15 Traffic and Transport

15. Traffic and Transport

15.1. Summary

15.1.1. The Proposed Varied Development will lead to increased traffic volumes on a number of roads in the vicinity of the site during the construction phase. These will be of a temporary timescale and transitory in nature.

15.1.2. 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.

15.1.3. It should however be noted that the above is based on the assumption that 100% of aggregate materials would be imported to the site from nearby quarries and should therefore be considered a significant over estimate of the number of HGV movements that will travel to and from the site during the peak month of activity. As detailed in **Appendix 15.1: Transport Assessment**, 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.

15.1.4. With regards to a comparison between the Proposed Varied Development and the Consented Development, using the same assessment methodology, whereby on-site borrow pits are utilised, there would be an increase of 555 vehicle movements in the peak month, or approximately 25 per day. This is due to the changes in the development content, and this increase is not considered significant.

15.1.5. 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.

15.1.6. A sensitivity review was undertaken to inform the planning authorities of possible issues with other relevant schemes in the area, whose construction traffic would impact the Study Area, should they be constructed concurrently. The review found that there would be more than sufficient spare road capacity to accommodate all schemes being constructed at the same time. It is proposed that any effects of all the sites being constructed at the same time would be mitigated through the use of an overarching Traffic Management and Monitoring Plan, which can be co-ordinated with Dumfries and Galloway Council (DGC).

15.1.7. With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be slight and will occur during the construction phase only, they are temporary and reversible.

15.1.8. Traffic levels during the operational phase of Proposed Varied Development will be up to two vehicles per week for maintenance purposes. Traffic levels during the decommissioning of the Proposed Varied Development are expected to be lower than

during the construction phase as some elements are likely be left in situ and others broken up on-site.

15.1.9. The movement of Abnormal Indivisible Load (AIL) traffic will require small scale and temporary remedial works at a number of locations along identified delivery route. An Offsite Roadworks Appraisal is provided as **Appendix 15.2**.

Table 15.1 – Summary of Conclusions: Proposed Varied Development and Consented Development

2018 Section 36 Application, supported by Additional Environmental Information I (2019) and Additional Environmental Information II (2021) - the Consented Development	2026 Section 36C Application - the Proposed Varied Development
This assessment identified one location where there is a potential for significant effects to occur. Mitigation measures were detailed. As a result of the proposed mitigation measures, all residual effects of the Consented Development on traffic and transport resource were considered at maximum low, and not significant, in terms of the EIA regulations.	This assessment identified ten locations where there is a potential for significant effects to occur. The increase in identified locations was as a result of a changes in the assessment methodology, where all aggregate material to be used on-site was imported from nearby quarries. The change in methodology was in response to the Scoping Opinion from DGC. The assessment confirms the effects will be minor in nature and they would be not significant, following the implementation of comprehensive mitigation measures, which are detailed within this Chapter and supporting Appendices. No long-term detrimental transport or access issues are associated with the construction phase of the Proposed Varied Development.

15.2. Introduction

15.2.1. This Chapter provides an assessment of the potential effects of the Proposed Varied Development on receptors along the transport routes resulting from vehicle movements associated with the construction phase.

15.2.2. The specific objectives of the Chapter are to:

- review the relevant policy and legislative framework;
- describe the baseline transport conditions;

- describe the assessment methodology and significance criteria used in undertaking the assessment;
- describe the potential effects, including direct, indirect and cumulative effects;
- describe the mitigation measures proposed to avoid, reduce and offset likely potential significant adverse effects; and
- assess the significance of residual effects remaining following the implementation of mitigation.

15.2.3. The assessment has been carried out in accordance with the Institute of Environmental Management and Assessment (IEMA)[1] Guidelines for the Environmental Assessment of Traffic and Movement (2023). The document is referred to as the IEMA Guidelines in this chapter.

15.2.4. This Chapter should be read in conjunction with **Appendix 15.1: Transport Assessment** and **Appendix 15.2: Offsite Roadworks Appraisal**.

15.2.5. This Chapter is supported by the following figures:

- **Figure 15.1**: Study Area;
- **Figure 15.2**: Traffic Count Locations;
- **Figure 15.3**: Personal Injury Accident Locations; and
- **Figure 15.4**: Abnormal Indivisible Load Delivery Route.

15.3. Legislation, Policy and Guidelines

15.3.1. Relevant legislation and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance are:

- National Planning Framework 4 (NPF4) (2023);
- Transport Assessment Guidance (2012);
- Institute of Environmental Management and Assessment (now ISEP), Environmental Assessment of Traffic and Movement (2023);
- Institute of Environmental Management and Assessment (now ISEP), Guidelines for the Environmental Assessment of Road Traffic (1993);
- Institution of Environmental Management and Assessment (now ISEP) 'Guidelines for Environmental Impact Assessment' (2005);

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

- The Dumfries and Galloway Local Development Plan 2 (LDP2) (2019);
- LDP2 'Wind Energy Development: Development Management Considerations' Supplementary Guidance (2020);
- Guidance on the Preparation of Transport Assessments (2014);
- LA104, Environmental assessment and monitoring, Design Manual for Roads and Bridges (DMRB) (Standards for Highways, 2020); and
- Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (2008).

15.4. Consultation

15.4.1. **Table 15.2** provides details of consultations undertaken with relevant regulatory bodies, together with action undertaken by the Applicant in response to consultation comments.

Table 15.2 – Summary of Consultation Undertaken

Consultee	Key Consultee Comments	Application Action
Dumfries and Galloway Council (DGC) – Scoping Response (No Date Provided)	It would be appropriate that Transport Scotland (TS) be consulted with regard to any access route utilising the Trunk Road network.	Noted, TS has been consulted regarding potential impacts on the trunk road network and covered within the Chapter as necessary.
	Given the restricted nature of the road network at Moniaive, I would not be in favour of any windfarm related HGV traffic accessing the site using the B729 between the U141s junction and Moniaive.	Noted, no construction traffic is proposed to use this route to access the Proposed Varied Development.
	Full details of the design and layout of the access and any other accommodation works should be submitted and agreed by the Planning Authority in consultation with the Roads Authority.	Noted, the proposed Site access junction is included as **Annex A** in **Appendix 15.1: Transport Assessment,** as well as **Figure 4.6** of the EIA Report.
	Formation of the site access on the B729 public road and any accommodation works on the public road will require the issuing of a permit under	Noted and would be undertaken at the appropriate time following the Proposed Varied Development being consented.

Consultee	Key Consultee Comments	Application Action
	Section 56 of The Roads (Scotland) Act 1984.	
	Where a proposed access route crosses bridges and culverts, the applicant will require to get approvals and safe axle loadings (in respect of those structures) from the Council's Engineering Services (Bridges and Structures) unit.	As part of the Route Survey Report (RSR) which forms an annex to **Appendix 15.1**, a weight review was undertaken via the Electronic Service Delivery for Abnormal Loads (ESDAL) contacts database.
	The Council's Bridges and Structures unit have advised that Abnormal Loads require to be assessed on an individual basis, proposed axle load on figurations should be supplied and agreed at earliest opportunity. Any proposal or requirement to carry out amendments to any bridge or culvert will require to be addressed via an AIP process.	As part of the Route Survey Report (RSR) which forms an annex to **Appendix 15.1**, a weight review was undertaken via the Electronic Service Delivery for Abnormal Loads (ESDAL) contacts database. A further assessment in full consultation with DGC will be undertaken post consent following confirmation on the wind turbine manufacturer and appointment of a specialist haulage contractor.
	It would be appropriate that any future application confirm the access route(s) and identify the full extent of proposed off-site road accommodation and mitigation works including passing place provision, carriageway strengthening, widening and alterations to road boundaries all along any proposed access route(s) necessary to permit 2-way construction traffic and the passage of cranes and component delivery vehicles (this may require land outwith the public road boundary and a separate planning consent may be	The RSR which forms an annex to **Appendix 15.1**, includes swept path assessments at pinch points along the proposed AIL access route, including identifying locations of required widening. The additional requirements would be undertaken at the appropriate time following the Proposed Varied Development being consented. The requirement for these can be secured via an appropriately worded planning condition.

Consultee	Key Consultee Comments	Application Action
	required in respect of these works).	
	Proposals for access routes, site access and all accommodation works must be supported by swept path analysis.	The RSR which forms an annex to **Appendix 15.1**, includes swept path assessments at pinch points along the proposed AIL access route.
	All accommodation works must be designed and constructed to the satisfaction of the Planning Authority in consultation with the Roads Authority and will require appropriate permits and consents to have been issued.	Noted and would be undertaken at the appropriate time following the Proposed Varied Development being consented. The requirement for these can be secured via an appropriately worded planning condition.
	Where public road boundaries are to be altered either for the formation of temporary accesses or for accommodation works, these should be reinstated in their original position at the conclusion of construction works (unless prior agreements have been secured with the Planning and Road Authorities).	Noted.
	The TMP should include a programme of delivery types/numbers by month, details of all proposed mitigation measures to minimise the impact on local communities and businesses, agreed and excluded access routes and details of measures that will be implemented to ensure that (a) no stacking of delivery vehicles occur on any part of the public road network (b) the safety of the public using 'core' paths is	An Outline Construction Traffic Management Plan (CTMP) is provided as part of the proposed mitigation measures as part of this Chapter. The provision of a final CTMP will form a planning condition and will include the requested information.

Consultee	Key Consultee Comments	Application Action
	maintained; and is to be agreed in writing with the Police, Transport Scotland and Dumfries and Galloway Council Roads Authority prior to any works commencing on site. Access and excluded routes should be identified and agreed for all types of vehicles and a system of visible vehicle tagging/badging employed to ensure compliance with agreed routes and driver behaviour standards which should be supported by a Driver Code of Conduct.	
	There is also the possibility of other unrelated windfarm projects being constructed in the vicinity concurrently with this project. Therefore, it would be appropriate that the TMP acknowledge that co-ordination phasing may be required to mitigate against the cumulative traffic impact.	Noted. The Applicant is committed to working with other developers in the area in the event of more than one site 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.
	Any future submission/ES should include worst-case (100%) details of tonnages and vehicle movements so that the potential impact of importing aggregate from elsewhere via the public road network be assessed.	Noted. The assessment has been undertaken in line with this requirement. Material assumptions are presented in **Appendix 15.1**.
	Creation of windfarm access tracks and turbine placements will likely generate accelerated timber extraction. All extracted	Noted.

Consultee	Key Consultee Comments	Application Action
	timber must only travel agreed haulage routes.	
	The B729 between the A713 and the C35s by Smittons Bridge is a well trafficked timber haulage route and therefore it would be appropriate that there should be consultation with nearby forest managers and timber hauliers through the office of the South of Scotland Timber Transport Officer to co-ordinate timber haulage operations that may use the access route during the construction period to minimise the cumulative impact on communities and road users	Noted. The Applicant and the appointed contractor will undertake the necessary consultation at the appropriate time post consent.
	The developer will be held responsible for the immediate execution of any repairs and will be required to meet the cost of above average maintenance to the public road network arising from the concentration of heavy traffic associated with this development. This to be secured by legal agreement (Section 96).	The Applicant is willing to enter into a formal Wear & Tear agreement. This will form a suitably worded planning condition.
	The installation of the grid connection will have an impact upon public roads where the route follows a road, crosses a road or crosses a bridge on the road. The proposed grid connection has been identified as the Harker substation at Carlisle.	The proposed grid connection remains the same as for the Consented Development. It is likely that the Proposed Varied Development would connect into the national transmission system in the vicinity of Holm Hill near the A713, approximately 7 km to the north-west of the site, via a new pole mounted overhead 132 kV line proposed by Scottish Power Energy

Consultee	Key Consultee Comments	Application Action
		Networks (SPEN) to connect Lorg wind farm (refer to **Chapter 4: Description of Proposed Varied Development** for further information on the Proposed Varied Development's grid connection). Nonetheless, this comment is noted and an initial assessment of the anticipated grid connection corridor for the Proposed Varied Development has been undertaken and is provided as **Appendix 4.2**.
Transport Scotland – Scoping Response (16 August 2024)	Transport Scotland would state that in the event that the route proposed for construction related HGVs involves the trunk road, a screening assessment will be required to determine if the above thresholds will be exceeded.	Noted. No roads within the proposed Study Area are trunk roads. Should this change an additional screening assessment with TS will be undertaken.
	We would ask that "estimated" data from the DfT site is not used. We would add that an alternative source of traffic data is Traffic Scotland's National Traffic Data System.	Noted, no 'estimated data' from the DfT site has been used within the assessment.
	We note that National Road Traffic Forecast (NRTF) Low Traffic Growth assumptions will be used to provide a common future year baseline to coincide with the expected construction traffic peak. This is considered appropriate.	Noted, the assessment has been undertaken on this basis.
	The SR indicates that a Route Survey Report (RSR) for abnormal indivisible loads (AILs) will be produced. In addition, detailed swept path	The RSR which forms an annex to **Appendix 15.1: Transport Assessment**, includes swept path assessments at appropriate

Consultee	Key Consultee Comments	Application Action
	analysis will be undertaken for the main constraint points on the route from the port of entry (assumed to be King George V Docks in Glasgow at this time) through to the site access junction to demonstrate that the turbine components can be delivered to site and to identify any temporary road works which may be necessary. This is considered appropriate, and we would add that any proposed changes to the trunk road network must be discussed and approved (via a technical approval process) by the appropriate Area Managers.	locations of the proposed AIL access routes.
The British Horse Society – Scoping Response (13 August 2024)	Most riding accidents happen on minor roads and with increasing numbers of horses and riders seeking to access the countryside, adequate access to off-road riding should be a priority, especially in rural and semi-rural areas, and areas of high horse ownership, like Dumfries and Galloway. Few riders access busy roads by choice (although the horse has as much right to be on public roads as cars, bikes and pedestrians) - but they often have few other places to ride or no other way to access their safe off-road riding. Vehicles travelling two and from Shepherds' Rig are likely to meet equestrians on the road and drivers should be advised of this risk.	Noted, measures which could be included in an Outdoor Access Management Plan (OAMP) are presented as part of the mitigation section of this Chapter.

15.5. Scope of Assessment

Effects Assessed In Full

15.5.1. This assessment focusses on the effects of construction of the Proposed Varied Development upon those receptors identified during the review of desk-based information and field surveys (the extents of the Study Area are set out in the 'Study Area' section below).

15.5.2. The following potential effects were identified during Scoping for consideration in this assessment:

- Direct effects on road / path users during construction due to changes in traffic flows and transport of AILs in the surrounding Study Area; and
- Direct effects on local residents as a result of increased traffic during construction.

15.5.3. The assessment scenarios used for this topic are as follows:

- Future Baseline Flows (2028) – which are estimated by applying a combination of National Road Traffic Forecast (NRTF) Low growth factors to existing traffic flow information;
- Future Baseline + Development Flows (2028) – which are estimated by applying the distributed development trips to the future baseline traffic flow information; and
- Future Baseline + Committed Development Flows + Development Flows (2028) – which are estimated by applying the distributed development trips, plus committed development trips to the future baseline traffic flow information.

15.6. Assessment Methodology and Significance Criteria

15.6.1. The methodology adopted in this assessment involved the following key stages:

- determine the baseline for traffic and transport;
- review and identify potential impacts related to the construction of the Proposed Varied Development;
- evaluate significance of effects on receptors;
- identify mitigation; and
- assess residual effects.

Study Area

15.6.2. 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.

15.6.3. 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.

15.6.4. The likely Port of Entry (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 this Chapter and within **Annex B** of **Appendix 15.1**.

15.6.5. 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.

15.6.6. 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.

15.6.7. The Study Area is presented in **Figure 15.1**.

Desk Study

15.6.8. To inform the baseline assessment and to establish the nature of the surrounding road and footway infrastructure, the following desktop reviews have been undertaken:

- review of relevant transport planning policy;
- consideration of potential origin locations of construction staff and potential supply locations for construction materials to inform extent of local area roads network to be considered in the assessment;
- collection of existing traffic flow information;
- review of the relevant roads hierarchy;
- review of personal injury accident (PIA) data;
- Identification of sensitive locations within Study Area (as defined by ISEP such as settlements, schools, tourist attractions etc.) using freely available online mapping;

- identification of any other traffic sensitive receptors in the area (Core Paths, routes, communities, etc.) using freely available online mapping and relevant agency websites;
- review of OS plans;
- review of cumulative development information – DGC planning portal and the Scottish Government's Energy Consents Unit (ECU) portal; and
- identification of constraints to the movement of AILs through a Route Survey including swept path assessments – OS plans, video footage and Google Streetview.

Field Surveys

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

- Detailed site visits were undertaken to review the proposed access route and potential constraints for both general construction traffic and AILs.

Assessment of Likely Effect Significance

15.6.10. The ISEP 'Guidelines for Environmental Impact Assessment' (2005) notes that the ISEP Guidelines relating to road traffic should be used for characterising the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments. More recent guidance published by the ISEP, namely 'Environmental Assessment of Traffic and Movement' (2023) provides an update to the previously used guidance, 'Guidelines for the Environmental Assessment of Road Traffic' (1993) and this document has been used in the assessment and are referenced as ISEP Guidelines. The guidelines intend to complement professional judgement and the experience of trained assessors.

Criteria for Assessing Sensity of Receptors

15.6.11. In terms of traffic and transport impacts, the receptors are the users of the roads within the Study Area and the locations through which those roads pass.

15.6.12. The ISEP Guidelines include guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement has been used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in **Table 15.3**.

Table 15.3 – Classification of Receptor Sensitivity

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

15.6.13. It is acknowledged that there will be locations both in terms of users of roads or users / residents of locations that may not fit within one of the sensitivity classifications highlighted in **Table 15.3**. In these situations, professional judgement has been applied and justification for any changes provided.

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

Criteria for Assessing Magnitude of Change

15.6.15. Magnitude of change has been assessed in accordance with the following rules which are outlined in the ISEP Guidelines, and are used to inform a screening exercise to determine which links within the Study Area are to be considered for detailed analysis in the assessment:

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

15.6.16. Examples of sensitive areas are presented in the ISEP Guidelines as hospitals, churches, schools, historical buildings and tourist attractions etc. These locations are to be assessed in relation to "Rule 2".

15.6.17. The ISEP Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development; the impacts and levels of magnitude are discussed below:

- Severance – the ISEP Guidance advises that, *"The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic."* (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that *"the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc."* (Para 3.17).
- Driver delay – the ISEP Guidelines note that these delays are only likely to *be "significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system"* (Para 3.20).
- Pedestrian delay (incorporating delay to all non-motorised users) – the ISEP Guidance advises that *"pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to crossroads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development Site."* (Para 3.24). Furthermore, the guidance advises that *"…it is not considered wise to set down definitive thresholds. Instead it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect."* (Para 3.26).
- Non-motorised user amenity - the ISEP Guidance advises that, *"The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance,*

they have not been superseded by subsequent changes to guidance and are established through planning case law." (Para 3.30).

- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the Proposed Varied Development.
- Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the ISEP Guidance, those areas of collision clusters would be subject to detailed review.
- Road safety audits – It would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition.
- Large loads – The movement of the AILs associated with the construction of the Proposed Varied Development have been considered in full, within a separate route survey assessment (see **Annex B** of **Appendix 15.1**), which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as standard within Mitigation section.

15.6.18. While not specifically identified, as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

Criteria for Assessing Significance

15.6.19. Table 3.7 of LA104 Environmental Assessment Methodology of the Design Manual for Roads and Bridges (DMRB) sets out four levels against which the magnitude of these impacts should be assessed – major, moderate, minor and negligible. The impacts and levels of magnitude are discussed below in **Table 15.4**.

Table 15.4 – Magnitude of Effect

Magnitude	Description
Major	These effects are considered to be material in the decision-making process.
Moderate	These effects may be important but are not likely to be material factors in decision making. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor.

Magnitude	Description
Minor	These effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the project.
Negligible	No effects or those that are imperceptible.

15.6.20. The predicted significance of the effect was determined through a standard method of assessment based on professional judgement, considering both sensitivity and magnitude of change as detailed in **Table 15.5** below.

Table 15.5 – Significance Criteria

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

15.6.21. Significance is categorised as major, moderate, minor or negligible. Effects judged to be of major or moderate significance are considered to be significant in with the context of the EIA Regulations and require mitigation.

15.6.22. Where an effect could be one of major / moderate or moderate / minor significance, professional judgement is used to determine which option should be applicable. Effects judged to be of minor or negligible significance are considered not significant in the context of EIA Regulations.

Mitigation and Enhancement

15.6.23. If significant likely potential effects are identified, appropriate mitigation will be implemented to remove and reduce the significance of the effects where possible.

Assessment of Residual Effect Significance

15.6.24. Residual effects will be assessed following the methodology described above, taking into consideration the identified mitigation.

Assessment of Cumulative Effects

Onshore Wind Farm and Energy Related Planning Applications

15.6.25. A review of DGC's online planning portal and Scottish Government's Energy Consents Unit (ECU) portal 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.

15.6.26. TA Guidance 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.

15.6.27. **Appendix 15.1** includes a full review of consented schemes in the area which required consideration, including justification on whether these should be included within the cumulative assessment. Those included within **Table 15.6** are those schemes deemed applicable for inclusion within the assessment.

Table 15.6 – Significance Criteria

Planning Reference	Scheme Name	Status	Included as Committed 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.

Planning Reference	Scheme Name	Status	Included as Committed 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.
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.

15.6.28. The review did not identify any other significant traffic generating developments in the Study Area that may occur during the peak construction period associated with the Proposed Varied Development, which should be considered as part of any cumulative assessment of construction effects within this Chapter.

Other Planning Applications

15.6.29. 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%).

15.6.30. 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.

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

Lorg Wind Farm Grid Connection

15.6.32. Whilst not a committed development, cognisance has also been taken to the proposed Lorg Wind Farm Grid Connection, which is currently under determination. Available information from the Section 37 application (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.

Limitations to Assessment

15.6.33. Limitations to the assessment are as follows:

- The assessment is based upon average traffic flows in one month periods. During the month, activities at the site may fluctuate between one day and another. It is not possible to fully develop a day by day traffic flow estimate as no Balance of Plant (BoP) contractor has been appointed and external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc).
- Assumptions on the original points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on the Study Area may alter to those presented in the assessment.
- Construction material estimates set out in **Appendix 15.1** are based on past experience of what is likely to be required for a project of this size and are considered to be appropriate for enabling a robust assessment of effects to be made.
- 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 hectares (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. Note this is subject to change following the preparation of a detailed felling plan.
- 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.

15.6.34. It is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant environmental effects on traffic and transport.

15.7. Baseline Conditions

Active Travel Network

15.7.1. 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.

15.7.2. 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.

15.7.3. A review of the DGC Core Path Map 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.

15.7.4. The Core Path Network within the vicinity of the site can be seen in **Figure 7** in **Appendix 15.1.**

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

Road Access

A713

15.7.6. 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

15.7.7. 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

15.7.8. 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 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

15.7.9. The Agreed Timber Route Map 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'.

15.7.10. '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.

15.7.11. 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'.

Existing Traffic Conditions

15.7.12. 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.

15.7.13. The traffic count sites used are as follows:

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

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

15.7.15. An 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.

15.7.16. These sites were identified as being areas where sensitive receptors on the access route would be located. **Figure 15.2** shows the location of the DfT survey points, while **Table 15.7** summarises the Annual Average Daily Traffic (AADT) traffic data collected and used in this assessment.

Table 15.7 – 24-Hour Two Way Average Traffic Data (2026)

Site ID	Survey Location	Cars & Lights	HGV	Total
1	B729, north of B7000 Junction	101	58	159
2	B729, east of A713 Junction	106	45	151
3	A713, between Dalmellington and Carsphairn	1,726	78	1,804
4	A713, Dalmellington	3,845	103	3,948

Site ID	Survey Location	Cars & Lights	HGV	Total
5	A713, at St John's Town of Dalry	2,439	318	2,757
6	B741, east of Dalmellington	887	33	920

Please note minor variances due to rounding may occur.

15.7.17. The ATC survey location 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 15.8**.

Table 15.8 – Speed Summary

Site ID	Survey Location	Count Source	Mean Speed (mph)	85%tile Speed	Speed Limit
3	A713, between Dalmellington and Carsphairn	ATC	42.4	49.3	60
4	A713, Dalmellington	ATC	55.5	63.4	60
6	B741, east of Dalmellington	ATC	37.8	45.3	60

Speed data obtained June 2024

15.7.18. 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 five percent. 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.

Personal Injury Accident Review

15.7.19. 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 which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.

15.7.20. TA Guidance 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.

15.7.21. 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.

15.7.22. The locations and severity of the recorded accidents within the Study Area are summarised in **Table 15.9** while **Figure 15.3** shows their locations.

Table 15.9 – 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%***

15.7.23. 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

15.7.24. 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.

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

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

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

15.7.28. 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

Future Baseline

15.7.29. 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.

15.7.30. To assess the likely effects during the construction phase, base year traffic flows were determined by applying an 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 15.7** to estimate the 2028 Base traffic flows presented in **Table 15.10**.

Table 15.10 – 24-Hour Future Baseline Daily Two-Way Traffic (2028)

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

Please note minor variances due to rounding may occur.

15.8. Summary of Sensitive Receptors

15.8.1. A review of sensitive receptors has been undertaken within the Study Area. **Table 15.11** details the receptors and their sensitivities for use within the following assessment. A justification for the sensitivity has been provided, based upon the details contained in **Table 15.3**.

Table 15.11 – Receptor Sensitivity Summary

Receptor	Sensitivity	Justification
B729 Users	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
A713 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
B741 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
Residents along B729	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents along A713	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.

Receptor	Sensitivity	Justification
Residents along B741	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents in Dalmellington	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Residents in Carsphairn	Low	Where a location is a small rural settlement, few community or public facilities or services.
Residents in St John's Town of Dalry	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Residents in New Cumnock	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Core Path / Path Network	Medium	At locations where users are required to cross roads within the Study Area to use the paths.

15.8.2. As previously noted in the 'Criteria for Assessing Magnitude of Change' section, examples of sensitive areas are presented in the ISEP Guidelines as locations which include hospitals, churches, schools, historical buildings tourist attractions for example. Based on these indicators which are stated within the ISEP Guidelines, the following locations within the Study Area have been identified as sensitive areas in this assessment:

- Dalmellington (church, schools, tourist attractions and health centre);
- New Cumnock (church, schools, tourist attractions and health centre);
- Carsphairn (church and tourist attraction); and
- St John's Town of Dalry (church, schools, tourist attractions and health centre).

15.8.3. This location is therefore subject to 'Rule 2' of the ISEP Guidelines which requires a full assessment of effects if the locations are subject to a total traffic increase of 10% or more. All other locations within the Study Area are subject to 'Rule 1' and are assessed if total traffic flows (or HGV flows) on highway links increase by more than 30%.

15.9. Implications of Climate Change for Existing Conditions

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

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

15.10. Future Baseline in the Absence of the Proposed Varied Development

15.10.1. As noted above, the assessment has been undertaken on the basis of a future baseline of conditions in 2028, with growth factors applied. In the absence of the Proposed Varied Development, it is anticipated that traffic growth will occur throughout the Study Area as a result of other development pressures, tourism and population flows.

15.11. Impacts Scoped Out of Assessment

15.11.1. On the basis of the desk based and field survey work undertaken, the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, and feedback received from consultees, the following topic areas have been 'scoped out' of detailed assessment:

- Operational Phase: The traffic effects during the operational phase of the Proposed Varied Development will be low, with two vehicles per week for maintenance purposes, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operational phase are scoped out of the assessment.
- Decommissioning Phase: The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 40 years on from the completion of the Proposed Varied Development. As elements of the Proposed Varied Development are likely to remain in-situ (such as cable trenches, some access tracks, etc.), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst-case assessment, and as such Decommissioning effects are considered to be less than or equal to, the predicted construction phase effects.

15.12. Standard Mitigation

15.12.1. The site layout includes the use of two on-site borrow pits to provide material for the creation of the access tracks, hardstandings and compound bases etc. 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.

15.12.2. Batching of concrete for use on-site is considered feasible and economic and facilities to enable this are being provided at the Proposed Varied Development. The assessment, has, however, taken into consideration the importation of concrete batching materials, including cement, water and aggregates.

15.13. Potential Effects

Construction

15.13.1. The assessment is based upon the construction effects that may occur within the Study Area during the 21-month construction phase. To assess the effects, it is necessary to determine the likely traffic generation associated with the Proposed Varied Development during the peak construction month.

15.13.2. During the 21-month 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 Battery Energy Storage System (BESS) element, substation components and associated infrastructure; and
- AILs consisting of the wind turbine sections and heavy lift cranes.

15.13.3. Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Varied Development and these are detailed in the Transport Assessment provided as **Appendix 15.1**. The trip estimates have been based upon first principle estimates of traffic movements to and from the site, having established the likely volumes of construction materials, resources and components.

15.13.4. 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 in the Chapter.

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

15.13.6. The turbines are delivered in component sections for transport and will be assembled within the turbine array. The nacelle, hub, drive train, blade, tower sections are classified as AILs due to their weight and/or length, width and height when loaded. The components can be delivered on a variety of transport platforms with typical examples illustrated in **Appendix 15.1**.

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

15.13.8. The resulting traffic generation profile is presented in **Appendix 15.1**. 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.

15.13.9. 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. At the request of DGC, this has been based on the assumption that 100% of aggregate materials are brought to the site from nearby quarries, when in fact this would not be the case, with the on-site borrow pits being sufficient to provide the necessary aggregate materials.

15.13.10. With regards to a comparison between the Proposed Varied Development and the Consented Development, with 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. This increase is due to the change in assessment methodology, where all aggregate material to be used on-site is imported from nearby quarries. The Consented Development assumed the use of on-site borrow pits, hence the lower number of construction vehicle movements. As previously advised, this change in methodology was solely in response to the Scoping Opinion from DGC. In reality, the on-site borrow pits would still be used for the Proposed Varied Development.

15.13.11. In the actual scenario whereby the on-site borrow pits are used to provide the on-site aggregate materials, with the exception of that to be used within concrete batching, the peak of construction activity would 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.

15.13.12. 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.

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

15.13.14. With regards to a comparison between the Proposed Varied Development and the Consented Development, with 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 26 per day. This increase is due to the change in development proposals, including the change in wind turbine tip height.

15.13.15. A full comparison between both scenarios and details on traffic generation for the Proposed Varied Development with 100% of aggregate materials being imported to the

site and the use of on-site borrow pits is included in **Section 7** of **Appendix 15.1**. For the purposes of the assessment of the potential impacts of the Proposed Varied Development on the local road network within this Chapter, this has been done in line with the assessment requirements set out by DGC in their Scoping response.

15.13.16. The distribution of development traffic on the network will vary depending on the types of loads being transported, however it will generally originate from the north and south, joining the Study Area on the A713. The assumptions for the distribution of construction traffic during the peak month are presented in **Appendix 15.1**.

15.13.17. All AIL traffic will access from the 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. For the purposes of preparing this Chapter and **Appendix 15.1**, 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.

15.13.18. The above route is shown in **Figure 15.4**.

15.13.19. As with the Consented Development, a number of roadworks on the B729 are required to facilitate the movement of AILs to the Proposed Varied Development. An assessment of the B729 offsite roadworks is included within **Appendix 15.2**, which is based on the AIL RSR presented as Annex B within **Appendix 15.1**.

15.13.20. Following the distribution and assignment of traffic flows to the Study Area network for the scenario whereby 100% of aggregate materials are imported to the site, the resultant daily traffic during the peak of construction in month nine, is summarised in **Table 15.12**.

Table 15.12 – Peak Construction Traffic (month nine) – 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 minor variances due to rounding may occur.

15.13.21. The construction traffic was compared against the future baseline traffic to estimate the increase in traffic associated with this phase of the Proposed Varied Development for the scenario whereby 100% of aggregate materials are imported to the site. **Table 15.13** illustrates the potential traffic impact at the peak of construction activity during month nine.

Table 15.13 – 2028 Baseline + Construction Development (100% Import of Materials) – Flows and Impact

Site ID	Survey Location	Cars & Lights	HGV	Total Traffic	Cars & Lights % 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%

Site ID	Survey Location	Cars & Lights	HGV	Total Traffic	Cars & Lights % Increase	HGV % Increase	Total Traffic % Increase
6	B741, east of Dalmellington	900	212	1,112	0.49%	528.24%	19.63%

Please note minor variances due to rounding may occur.

15.13.22. 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.

15.13.23. **Table 15.13** 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.

15.13.24. 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.

15.13.25. 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 15.14**.

Table 15.14 – 2028 Peak Traffic Flow Capacity Review – 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%

Site ID	Survey Location	2028 Baseline Flow	2028 Base + Development Flows	Theoretical Road Capacity (12hr)	Spare Road Capacity %
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%

Please note minor variances due to rounding may occur.

15.13.26. 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.

15.13.27. In accordance with the ISEP Guidelines Rules 1 and 2, detailed assessments have been undertaken on the following receptors within the Study Area.

- B729 Users (High Sensitivity);
- A713 Users (Medium Sensitivity);
- B741 Users (Medium Sensitivity);
- Residents along B729 (Negligible Sensitivity);
- Residents along A713 (Negligible Sensitivity);
- Residents along B741 (Negligible Sensitivity);
- Residents in Dalmellington (Medium Sensitivity);
- Residents in Carsphairn (Low Sensitivity);
- Residents in St John's Town of Dalry (Medium Sensitivity);
- Residents in New Cumnock (Medium Sensitivity); and
- Core Path Network Users (Medium Sensitivity).

15.13.28. For the purposes of undertaking the assessment, where both the users of a road and residents in the vicinity of the road require to be assessed, these have been done together to avoid repetition.

Table 15.15 – Overall Construction Phase Effects Assessment

Receptor	Severance	Driver Delay	Pedestrian Delay	Non-motorised user Amenity	Fear & Intimidation	Road Safety	Large Loads
B729 Users / Residents	Major / Moderate	Minor	Moderate / Minor	Major / Moderate	Major / Moderate	Moderate / Minor	Major
A713 Users / Residents	Minor / Negligible	Minor / Negligible	Minor	Moderate	Major / Moderate	Minor / Negligible	Major / Moderate
B741 Users / Residents	Moderate	Minor	Minor	Moderate	Moderate	Minor	N/A
Residents in Dalmellington	Minor / Negligible	Minor / Negligible	Minor	Moderate	Major / Moderate	Minor / Negligible	Major / Moderate
Residents in Carsphairn	Minor / Negligible	Minor / Negligible	Minor	Minor	Moderate / Major	Minor / Negligible	Moderate / Major
Residents in St John's Town of Dalry	Minor / Negligible	Minor / Negligible	Minor	Minor	Minor / Negligible	Minor / Negligible	N/A
Residents in New Cumnock	Moderate / Minor	Minor	Moderate / Minor	Major / Moderate	Minor	Moderate / Minor	N/A
Core Path Network Users	Major / Moderate	N/A	Major / Moderate	Major / Moderate	Major	Minor	Major

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

- B729 Users;
- A713 Users;
- B741 Users;

- Residents along B729;
- Residents along A713;
- Residents along B741;
- Residents in Dalmellington;
- Residents in Carsphairn;
- Residents in New Cumnock; and
- Core Path Network Users.

15.13.30. It should be noted that the impacts relate solely to the peak of construction activities and that the construction period is short lived (21 months) and the effects transitory in nature.

Operation

15.13.31. It is predicted that during the operational phase of the Proposed Varied Development there would be up to two vehicle movements per week for maintenance purposes associated with the Proposed Varied Development. Also, there may be occasional AIL movements to deliver replacement components to the site in the unlikely event of a major failure.

Decommissioning

15.13.32. The decommissioning phase would result in fewer trips on the road network than the construction phase as it is considered likely that the majority of the proposed access track would be left in place for wider estate access.

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

15.14. Additional Mitigation and Enhancement

Construction Traffic Management Plan (CTMP)

15.14.1. During the construction phase, a project website, blog or X feed (previously Twitter) 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.

15.14.2. 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** of **Appendix 15.1**;

- 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 1300 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;
- 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.

Off-site Mitigation

15.14.3. 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.

15.14.4. 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.

15.14.5. 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.

Specific Abnormal Load Mitigation

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

15.14.7. All abnormal load deliveries will be undertaken at appropriate times (to be discussed and agreed with DGC, TS and Police Scotland) 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.

15.14.8. 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.

15.14.9. 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.

15.14.10. Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

15.14.11. The location and numbers of signs will be agreed post consent and would form part of the wider traffic management proposals for the Proposed Varied Development.

15.14.12. 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 becoming aware of the convoy movements and may help reduce any potential conflicts.

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

AIL Transport Management Plan

15.14.14. An Abnormal Load Transport Management Plan will be prepared to cater for all movements to and from the Proposed Varied Development site. This will include:

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

Public Information

15.14.15. 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.

15.14.16. 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.

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

Convoy System

15.14.18. 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.

15.14.19. 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.

15.14.20. 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.

Staff Travel Plan

15.14.21. 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.

Outdoor Access Management Plan (OAMP)

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

15.14.23. Users of 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 compliant temporary road signage will be provided to assist at these crossings for the benefit of all users.

15.14.24. 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.

15.14.25. 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.

15.14.26. 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.

15.14.27. 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.

15.14.28. 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.

15.15. Existing Planning Conditions

15.15.1. **Annex 2** of the Shepherds' Rig Wind Farm (the Consented Development) Decision Letter outlines the Conditions attached to the Deemed Planning Permission. The following Conditions relate to traffic and transport:

- Condition 20: Traffic Management Plan;
- Condition 21: Abnormal Load Route – trailer type;
- Condition 22: Abnormal Load Route – off-site roadworks;

- Condition 31: Roads post-construction work;
- Condition 32: Roads post-construction work – compliance;
- Condition 33: Roads – extra-ordinary damage;
- Condition 35: Transport Monitoring Officer; and
- Condition 36: Community Liaison Group.

15.15.2. It is considered that that above Conditions are applicable to the Proposed Varied Development and the Applicant can confirm their agreement to these being attached to the current application, subject to agreement on the wording of each Condition.

15.16. Residual Effects

Construction

15.16.1. This section considers the assessment of traffic impacts following the incorporation of the identified mitigation measures. An evaluation of the potential effects of the increase in traffic on the Study Area roads used for construction traffic was undertaken. The summary of this assessment is provided in **Table 15.18**.

15.16.2. The assessment confirms the effects will be minor in nature and they would be not significant, following the implementation of a comprehensive CTMP, together with on-site route signage and an OAMP. The traffic effects are transitory in nature and appropriate mitigation measures are proposed to reduce the potential impacts. No long-term detrimental transport or access issues are associated with the construction phase of the Proposed Varied Development.

15.17. Cumulative Assessment

15.17.1. As detailed in **Appendix 15.1** and the **Section 15.6** of this Chapter, there are five consented onshore wind farms, which could potentially impact the roads within the Study Area, namely Manquhill Wind Farm, Glenshimmeroch Hill Wind Farm, Margree Wind Farm, Enoch Hill 2 Wind Farm and Windy Standard I Re-powering.

15.17.2. The peak traffic flows for the five schemes were obtained from their respective planning application documents (see **Table 15.16**: 2028 Daily Traffic (12hr) Construction Traffic Summary) and then compared to the future baseline year (2028) on **Table 15.17**.

Table 15.16 – 2028 Daily Traffic (12hr) Construction Traffic Summary) – Part One

Site ID	Survey Location	Proposed Varied Development		Manquhill Wind Farm		Glenshimmeroch Hill Wind Farm	
		Cars & Lights	HGV	Cars & Lights	HGV	Cars & Lights	HGV
1	B729, north of B7000 Junction	44	226	50	25	0	0
2	B729, east of A713 Junction	44	226	50	25	0	0
3	A713, between Dalmellington and Carsphairn	32	208	0	0	0	0
4	A713, Dalmellington	26	28	50	25	50	39
5	A713, at St John's Town of Dalry	14	192	50	25	50	39
6	B741, east of Dalmellington	4	178	0	0	0	0

Please note minor variances due to rounding may occur.

Table 15.16 – 2028 Daily Traffic (12hr) Construction Traffic Summary) – Part Two

Site ID	Survey Location	Margree Wind Farm & Divot Hill Wind Farm		Enoch Hill 2 Wind Farm		Windy Standard I Wind Farm	
		Cars & Lights	HGV	Cars & Lights	HGV	Cars & Lights	HGV
1	B729, north of B7000 Junction	0	0	0	0	0	0
2	B729, east of A713 Junction	0	0	0	0	0	0
3	A713, between Dalmellington and Carsphairn	50	31	0	0	39	46
4	A713, Dalmellington	50	31	0	0	39	46

Site ID	Survey Location	Margree Wind Farm & Divot Hill Wind Farm		Enoch Hill 2 Wind Farm		Windy Standard I Wind Farm	
		Cars & Lights	HGV	Cars & Lights	HGV	Cars & Lights	HGV
5	A713, at St John's Town of Dalry	100	62	0	0	39	46
6	B741, east of Dalmellington	0	0	0	204	0	0

Table 15.17 – 2028 Combined Scheme Sensitivity Traffic Impact Summary (2028)

Site ID	Survey Location	Cars & Lights	HGV	Total Traffic	Cars & Lights % Increase	HGV % Increase	Total Traffic % Increase
1	B729, north of B7000 Junction	196	309	505	92.16%	429.51%	215.03%
2	B729, east of A713 Junction	201	297	498	87.59%	549.37%	225.49%
3	A713, between Dalmellington and Carsphairn	1,864	364	2,228	6.94%	362.48%	22.29%
4	A713, Dalmellington	4,099	273	4,372	5.55%	162.40%	9.64%
5	A713, at St John's Town of Dalry	2,716	686	3,402	10.27%	113.17%	22.16%
6	B741, east of Dalmellington	905	416	1,316	1.05%	1133.64 %	41.58%

Please note minor variances due to rounding may occur.

15.17.3. **Table 15.17** shows the total traffic movements are predicted to increase by a maximum of 225.49% on the B729, east of the A713 junction, whilst this increase could be considered statistically high, it is caused by the relatively low vehicular traffic at this location. On the rest of the Study Area, the highest total traffic increase is 215.03%, which occurs on the B729 north of the B7000 junction leading through to the proposed site access junction.

15.17.4. **Table 15.17** shows that highest HGV traffic movements increase will occur on the B741, east of Dalmellington, where it is estimated to increase by 1133.64%. 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 382 HGV movements per day or approximately 32 HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows. Is should also be noted that this would not occur on the full length of the B741, as the access to Enoch Hill 2 Wind Farm is at the eastern extents of the road and this accounts for 204 of the HGV vehicle movements. As such, these would leave the road before reaching Dalmellington.

15.17.5. The next highest HGV traffic movement increase would occur on the B729, east of A713 Junction, where it is estimated to increase by 549.37%. To put the increase into perspective, the B729 will see an additional 251 HGV movements per day or approximately 21 HGV movements per hour over the course of a typical 12-hour shift. This is not considered significant in terms of overall traffic flows.

15.17.6. Based on the road capacity results shown in **Table 15.17**, there would still be no road capacity issues should the Proposed Varied Development and other schemes be constructed at the same time, with ample spare capacity within the Study Area road network to accommodate construction phase traffic.

15.17.7. 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.

15.17.8. Furthermore, it is not predicted that the potential traffic flow increases would ever occur on the Study Area, as it is extremely unlikely that the peak traffic conditions will occur at the same time due to differences in construction programmes, material supplies and developer resources. In addition, those schemes already consented will likely begin construction prior to the Proposed Varied Development gaining planning consent

15.17.9. A summary of this cumulative assessment is provided in **Table 15.19**, which shows the significance of effect following the implementation of the previously discussed mitigation measures.

15.18. Summary

15.18.1. The Proposed Varied Development will lead to increased traffic volumes on a number of roads in the vicinity of the site during the construction phase. These will be of a temporary timescale and transitory in nature.

15.18.2. 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

15.18.3. It should however be noted that the above assumes that 100% of 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. This scenario was undertaken as per the requirements set out within the Scoping Opinion by DGC and would not occur in reality should the Proposed Varied Development be consented. 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.

15.18.4. With regards to a comparison between the Proposed Varied Development and the Consented Development, whereby on-site borrow pits are utilised, there would be an increase of 555 vehicle movements in the month, or approximately 26 per day. This is due to changes in the development content, and this increase is not considered significant.

15.18.5. 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.

15.18.6. A sensitivity review was undertaken to inform the planning authorities of possible issues with other relevant schemes in the area, whose construction traffic would impact the Study Area, should they be constructed concurrently. The review found that there would be more than sufficient spare road capacity to accommodate all schemes being constructed at the same time. It is proposed that any effects of all the sites being constructed at the same time would be mitigated through the use of an overarching TMMP, which can be co-ordinated with DGC.

15.18.7. With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be slight and will occur during the construction phase only, they are temporary and reversible.

15.18.8. Traffic levels during the operational phase of Proposed Varied Development will be up to two vehicles per week for maintenance purposes. Traffic levels during the decommissioning of the Proposed Varied Development are expected to be lower than during the construction phase as some elements are likely be left in situ and others broken up on-site.

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

15.18.10. As required by any future consent or to address consultation responses to the EIA Report, the Applicant is committed to engaging with the relevant stakeholders to minimise disruption, and to explore delivery routes, timescales and means of delivery of AIL to the Proposed Varied Development.

Table 15.18 – Summary of Effects

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Construction						
B729 Users / Residents	**Major**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
A713 Users / Residents	**Major / Moderate**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
B741 Users / Residents	**Moderate**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
Residents in Carsphairn	**Moderate / Major**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
Residents in Dalmellington	**Major / Moderate**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage,	Minor / Not Significant	Neutral	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			convoy escorts for AIL movements, provision of localised road improvement works.			
Residents in New Cumnock	**Major / Moderate**	**Adverse**	Implementation of Construction Traffic Management Plan, and provision of construction traffic road signage.	Minor / Not Significant	Neutral	None
Core Path / Path Network Users	**Major**	**Adverse**	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage.	Minor / Not Significant	Neutral	None

Table 15.19 – Summary of Cumulative Effects (following implementation of mitigation measures)

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
Users of Roads	Severance Driver Delay Pedestrian Delay Non-motorised User Amenity Fear and Intimidation Road Safety Large Loads	Enoch Hill 2 Wind Farm Manquhill Wind Farm Glenshimmeroch Wind Farm Margree Wind Farm Windy Standard I Re-Powering	Minor / Not Significant	Neutral
Users / Residents of Locations	Severance Driver Delay Pedestrian Delay Non-motorised User Amenity Fear and Intimidation Road Safety Large Loads	Enoch Hill 2 Wind Farm Manquhill Wind Farm Glenshimmeroch Wind Farm Margree Wind Farm Windy Standard I Re-Powering	Minor / Not Significant	Neutral

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Abbreviations

Abbreviations	Definition
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
ATC	Automatic Traffic Count
BESS	Battery Energy Storage System
BoP	Balance of Plant
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
DGC	Dumfries and Galloway Council
DMRB	Design Manual for Roads and Bridges
ECU	Energy Consents Unit
EIA Report	Environmental Impact Assessment Report
ESDAL	Electronic Service Delivery for Abnormal Loads
HGV	Heavy Goods Vehicle
IEMA	The Institution of Environmental Management and Assessment
ISEP	The Institute of Sustainability and Environmental Professionals
LGV / Lights	Light Goods Vehicles
MPH	Miles Per Hour
NCN	National Cycle Network
NPF4	National Planning Framework 4
NRTF	National Road Traffic Forecast
OAMP	Outdoor Access Management Plan
OS	Ordnance Survey
PAN 75	Planning Advice Note 75
PIA	Personal Injury Accident
POE	Port of Entry
TPC	Travel Plan Coordinator

Abbreviations	Definition
TS	Transport Scotland
TTMP	Traffic Management and Monitoring Plan