15. TRAFFIC AND TRANSPORT

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15. Traffic and Transport

15.1. Introduction

15.1.1. This chapter of the EIA Report evaluates the effects of vehicle movements to and from the Proposed Development Site associated with construction, operation and decommissioning phases of the Proposed Development. Vehicle movements to the Site will likely consist of abnormal load vehicles (for the delivery of turbine components), heavy goods vehicles, light goods vehicles and cars.

15.1.2. This chapter is structured as follows:

- Legislation, policy and guidance;
- Assessment methodology and significance criteria;
- Baseline conditions;
- Future baseline scenarios;
- Anticipated construction development traffic;
- Assessment of effects;
- Assessment of cumulative effects;
- Mitigation;
- Residual Effects; and
- Summary.

15.1.3. This chapter is supported by Appendix 15.1 Abnormal Load Route Assessment.

15.2. Legislation, Policy and Guidance

15.2.1. Table 15.1 details relevant legislation, policy and guidance documents considered during preparation of this assessment.

Table 15.1: Legislation, Policy and Guidance

Author	Title	Policy
The Scottish Government	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017	These regulations establish in broad terms what is to be considered when determining the effects of development proposals on the transport network.
The Scottish Government	Scottish Planning Policy (2014)	This provides a statement of the Scottish Government's policy on nationally important land use planning matters including renewable energy and indicates that proposals for onshore wind should consider the impact on road traffic and on adjacent trunk roads.
The Scottish Government	Planning Advice Note 75 (PAN 75) – Planning for Transport	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.

15.3. Assessment Methodology and Significance Criteria

Scope of Assessment

15.3.1. This assessment considers access, traffic and transportation effects of the Proposed Development during the construction, operational and decommissioning phases for the following:

- traffic generation;
- accidents and safety;
- driver delay;
- pedestrian amenity;
- severance;
- noise and vibration;
- hazardous loads;
- pedestrian delay;
- visual effects; and
- air quality.

Study Area

15.3.2. The Site is located approximately 5 kilometres (km) east of Carsphairn, Dumfries and Galloway.

15.3.3. 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. These take into account the local strategic / Trunk Road network, sources of labour and the potential sources of construction materials, specifically stone and concrete from local quarries.

15.3.4. No public roads are located within the Site; however, the Site Boundary is adjacent to the B729 in the south and to an unnamed public road in the east. The study area includes all routes which will be used by construction vehicles between the site and the nearest major trunk road, in this case the A77. The A77 itself will also be considered.

15.3.5. The main approach corridor considered in this assessment assumes that wind turbine components will be transported as abnormal loads from the Port of Ayr, and that the general approach route for all construction vehicles will be as follows:

- A77 Bankfield Roundabout;
- A713;
- B729; and
- Site Entrance

15.3.6. This route is indicated on Figure 15.1.

Survey Methodology

15.3.7. Baseline traffic flow conditions were established at key locations on the delivery route. Automatic traffic counts (ATCs) were undertaken at three locations on the delivery route in May 2018. Further information was gathered from

publically available traffic counts published by the Department for Transport (DfT) at one location.

15.3.8. Traffic growth between the survey date (2018 and 2016) and the anticipated commencement of construction of the Development (2021) was estimated by applying traffic growth factors from the National Trip End Model (NTEM) forecasts using the Trip End Model Presentation Program (TEMPRO). NTEM and TEMPRO are designed by the DfT, and provide forecasts of traffic growth over time for use in local and regional transport models. NTEM and TEMPRO are the industry standard tool for estimating traffic growth.

15.3.9. Baseline road conditions were established by a 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[1].

Assessment Methodology

15.3.10. The magnitude of the effect of 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 Proposed Development.

15.3.11. An initial screening exercise was undertaken to identify routes where an adverse effect could potentially occur. The Institute of Environmental Management and Assessment (IEMA) Guidelines[2] suggest two broad principles:

- 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 are predicted to increase by 10% or more.

15.3.12. 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 further detailed assessments not warranted. Consequently, where the predicted increase in traffic flow is greater than these thresholds, the effects are considered to be potentially significant and are assessed in greater detail.

15.3.13. The IEMA 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 Proposed Development.

15.3.14. 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

[1] Department for Transport (2013), Design Manual for Roads and Bridges, Volume 15
[2] Institute of Environmental Management and Assessment (1993). Guidelines for the Environmental Assessment of Road Traffic.

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.

15.3.15. 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.

15.3.16. Table 15.2 indicates the criteria used to assess the sensitivity of roads within the study area.

Table 15.2 - Receptor Sensitivity

Sensitivity	Description
High	Receptors of greatest sensitivity to changes in traffic flow, would include: People whose livelihood depends upon unrestricted movement within their environment including commercial drivers and companies who employ them, local residents, schools and colleges. Accident hotspots would also be considered.
Medium	Traffic flow sensitive receptors, would include: People who pass through the area habitually, but whose livelihood is not wholly dependent on free access. Would also typically include: congested junctions, community services, parks, businesses with roadside frontage, and recreation facilities.
Low	Receptors with some sensitivity to changes in traffic flow: People who occasionally use the road network. Would also typically include: public open spaces, nature conservation areas, listed buildings, tourist attractions, residential roads with adequate footway provision and places of worship.
Negligible	Receptors with very low sensitivity to traffic flows: People not sensitive to transport effects. Would also refer to receptors that are sufficiently distant from the affected roads and junctions.

15.3.17. The criteria used to assess the magnitude of change are presented in Table 15.3.

Table 15.33 - Magnitude of Effect

Magnitude	Description
Major	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.
Moderate	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.
Minor	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

Magnitude	Description
Negligible	No effect on movement of road traffic above normal level.

15.3.18. Criteria for assessing the significance of a given effect, considering the assessed magnitude of effect and sensitivity of relevant receptors is provided in Table 6.5 in Chapter 6.

Assumptions

Route to Site

15.3.19. It has been assumed that all construction traffic will approach the site from the west via the main approach corridor detailed in 15.3.5. Construction traffic will not approach the site from the east, through Moniave, due to the restricted geometry of the B729 in this settlement. This assumption is consistent with the consultation response received from Dumfries and Galloway Council which is detailed in 15.4.

Baseline Traffic

15.3.20. Baseline traffic flow data acquired from the DfT is not as current as that collected from the ATCs. At the DfT location on the A77 traffic flow was counted manually in 2016; this is the most recent data available. At location 4 on the A713 (**Figure 15.2**), an estimated traffic flow was provided for the year 2016. This estimate is based upon the last manual count (2008) and the application of traffic growth factors by the DfT.

15.3.21. As a result, it is possible that there are minor differences between the assessed and actual baseline traffic flows at these two locations; however, it is considered highly unlikely that this would change the outcome of the assessment.

15.3.22. The three surveyed ATC sites locations 1, 2 and 3, as shown on **Figure 15.2**, are those closest to the Site and are located on the B729 and A713. Due to the lower classification of the roads, these locations are likely to be the most critical in terms of potential effects. These sites have up to date measured baseline information; therefore, the assessment at the critical locations can be considered highly robust.

Material Import Requirements

15.3.23. For the purposes of this assessment, and in line with the conclusion of the Borrow Pit Assessment, it has been assumed that all material required for the formation of on-site access tracks and hardstandings will be won on site.

15.3.24. It has also been assumed that the quality and/or quantity of material won is not suitable for use as concrete aggregate. Therefore all concrete for turbine foundations is assumed to be imported to site as ready-mix. This assumption represents a worst case scenario, and should it prove possible to use won

material for concrete aggregate then the number of vehicle movements associated with foundations would be lower than that assessed.

Construction Vehicle Routes

15.3.25. The route to site for construction traffic is shown on **Figure 15.1**. The port of delivery for wind turbine components will be Ayr, as this is the closest port to the Site. This assessment considers routes which are to be used by all construction traffic between the site and the nearest trunk road, in this case the A77.

15.3.26. Wind turbine components, which include blades, tower sections and nacelles, will be transported by abnormal load vehicle (ALV) between the port of delivery and the site. These vehicles are able to retract to the size of a standard heavy goods vehicle (HGV) following delivery. An Abnormal Load Route Assessment (ALRA) was undertaken in order to assess the suitability of the proposed route and to detail any improvement works required to be undertaken, this is included in **Appendix 15.1** for reference.

15.3.27. In addition to wind turbine components, deliveries will be required for plant and equipment, concrete for turbine foundations, balance of plant electrical equipment and any additional aggregates which cannot be sourced from on-site borrow pits. Such deliveries are likely to be made by heavy goods vehicles (HGV).

15.4. Scoping Responses and Consultation

15.4.1. Throughout the scoping exercises, and subsequently during the ongoing EIA process, relevant organisations were contacted with regards to the Proposed Development. Table 15.4outlines the scoping consultation responses received in relation to Traffic and Transportation

Table 15.4: Scoping Consultation

Consultee	Response	Where Addressed in EIA Report
Transport Scotland	The abnormal loads assessment should assess junctions on the A77(T) in addition to those closer to the site. Trunk road environmental effects should be assessed where IEMA thresholds are breached.	An Abnormal Load Route Assessment has been undertaken and is included in Appendix 15.1 This assessment considers effects on Trunk Roads on the Delivery Route throughout this chapter.
Dumfries and Galloway Council – Council Roads Officer	Road geometry in Moniaive is severely restricted, would not be in favour of any proposal for construction traffic approaching the site from the east. Full details of any required accommodations works should be provided along with swept	Construction traffic is not proposed to approach the Site from the east in this assessment. An abnormal load route assessment has been undertaken and is included in Appendix 15.1

Consultee	Response	Where Addressed in EIA Report
	path analysis of the delivery route. Should suitable aggregate not be available on site the ES should detail tonnages and vehicle movements so that the potential impact of the importation of aggregates can be considered. A traffic management plan must be agreed with the council and Transport Scotland prior to construction,	A worst case scenario has been assumed in which all concrete for the formation of turbine foundations is imported. This assumes that no material for concrete production can be won on site. Detailed in section 15.7 of this report. A traffic management plan will be prepared Post consent, and it is anticipated to be secured via planning condition.

15.5. Baseline Conditions

Baseline Traffic Flow

15.5.1. Baseline traffic flow conditions were established by ATCs undertaken between the 4th and the 10th of May 2018 at three locations on routes near the site. Further information was collected from publically available information published by the DfT at one location for the year 2016. Traffic count locations are indicated on **Figure 15.2**.

15.5.2. Table 15.5 summarises the data collected from these sources.

Table 15.5 - Existing Average Daily Traffic (ADT)

Ref	Source	Road	Location	Total ADT	HGV ADT	HGV% of Total ADT
1	ATC	B729	North of B7000 Junction	151	55	36.5
2	ATC	B729	East of A713 Junction	144	43	29.5
3	ATC	A713	West of Carsphairn	1517	402	26.5
4	DfT	A77	North of Holmston Roundabout	22537	1206	5.4

15.5.3. The location of traffic counts were selected so as to be representative of general traffic conditions along key sections of the delivery route between the nearest major trunk road, the A77, and the site entrance. The reasoning for the selection of each of these is presented below:

- 1 - Selected to understand conditions on the B729 between its junction with the B7000 and the site entrance;
- 2 - Details conditions on the B729 west of the B7000 junction as far as the junction with the A713;

- 3 - Details conditions on the A713 west from the B729 junction. It is considered that this count location is appropriate to represent the A713 as far as the A77; and
- 4 - Details conditions on the A77. This route was assessed specifically to address the Scoping Response from Transport Scotland.

Road Capacity

15.5.4. Typical capacity values for a variety of road types are provided within the Design Manual for Roads and Bridges (DMRB)[3] in which 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 15.6 gives the estimated capacity of each of the roads within the study area.

15.5.5. East of the junction with the B7000, the B729 is of reduced width and standard. In Table 15.7, sections east and west of this junction are detailed. East of the B7000/B729 junction, the B729 road does not have any markings and is of an average width of less than 5.0 m with passing places. The theoretical capacity of single track roads is difficult to estimate and is dependent on the road geometry and the intervisibility of the passing places; however, an estimate is provided within the DMRB guidance as shown in Table 15.6.

Table 15.6 - Theoretical Road Capacities

Road	Type	Speed Limit (kph)	Capacity (veh/hour/direction)	Two-Way Hourly Flow	Two – Way Daily Flow
B729 East	Rural – Poor Single 4.0 m	96	140	280	6720
B729 West	Rural – Poor Single 5.5 m	96	800	1600	38,400
A713	Rural – Typical Single 6 m	96	900	1800	43,200
A77	Rural – Typical Single 7.3 m	96	1200	2400	57,600

Road Traffic Collision Assessment

15.5.6. Analysis of all 'serious' and 'fatal' road traffic collisions (RTCs) within the last five years for the routes within the study area was undertaken[4]. 'Serious' RTCs are defined as those which result in hospitalisation of one or more of the parties involved. 'Fatal' RTCs are defined as those in which one or more parties' dies within 30 days as a result of injuries sustained.

15.5.7. Fifteen 'serious' RTCs were identified in the study area; all of these were located on the A713 except one which was located on the Bankfield Roundabout at the A77. One fatal RTC was recorded on the A713. The RTCs appear to be distributed along the length of the A713 with no particular clusters or hotspots

[3] Department For Transport (2013), Design Manual for Roads and Bridges - Volume 15

[4] Data was compiled from publically available police reports released by the Department for Transport via www.crashmap.co.uk [Accessed 14/09/18]

identifiable. **Figure 15.3** indicates the location of each of the identified RTCs within the study.

15.5.8. Considering only RTCs which involve a heavy goods vehicle (HGV), three 'serious' accidents occurred within the study, all on the A713. No 'fatal' RTCs involving HGVs occurred within the study.

Sensitive Receptors

15.5.9. A number of receptors of medium or high sensitivity to changes in traffic have been identified and are detailed in Table 15.7. These receptors are either located directly on the proposed delivery route or are located close to and require access through the proposed delivery route. The sensitivity of these receptors has been estimated using the criteria outlined in 15.2.

Table 15.7: Sensitive Receptors

Receptor	Sensitivity	Justification
Carsphairn Primary School, Carsphairn	High	This school fronts directly onto the A713 and staff and students are required to use the A713 for part of their journey to and from the school. This receptor may be highly sensitive to changes in HGV traffic.
Doon Academy and Dalmellington Primary School, Dalmellington	High	This school is located near to the A713 and staff and students may use the route for part of their journey to and from the school. This receptor may be highly sensitive to changes in HGV traffic.
St Xavier's Primary School, Patna	High	This school is located near to the A713 and staff and students may use the route for part of their journey to and from the school. This receptor may be highly sensitive to changes in HGV traffic.
Ailsa Hospital, Ayr	High	This hospital is located by the A713 and staff and patients are required to use the A713 for their journey to and from the facility. This receptor may be highly sensitive to changes in HGV traffic.

15.6. Future Baseline Scenarios

Traffic Flow

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

15.6.2. A traffic growth factor of 1.031 was calculated for ATC location references 1, 2 and 3 using the Dumfries and Galloway local area as defined within TEMPRO, baseline year (2018) and the proposed year of construction (2021). The baseline traffic flow information collected for each route was then multiplied by the growth factor to give the estimated traffic flow for the year of construction.

15.6.3. A growth factor of 1.058 was estimated for location 4 using the South Ayrshire local area as defined within TEMPRO, the baseline year 2016 and year of construction 2021.

15.6.4. Table 15.8 indicates the projected baseline traffic flow at each of the locations for the anticipated year of construction.

Table 15.8: Projected Baseline Traffic Flow

Ref	Road	Growth Factor	Projected ADT	HGV ADT	%HGV
1	B729	1.031	156	57	36.5
2	B729	1.031	148	44	29.5
3	A713	1.031	1564	414	26.5
4	A77	1.058	23844	1276	5.4

15.7. Anticipated Construction Development Traffic

15.7.1. A detailed programme of anticipated construction development traffic is provided in **Figure 15.4**. The following subsections provide detail for each element of work. A summary of all predicted construction traffic is provided at the end of this section.

Forestry

15.7.2. Forestry operations will be required in order to provide suitable working areas for construction. It is likely that felling will commence two months prior to construction site mobilisation and will continue for a duration of six months.

15.7.3. At the commencement of felling operations, plant and equipment will be required to be imported to site. This will be transported by low-loader HGV and is likely to comprise seven deliveries, resulting in 14 vehicle movements, in the first month.

15.7.4. It is likely that felling will be phased such that access track alignments and wind farm infrastructure areas are 'keyholed' initially in order to allow construction to progress. Following keyholing, wider clear felling may occur (**Figure 7.6**). For the purposes of this assessment and in the absence of a detailed felling programme, it has been assumed that extraction will occur at a constant rate throughout the duration of felling operations. A total of 800 loads of timber are anticipated to be extracted over the six month duration of this phase of works, resulting in 1600 vehicle movements.

15.7.5. Fuel deliveries to support forestry operations can be expected throughout the six month duration of this phase of works at a rate of approximately two deliveries per week, resulting in four vehicle movements per week.

15.7.6. Table 15.9 indicates the anticipated number of vehicle movements associated with forestry.

Table 15.9: Anticipated Vehicle Movements - Forestry

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Plant Delivery/Removal	HGV Low Loader	1, 6	28*	14*

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Timber Extraction	HGV	1-6	1600	267
Fuel Delivery	Fuel Tanker HGV	1-6	96	16
Overall			**1724**	**297**

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

Site Mobilisation and Demobilisation

15.7.7. HGV and other vehicle movements will be required during site mobilisation. This will comprise the erection of welfare facilities, delivery of construction site vehicles and importation of plant and equipment, including equipment for processing material from the on-site borrow pits. The majority of these movements will be as HGVs and low loaders which will deliver and then depart the site empty.

15.7.8. 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 15.10 indicates the anticipated number of vehicle movements associated with site mobilisation and demobilisation.

Table 15.10: Anticipated Vehicle Movements – Site Mobilisation / Demobilisation

Operation	Vehicle Type	Operational Months	Total	Max Monthly
On-site vehicles	Car/LGV**	3, 17	30	15
Construction Compound	HGV Low Loader	3, 17	120*	60*
Borrow Pit Equipment	HGV Low Loader	3, 17	168*	84*
Overall			**318**	**159**

*Includes transporter vehicle leaving and then returning to site during demobilisation
**Self-propelled vehicles which arrive in one month and depart in another

Access Track and Hardstanding Construction

15.7.9. All stone required for construction of the access tracks and hardstandings is expected to be sourced from on-site borrow pits and processed on Site. Therefore, there are not anticipated to be any vehicle movements associated with the importation of stone for access track construction.

15.7.10. Two teams are expected to operate during access track construction. Each team may utilise an excavator, roller and four dumper trucks. It is assumed that the excavators and rollers will be delivered to the site via low loaders at the commencement of this operation and will generate two vehicle trips each

for delivery and another two trips during removal, the dumper trucks will be self-propelled to and from the Site.

15.7.11. Other materials will require to be imported regularly throughout construction of the access tracks such as geo-membrane, drainage pipes and culvert sections.

15.7.12. Table 15.11 indicates the anticipated number of vehicle movements associated with access track and hardstanding construction.

Table 15.11: Anticipated Vehicle Movements - Access Track and Hardstanding Construction

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Plant Delivery	HGV Dump Truck**	5,11	16	8
	HGV Low Loader (Excavators/Rollers)	5,11	8*	4*
Material Deliveries	HGV	5-11	28	4
Overall			**52**	**16**

*Includes transporter vehicle leaving and then returning to site during demobilisation
**Self-propelled vehicles which arrive in one month and depart in another

Turbine Foundation Construction

15.7.13. The concrete for each turbine foundation will be formed either from concrete batched onsite (utilising aggregate won from the borrow pits), or from ready-mix concrete imported to the Site, or from a combination of both methods. The intention will be to batch as much concrete onsite as possible which will have the effect of reducing the transportation impact of this element of works. However, should the quality or quantity of aggregate available on site prove not to be sufficient for foundation construction, imported material would be required.

15.7.14. In order to provide a robust assessment of the potential effects and to account for any eventuality, a worst case scenario in which all concrete is ready-mix has been assumed for this assessment.

15.7.15. In the eventuality that ready-mix concrete is used, each foundation will be poured in one continuous session over a single day, with 19 non-consecutive days required in total over the 20 week duration of this element of works.

15.7.16. Each foundation will comprise 500 m^3 of concrete, which will require 56 ready-mix vehicle loads, assuming a capacity of 9 m^3 per vehicle. This will result in a total of 2,128 vehicle movements over the 20 weeks of this phase of works.

15.7.17. Additionally 1,020 tonnes of steel reinforcement (rebar) will be required, this will result in a 107 HGV movements over this period. Table 15.12 indicates the

anticipated number of vehicle movements associated with turbine foundation construction.

Table 15.12: Anticipated Vehicle Movements - Turbine Foundation Construction

Operation	Vehicle Type	Operational Months	Total	Max (Daily/Monthly)
Concrete Delivery	Ready Mix HGV	8-13	2,128	112 (daily)
Rebar Delivery	HGV	8-13	107	18 (monthly)
Overall			**2,235**	

Control Building and Substation Construction

15.7.18. Material for construction of the substation compound hardstanding is assumed to be won from on-site borrow pits. Electrical components and switchgear will require to be imported and is predicted to total 40 HGV movements over the eight month phase of this element.

15.7.19. Two transformers will require to be delivered by abnormal load vehicle due to their weight, this will result in four vehicle movements. Two escort vehicles are assumed to accompany each abnormal load vehicle resulting in eight vehicle movements. Table 15.13 indicates the number of vehicles associated with substation construction.

Table 15.13: Anticipated Vehicle Movements - Substation Construction

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Electrical Components and Switchgear Delivery	HGV	4-11	40	5
Transformer Delivery	ALV	4-11	4	2
	Escort Car/Van	4-11	8	4
Overall			**2**	**11**

Electrical Cabling Delivery

15.7.20. Electrical cabling for wind farm power distribution will require to be delivered and will constitute 48 HGV movements over the period of delivery. Table 15.14 indicates the number of vehicle movements associated with electrical cabling delivery.

Table 15.14: Anticipated Vehicle Movements - Electrical Cabling Delivery

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Electrical Cabling Delivery	HGV	12-14	57	19

Crane Delivery

15.7.21. A large crawler or track mounted crane of approximately 1,000 tonne capacity will be required for turbine erection along with an additional 160 tonne pilot crane. The crawler crane will be transported in component form and assembled on 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 abnormal load vehicle due to its weight.

15.7.22. Both cranes will remain on site for the duration of the turbine assembly phase Table 15.15 indicates the number of vehicle movements associated with crane delivery.

Table 15.15: Anticipated Vehicle Movements - Crane Delivery

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Crawler Crane	HGV	12, 16	52	26
	Abnormal Load Vehicle**	12, 16	2	1
Overall			**54**	**27**

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

Turbine Delivery

15.7.23. Turbines will be delivered as separate components the majority of which will require to be transported by ALV. The towers will be transported in three separate sections and each of the three blades will be transported individually. Two further abnormal load vehicles will be required to transport the nacelle and hub. For the 19 turbines, 152 ALV deliveries will be required equalling 304 vehicle movements. Following delivery of components, the abnormal load vehicles are able to retract to the size of a standard HGV vehicle for the return journey.

15.7.24. Two escort vehicles are likely to be required to accompany each abnormal load which will result in a worst case of 608 additional vehicle movements. In practice, this figure may be reduced where abnormal load vehicles approach the site in convoy and fewer than two escort vehicles per abnormal load are required.

15.7.25. Additionally, 38 HGV vehicle movements will be required for the delivery of turbine accessories and ancillary equipment. Table 15.16 indicates the number of vehicle movements that are expected for turbine delivery.

Table 15.16: Anticipated Vehicle Movements - Turbine Delivery

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Turbine Components	ALV	12-16	304	61
	Escort Car or Van	12-16	608	122

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Ancillary Equipment	HGV	12-16	38	8
Overall			**950**	**191**

Fuel Delivery

15.7.26. Fuel will require regular delivery to the site regularly throughout the construction period and is expected to total 1 HGV fuel tanker delivery per month from site mobilisation, totalling 30 vehicle movements over the duration of construction. This excludes fuel delivered to support forestry operations which is accounted for in the Forestry section. Table 15.17 indicates the number of vehicle movements associated with fuel delivery.

Table 15.17: Anticipated Vehicle Movements Fuel Delivery

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Fuel Delivery	HGV Fuel Tanker	3-17	30	2

Construction Personnel and Staff

15.7.27. It is anticipated that an average of 40 staff will be required onsite per day throughout the construction phase, months 3-21. For the purposes of this assessment, the most recent available Scottish private vehicle occupancy rate[5] of 1.57 people per vehicle was used.

15.7.28. Assuming a 26 day working month, this is expected to result in a total of 13,240 vehicle trips for staff over the course of construction of the Development. Table 15.18 indicates the number of vehicle movements associated with staff.

Table 15.18: Anticipated Vehicle Movements - Staff

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Staff	Car or Minibus	3-21	25,156	1,324

Summary

15.7.29. Table 15.19 provides a summary of all deliveries expected throughout duration of construction.

Table 15.19: Anticipated Vehicle Movements - Summary

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Forestry				
Plant Delivery/Removal	HGV Low Loader	1, 6	28*	14*

[5] The Scottish Government (2011) – High Level Summary of Statistics Trend, Car Occupancy – Available at http://www.gov.scot/Topics/Statistics/Browse/Transport-Travel/TrendCarOccupancy [Accessed 12/11/18]

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Timber Extraction	HGV	1-6	1600	267
Fuel Delivery	Fuel Tanker HGV	1-6	96	16
Subtotal			**1724**	**297**
Site Mobilisation/Demobilisation				
On-site vehicles	Car/LGV**	3, 17	30	15
Construction Compound	HGV Low Loader	3, 17	120*	60*
Borrow Pit Equipment	HGV Low Loader	3, 17	168*	84*
Subtotal			**318**	**159**
Access Track and Hardstanding Construction				
Plant Delivery	HGV Dump Truck	5-11	16	8
	HGV Low Loaders (Excavators/Rollers)	5-11	8*	4*
Material Deliveries	HGV	5-11	28	4
Subtotal			**52**	**16**
Turbine Foundation Construction				
Concrete Delivery	Ready-Mix HGV	8-13	2,128	112 (daily)
Rebar Delivery	HGV	8-13	107	18 (monthly)
Subtotal			**2235**	
Control Building and Substation Construction				
Electrical Components and Switchgear Delivery	HGV	4-11	40	5
Transformer Delivery	ALV	4-11	4	2
	Escort Car/Van	4-11	8	4
Subtotal			**52**	**11**
Electrical Cabling Delivery				
Electrical Cabling Delivery	HGV	12-14	57	19
Crane Delivery				
Crawler Crane	HGV	12, 16	52	26
	Abnormal Load Vehicle**	12, 16	2	1

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Subtotal			**54**	**27**
Turbine Delivery				
Turbine Components	ALV	12-16	304	61
	Escort Car or Van	12-16	608	122
Ancillary Equipment	HGV	12-16	38	8
Subtotal			**950**	**191**
Fuel Delivery				
Fuel Delivery	HGV Fuel Tanker	3-17	30	2
Staff				
Staff	Car or Minibus	3-21	25,156	1324
Totals				
Total HGV and Abnormal Load Movements (excluding concrete deliveries)			2698	429
Total HGV Movements for Concrete Delivery (19 non-consecutive days)			2128	355
Total Car and Van Movements			25,802	1446
Overall Total			**30,628**	**1932*****

*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

15.8. Assessment of Effects

Traffic Generation

15.8.1. A detailed breakdown of the distribution of vehicle movements in each month, and for each element of work, throughout the construction phase of the Proposed Development is included in **Figure 15.4**. The peak month of construction, from a traffic perspective, was identified and used to predict the traffic increase on routes within the study area. A worst case scenario in which all predicted traffic passes each location within the study area was assumed.

15.8.2. From inspection of the predicted traffic movements, the peak month for vehicle flow is expected to be month 12 where a total of 1,932 vehicle movements are predicted. Concrete deliveries are expected to occur during this month on non-consecutive days. On days where concrete delivery occurs, a maximum of 173

vehicle movements are expected. On days with no concrete delivery a maximum of 61 vehicle movements are expected.

15.8.3. Outside of the foundation pouring phase, the peak month of construction from a transport perspective is expected to be month three. During this month a total of 1,768 vehicle movements are expected resulting in an average of 68 vehicle movements per day.

15.8.4. Table 15.20 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.

Table 15.20: Predicted Peak Month Average Daily Traffic - No Concrete Delivery

Location	Total Vehicles			HGV Only*		
	2021 Baseline	Peak Month	% Increase	2021 Baseline	Peak Month	% Increase
1	156	224	43.7	57	73	29.1
2	148	216	45.8	44	61	37.2
3	1564	1632	4.3	414	431	4.0
4	23844	23912	0.3	1276	1292	1.3

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

15.8.5. Table 15.21 details the anticipated vehicle flow in the peak month on days where concrete deliveries will take place; this will occur on a maximum of 19 non-consecutive days.

Table 15.21: Predicted Peak Month Average Daily Traffic - During Concrete Delivery

Location	Total Vehicles			HGV Only*		
	2021 Baseline	Peak Month	% Increase	2021 Baseline	Peak Month	% Increase
1	156	328	110.9	57	174	206.5
2	148	321	116.3	44	161	264.2
3	1564	1737	11.0	414	532	28.3
4	23844	24017	0.7	1276	1393	9.2

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

15.8.7. The lower threshold of significance (10%) was considered appropriate for those locations with identified sensitive receptors, namely the primary schools located in Carsphairn, Dalmellington and Patna and Ailsa Hospital outside Ayr. Each of these receptors are located on, or near to, the A713 and will be considered against location reference 3.

15.8.8. The upper threshold of significance (30%) was considered appropriate for other routes within the study, which applies at location references 1, 2 and 4.

15.8.9. Using the above thresholds, and assessing the estimated percentage increases in overall traffic and HGV traffic, further detailed assessment will be considered in the following locations/cases:

- On the B729, eastern section (ref 1), as a result of overall traffic increase during non-concrete delivery days;
- On the B729, eastern section (ref 1), as a result of overall and HGV traffic increase during concrete delivery days;
- On the B729, western section (ref 2), as a result of overall traffic and HGV increase during concrete delivery and non-concrete delivery days;
- On the A713 at the identified sensitive receptors (ref 3) as a result of total traffic increase and HGV traffic increase on concrete delivery days.

15.8.10. Where the predicted increase in traffic and HGV traffic falls below the applied threshold no further assessment is warranted.

15.8.11. The following subsections detail considerations for each of the above cases.

B729 (East) Overall Traffic Increase: Non Concrete Days

15.8.12. Total traffic is predicted to increase on the eastern section of the B729 by 43.7% on non-concrete delivery days. This is above the upper threshold for identifying significant effects (30%). As detailed in the assessment methodology, where 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.

15.8.13. This section of road has an estimated capacity (detailed in Table 15.6) of 280 vehicles per hour or 6720 vehicles per day. The total number of vehicle movements, including baseline and predicted construction traffic, per day during this phase is 224 vehicles per day; these are likely to be distributed throughout the day with a typical morning and evening peak.

15.8.14. It can be seen that there is significant residual capacity on this route to accommodate the increase in traffic, and thus the effect of increased traffic on this route on non-concrete days is considered low and not significant as per the EIA Regulations.

B729 (East) Overall and HGV Traffic Increase – Concrete Delivery Days

15.8.15. Total traffic is predicted to increase on the eastern section of the B729 by 110.9% and HGV traffic by 206.5% on days where concrete is being delivered. This is above the upper threshold (30%).

15.8.16. Concrete will be delivered for turbine foundations on 19 non-consecutive days. During those days, the supply of concrete to the foundation pour is required to be continuous and distributed over an approximately 24-hour period.

15.8.17. The total number of vehicles predicted to use this route on concrete pouring days is 328, including baseline traffic and predicted construction traffic. This

total is significantly less than the estimated capacity of the route, 6720 vehicles per day, and there is considered to be sufficient residual capacity on the route. Furthermore, due to the requirement to distribute concrete deliveries throughout the pour, there is not expected to be a significant peak flow.

15.8.18. Given the residual capacity of the route, the distributed nature of concrete deliveries and the fact that this effect will occur on only 19 non-continuous days, it is considered that the effect of overall traffic and HGV traffic increase on this route is low and not significant as per the EIA Regulations.

B729 (West) Overall and HGV Traffic Increase – Concrete and Non-Concrete Delivery Days

15.8.19. Total traffic is predicted to increase on the western section of the B729 by 45.8% and 116.3% on non-concrete and concrete days respectively. HGV traffic is predicted to increase by 37.2% and 252.6% on non-concrete and concrete delivery days respectively. In all cases, this exceeds the upper (30%) threshold.

15.8.20. This section of road has an estimated capacity (detailed in Table 15.6) of 1600 vehicles per hour or 38,400 vehicles over a 24-hour period. The total traffic expected to use the route is 216 and 321 vehicles per day on non-concrete and concrete delivery days respectively, including baseline and predicted construction traffic.

15.8.21. It can therefore be seen that there is significant residual capacity on this route to accommodate the increase in traffic, and thus the effect of increased overall traffic and HGV traffic on this route is considered to be low and not significant.

A713 at Identified Sensitive Receptors – Concrete Delivery Days

15.8.22. Total traffic is predicted to increase on the A713 by 11% and HGV traffic by 27% on concrete delivery days. In each case, this exceeds the lower (10%) threshold of significance.

15.8.23. On non-concrete delivery days these increases are predicted to be 4.3% and 4.0% (total traffic and HGV traffic respectively), below the lower (10%) threshold in both cases.

15.8.24. Concrete pouring will occur on 19 non-consecutive days. It is considered that as this effect is limited to these days only and that the significance thresholds will not be exceeded at these locations at any other times, the effect of overall traffic and HGV traffic increase on the A713 is low and not significant as per the EIA Regulations.

Accidents and Safety

15.8.25. A RTC assessment was undertaken and is detailed in Section 15.5. This identified 15 'Serious' or 'Fatal' RTCs within the study, 14 of which were located in on the A713 and one on the A77. **Figure 15.3** indicates the location of all identified RTCs.

15.8.26. This assessment did not identify any hotspots or trends in the data. Only two 'slight' RTCs were reported, one of which involved a single vehicle (a motorcycle) entering a ditch. It is therefore concluded that there is no evidence that this road is not operating safely at present.

15.8.27. 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.

15.8.28. It is therefore considered that the temporary increase in overall traffic and HGVs for the duration of construction of the Development is not likely to result in an effect on accidents and safety. The effect on accidents and safety is negligible and not significant as per the EIA Regulations.

Pedestrian Amenity

15.8.29. Pedestrian amenity, fear and intimidation can be affected by changes to traffic flow and composition. The B729 and A713 do not have pedestrian footways, except where they pass through settlements, and it is considered unlikely that there is any substantial pedestrian traffic outside of settlements on these routes. The effect of increased traffic on pedestrian amenity on these routes, outside of settlements, is negligible and not significant as per the EIA Regulations.

15.8.30. Overall traffic flow or HGV flow is only predicted to increase above significance threshold levels in locations where sensitive receptors were identified, and this only occurs on concrete delivery days (19 non consecutive days during the construction programme). Three of the four identified sensitive receptors are schools, and it is likely that students will walk on and may cross the delivery route on the way to and from school.

15.8.31. It is considered that the increase in overall traffic flow and HGV flow may have an effect on pedestrian amenity at these sensitive receptors which is considered moderate and significant.

15.8.32. In accordance with the EIA Regulations, section 15.10 of this Chapter details mitigation measures which are to be adopted in relation to minimising this effect.

Driver Delay

15.8.33. All roads within the study are operating significantly below capacity and are predicted to continue to do so even during construction of the Proposed Development. The effect of general increase in traffic on driver delay is therefore considered to be negligible and not significant as per the EIA Regulations.

15.8.34. Some driver delay can be expected to occur on routes due to the slow movement of abnormal load vehicles between the port of delivery (Ayr) and the Site. Where safe to do so ALVs will occasionally stop to allow traffic to pass if necessary. A total of 152 ALVs associated with turbine delivery are

anticipated. These will be distributed through the duration of this element of works (months 12-16).

15.8.35. Due to the overall limited number of loads across the construction programme and the short term nature of this phase of works, the anticipated effect of abnormal loads on driver delay is low and not significant as per the EIA Regulations.

Severance

15.8.36. Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The A713 is the only route within the study which passes through settlements which have the potential to be affected by severance.

15.8.37. During construction of the Proposed Development, overall traffic is not predicted to increase by more than a maximum of 11.0% on 19 non-consecutive days of concrete delivery. This increase is predicted to be a maximum of 4.3% on non-concrete delivery days. In both cases this falls below the thresholds of significance (30%) for this effect. Therefore the effect of severance is negligible and not significant as per the EIA Regulations.

Noise and Vibration

15.8.38. Ground-borne vibration resulting from heavy goods vehicle and turbine delivery vehicle movements is generally only likely to be significant where vehicles traverse discontinuities, such as rough surfaces (including pot-holes) or speed-humps.

15.8.39. The DMRB Volume II[6] identifies that there is no evidence that suggests traffic induced vibrations are a source of significant damage to buildings.

15.8.40. 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. However due to the short-term and temporary nature of the increase in traffic movements, it is considered that the effect of vibration upon receptors along the route would be low and not significant.

Hazardous Loads

15.8.41. Fuel will be regularly transported to the Site over the duration of construction of the Proposed 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 are expected to be transported to site. It is therefore considered that the effect of the transportation of hazardous substances is negligible and not significant as per the EIA Regulations.

[6] The Design Manual for Roads and Bridges Volume II, Section 3 Annex 5 'Research into Traffic Noise and Vibration'.

Visual Effects

15.8.42. The movements of ALVs could be considered visually intrusive. This effect would be short-term and would only occur during the movement of abnormal loads. It is therefore considered the visual effect as a result of the ALVs upon receptors along the routes would be negligible and not significant.

Air Quality

15.8.43. 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 (CO2), nitrogen dioxide (NO2), and particulate matter (PM10). Nitrogen oxide emissions are also of concern for nearby vegetation and ecosystems.

15.8.44. The DMRB gives guidance 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 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.

15.8.45. Given the assessment of the expected volume of construction traffic, it is considered that none of the above criteria have been met or exceeded. It is therefore considered that the effect of the increase in traffic on local air quality would be negligible and not significant as per the EIA Regulations.

15.8.46. It should also be noted that 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.

Operational Effects

15.8.47. Traffic associated with operation of the Proposed Development is limited to maintenance and is expected to be insignificant in comparison to traffic generated during construction. General maintenance and site monitoring visits will likely be undertaken by car and light goods vehicle (LGV) and can be expected to be in the region of three visits per day average. The effect of operational traffic is therefore expected to be negligible and not significant as per the EIA Regulations.

Decommissioning Effects

15.8.48. Traffic and transport effects associated with decommissioning of the Development are expected to comprise removal of the turbines and all associated above ground equipment. Turbine towers and blades are likely to be dismantled into smaller sections prior to their removal to ease transport requirements.

15.8.49. At this stage, it is not possible to forecast quantitatively or accurately the traffic effect during decommissioning of the Proposed Development as the baseline data would no longer be valid in 25 years. It is reasonable to assume that baseline traffic would continue to increase. The implication of applying further background traffic growth would be that the proportional impact of the decommissioning traffic would reduce in comparison to the construction traffic impact that has been assessed. It is expected that traffic flow along the B729 and A713 would continue to remain well below capacity.

15.8.50. The decommissioning effects would also be greatly reduced as the majority of the construction traffic is created by the import of concrete for turbine foundations, which is likely be left in situ at depth of greater than 1 m below ground level.

15.8.51. Prior to decommissioning of the Proposed Development, a traffic assessment would be undertaken and appropriate traffic management procedures agreed with the relevant authorities at the time.

15.9. Assessment of Cumulative Effects

15.9.1. Significant cumulative effects may occur during construction of the Proposed Development where this overlaps with construction of another nearby development. Proposed developments which have the potential to result in cumulative effects are:

- Troston Loch Wind Farm (15 turbines);
- Lorg Wind Farm (9 turbines);
- South Kyle Wind Farm (50 turbines);
- Benbrack Wind Farm (18 turbines);
- Longburn Wind Farm (10 turbines);
- Wether Hill Wind Farm Extension (11 turbines);
- Windy Rig Wind Farm (12 turbines);
- Windy Standard III Wind Farm (20 turbines); and
- Margree Wind Farm (17 turbines)
- Cornharrow Wind Farm (11 turbines)
- Glenshimmeroch Wind Farm (10 turbines).

15.9.2. Table 15.22 provides daily traffic generation figures that have been assumed for each of the identified developments. Exact traffic data is not available for the identified developments and in order to provide a reasonable assessment, it has been assumed that traffic generation for each project will be in proportion to that generated by the Shepherds' Rig Development (calculated pro-rata, per turbine).

15.9.3. Traffic relating to the delivery of concrete during foundation pours has not been included as it is assumed that, given the relative impacts, 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.

Table 15.22: Extrapolated Cumulative Daily Traffic Movements from Identified Developments (Peak Month – Non Concrete Pour Days)

Development	No. Turbines	Total Traffic	HGV
Troston Loch	15	54	13
Lorg	9	32	8
South Kyle	50	179	43
Benbrack	18	64	16
Longburn	10	36	9
Wether Hill	11	39	10
Windy Rig	12	43	10
Windy Standard III	20	72	17
Margree	17	61	15
Cornharrow	11	39	10
Glenshimmeroch	10	36	9
Total	**183**	**655**	**160**

15.9.4. The cumulative traffic associated with the identified developments will primarily result due to the import of materials and from staff movements. For the purposes of this assessment, it has been assumed that all traffic will use each road within the study area; however, as a number of the identified developments are accessed off the A713, the total traffic which would use the B729 will be lower than this.

15.9.5. Table 15.23 indicates the anticipated total traffic (including baseline) and the percentage increase above baseline in the worst case cumulative scenario.

Table 15.23: Cumulative Daily Traffic Increase (Peak Month - Non Concrete Pour Days)

Location	Total Vehicles			HGV Only*		
	2021 Baseline	Peak Month	% Increase	2021 Baseline	Peak Month	% Increase
1	156	811	421	57	216	280
2	148	803	441	44	203	358
3	1564	2219	42	414	573	38
4	23844	24499	3	1276	1435	12

15.9.6. As indicated in Table 15.23 the addition of all construction traffic from the identified cumulative developments results in a worst case increase of 441%

at location reference 2 over baseline flow. This is reduced to 42% on the A713 at reference location 3.

15.9.7. There is sufficient residual capacity on each of the roads within the study to accommodate the predicted increase in traffic which may occur in the cumulative scenario. The likelihood of all of the identified developments receiving planning consent is considered low, and furthermore the likelihood of all of these being constructed simultaneously is considered low. In the event that a number of the identified developments are scheduled to be constructed simultaneously then it is assumed that their Traffic Management Plans would be agreed in consultation to minimise disruption. For these reasons the likely impact is expected to be significantly lower than stated in Table 15.23.

15.9.8. The impact on traffic and transport due to cumulative effects is therefore considered to be low and not significant.

15.10. Mitigation Measures

15.10.1. One potentially significant effect was identified in Section 15.8 relating to pedestrian amenity at the schools in Carsphairn, Dalmellington and Patna. In order to address this effect, a number of mitigation measures are proposed which are recommended for adoption in the Traffic Management Plan as follows:

- 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 within these settlements and that formal pedestrian crossing facilities are not present; and
- Dalmellington and Carsphairn have part-time 20 mph speed limits which should be in force during school opening and closing times. Drivers to be made aware of this during induction and reminded that strict adherence to these speed limits is expected.

15.10.2. The above measures are recommended; however, the traffic management plan will detail the exact measures to be implemented during construction of the Proposed Development.

15.11. Residual Effects

15.11.1. It is considered that if the above mitigation measures are implemented for the duration of construction then the effect on increased traffic on pedestrian amenity will be reduced to low and not significant.

15.12. Summary

15.12.1. An assessment of the potential effects on traffic and transport during construction and operation of the Proposed Development has been undertaken. This assessment identified one location where there is a potential for significant effects to occur. Mitigation measures have been detailed. As a result, all residual effects of the Proposed Development on traffic and transport resource are considered at maximum low, and not significant, in terms of the EIA regulations.