13 TRAFFIC & TRANSPORT

13.1 Introduction

This chapter of the Environmental Impact Assessment (EIA) Report evaluates the effects of Ladyfield Renewable Energy Park (the Development) on the Traffic & Transport resources. Vehicle movements to the Development site (the Site) will likely consist of abnormal loads vehicles (for the delivery of wind turbine components), heavy goods vehicles (HGV), light goods vehicles (LGV) and cars. This assessment was carried out by ERM Limited.

This Chapter of the EIA Report is supported by the following Technical Appendix documents provided in Volume 3 Technical Appendices:

- Technical Appendix A13.1: Abnormal Indivisible Load Route Survey undertaken by Pell Frischmann;
- Technical Appendix A13.2: Construction Programme; and
- Technical Appendix A13.3: Bellmouth Designs

This Chapter is also supported by the following figures provided in Volume 2a Figures:

- Figure 13.1: Abnormal Load Route to Site;
- Figure 13.2: General Construction Traffic Route to Site;
- Figure 13.3: Traffic Count Locations; and
- Figure 13.4: Road Traffic Collision (RTC) Assessment.

This chapter consists of the following elements:

- Legislation, Policy, and Guidance;
- Assessment Methodology and Significance Criteria;
- Baseline Conditions;
- Future Baseline Scenarios;
- Anticipated Construction Development Traffic;
- Assessment of Potential Effects;
- Cumulative Effect Assessment;
- Mitigation and Residual Effects;
- Summary of Effects; and
- Statement of Significance.

13.2 Legislation, Policy and Guidance

The legislation, policy, and guidance outlined in Table 13.1 below have been considered in carrying out this assessment:

Table 13.1: Legislation, Policy, and Guidance

Author	Title	Policy
The Scottish Government	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017[379] ('the EIA Regulations')	This provides the legal framework for the assessment of the likely significant environmental impacts of the proposed development.

[379] The Scottish Government (2017) The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 [Online] Available at: https://www.legislation.gov.uk/ssi/2017/101/contents/made (Accessed 02.10.23)

Author	Title	Policy
The Scottish Government	National Planning Framework 4 (2023)[380]	This provides a statement of the Scottish Government's policy on nationally important land use planning matters. In terms of transport, development proposals should consider the impact on road traffic and on adjacent trunk roads including construction.
The Scottish Government	National Transport Strategy[381]	This document provides an overview of the Scottish National Transport Strategy 2, which discusses sustainable freight movements.
The Scottish Government	Planning Advice Note 75 (PAN 75) – Planning for Transport[382]	Provides guidance on sustainable transport planning in the context of new and existing development. The document also indicates that all planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail is to be proportionate to the complexity and scale of impact of the development.
Institute of Environmental Management and Assessment (IEMA, 1993)	Guidelines for the Environmental Assessment of Road Traffic[383]	Sets out guidelines for determining the appropriate and significance of traffic effects as a result of a proposed development. The document focuses on the assessment of potential environmental effects associated with road traffic.

13.3 Assessment Methodology and Significance Criteria

13.3.1 Scoping Responses and Consultations

Consultation for this EIA Report topic was undertaken with the organisations shown in Table 13.2.

Table 13.2: Consultation Responses

Consultee	Type and Date	Summary of Consultation Response	Response to Consultee
Argyll and Bute Council ('The Council')	Scoping Response 02/03/2022	1. The Council's Area Road Engineer has advised that in terms of traffic and transport, they would have no objection to the proposed Development subject to conditions in the event that consent is granted.	1. Noted. No action required.
		2. Details of the proposed access junction including: Visibility Splay Assessment The condition requirement would be to ensure that the connection of the Site access with the public road is 160 m x 2.4 m x 1.05 m, and that the junction layout is agreed with Roads and infrastructure Services prior to any work starting on Site.	2. This is included in Technical Appendix 13.3.
		3. No surface water should be discharged onto the public road,	Noted. As requested, a Road Opening Permit will be obtained

[380] The Scottish Government (2023) National Planning Framework 4 [Online] Available at: National Planning Framework 4 (www.gov.scot) (Accessed 02.10.23)
[381] The Scottish Government (2020) – Scottish National Transport Strategy 2 [Online] Available at: https://www.transport.gov.scot/publication/national-transport-strategy-2/ (Accessed 02.10.23)
[382] The Scottish Executive (2005). Planning Advice Note, PAN 75, Planning for Transport. Available at: https://www.gov.scot/publications/pan-75-planning-for-transport/ (Accessed on 02.10.23)
[383] Institute of Environmental Assessment – Guidelines for the Environmental Assessment of Road Traffic

Consultee	Type and Date	Summary of Consultation Response	Response to Consultee
		and a Roads Opening Permit will be required.	prior to the deliveries. A detailed and dimensioned plan of the designed access junction including surface water drainage proposals will be included in the permit application.
Transport Scotland	Scoping Response 02/08/2021	1. Transport Scotland notes that the proposed access off the A83(T) appears to be a farm/residential access and will require significant upgrading to accommodate both HGV and abnormal loads.	Access is no longer required via the existing farm/residential access off the A83(T). Access to the Site will be taken from the A819 via the northern and/or southern accesses as shown on Figure 2.1.
		2. Transport Scotland is satisfied with the methodology being adopted in assessing the potential environmental impacts and are content that no further assessment is required if the assessment thresholds are not exceeded. It is noted that any potential impacts associated with both the operational and decommissioning phases of the development are to be scoped out of the forthcoming EIAR. We would consider this to be acceptable in this instance.	Noted. No action required.
		3. A full Abnormal Loads Assessment report should be provided with the EIAR. Swept path analysis should be undertaken and details provided with regard to any required changes to street furniture or structures along the route.	An Abnormal Indivisible Load Route Survey has been undertaken by Pell Frischman and included in Appendix A13.1 of the EIA Report.

13.3.2 Scope of Assessment

This assessment considers access, traffic, and transportation effects of the Proposed Development during the construction phase for the following:

- Traffic Generation;
- Severance;
- Pedestrian Amenity;
- Driver Delay;
- Accidents and Safety;
- Noise and Vibration;
- Hazardous Loads; and
- Air Quality.

13.3.3 Elements Scoped Out of Assessment

A number of effects have been scoped out of the assessment and summarised below:

13.3.3.1 Operational Traffic

Operational traffic is expected to be minimal and negligible in terms of existing traffic flow levels on routes within the vicinity of the Development. Assessment of operational traffic has therefore been scoped out of this assessment.

13.3.3.2 Decommissioning Effects

Traffic associated with decommissioning of the Development will be less than that experienced during construction, this is due to the fact that all below ground infrastructure will be left in-situ. It is not possible to accurately forecast baseline traffic flow levels 40 years into the future. For the above reasons prior to decommissioning of the Proposed Development, a traffic assessment should be undertaken, and appropriate traffic management procedures agreed with the relevant authorities at the time. As the construction phase represents a worst-case assessment, the decommissioning phase has been scoped out of this assessment.

13.3.3.3 Visual Effects

The movements of Abnormally Loaded Vehicles (ALVs) could be considered visually intrusive. This effect would be short-term and would only occur during the movement of abnormal loads. The movements of HGVs are not considered visually intrusive as it is an everyday occurrence. Any likely significant environmental effects relating to visual effects due to the Development is considered in within Volume 1 Chapter 6: Landscape and Visual Assessment of this EIA Report. The assessment of visual effects has therefore been scoped out of this assessment.

13.3.4 Study Area

The Site is located on land approximately 4.7 km north of Inveraray, in Argyll and Bute, and the Site covers approximately 790 ha of land, centred on National Grid Reference (NGR) 210500, 715500. The Site and Development is wholly located on land within the administrative boundary of the Council.

The Study Area has been defined by the public road network in the vicinity of the Development and potential delivery corridors to be used during construction by Abnormal Load Vehicles (ALVs) and by general construction traffic, including staff. These consider the local strategic / trunk road network, sources of labour and the potential sources of construction materials, specifically stone and concrete from local quarries.

Access to the Site will be taken from the A819 via the means of a newly constructed Site access junction located to the northwest of the Site (Grid Ref NGR 209101, 716517) and an existing access junction to the south which would have to be upgraded to facilitate the transport of turbine components as shown in Technical Appendix 13.3: Bellmouth Designs.

The proposed Port of Entry (PoE) for turbine components is Corpach Harbour, near Fort William and these will then be transported to the Site via the A308, A830, A82, A85 and the A819. Whilst all ALVs will originate from Corpach Harbour, the origin of general construction traffic is not currently known and is likely to be distributed throughout the region.

Two approach corridors are considered in this assessment:

- Firstly, wind turbine components would be transported as abnormal loads from Corpach Harbour; and
- The second assumes the general approach route for all other construction vehicles associated with construction of the Development.

The routes are outlined in the following sections.

13.3.4.1 Abnormal Loads Route

- Loads will exit the port onto the A830 eastbound towards the A830/A82 Roundabout;
- Take the 2nd exit onto the A82 and continue southbound towards A82/A85 priority junction;
- At the junction, turn right onto the A85 westbound towards the A85/A819 priority junction;

- At the junction, turn left onto the A819 southbound towards the Site Entrance Junctions; and
- Turn left into the Site.

This route is illustrated on Figure 13.1

13.3.4.2 General Approach Route for Construction Traffic

Two routes have been proposed to facilitate access into Site for general construction traffic.

Northern Route

- Construction is assumed to be approaching from the A85 approaching from Tyndrum or Taynuilt and follow routes described above.

Southern Route

- Construction traffic is assumed to be approaching from the south via the A83(T);
- Turn left onto the A819 at the A83(T)/A819 priority junction northbound at Inveraray towards the Site Entrance Junction; and
- Turn right into the Site.

13.3.5 Baseline Survey Methodology

Baseline traffic flow conditions were gathered from both publicly available traffic counts published by the Department for Transport (DfT)[384] and independent traffic counts located on the construction traffic routes as detailed in Section 13.3.4 and shown in Figure 13.3. The baseline traffic flows have informed the analysis to determine the impact of the Development proposals on the road network.

Traffic growth between the published DfT counts, and the anticipated commencement of construction of the Development (2026) was estimated by applying traffic growth factors from the National Trip End Model (NTEM) forecasts using the Trip End Model Presentation Program (TEMPRO[385]) for the Scotland geographical area. The above method is an industry standard method for the determination of traffic growth factors.

Baseline traffic conditions were established via desk study and review of online mapping resources. Traffic flow capacity was estimated using information contained in the Design Manual for Roads and Bridges (DMRB) – Volume 15[386]. It is acknowledged that this document has been withdrawn as part of the ongoing reformatting of the DMRB, however the quoted traffic flow capacities still remain valid for use in this assessment.

13.3.6 Methodology for the Assessment of Effects

The magnitude of the change in increase in traffic flow is a function of the existing traffic volumes on routes and the percentage increase in flow as a result of the Development.

An initial screening exercise was undertaken to identify routes where an adverse effect could potentially occur. The Institute of Environmental Management and Assessment (IEMA 1993) Guidelines[387] suggest two broad principles:

[384] UK Government (2021) Road Traffic Statistics [Online] Available at: https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints (Accessed 02.10.23)
[385] Department for Transport - Trip End Model Presentation Program (TEMPro) Software Version 8.0 (November 2022) using NTEM Dataset 8.0 Core Scenario.
[386] Standards for Highways (2013) Volume 15, Economic Assessment of Road Schemes in Scotland, DMRB. Available at: https://www.standardsforhighways.co.uk/search/fe6b9c41-cd75-4052-a5ee-bd244231e9b0 (Accessed 02.10.23)
[387] Institute of Environmental Management and Assessment (1993). Guidelines for the Environmental Assessment of Road Traffic. Institute of Environmental Management and Assessment.

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

Where the predicted increase in traffic flow is lower than these thresholds, the significance of the effects can be considered to be low or not significant with no further detailed assessments warranted. Consequently, where the predicted increase in traffic flow is greater than these thresholds, the potential effects are assessed in greater detail.

Rules 1 and 2 are used as a screening tool to determine whether or not a full assessment of effects on routes within the study area is required as a result of intensification of road traffic. Therefore, it should be noted that an increase in total traffic or HGV levels of more than 30% (or 10% depending on the sensitivity of the area) does not necessarily equate to a significant effect in terms of the EIA Regulations. The process for determining significance where Rules 1 or 2 are triggered is undertaken on a site-specific basis. The methodology for assessing the significance of an effect is described in detail the sections below.

The IEMA (1993) guidelines are intended for the assessment of environmental effects of road traffic associated with major new developments giving rise to traffic generation, as opposed to short-term construction. In the absence of alternative guidance and as the traffic generation during the operational phase is very low, these guidelines have been applied to assess the short-term construction phase of the Development.

Where existing traffic levels are generally low (e.g., rural roads and some unclassified roads), any increase in traffic flow may result in a predicted increase that would be higher than the IEMA (1993) guideline thresholds. In these situations, it is important to consider any increase in terms of overall traffic flow in relation to the capacity of the road, before making a conclusion on whether the effect is significant as defined under the EIA Regulations.

Any change in traffic flow which is greater than the thresholds set out in the IEMA (1993) guidelines would be subject to further analysis. The magnitude of potential impacts will be identified through consideration of receptor sensitivity against the degree of predicted change to baseline conditions, the duration and reversibility of this change and professional judgement.

13.3.6.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near to the Site or the sensitivity of potentially affected receptors, will be assessed in line with best practice guidance, legislation, statutory designations and / or professional judgement. Table 13.3 details the framework for determining the sensitivity of receptors.

Table 13.3: Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition
Very High	The receptor has no ability to absorb change without profoundly altering its present character, is of high strategic value, or of national importance. For example: • Routes with existing high traffic levels which are at or very close to exceeding capacity; • Receptors such as populated areas where existing traffic levels are high and there is no capacity to absorb additional traffic flow on adjacent routes; • Strategic nationally important routes with no capacity to absorb additional traffic flow; • At severe/fatal accident hotspots where an increase in traffic flow is likely to increase the likelihood or severity of accidents; • A route with very poor pedestrian facilities and a high traffic flow level where an increase in traffic is likely to decrease pedestrian amenity severely; • At a settlement which is bisected by a major route where a significant change in traffic flow or composition is likely to severely increase severance;

Sensitivity of Receptor	Definition
	• A receptor where due to the presence of noise and vibration inducing road surfaces (e.g. cattle grids or cobbles) close to a residential property or similarly sensitive receptor, a change in traffic flow or traffic composition is likely to severely affect the perception of noise and vibration due to traffic; and • At a location where pedestrian crossing facilities are informal and where a significant change in traffic flow level might induce severe pedestrian crossing delay also where children/elderly people might frequently cross an informal crossing.
High	The receptor has little ability to absorb change without fundamentally altering its present character, is of high strategic value, or of national importance. For example: • Routes with existing high traffic levels which have little additional traffic flow capacity; • Receptors such as populated areas where existing traffic levels are high and there is little capacity to absorb additional traffic flow on adjacent routes; • Strategic nationally important routes with little capacity to absorb additional traffic flow; • At severe accident hotspots where an increase in traffic flow may increase the likelihood or severity of accidents; • A route with poor pedestrian facilities and a high traffic flow level where an increase in traffic is likely to decrease pedestrian amenity significantly; • At a settlement which is bisected by a major route where a significant change in traffic flow or composition is likely to significantly increase severance; • A receptor where due to the presence of noise and vibration inducing road surfaces (e.g., cattle grids or cobbles) close to a residential property or similarly sensitive receptor, a change in traffic flow or traffic composition may significantly affect the perception of noise and vibration due to traffic; • At a location where pedestrian crossing facilities are informal and where a significant change in traffic flow level might induce significant pedestrian crossing delay also where children/elderly people might regularly cross an informal or priority crossing.
Medium	Areas where the transport network has moderate capacity to change, without significantly altering its state. For example: • Routes with existing moderate traffic levels which have some additional traffic flow capacity; • Receptors such as populated areas where existing traffic levels are moderate and there is some capacity to absorb additional traffic flow on adjacent routes; • Receptors such as rural roads where existing traffic levels are moderate and there is some capacity to absorb additional traffic flow on adjacent routes; • Strategic nationally important routes with some capacity to absorb additional traffic flow; • At slight accident hotspots where an increase in traffic flow may increase the likelihood or severity of accidents; • A route with moderate pedestrian facilities where an increase in traffic is may decrease pedestrian amenity; • At a settlement which is bisected by a major route where a significant change in traffic flow or composition is likely to moderately increase severance; • A receptor where due to the presence a road close to a residential property or similarly sensitive receptor, a change in traffic flow or traffic composition may moderately affect the perception of noise and vibration due to traffic; and • At a location where pedestrian crossing facilities are informal or substandard and where a significant change in traffic flow level might induce a moderate pedestrian crossing delay.
Low	Areas where the transport network is tolerant to change without detriment to its state, for example; • Routes with existing low traffic levels which have additional traffic flow capacity; • Receptors such as populated areas where existing traffic levels are low and there is capacity to absorb additional traffic flow on adjacent routes; • Receptors such as rural roads where existing traffic levels are low and there is capacity to absorb additional traffic flow on adjacent routes; • Strategic nationally important routes with capacity to absorb additional traffic flow; • On routes with a low level of historical accident data where a change in traffic flow or composition would have a low effect on the likelihood or severity of accidents; • A route with formal pedestrian facilities where an increase in traffic would have a low effect on pedestrian amenity;

Sensitivity of Receptor	Definition
	• A settlement which is bisected by a road, but where the effect of increased traffic or change in composition would have a low effect on severance; • A receptor which is not highly sensitive to changes in noise level (e.g., a school) or where receptors are set back from the road and therefore their sensitivity to changes in noise as a result of changes in traffic flow or composition are low; and • A location where pedestrian crossing facilities are formal but priority, or pedestrian flows are sufficiently low that changes to traffic flow or composition are unlikely to cause a significant pedestrian delay.
Negligible	Areas where the transport network is highly tolerant to change without detriment to its state, for example: • Routes with existing very low traffic levels which have a lot of additional traffic flow capacity; • Receptors such as populated areas where existing traffic levels are very low and there is a lot of capacity to absorb additional traffic flow on adjacent routes; • Receptors such as rural roads where existing traffic levels are very low and there is a lot of capacity to absorb additional traffic flow on adjacent routes; • Strategic nationally important routes with a lot of capacity to absorb additional traffic flow; • On routes with a very low level of historical accident data where a change in traffic flow or composition would have a negligible effect on the likelihood or severity of accidents; • A route with formal pedestrian facilities where an increase in traffic would have a negligible effect on pedestrian amenity; • A settlement which is not bisected by a road or where the effect of increased traffic or change in composition would have a negligible effect on severance; • A receptor which is negligibly sensitive to changes in noise level (e.g., a sports stadium) or where receptors are set very far back from the road and therefore their sensitivity to changes in noise as a result of changes in traffic flow or composition are negligible; and • A location where pedestrian crossing facilities are formal and controlled, or pedestrian flows are negligible (i.e., where there are no footways) such that changes to traffic flow would not result in a change to pedestrian delay.

13.3.6.2 Magnitude of Change

The magnitude of potential change will be identified through consideration of the Development, the degree of change to baseline conditions predicted as a result of the Development, the duration and reversibility of an effect and professional judgement, best practice guidance and legislation.

The criteria for assessing the magnitude of change on those receptors described above are presented in Table 13.4.

Table 13.4: Framework for Determining Magnitude of Change

Magnitude	Description
High	The proposals could result in an appreciable change in terms of length and/or duration to the present traffic routes or schedules or activities, which may result in hardship; high likelihood of increased accidents or a large increase in the severity of possible accidents; significant loss of pedestrian amenity; significant increase in severance; significant increase in traffic caused noise or vibration; or in a significant increase in pedestrian delay. Generally, a rule of >90% (or >70% at sensitive receptors) change in traffic is considered to be a High magnitude.
Medium	The proposals could result in changes to the existing traffic routes or activities such that some delays or rescheduling could be required, which cause inconvenience; medium likelihood of increased accidents or a moderate increase in the severity of possible accidents; moderate loss of pedestrian amenity; moderate increase in severance; moderate increase in traffic caused noise or vibration; or a moderate increase in pedestrian delay. Generally, a rule of 60 – 90% (or 40% - 70% at sensitive receptors) change in traffic is considered to be a medium magnitude.
Low	The proposals could occasionally cause a minor modification to routes, or a very slight delay in present schedules, or on activities in the short-term; a low likelihood of increased accidents or

Magnitude	Description
	a low increase in the severity of possible accidents; low loss of pedestrian amenity; low increase in severance; low increase in traffic caused noise or vibration; or low increase in pedestrian delay. Generally, a rule of 30 – 60% (or 10% - 40% at sensitive receptors) change in traffic is considered to be a low magnitude.
Negligible	Barely perceptible effect on movement of road traffic above normal level; severity of accidents; pedestrian amenity severance; traffic caused noise and vibration at receptors; or pedestrian delay. Where there is no effect, this is stated. Generally, a rule of <30% (or <10% at sensitive receptors) change in traffic is considered to be a negligible magnitude.

13.3.6.3 Significance of Effect

The sensitivity of the receptor and the magnitude of the predicted effects will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects. Table 13.5 summarises guideline criteria for assessing the significance of effects.

Table 13.5: Framework for Assessment of the Significance of Effects

Magnitude of Change	Sensitivity of Resource or Receptor				
	Very High	**High**	**Medium**	**Low**	**Negligible**
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

Effects predicted to be of major or moderate significance are considered to be 'significant' in the context of the EIA Regulations and are shaded in light grey in the above table.

13.3.7 Assumptions

13.3.7.1 Baseline Traffic

Baseline traffic flow conditions were gathered from publicly available traffic counts published by the DfT at locations on the proposed transport routes detailed in Section 13.3.4 of this report. Figure 13.3 shows the traffic count locations along the abnormal load and general construction traffic routes respectively.

Some of the traffic count locations along both routes provide an estimated flow based upon the last manual or automatic traffic counts and the application of traffic growth factors by the DfT, as detailed in Table 13.6.

Table 13.6: Traffic Count Data

Traffic Count Methods				
Ref.	**Location**	**Year**	**Count Type**	**Last Manual Count**
1	A85 near Taynuilt, DfT Point ID: 80339	2021	Public ATC	2021
2	A85 near Arrivain, DfT Point ID: 30775	2021	Public ATC	2017
3	A85 near Clifton, DfT Point ID: 10845	2021	Public ATC	2015

Traffic Count Methods				
Ref.	**Location**	**Year**	**Count Type**	**Last Manual Count**
4	A83 near Auchnabreac, DfT Point ID: 10765	2021	Public ATC	2019
5	A819 North, North of Ladyfield	2022	ATC	N/A
6	A819 South, North of Inveraray	2022	ATC	N/A

It is possible that due to traffic values being estimated at locations 2, 3 and 4 there are minor differences between the assessed and actual baseline traffic flows at these locations. This does not have any material change to the outcome of the assessment.

13.3.7.2 Material Import Requirements

An on-site borrow pit has been identified and it is expected that all stone material required for the formation of the internal access tracks and hardstanding areas will be sourced from the existing on-site borrow pit with the exception of a quantity of fine surface material which will be imported. In line with the conclusions as set out within the Preliminary Borrow Pit Assessment (Technical Appendix 11.3, of the EIA Report), the borrow pits search area is anticipated to deliver up to 24,847 m^3 of aggregate. This would reduce the overall impact along this route, particularly close to the more populated areas such as Inveraray.

There is also the option of on-site concrete batching, however to present a conservative and robust assessment, it is assumed that all concrete will be transported to the Site along the entirety of the route specified in Section 13.3.4.

13.3.7.3 Impact Assessment

A worst-case scenario has been assumed in which all traffic associated with the Proposed Development will pass each traffic count location identified in the study. Whilst all HGV traffic will use the defined route to site, no specific routes will apply for light traffic (i.e., cars and vans) and therefore their choice of route will be determined by their origin and is likely to be distributed across a variety of routes. The effect of increased traffic on the identified route is therefore likely to be lower than estimated in this assessment.

13.4 Baseline Conditions

13.4.1 Baseline Traffic Flow

Table 13.7 summarises the data collected from the traffic count data at a number of locations on the proposed transport routes detailed in Section 13.3.4. Traffic count locations are shown on Figure 13.3.

Table 13.7: Existing Average Annual Daily Flow (AADF)

Ref	Road	Location	Total ADT	HGV ADT	%HGV
1	A85	A85 near Taynuilt, DfT Point ID: 80339	4241	331	7.8%
2	A85	A85 near Clifton, DfT Point ID: 10845	1574	125	7.9%
3	A85	A85 near Arrivain, DfT Point ID: 30775	1813	179	9.9%
4	A83	A83 near Auchnabreac, DfT Point ID: 10765	2,608	272	10.4%
5	A819	A819 N	1224	212	17.3%
6	A819	A819 S	1314	199	15.1%

13.4.2 Road Capacity

Typical capacity values for a variety of road types are provided within the Design Manual for Roads and Bridges (DMRB) – Volume 15[388]. It is acknowledged that this document has been withdrawn, as part of the ongoing reformatting of the DMRB, however the quoted traffic flow capacities still remain valid for use in this assessment. Capacity is defined as the maximum sustainable flow of traffic passing in one hour under favourable road and traffic conditions and depends on the road type, speed limit and width. Table 13.8 gives the estimated capacity of each of the roads within the Study Area.

Table 13.8: Theoretical Road Capacities

Road	Type	Speed Limit (mph)	Capacity (veh/hour/direction)	Two-Way Hourly Flow (veh/hour)	Two – Way Daily Flow (veh/day)
A83	Rural – Typical Single 7.3 m	60	1,200	2,400	57,600
A85	Rural – Typical Single 7.3 m	60	1,200	2,400	57,600
A819	Rural – Typical Single 6.0 m	60	900	1800	43,200

13.4.3 Sensitive Receptors

As per (IEMA 1993) Guidelines, particular groups of locations which may be sensitive to changes in traffic conditions should be identified. The Guidelines suggest, for example, that people, home, schools, and the elderly may be sensitive to changes in traffic conditions. A desktop search was undertaken for the route to site within the Study Area.

A number of receptors of medium or high sensitivity to changes in traffic have been identified within the Study Area and are detailed in Table 13.9. These receptors are either located on proposed delivery routes or located within close proximity and require access through the proposed delivery routes.

Table 13.9: Sensitive Receptors

Route	Receptor	Relevant Count Location	Sensitivity	Justification
A85(T), Taynuilt	Taynuilt	1	High	There are a number of commercial and residential properties which front directly onto the A85(T) as it passes through Taynuilt. The town centre includes shops, services, and has formal pedestrian crossing points on it. Users may be required to use/cross the route when accessing the service. However, this route is a major transport corridor constructed to accommodate significant HGV traffic and so a certain level of traffic should be expected.
A85(T), Clifton	Residential Properties on or near the delivery route	2	Medium	Few residential properties located directly on the proposed delivery route who require unrestricted use of the route in order to access their property. This is an A-class road designed to accommodate significant HGV traffic

[388] Standards for Highways (2013) Volume 15, Economic Assessment of Road Schemes in Scotland, DMRB. Available at: https://www.standardsforhighways.co.uk/search/fe6b9c41-cd75-4052-a5ee-bd244231e9b0. (Accessed 02.10.23)

Route	Receptor	Relevant Count Location	Sensitivity	Justification
A85(T), Dalmally	Dalmally	3	High	There are a number of commercial and residential properties which front directly onto the route as it passes through Dalmally. The town centre includes shops, services, and has formal pedestrian crossing points on it. Users may be required to use/cross the route when accessing the service. However, this route is a major transport corridor constructed to accommodate significant HGV traffic and so a certain level of traffic should be expected
A85(T), Dalmally	Dalmally Primary School	3	High	This school is located in Dalmally within the vicinity of, although not directly on, the general construction traffic route. There are no formal pedestrian crossing facilities on this section of the A85 and pupils are likely to cross the route on their journey to and from the school.
A83(T), Inveraray	Inveraray	4 and 6	High	There are a number of commercial and residential properties which front directly onto the A83 as it passes through Inveraray. The town centre includes shops, services, and residential properties. Users may be required to use/cross the route when accessing the service. However, this route is a major transport corridor constructed to accommodate significant HGV traffic and so a certain level of traffic should be expected
A819	Residential Properties located on/near the delivery route	5	Medium	Few residential properties located directly on the proposed delivery route who require unrestricted use of the route in order to access their property. This is an A-class road designed to accommodate significant HGV traffic.

13.4.4 Road Traffic Collision Assessment

An analysis of all 'Slight', 'Serious' and 'Fatal' Road Traffic Collisions (RTCs) within the most recent five years was carried out using data from CrashMap[389] for key junctions along the route within the Study Area.

Collisions are categorised according to the severity of injuries sustained by those involved:

- 'Slight' are defined as a collision in which nobody is fatally or seriously injured, but at least one person is slightly injured;
- 'Serious' injuries are those which result in hospitalisation or death more than 30 days after the incident; and,
- 'Fatal' results in the death of one or more persons at the scene of the collision or within 30 days of the incident.

A total of 26 RTCs were recorded on the A85(T) between Tyndrum and Clifton of which 12 were noted as 'Slight', 12 'Serious' and 2 Fatal in severity. A total of 11 RTCs were also recorded on the A819 of which 2 were noted as 'Slight', and 9 'Serious' in severity. The locations of each of the identified RTCs are noted on Figure 13.4.

Four 'Slight', 6 'Serious' and 1 'Fatal' RTCs have been recorded on the A85(T) between the Clifton and Dalmally. While a review into these collisions did not identify a common cause of the RTCs on this stretch of road, it is worth noting that three of the 'Serious' RTCs involved single vehicle

[389] AGILYSIS (2019) CrashMap. UK Road Safety Map. Available at: www.crashmap.co.uk. (Accessed 02.10.23)

collisions and 3 of the 'Serious' RTCs occurred on wet or snowy conditions. The 'Fatal' RTC recorded in this area was found to be a single vehicle RTC and this occurred as a result of driver error.

8 'Slight', 6 'Serious' and 1 'Fatal' RTCs have been recorded on the A85(T) from Taynuilt to Dalmally. Upon review, it was noted that 3 of the 'Slight' RTCs were rear end shunt collisions, while another 3 were found to be single vehicle collisions, therefore the likely cause of these collisions can be attributed to driver error. 4 of the 6 'Serious' RTCs recorded in this area were single vehicle collisions that occurred on wet road conditions and can likely be attributed to driver error. With regards to the 'Fatal' RTC recorded in this area, this collision was found to involve a vehicle colliding with a pedestrian on wet road conditions at night.

A total of 2 'Slight' and 9 'Serious' RTCs have been recorded on the A819. While a review into these collisions did not identify a common cause of the RTCs on this stretch of road, it is worth noting that 6 of the 'Serious' and 1 of the 'Slight' RTCs involved single vehicle collisions, while the other 4 'Serious' RTCs involved 2 that occurred as a result of wet road conditions, and 1 other involved a rear end shunt between 2 motorcycles.

No 'trends' or hotspots have been noted which would otherwise indicate the roads within the Study Area to be unsafe. As such it is determined that the road network along the route is working as intended and does not pose any significant safety concerns.

13.5 Future Baseline Scenarios

13.5.1 Traffic Flow

Background traffic growth will occur on the local road network irrespective of whether or not the Development is constructed.

A traffic growth factor was calculated for the relevant geographic area as from TEMPRO and applied to the baseline traffic flow information collected for each route to give the estimated traffic flow for the year of construction (2026). Table 13.10 indicates the projected baseline traffic flow at each of the locations for the anticipated year of construction.

Table 13.10: Projected Baseline Traffic Flow (2026)

Ref	Road	Location	Growth Factor	Total ADT	HGV ADT	%HGV
1	A85	A85 near Taynuilt, DfT Point ID: 80339	1.0074	4,272	333	7.8%
2	A85	A85 near Clifton, DfT Point ID: 10845	1.0074	1,586	126	7.9%
3	A85	A85 near Arrivain, DfT Point ID: 30775	1.0074	1,826	180	9.9%
4	A83	A83 near Auchnabreac, DfT Point ID: 10765	1.0074	2,627	274	10.4%
5	A819	A819 N	1.0059	1,231	213	17.3%
6	A819	A819 S	1.0059	1,322	200	15.1%

13.6 Anticipated Construction Development Traffic

An indicative programme of anticipated construction traffic associated with the Development is provided in Technical Appendix 13.2: Construction Program. Construction is expected to run for a total of 24 months. The following sub-sections provide detail for each element of work, and it should be read in conjunction with Technical Appendix 13.2. A summary of all predicted construction traffic is provided at the end of this section.

13.6.1 Forestry

Pre-commencement forestry operations (primarily felling) are required in order to prepare the Site for construction. Estimated vehicle movements associated with the forestry operations are set out

in Table 13.11. Timber extraction will require a total of an estimated 500 HGV loads resulting in 1,000 HGV movements over 3 months duration of this phase of works.

At the commencement of felling operations, plant and equipment will be required to be imported to site. This will be transported by low-loader HGVs and is likely to comprise 5 deliveries, resulting in 10 vehicle movements.

Fuel deliveries to support forestry operations can be expected at a rate of approximately two deliveries per week, resulting in 4 vehicle movements per week or 16 vehicle movements per month.

It should be noted, as described within Chapter 3: Site Selection and Design and Chapter 14: Forestry, ongoing forestry operations including felling associated with the normal operation of Ladyfield Long Term Forest Plan will be completed by 2025. The Development is not considered likely to start construction earlier than 2025, therefore, felling scheduled for 2025 or earlier has been assumed to have been undertaken and completed. The estimated vehicle movements associated with the forestry operations as set out in Table 13.11 is solely felling required in order to provide suitable working areas for construction of the Development.

Table 13.11: Forestry Extraction

Operation	Vehicle Type	Construction Months	Total	Max Monthly
Forestry Plant Delivery	HGV	1,3	20	10
Timber Extraction	HGV	1-3	1,000	166
Fuel Delivery	HGV Tanker	1-3	48	16
Sub-Total			**1,068**	**192**

13.6.2 Site Mobilisation/Demobilisation

HGV and other vehicle movements will be required during the mobilisation of the Site. This will comprise the erection of welfare facilities, delivery of construction site vehicles and importation of plant and equipment. The majority of these movements will be as HGVs and low loaders which will deliver and then depart the Site empty. It is also anticipated that 2 deliveries will be required in order to bring potable water into the Site, resulting in an additional 4 deliveries per week (or 16 deliveries per month) throughout the whole construction period.

During site demobilisation, the majority of this equipment will be removed from Site. Vehicle movements for demobilisation will result from empty HGVs and low loaders travelling to Site and then departing loaded. Table 13.12 indicates the anticipated number of vehicle movements associated with site mobilisation and demobilisation.

Table 13.12: Anticipated Vehicle Movements – Site Mobilisation / Demobilisation

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Site Mobilisation/ Demobilisation	Car or Minibus	1,24	32	16
Site Establishment, TCC, etc	HGV Low Loader	1,24	120	60
Water Delivery	HGV	1-24	384	16
Overall			**536**	**92**

13.6.3 Access Track and Hardstanding Construction

This assessment assumed that the top 0.15 m layer of fine material required for all access tracks and hardstandings will be imported to site; and the remaining aggregate required would be won from the on-site borrow pit. In line with the conclusions as set out within the Borrow Pit Assessment

(Technical Appendix 11.3, of the EIA Report), the borrow pit search area is anticipated to deliver approximately 24,847 m^3 of aggregate.

The total length of access tracks required for the Development is estimated at 13,710 m, of which 9,677 m will be newly constructed tracks and 4,034 m of existing track is to be upgraded. Tracks will be of an average width of 5.5 m, therefore the total surface area of tracks required is approximately 75,405 m^2. In addition, some areas of widened track for ALV movements as well as bell mouth junctions are required, resulting in an additional 5,282 m^2 surface area of track being required.

Additionally,

- Thirteen crane pads will require to be constructed, each has a surface area of 3,640 m^2, resulting a total surface area of 47,320 m^2. However, the crane pads will not require the 0.15m layer of imported stone over the entire area and will be limited to only the areas under the crane outrigger pads;
- Three passing bays with a combined surface area of 327 m^2;
- Two temporary Construction Compounds with a combined surface area of 2,700 m^2 will be constructed and it is anticipated that these will not require the 0.15m of imported stone; and
- The substation and BESS compounds will be constructed on an area of hardstanding which is approximately 9,150 m^2. Only the areas to provide road access will receive the 0.15m of imported stone and this equates to a total surface area of 2,648 m^2 of tracks.

Therefore, the volume of material required for a 0.15 m surface layer across all tracks and hardstandings is estimated to be 12,549 m^3. Aggregate will be transported by tipper vehicles which have a capacity of 9 m^3, therefore 1,395 vehicle loads will be required which will result in 2,790 vehicle movements.

In addition to the aggregate itself, an excavator and roller will be required on-site to process the aggregate and construct the tracks and hardstandings. Both the excavator and roller will be transported to site via HGV low-loader which will result in an additional two deliveries, or four HGV movements, at the commencement of this phase of works and a further 2 deliveries, or 4 HGV movements, at the end of this phase.

Other miscellaneous deliveries will be required throughout this phase for drainage materials, and geotextiles for example. This is estimated to result in an additional 2 deliveries per month, or 10 deliveries in total or 20 HGV vehicle movements over the 8-month period for this element of works.

Table 13.13 sets out the anticipated number of vehicle movements associated with access track and hardstanding construction.

Table 13.13: Anticipated Vehicle Movements - Access Track and Hardstanding Construction

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Plant	HGV Low Loader (Excavators/Rollers)	5,12	8	4
Miscellaneous	HGV	5-12	20	2
Material Deliveries	HGV	5-12	2,790	349
Overall			**2,818**	**355**

13.6.4 Control Building and Substation Construction, including BESS

Material for construction of the substation and battery compound hardstanding has been accounted for in Section 13.6.3. This section will therefore consider above ground material only.

Concrete will be required to be imported for construction of the substation building. This is assumed to require 10 HGV concrete wagon loads, resulting in 20 movements. An additional 40 HGV loads have been assumed for the delivery of the control building electrical components and switchgear battery energy storage system (BESS) containers and inverters, resulting in a further 80 HGV movements.

Two external transformers will require to be delivered by ALV due to their weight. Following delivery of components, the ALVs will retract to the size of an HGV for the return journey. This will result in four vehicle movements, 2 ALV movements and 2 HGV movements. Two escort vehicles are assumed to accompany each ALV resulting in eight vehicle movements.

Table 13.14 indicates the number of vehicles associated with the construction of the substation.

Table 13.14: Anticipated Vehicle Movements - Substation Construction

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Electrical Components and Switchgear Delivery, BESS Delivery	HGV	11-14	80	20
Transformer Delivery	ALV	14	2	2
	HGV	14	2	2
	Escort Car/Van	14	8	8
Concrete for Control Building	HGV Concrete Wagon	11-13	20	7
Overall			**112**	**39**

13.6.5 Electrical Cabling Delivery

Electrical cabling for wind farm power distribution will require to be delivered and will constitute 36 HGV movements over the period of delivery. Table 13.15 indicates the number of vehicle movements associated with electrical cabling delivery.

Table 13.15: Anticipated Vehicle Movements - Electrical Cabling Delivery

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Electrical Cabling Delivery	HGV	11-14	36	9

13.6.6 Turbine Foundation Construction

Each turbine foundation will require up to 750 m^3 of concrete. In order to assess the worst-case scenario, it has been assumed that each turbine foundation will be formed from imported ready mix concrete.

Assuming a volumetric capacity of 6 m^3 per concrete wagon, approximately 125 ready-mix HGV loads would be required to supply the required concrete for each foundation, resulting in 250 vehicle movements per foundation or 3,250 movements in total for foundation pouring.

Concrete delivery would occur over a 10-month period, however, each foundation is required to be poured over a continuous (approximately) 10-hour period. Foundations would be poured on non-consecutive days during this period of works with 13 days of foundation pouring required to deliver concrete for the 13 turbines. Therefore, on concrete pouring days, 250 HGV vehicle movements will be experienced in addition to the deliveries experienced for other concurrent elements of work.

It is acknowledged that potentially two pours may occur in the same month as detailed in Appendix 13.1. However, these will be programmed not to occur on consecutive days during any monthly period.

In addition to concrete, steel rebar will have to be imported. It is assumed that up to 4 HGV loads per turbine will be required, therefore 52 loads will be required for the 13 turbines resulting in 104 vehicle movements. Rebar will be delivered prior to the commencement of foundation pouring and would be spread throughout the concrete delivery period.

Table 13.16 indicates the anticipated number of two-way vehicle movements associated with turbine foundation construction.

Table 13.16: Anticipated Vehicle Movements - Turbine Foundation Construction

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Concrete Delivery	Ready Mix HGV	10-17	3,250+	500+
Rebar	HGV	9-16	104	13
Overall			**3,354**	**500**

+ Maximum of 2 foundation pours in any month assumed.

13.6.7 Crane Delivery

During the construction phase, two cranes are typically required to install the turbines, consisting of a larger 800 – 1000 tonne main crane and a secondary 400 – 500 tonne tailing crane plus potentially smaller ancillary cranes typically 120 tonne and or telehandlers for generally offloading and turbine component preparation. The crane will be transported in component form and assembled on the Site. This will require approximately 52 HGV movements to be undertaken prior to the commencement of turbine delivery. The pilot crane will be self-propelled although will constitute an ALV due to its weight.

The crane will remain on-site for the duration of the turbine assembly phase. Table 13.17 indicates the number of vehicle movements associated with crane delivery.

Table 13.17: Anticipated Vehicle Movements - Crane Delivery

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Crane	HGV	17,22	52	26
	Abnormal Load Vehicle**	17,22	2	1
	Escort Car/Van	17,22	8	4
Overall			**62**	**31**

13.6.8 Turbine Delivery

Turbines will be delivered as separate components, the majority of which will require transportation via ALV. The towers will be transported in three separate sections and each blade will be transported individually. Up to six further abnormal load vehicles will be required to transport the nacelle, tower section and hub. Therefore, it is assumed 117 ALV deliveries will be required for 13 turbines. Following delivery of components, the ALVs will retract to the size of a standard HGV for the return journey resulting in 234 vehicle movements.

Escort vehicles will be required to accompany each ALV at a rate of two per vehicle which will result in a worst-case of 468 additional vehicle movements. In practice, this figure may be reduced where ALVs approach the Site in convoy and fewer escort vehicles per ALV are required.

Two HGV vehicle movements will be required for the delivery of turbine accessories and ancillary equipment per turbine. Table 13.18 indicates the number of vehicle movements that are expected for turbine delivery.

Table 13.18: Anticipated Vehicle Movements - Turbine Delivery

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Turbine Components	ALV	18-21	143	72
	Escort Car or Van	18-21	468	117
	HGV	18-21	143	36
Ancillary Equipment	HGV	18-21	26	7
Overall			**780**	**232**

13.6.9 Commissioning

Materials will be delivered to the Site during the commissioning phase of the construction period. Table 13.19 indicates the number of vehicle movements associated with this phase.

Table 13.19: Anticipated Vehicle Movements - Commissioning

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Material Delivery	HGV	23,24	20	10
	Car or Van	23,24	80	40
Overall			**100**	**50**

13.6.10 Fuel Delivery

Fuel will require regular delivery to the Site regularly throughout the construction period and is expected to total 3 HGV fuel tanker deliveries per week, resulting in 6 vehicle movements per week or 24 vehicle movements per month from site mobilisation; totalling 528 vehicle movements over the duration of construction. Table 13.20 indicates the number of vehicle movements associated with fuel delivery.

Table 13.20: Anticipated Vehicle Movements – Fuel Delivery

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Fuel Delivery	HGV Fuel Tanker	3–24	528	25

13.6.11 Construction Personnel and Staff

It is estimated that during the peak period of construction, approximately 100 staff will be required onsite per day, and this would reduce to around 30 staff during the non-peak period. For the purposes of this assessment, the most recent available Scottish private vehicle occupancy[390] rate of 1.57 people per vehicle was used, equating to 64 vehicles during the peak period and 20 vehicles during the non-peak period. This equates to 128 movements per day during the peak period and 40 movements per day during the non-peak period.

[390] The Scottish Government (2020) Transport and Travel in Scotland 2020 [Online] Available at: https://www.transport.gov.scot/media/50980/transport-and-travel-in-scotland-2020-results-from-the-scottish-household-survey-pdf-version.pdf/ (Accessed 02.10.23)

Assuming 26 workdays per month, this will result in 3,328 movements per month during the peak period and 1,040 movements per month during the non-peak. A total of 54,912 vehicle trips for staff over the course of the Development's construction.

Staff will be encouraged to car share, so it is anticipated that the figure for car or van movements is likely to be considerably lower than the above estimates in practice.

Table 13.21 indicates the number of vehicle movements associated with staff.

Table 13.21: Anticipated Vehicle Movements – Staff

Operation	Vehicle Type	Construction Months	Total Movements	Maximum Monthly Movements
Staff	Car or Minibus	3-24	**54,912**	3,328

13.6.12 Summary

Table 13.22 provides a summary of all deliveries expected throughout duration of construction.

Table 13.22: Anticipated Vehicle Movements – Summary

Operation	Vehicle Type	Construction Months	Total	Max Monthly
Forestry				
Forestry Plant Delivery	HGV	1,3	20	10
Timber Extraction	HGV	1-3	1,000	333
Fuel Delivery	HGV Tanker	1-3	48	16
Sub-Total			**1,068**	**359**
Site Mobilisation/Demobilisation				
Site Mobilisation/ Demobilisation	Car or Minibus	3-4,24	32	16
Site Mobilisation/ Demobilisation	HGV	3-4,24	120*	60*
Water Delivery	HGV	3-24	352	16
Subtotal			**504**	**92**
Access Track and Hardstanding Construction				
Plant	HGV Dump Truck	5-12	8	4
	HGV Low Loader (Excavators/Rollers)	5-12	20	3
Material Deliveries	HGV	5-12	2,790	349
Subtotal			**2,818**	**355**
Turbine Foundation Construction				
Concrete Delivery	HGV Concrete Wagon	10-17	3,250+	500+
Rebar	HGV Low-Loader	9-16	104	13
Subtotal			**3,354**	**500**
Control Building Substation and Battery Storage				
Electrical Components and Switchgear Delivery, BESS Delivery	HGV	11-14	80	20
Transformer Delivery	ALV	14	2	2

Operation	Vehicle Type	Construction Months	Total	Max Monthly
	HGV	14	2	2
	Escort Car/Van	14	8	8
Concrete for Control Building	HGV Concrete Wagon	11-14	20	7
Subtotal			112	39
Electrical Cabling Delivery				
Electrical Cabling Delivery	HGV	11-14	**36**	**9**
Subtotal			**36**	**9**
Crane Delivery				
Crane	HGV	17,22	52	26
	Abnormal Load Vehicle**	17,22	2	1
	Escort Car/Van	17,22	8	4
Subtotal			**62**	**31**
Turbine Delivery				
Turbine Components	ALV	18-21	117	29
	Escort Car or Van	18-21	468	117
	HGV	18-21	117	29
Ancillary Equipment	HGV	18-21	26	7
Subtotal			**728**	**182**
Commissioning				
General Delivery	HGV	23,24	20	10
General Delivery	Car or Van	23,24	80	40
Subtotal			**100**	**50**
Fuel Delivery				
Fuel Delivery	HGV Fuel Tanker	3-24	**528**	**24**
Subtotal			**528**	**24**
Staff				
Staff	Car or Minibus	3-24	**54,912**	**3,328**
Subtotal			**54,912**	**3,328**
Totals			**Total**	**Max Monthly**
Total HGV and Abnormal Load Movements			8,714	944
Total Car and Van Movements			55,508	3,445
Overall Total			**64,222**	**4,272*** **

* Includes transporter vehicle leaving and then returning to site during demobilisation

**Self-propelled vehicles which arrive in one month and depart in another

***Total flow in peak month

+Assumes two pours per month.

13.7 Assessment of Potential Effects

13.7.1 Traffic Generation

A detailed breakdown of the distribution of vehicle movements in each month and by element of work, throughout the construction period of the Development, is included in Appendix A13.1. The peak month from a traffic perspective was identified and used to predict the traffic increase along the construction traffic route. A worst-case scenario was assumed in which all predicted traffic passes each location within the study.

Due to the nature of foundation pouring, i.e., all concrete for one pour will be delivered within a single day, it is not appropriate to distribute this traffic across the month. Instead, a calculation of the traffic flow increases on the 13 non-consecutive days of concrete pouring, and on days during the peak month with no concrete pouring, has been made.

From inspection, the peak months for vehicle flow are expected to be Month 11 where 3,772 vehicle movements (excluding concrete delivery) per month are predicted. Assuming a 26-day working month, a maximum of 145 vehicle movements per day are predicted on non-concrete pouring days while a maximum of 395 vehicle movements per day are expected on concrete pouring days.

Table 13.23 details the anticipated vehicle flow in the peak month on days with no concrete deliveries and the percentage increase above the predicted baseline at each point within the Study Area. For the purposes of this assessment, 26 working days per month has been assumed for all daily traffic calculations.

Table 13.23: Predicted Peak Month Average Daily Traffic (Non- Concrete Delivery) General Construction Traffic Route

Traffic Count Location/Link	Total Vehicle Movements			HGV Movements Only*		
	2026 Baseline	Baseline + Development	Increase (%)	2026 Baseline	Baseline + Development	Increase (%)
1: A85 near Taynuilt, DfT Point ID: 80339	4,272	4,417	3.4%	333	351	5.1%
2: A85 near Clifton, DfT Point ID: 10845	1,586	1,731	9.1%	126	143	13.6%
3: A85 near Arrivain, DfT Point ID: 30775	1,826	1,972	7.9%	180	197	9.5%
4: A83 near Auchnabreac, DfT Point ID: 10765	2,627	2,772	5.5%	274	291	6.2%
5: A819 N	1,231	1,376	11.8%	213	230	8.0%
6: A819 S	1,322	1,467	10.9%	200	217	8.5%

*For the purposes of this estimation abnormal load vehicles are included in HGV.

Table 13.24 details the anticipated vehicle flow in the peak month on days where concrete deliveries will take place; this will occur on a maximum of 13 non-consecutive days over the eight-month period of this phase or works. Therefore, it is anticipated there would be two concrete pouring days in some months between months ten and seventeen.

Table 13.24: Predicted Peak Month Average Daily Traffic (During Concrete Delivery) General Construction Traffic Route

Traffic Count Location/Link	Total Vehicle Movements			HGV Movements Only*		
	2026 Baseline	Baseline + Development	Increase (%)	2026 Baseline	Baseline + Development	Increase (%)
1: A85 near Taynuilt, DfT Point ID: 80339	4,272	4,667	9.2%	333	601	80.1%
2: A85 near Clifton, DfT Point ID: 10845	1,586	1,981	24.9%	126	393	212.1%
3: A85 near Arrivain, DfT Point ID: 30775	1,826	2,222	21.6%	180	447	148.1%
4: A83 near Auchnabreac, DfT Point ID: 10765	2,627	3,022	15.0%	274	541	97.5%
5: A819 N	1,231	1,626	32.1%	213	480	125.2%
6: A819 S	1,322	1,717	29.9%	200	467	133.4%

*For the purposes of this estimation abnormal load vehicles are included in HGV.

As detailed in the assessment methodology, a screening exercise was undertaken in order to determine which locations warrant detailed assessment.

The lower threshold of significance was considered appropriate for those locations with identified high sensitive receptors, i.e., location references 1, 3, and 4.

The upper threshold of significance was considered appropriate for other locations within the study, which applies to location reference 2, 5 and 6.

Table 13.23 and Table 13.24 above shows that on concrete delivery days, HGV traffic is predicted to exceed both thresholds at the count locations within the Study Area and therefore further assessment is required, as detailed below.

As detailed in the assessment methodology, when considering increases in traffic on roads with a low baseline traffic flow, it is important to consider the overall and residual capacity of the road in question. The theoretical road capacity for the A83(T) and the A85(T) detailed in Table 13.8 shows that these roads are capable of accommodating 1,200 vehicles per hour per direction or 57,600 vehicle movements per day (VMPD). The total number of vehicle movements, including baseline and predicted construction traffic, per day predicted during this phase on locations 1, 2, 3 and 4 are 4,667 VMPD, 1,981 VMPD, 2,222 VMPD and 3,022 VMPD respectively.

It can be seen that there is significant residual capacity on this route to accommodate the temporary increase in HGV traffic, in addition to the above, it is important to note that the scenarios assessed are worst-case for each road link in which all traffic is assumed to pass each traffic count location identified, however these traffic effects could not occur simultaneously i.e., an increase in construction traffic on one road link results in an equivalent decrease in road traffic on the other road links.

Given that the A85(T) and A83(T)) will remain significantly below its theoretical capacity during the identified period and the period of concrete pouring comprises a small number of days during construction, the effect of construction on traffic generation on these roads will result in a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of increased traffic on this route is minor and **not significant** in the terms of the EIA Regulations.

With regards to the A819, the theoretical capacity of this road is 43,200 VMPD respectively. The absolute flow levels expected during the peak period on locations 5 and 6 are 1,626 VMPD and 1,717 VMPD (on concrete delivery days), therefore it is clear that A819 will remain significantly

below its theoretical capacity. In addition to this, the predicted increase is temporary and would be reversed following completion of construction of the Development, therefore the effect of construction on traffic generation on the A819 will result in a negligible magnitude of change on a receptor of medium sensitivity. Thus, the effect of increased traffic on this route is negligible and **not significant** in the terms of the EIA Regulations.

13.7.2 Severance

Severance occurs in a community when a major road separates people from places and other people. Severance occurs from difficulty of crossing a road or where the road itself creates a physical barrier. Severance can be caused to pedestrians and motorists. The A819, A83 and the A85 all pass through settlements and have the potential to be affected by severance.

With respect to the A83(T) and the A85(T), guidance set out in Section 13.3.6.2 identifies that increases in total traffic volumes of under 30% could result in a negligible impact upon severance.

It is acknowledged that HGV traffic at locations identified on these roads (which presents the worst case) is predicted to increase to over 70% on concrete delivery days which may be considered as significant, however, professional judgment must be applied. With the A83(T) and A85(T) being major road (trunk road status) routes serving these settlements, it is likely that temporary increases in HGV traffic are not uncommon. It should be noted these increases would only occur during the concrete delivery days (as a worse case, 13 non consecutive days out of a total of circa 572 days) and would likely be within the existing daily variation in traffic flow on the route. Outside this phase of works, HGV levels (and total traffic) are not predicted to exceed the threshold of significance at all locations, therefore the change in traffic is temporary, fully reversible and would only occur during construction hours.

Therefore, when considering the link sensitivity and magnitude of impact, the effect of construction on severance on locations on the A83(T) and the A85(T) results in a negligible magnitude of change on receptors of high sensitivity. Thus, the effect of increased traffic on severance is minor and **not significant** in terms of the EIA Regulations.

With respect to the A819 (Location 6), the town of Inveraray is located at the southern end of the A819. It is acknowledged that HGV traffic at locations identified on these roads (which presents the worst case) is predicted to increase to over 90% on concrete delivery days which may be considered as significant, however, professional judgment must be applied.

The increase is primarily due to the low baseline traffic flow on the A819, and as detailed in Table 13.8, the A819 will operate well within its theoretical link capacity with the additional vehicle movements associated (including on concrete delivery days). Secondly, this increase would only occur during the concrete delivery days (as a worse case, 13 non consecutive days out of a total of circa 572 days) and would likely be within the existing daily variation in traffic flow on the route. As with other routes in the Study Area, outside this phase of works, HGV levels (and total traffic) are not predicted to exceed the threshold of significance at Location 6 on the A819, therefore the change in traffic is temporary, fully reversible and would only occur during construction hours.

Therefore, when considering the link sensitivity and magnitude of impact, the effect of construction on severance on locations on the A819 results in a negligible magnitude of change on receptors of high sensitivity. Thus, the effect of increased traffic on severance is minor and **not significant** in terms of the EIA Regulations.

That notwithstanding in order to sufficiently minimise any adverse effect on Severance on these routes, a number of measures are proposed in Section 13.9 which will be adopted as part of the Construction Traffic Management Plan (CTMP) that will be developed for the Development post consent.

13.7.3 Pedestrian Amenity

Pedestrian amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, pavement width and separation between vehicles and pedestrians or cyclist. Thresholds set out in the IEMA (1993) guidelines identifies that doubling or halving of the total traffic or HGV traffic volumes could lead to perceptible change upon pedestrian or cyclist amenity.

It is evident that the change in total traffic (or HGV component) associated with the Proposed Development is greater than 90% (high) at all locations with the exception of count Location 1 on the A85(T) where the change in traffic is between 60% and 90% (moderate). With respect to locations on the A83(T) and the A85(T), the link sensitivity is classed as high and whilst the overall effect at these locations results in a moderate effect (significant), professional judgement must be applied.

- The A83(T) and the A85(T) do not have pedestrian footways, except where they pass through settlements where footways, pedestrian guard rails and crossing points are available.
- Secondly, it should be noted these increases would only occur during the concrete delivery days (13 non consecutive days out of a total of circa 572 days) and outside this phase of works, the magnitude of predicted change in total traffic (or HGV component) is negligible (Table 13.4).

Considering the above, the overall magnitude of change can be reduced to negligible, therefore, when considering the link sensitivity and magnitude of impact, the effect of construction on pedestrian amenity on locations on the A83(T) and A85(T) results in a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of increased traffic on pedestrian amenity is minor and **not significant** in terms of the EIA Regulations.

With respect to the A819 (Location 6), it is evident that the change in total traffic (or HGV component) associated with the Development is greater than 90% (high). Whilst the overall effect results in a moderate effect (significant), there is a need for professional judgement to be applied. These increases are primarily due to the very low number of existing vehicles using the A819 and as detailed in Table 13.8, these roads would operate well within their theoretical link capacity with the additional vehicle movements associated (including on concrete delivery days). Additionally, it should be noted these increases would only occur during the concrete delivery days (13 non consecutive days out of a total of circa 572 days) and on non-concrete delivery days, the magnitude of predicted change in total traffic (or HGV component) is negligible (Table 13.4).

Considering the above, the overall magnitude of change can be reduced to negligible, therefore, when considering the link sensitivity and magnitude of impact, the effect of construction on pedestrian amenity on locations on the A819 is a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of increased traffic on pedestrian amenity is minor and **not significant** in terms of the EIA Regulations.

That notwithstanding in order to sufficiently minimise any adverse effect on Pedestrian Amenity, a number of measures are proposed in Section 13.9 which will be adopted as part the CTMP to be developed for the Proposed Development post consent.

13.7.4 Driver Delay

Delays mostly occur at junctions that operate close to capacity due to increase in traffic flows particularly during peak periods or the passage of slower moving vehicles such as HGVs. No sensitive junctions in terms of capacity constraints have been identified and referring to the theoretical road capacities given in Table 13.8, even with the additional traffic during concrete pouring days all roads on the route to site remain well within capacity. The effect of general increase in traffic on driver delay results in a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of increased traffic on driver delay is minor and **not significant** in terms of the EIA Regulations.

Some driver delay can be expected to occur on routes due to the slow movement of ALVs between the port of delivery and the Site. Where safe to do so ALVs will occasionally stop to allow traffic to pass if necessary. A total of 120 ALVs associated with turbine delivery, two associated with the crane delivery and two associated with transformer delivery for the substation are anticipated. These are all one-way movements as the return journeys constitute standard HGV trips. These will be distributed throughout the duration of specific elements of works.

Due to the overall limited number of loads across the construction programme and the short-term nature of this phase of works, which will be managed with communication with the local community which is to form part of the CTMP as best practice, the anticipated effect of abnormal loads on driver delay results in a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of abnormal loads on driver delay is minor and **not significant** in EIA terms.

13.7.5 Accidents and Safety

For the assessment of effects on accidents and safety, the receptor is the safety of the road network. An increase in traffic on any particular route theoretically has the potential to increase the risk of accidents occurring. However, there are no general thresholds for determining the significance of increased traffic on road safety. Indeed, this is confirmed by the IEMA (1993) guidelines which note that road accidents are attributable to a variety of local factors and as such do not provide a threshold to determine significance. As such judgement and discretion on the part of the assessor is required to determine any detrimental effects associated with the traffic generated by the Development.

As detailed in Section 13.4.3, no RTC hotspots were identified within the study area within the last 5 years, therefore the sensitivity of the receptor to changes in accidents is 'medium'. It has therefore been concluded that these roads are operating within acceptable safety parameters at present and in the absence of identifiable trends in RTCs or known accident hotspots, an increase in overall traffic flow or HGV composition is not sufficient to affect a change in safe operation of the road network. It was also determined that as any ALV movements will be carried out under escort and outside of peak hours, therefore, the risk of RTCs during these movements would be negligible, hence the overall magnitude is low.

The temporary increase in overall traffic and HGVs for the duration of the construction of the Development will not result in an adverse effect in respect to accidents and safety. Therefore, the effect of construction on accidents and safety results in a negligible magnitude of change on a receptor of medium sensitivity. Thus, the effect of increased traffic on accidents and safety is negligible and **not significant** in terms of the EIA Regulations.

13.7.6 Noise and Vibration

Assessment of noise and vibration effects as a result of offsite construction vehicle movements has been considered using the guidance contained in DMRB – LA 111[391]. In accordance with the guidance, the following points have been noted when considering the need for a quantitative assessment of offsite construction traffic noise and vibration:

- The level of detail of a noise and vibration assessment shall be proportionate to the quality of data available and the risk of likely significant effects occurring; and
- Are there any noise sensitive receptors where there would be a reasonable stakeholder expectation that a construction noise/vibration assessment would be undertaken?

It should be noted that construction noise and vibration effects, and operational noise effects are considered in Chapter 12: Noise.

[391] Department for Transport (May 2020). Design Manual for Roads and Bridges – LA 111 Noise and Vibration. Available at: https://www.standardsforhighways.co.uk/dmrb/search?q=noise&pageNumber=1. (Accessed 02.10.23)

Considering the off-site transport related noise/vibration effects against the above bullet points, there are a number of sensitive receptors located close to the proposed general construction traffic route. However, this route is an established transport corridor, and there should be an expectation that it is used by HGV traffic. Therefore, there is no 'reasonable stakeholder expectation' that a quantitative noise/vibration assessment be undertaken for a temporary and fully reversible change in traffic flow as a result of the Development.

Furthermore, ground-borne vibration resulting from HGV and ALV movements is generally only likely to be significant where vehicles traverse discontinuities, such as rough surfaces (including potholes) or speed-humps. Effects from the temporary increase in traffic are therefore only likely to be experienced at receptors located next to such road defects, in which case the maintaining authority (i.e., the Council, or Transport Scotland) would be responsible for enacting repairs.

Airborne vibrations resulting from low frequency sound emitted by vehicle engines and exhausts can result in detectable vibrations in building elements such as windows and doors and cause disturbance to local people. Due to the short-term and temporary nature of these increase in traffic movements, the effect of noise and vibration upon receptors along the route results in a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of increased in traffic movement on noise and vibration are minor and **not significant** in terms of the EIA Regulations.

13.7.7 Hazardous Loads

Fuel will be regularly transported to the Site over the duration of construction of the Development. All fuel will be transported by suitably qualified contractors, and all regulations for the transportation and storage of hazardous substances will be observed. No other hazardous substances in significant quantities are expected to be transported to Site. The route to site is likely to experience transportation of hazardous substances already to nearby developments. Therefore, the effect of the transportation of hazardous substances is considered to result in a negligible magnitude of change on a receptor of high sensitivity as a worse case. Thus, the effect of hazardous load is considered minor and **not significant** in terms of the EIA Regulations.

13.7.8 Air Quality

Maintaining good local air quality is essential for the human health and overall quality of life for people living in the area. Road transport accounts for a significant proportion of emissions of a number of pollutants including carbon dioxide (CO_2), nitrogen dioxide (NO_2), and particulate matter (PM10). Nitrogen oxide emissions are also of concern for nearby vegetation and ecosystems.

Current guidance in the Design Manual for Road and Bridges[392] on matters relating to air quality in Volume 11 Section 3 and advises that significant impacts to local air quality may be found in the following cases:

- Where the road alignment will change by 5 m or more; or
- Daily traffic flows will change by 1,000 AADT flow or more; or
- Heavy Duty Vehicle flows will increase by 200 AADT or more; or
- Daily average speed will change by 10 km/hr or more; or
- Peak hour speed will change by 20 km/hr or more.

Based on the estimated volume of construction traffic, none of the above criteria have been met or exceeded. In addition, the Development, including access routes are not located within an Air Quality Management Area and due to the temporary nature of the increase in vehicles using the proposed access route, any effects on local air quality will be short term and reversible.

Therefore, the effect of the increase in traffic on local air quality results in a negligible magnitude of change on a receptor of high sensitivity. Thus, the effect of increased traffic on air quality is minor and **not significant** in terms of the EIA Regulations.

[392] Design Manual for Road and Bridges – LA 105 Air Quality [Online] Available at: https://www.standardsforhighways.co.uk/search/10191621-07df-44a3-892e-c1d5c7a28d90. (Accessed 02.10.23)

13.8 Cumulative Effect Assessment

Cumulative traffic effects can only occur where the construction phase of a nearby development, which shares a common construction programme and access route to site for construction traffic, overlaps with that of the Development. Proposed developments which have the potential to result in cumulative traffic and transport effects are:

- Blarghour Wind Farm (17 turbines); and
- An Carr Dubh Wind Farm (26 turbines).

In order to assess the cumulative effect of the possible simultaneous construction on the local road network, the peak traffic period for the above developments has been combined to give an overall peak traffic estimate. The assessed peak traffic flow levels for each development have been taken from their respective EIA Reports or Transport Statements.

Table 13.25 indicates the anticipated total traffic (including baseline) and the percentage increase above baseline in the worst-case cumulative scenario.

Table 13.25: Predicted Peak Month Average Daily Traffic (Non-Concrete Delivery) General Construction Traffic Route

Traffic Count Location/Link	Total Vehicle Movements			HGV Movements Only*		
	2026 Baseline	Baseline + Development	Increase (%)	2026 Baseline	Baseline + Development	Increase (%)
A85 near Taynuilt, DfT Point ID: 80339	4,272	4,573	7.0%	333	427	27.9%
A85 near Clifton, DfT Point ID: 10845	1,586	1,887	19.0%	126	219	73.9%
A85 near Arrivain, DfT Point ID: 30775	1,826	2,128	16.5%	180	273	51.6%
A83 near Auchnabreac, DfT Point ID: 10765	2,627	3,053	16.2%	274	444	62.1%
A819 N	1,231	1,711	39.0%	213	383	79.8%
A819 S	1,322	1,802	36.3%	200	370	85.0%

As indicated in Table 13.25, the addition of all construction traffic from the identified cumulative developments results in a worst-case increase of 90% on the A819, for overall flow, over baseline flow.

Traffic relating to the delivery of concrete during foundation pours has not been included as it is assumed that these events will be timed to ensure they do not coincide. It is unlikely that the local capacity for concrete production could accommodate several pours coinciding in any case.

In reality, it is unlikely that the peak construction period associated with another wind farm development in the area would overlap with the peak construction period of the Development as the applications are at different stages in the planning process and each development has varying lengths of construction period as well as potentially different grid connection dates.

The high traffic generating activities, such as the importation of stone and concrete, only occur over a few months of the whole construction period for each development. It is unlikely that the local capacity for concrete and stone production could supply several developments at once, therefore, high traffic generating activities would naturally be staggered.

Furthermore, implementation of a Construction Traffic Management Plan (CTMP) for each development would ensure that there are open lines of communication with Argyll and Bute Council, other local authorities where committed developments are located, Police Scotland,

Transport Scotland, other stakeholders, and wind farm developers to monitor the progress of the construction stages.

This process would flag whether construction HGV traffic is reaching unacceptable levels and would ensure that action is taken accordingly to minimise effects. For these reasons the impact is expected to be significantly lower than stated in Table 13.25.

It should be noted that although all locations identified within the study area would see an increase in HGV traffic levels if a worst-case scenario were to occur, all roads are good standard single carriageway roads (in particular the A85(T) and the A83(T) having trunk road status) with a high level of residual capacity which will not be breached. All the roads are currently well used by HGVs including forestry vehicles, and it is considered that these roads can suitably accommodate short term and temporary increases in traffic flow.

Therefore, the impact on traffic and transport due to cumulative effects to results in a negligible magnitude of change on a receptor of high sensitivity. Thus, the cumulative effect upon receptors along the route is minor and **not significant** as per the EIA Regulations.

13.9 Mitigation and Residual Effects

13.9.1 Mitigation Measures

Although no significant effects on the surrounding road network have been identified as a result of construction of the Development, mitigation measures are proposed in relation to pedestrian amenity and severance in order to ensure disruption to these effects is sufficiently minimised. The measures outlined below will form part of the CTMP which would be agreed in consultation with Transport Scotland and the Council and finalised post consent:

- As far as reasonably possible, deliveries should be scheduled outside of school opening and closing times;
- Drivers of all delivery vehicles to be made aware during induction of the presence of schools and other amenities within these settlements;
- Drivers to be reminded of the presence of 20mph temporary speed restrictions on the main roads outside of these schools and that a strict adherence to these speed limits is expected of all wind farm personnel;
- Delivery times will be scheduled to ensure that deliveries do not arrive in a convoy;
- Timing of the deliveries will be outlined within the CTMP to ensure construction vehicles avoid potentially congested networks at peak hours;
- Communications with local communities should be undertaken for planned activities such as turbine deliveries and concrete delivery days (if onsite batching is not possible).
- Drivers of all delivery vehicles will be made aware of the approved route to the Site and any restrictions. Drivers of HGVs and other vehicles will be made aware that only the approved route is to be used and that access from non-approved routes is prohibited;
- Prior to the commencement of construction, the Principal Contractor will install temporary construction phase signage on the approved route to Site to warn people of construction activities and associated construction vehicles. Pedestrian and road user safety will be enhanced via the installation of signage and the maintenance of sight lines;
- The Principal Contractor will develop a logistics plan highlighting the access point for the Proposed Development, loading bay, pedestrian / vehicular segregation, welfare, storage, security and material handling that would be enforced following full Development Area establishment;
- To ensure that deliveries do not arrive in a convoy, the construction material 'lay down' areas will allow for a staggered delivery schedule throughout the day, avoiding peak and unsociable hours (i.e., before 06:00 and after 22:00);
- Under no circumstances will HGVs be allowed to lay-up in surrounding roads. All personnel in the team will be in contact with each other and with Site management, who in turn will have mobile and telephone contact with the subcontractors;

- The Principal Contractor would liaise with other developers and relevant stakeholders to ensure that potentially significant impacts due to cumulative effects are avoided; and
- Roads will be maintained in a clean and safe condition. A wheel washing facility would be installed on-site during the construction period in order to reduce mud and debris being deposited onto the local road network.

The Council may require that a road condition survey to be undertaken on the access routes used during the construction phase as a condition of granting consent to the Proposed Development. This will be undertaken prior to the start of the construction phase to record the existing road conditions. The survey area and methodology will be agreed with the Council prior to the commencement of construction. Any deterioration in road condition, which is agreed as attributable to construction traffic associated with the Proposed Development will be restored to at least the same standard upon completion of construction. This process will ensure that there are no significant residual adverse effects on the condition of the local road network as a result of the movement of construction vehicles.

An Abnormal Indivisible Load Route Survey (Technical Appendix 13.1) has been undertaken to identify areas where remedial works including the removal or relocation of street furniture, road widening etc will be required to permit the safe transportation of larger wind turbine components to the Site. The required road improvements would be carried out in agreement with the Council through the appropriate road works licensing process to ensure that during delivery of turbine components minimal damage is caused to road surfaces, verges, street furniture and surrounding vegetation.

13.9.2 Residual Effects

It is considered that if the above mitigation measures are implemented through the CTMP for the duration of construction, the effect on increased traffic on traffic generation at the sensitive receptors identified will be reduced to negligible and therefore considered as **not significant** in terms of the EIA Regulations.

13.10 Summary of Effects

Table 13.26 provides a summary of the effects detailed within this chapter.

Table 13.26: Summary of Effects

Receptor	Potential Effect	Significance of Effect	Mitigation Proposed	Residual Effect
Construction Phase				
Road network	Traffic Generation	Minor	The CTMP will set out a phasing and timing strategy for construction traffic movements. Where necessary construction traffic movements will be reduced during periods of increased baseline traffic.	Negligible, Not Significant
Road network	Accidents and Safety	Negligible	The CTMP which would be agreed in consultation with the Council and finalised post consent will include measures to enhance existing road safety conditions during the construction phase.	Negligible, Not Significant
Non-motorised Users	Pedestrian Amenity	Minor	The CTMP which would be agreed in consultation with the Council and finalised post consent will set out a phasing and timing strategy for construction traffic movements. Where necessary construction traffic movements will be reduced during periods of increased pedestrian activity.	Negligible, Not Significant

Receptor	Potential Effect	Significance of Effect	Mitigation Proposed	Residual Effect
Construction Phase				
Road network	Driver Delay	Minor	The CTMP will set out a phasing and timing strategy for construction traffic movements. Where necessary construction traffic movements will be reduced during periods of increased baseline traffic.	Negligible, Not Significant
Settlements along route	Severance	Minor	The CTMP will set out a phasing, timing, and routing strategy for construction traffic movements. Where necessary construction traffic movements will be reduced during periods of increased baseline traffic.	Negligible, Not Significant
Road network and Settlements along route	Noise and Vibration	Minor	N/A	Negligible, Not Significant
Road network and Settlements along route	Hazardous Loads	Minor	N/A	Negligible, Not Significant
Settlements along route	Air Quality	Minor	N/A	Negligible, Not Significant
Road Users and Settlements along route (Abnormal Load Movements)	Combined effect of the above	Minor	Advance warning signs will be posted prior to abnormal load movements. Abnormal load movements will be scheduled to avoid periods of increased baseline traffic as well as school opening and closing periods. All abnormal load movements will be fully escorted to warn on-coming vehicles and advise other road users	Negligible, Not Significant

13.11 Statement of Significance

Effects on traffic and transport resource are considered to be significant for the purposes of the EIA Regulations where the effect is classified as being of 'major' or 'moderate' significance. Effects on receptors identified within the Study Area have been assessed as minor, except for effects on road accidents and safety which is assessed as negligible. However, further mitigation has been provided to ensure the safe usage of the road network throughout construction. The residual effects following implementation of these mitigation measures are predicted to be negligible and thus **not significant** in terms of the EIA regulations.