex B: Route Survey Report