12 Traffic and Transport

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12.1 Executive Summary

12.1.1 The Proposed Development will be accessed from new marine access points that will need to be constructed on the south-east of the island.

12.1.2 Materials for the majority of the works associated with the construction of the access track and crane hardstands will be won from on-site borrow pits. Material for the initial works will however need to be imported from quarries on the Mainland of Orkney.

12.1.3 Concrete will be batched on-site, with supplies coming from sources on Orkney. The majority of any traffic impact will therefore be focussed on the Mainland of Orkney.

12.1.4 The construction activities will lead to increased traffic volumes on the A965 during the construction phase only. Following commissioning of the Proposed Development, traffic flows will fall to two vehicle movements a week.

12.1.5 An assessment of likely effects using IEMA guidelines has been undertaken. This determined that no significant effects would occur as a result of traffic flows associated with the Proposed Development.

12.2 Introduction

12.2.1 This chapter considers the likely significant effects on receptors along the transport routes resulting from vehicle movements associated with the construction and operation of the Proposed Development. The specific objectives of the chapter are to:

- review the relevant policy and legislative framework;
- describe the baseline transport conditions;
- describe the assessment methodology and significance criteria used in undertaking the assessment;
- describe the likely effects, including direct, indirect and cumulative effects;
- describe the mitigation measures proposed to address likely significant effects; and
- assess the residual effects remaining following the implementation of mitigation.

12.2.2 A high-level overview of the effects of the traffic movements has been considered in accordance with Institute of Environmental Assessment (now Institute of Environmental Management and Assessment (IEMA)) Guidelines for the Environmental Assessment of Road Traffic. The document is referred to as the IEMA Guidelines in this chapter.

12.2.3 The chapter should be read in conjunction with Appendix 12.1 Transport Assessment.

12.3 Legislation, Policy and Guidelines

12.3.1 A review of relevant transport planning policies has been undertaken and is summarised below for national and local government policies.

Legislation

12.3.2 There is no legislation applicable to this chapter.

Policy & Guidance

12.3.3 Chapter 5 of the EIA Report provides an overview of all the relevant planning policy. Of particular relevance to this chapter are:

Planning Advice Note (PAN) 75

12.3.4 Planning Advice Note (PAN) 75: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

"… transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning."

"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 will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact."

Transport Assessment Guidance (2012)

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

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

Onshore Wind Turbines; Online Renewables Planning Advice (May 2014)

12.3.7 The most recent Scottish Government advice note regarding onshore wind turbines was published in 2014. The advice note identifies the typical planning considerations in determining applications for onshore wind turbines including landscape impact, impacts on wildlife and ecology, shadow flicker, noise, ice throw, aviation, road traffic impacts, cumulative impacts and decommissioning.

12.3.8 In terms of road traffic impacts, the guidance notes that in siting wind turbines close to major roads, pre-application discussions are advisable as this is important for the movement of abnormal indivisible loads during the construction period, ongoing planned maintenance and for decommissioning (if applicable).

Orkney Local Development Plan

12.3.9 The Orkney Local Development Plan (LDP) was adopted by the Council in April 2017 and is the established planning policy for Orkney. It sets out a settlement strategy and spatial framework for how the Council foresees development occurring in the forthcoming twenty-year period.

12.3.10 Within the plan, relevant transport elements include:

"Developments that have the potential to generate significant levels of freight will be directed to industrial allocations beside key ports and harbour facilities (Hatston, Copland's Dock and Lyness)."

"Development will only be permitted where due regard has been paid to Designing Streets and the proposal demonstrates that:

i. It is well connected to the existing network of roads, paths and cycleways and will not create a barrier to future development;

ii. It can be safely and conveniently accessed by service, delivery and other goods vehicles, as appropriate to the development;

iii. Any new access, or upgrades to an existing access, linking to the adopted road network has been designed to an adoptable standard as defined by the National Roads Development Guide (new accesses should be resource efficient, safe for all road users, and convenient for sustainable travel modes);

iv. It is designed to cause minimal impact on the character of the site and the surrounding area; and

v. There are satisfactory arrangements to ensure that there is provision for the long-term maintenance."

12.3.11 A Supplementary Energy Guidance noted is included within the LDP. With regards to transport and access, the supplementary note advises that:

"The developer must liaise with the Council as Roads Authority in relation to access and egress from the proposed development site. This must include for all works associated with alterations to the existing roads infrastructure required to transport materials to and from the development site and to all works associated with construction, maintenance and decommissioning.
Depending on the scale of the turbine(s) and the sensitivity of the site, all scales of wind energy developments could be required to submit a method statement for the construction of their proposal in support of the application. This statement would cover the phasing of construction, associated timescales and methods for transporting equipment to and from the site. This is to ensure minimal impacts on the surrounding environment and users."

12.4 Consultation

12.4.1 Table 12.1 summarises the consultation responses with regards to traffic and transport and the Proposed Development.

Table 12.1 – Consultation Summary

Organisation	Summary / Concerns Raised	Action Required
Orkney Islands Council – Scoping Opinion	There are no adopted public roads anywhere near the proposed site.	Noted.
	Full details of all loads that would be transported from Orkney Mainland to the site must be considered with their potential impact.	The TA and the assessment in this chapter cover the construction and operation of the Proposed Development. The application is for the development to exist in perpetuity, however, should decommissioning occur the effects are not anticipated to be greater than the construction phase. It should however be noted that elements of the Proposed Development would be retained should the site ever be decommissioned (i.e. the marine access and other elements such as sections of track that may assist with agricultural access, etc.) and as such, the assessment of the construction phase is the worst-case scenario. Should the site be decommissioned a Traffic Management Plan could be produced at that time to review access and transport issues.
	Need to outline the scale of the infrastructure	Details of proposed access strategy is provided in the Transport Assessment (Appendix 12.1). Details of the proposed

Organisation	Summary / Concerns Raised	Action Required
	required to access the site.	new extended slipway and landing jetty are provided in Chapter 3.
	A Section 96 Agreement to cover abnormal wear and tear on the road network may be required.	A Section 96 Agreement is noted and included as potential mitigation for the Proposed Development.
Orkney Islands Council – Marine Services	Access for abnormal loads would be best achieved via the Hatston Pier and there are no physical constraints to its use.	The Route Survey Report assumes access from Hatston Pier and notes that there are no physical infrastructure constraints at the pier.
	A swept path assessment of the route from the pier to the nearby storage areas will be required.	The Route Survey Report contains the required drawings and assessment.
	A Port Management Plan will be required to manage abnormal load deliveries and other marine traffic at Hatston Pier.	A commitment to a Port Management Plan is contained in the mitigation proposals.
Orkney Islands Council – Roads Services	No response received for Faray, but the following was relevant for the Orkney's Community Wind Farm Project - Quanterness scheme: The study area will need to include the A965 and Grainshore Road. The use of Low National Road Traffic Forecasts (NRTF) is acceptable in accounting for traffic growth and committed development traffic.	The study area contains traffic flow data for the A965 and Grainshore Road. Low NRTF has been applied.

12.5 Assessment Methodology and Significance Criteria

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

- determine the baseline;
- review the Proposed Development for impacts;
- evaluate significance of effects on receptors;
- identify mitigation; and
- assess residual effects.

Consultation

12.5.2 Consultation was undertaken with the following:

- Orkney Islands Council – Roads Services; and
- Orkney Islands Council – Marine Services.

12.5.3 The results of these consultations have been included in the evolution of the design and access strategy for the Proposed Development and are detailed in Section 12.4 above.

Desk Study & Site Visit

The desk study included reviews and identification of the following:

- relevant transport planning policy;
- accident data;
- any other traffic sensitive receptors in the area (core paths, routes, communities, etc);
- Ordnance Survey (OS) plans;
- potential origin locations of construction staff and supply locations for construction materials to inform extent of local area roads network to be included in the assessment; and
- constraints to the movement of Abnormal Indivisible Loads (AILs) through a Route Survey including swept path assessments.

12.5.4 The desk review was later confirmed by a site visit and walk over of the Proposed Development site. This included a detailed review of Hatston Pier and the routes leading to potential material supply sources.

Study Area

12.5.5 Faray is currently uninhabited and does not have any metaled public adopted roads or road going vehicles on the island.

12.5.6 Access to the island for wheeled vehicles is currently taken from a small slipway located to the south of the island. This slipway is in poor condition and is only suitable for small landing craft style vessels. Access for HGV traffic to the island is currently not possible with the current infrastructure.

12.5.7 To access the island, the following strategy has been developed:

- a new extended slipway will be required to replace the existing facility. This item would need to be replaced regardless of the Proposed Development as the current slipway is badly damaged and access to the island is still required for agricultural purposes. The new extended slipway

would be built in the same location as the existing slipway and would be built to a standard design for Orkney Islands to allow access for locally based vessels;

- a new landing jetty will be constructed to allow access for larger vessels to Faray. This is to be located in close proximity to the slipway and will allow access for abnormal and heavy loads to the island; and
- a network of access roads will connect the new extended slipway and landing jetty to the other Proposed Development elements. The access tracks would be designed to accommodate all predicted loads and traffic for both the construction and operational phases of the Proposed Development.

12.5.8 Given that there is no traffic or road network on Faray, the traffic impact assessment elements of the study will focus on the Mainland of Orkney, where the majority of materials for the construction phase will originate from or will be transferred from vessels originating from the UK Mainland or wider afield.

12.5.9 No assessment of traffic impact will therefore be undertaken on Faray.

12.5.10 The study area for this assessment on the Mainland of Orkney is as follows and was discussed and agreed with Orkney Islands Council as part of Orkney's Community Wind Farm Project – Quanterness application. The study area includes:

- The A965 from Finstown through to Kirkwall; and
- Grainshore Road between the Hatston Pier and the junction with the A965.

12.5.11 The A965 covers the principal route for HGV access from Cursiter Quarry (the nearest quarry to the port) and Hatston Pier (the embarkation point for deliveries to Faray). The A965 in Finstown is an A Class distributor road and features regular HGV traffic due to its regional distributor function. To the east of Heddle Road, the street is fronted by residential properties on both sides of the road, with limited retail uses.

12.5.12 Finstown is the fourth largest settlement within Orkney and there are a small number of community and public facilities accessed from the A965 in Finstown (including a garage, public conveniences and a post office). Other community facilities are not directly accessed from the A965, including the primary school, which is accessed directly from the A966, to the north of the town.

12.5.13 The A965 is a district distributor road connecting Kirkwall to Stromness. The road is of a modern design standard within the study area and is approximately between 6 m and 7.2 m in width and is subject to a 60 mph speed limit. This reduces as the road passes through Finstown.

12.5.14 The A965 passes into Kirkwall and changes to a 30mph urban distributor road.

12.5.15 Grainshore Road is a loop to the A965, providing access to industrial units and the Hatston Pier to the north of the A road. The road is subject to a 40 mph speed limit between the A965 junction and the start of the industrial developments to the west of Kirkwall.

12.5.16 Prior to works commencing, the Balance of Plant (BoP) Contractor will select a base for construction staff to be based upon as staff will not be permanently based on Faray during construction. Westray could be used as a base, however this has been excluded from the assessment at this point in time. A staff travel plan will be provided to OIC prior to works commencing and will detail sustainable measures for staff to access the construction site.

Assessment of Likely Effect Significance

12.5.17 The Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005) notes that the separate 'Guidelines for the Environmental Assessment of Road Traffic' (1993) document should be used to characterise the environmental traffic and transport effects (off-site effects) and the assessment of significance of the effects of major new developments. The guidelines intend to complement professional judgement and the experience of trained assessors.

Receptor Sensitivity

12.5.18 In terms of traffic and transport impacts, the receptors are the users of the roads within the study area and the locations through which those roads pass.

12.5.19 The IEMA Guidelines includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement was used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in Table 12.2.

Table 12.2 – Classification of Receptor Sensitivity

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

12.5.20 The classifications are based upon the activities that can be expected in different areas and different types of streetscape. Professional judgement is used to reflect these generalised descriptions to study areas, especially those in remote areas where settlement size, function and facilities are more important than the category descriptors suggest.

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

Magnitude of Impact

12.5.22 The following rules, also taken from the IEMA Guidelines are used to determine which links within the study area should be considered for detailed assessment:

- Rule 1 – include highway 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.

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

- Severance – the IEMA Guidance states that, *"severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery."* Further, *"Changes in traffic of 30 %, 60 %, and 90 % are regarded as producing 'slight', 'moderate', and 'substantial'* [or minor, moderate, and major] *changes in severance respectively"*. However, the Guidelines acknowledge that *"the measurement and prediction of severance is extremely difficult".* (Para 4.28).
- Driver delay – the IEMA Guidelines note that these delays are only likely to be *"significant [or major] when the traffic on the network surrounding the development is already at, or close to, the capacity of the system"* (Para 4.32).
- Pedestrian delay – the delay to pedestrians, as with driver delay, is likely only to be major when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. An increase in total traffic of approximately 30 % can double the delay experienced by pedestrians attempting to cross the road and would be considered major.
- Pedestrian amenity – the IEMA Guidelines suggests that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or its lorry component) is halved or doubled (Para 4.39). It is therefore considered that a change in the traffic flow of -50 % or +100 % would produce a major change in pedestrian amenity.
- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30 %, 60 % and 90 % are regarded as producing minor, moderate and major changes respectively.
- Accidents and safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents.

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

Significance of Effects

12.5.25 To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of change assessments are correlated and classified using a scale set out in Table 2.4 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) and summarised in Table 12.3.

Table 12.3 – Significance of Effects

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

12.5.26 In terms of the EIA Regulations, effects would be considered of significance where they are assessed to be major or moderate. Where an effect is Moderate/Minor, professional judgement will be used to determine whether the effect is significant on a case by case basis.

Requirements for Mitigation

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

Residual Effects

12.5.28 Residual effects will be assessed following a similar methodology as the likely effects but taking into consideration the identified mitigation.

Cumulative Effects

12.5.29 Cumulative effects will take into consideration other developments with planning consent (i.e. committed developments), under construction or in operation which, with the addition of the Proposed Development could cumulatively impact upon receptors.

12.5.30 Developments in the planning process that have not been consented, will be excluded from the assessment.

Limitations to Assessment

12.5.31 The assessment is based upon an assumed construction programme for the Proposed Development. Alterations in this programme, may increase or decrease traffic flows per month.

12.5.32 This assessment is based upon average traffic flows. There may be localised peaks with construction days where flows can be higher for a specific hour, such as a shift change on-site when staff return from Faray to where they are temporarily resident.

12.5.33 Assumptions on the origination points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on surrounding areas may alter to those presented in the assessment.

12.6 Baseline Conditions

Pedestrian and Cyclist Networks

12.6.1 There are no Core Paths recorded by Orkney Islands Council on Faray.

12.6.2 The closest Core Paths within the study area on the Mainland of Orkney that interact with the study area are located towards Finstown and are:

- WM7: Path to Keelylang Hill (from A956 to the top of Keelylang Hill – does not cross the A965);
- WM8: Cuween Paths (local paths near Old Finstown Road - does not cross the A965); and
- St Magnus Way: Within Finstown (running along and crossing the A965).

12.6.3 A review of the Sustrans cycle network plan of the United Kingdom indicates that there are no recommended National Cycle Routes (NCR) within the study area.

12.6.4 There is a segregated cycle / pedestrian path on Grainshore Road in the industrial unit section of the road. This provides links from this point, through to Kirkwall town centre via the A965.

Existing Traffic Conditions

12.6.5 In order to assess the impact of development traffic on the study area, data from a series of Automatic Traffic Count (ATC) sites were obtained. The locations and sources for the data are indicated below:

- A965 Finstown (obtained from the Department for Transport traffic counts);
- Grainshore Road (obtained from published data associated with Costa Head Wind Farm);
- A965 Kirkwall (obtained from the Department for Transport traffic counts); and
- A965 West of Finstown (obtained from the Department for Transport traffic counts).

12.6.6 The locations of the ATC sites are illustrated in Figure 12.1. These sites were identified as being areas where sensitive receptors on the access route could be located.

12.6.7 The traffic data collected at the count sites detailed in Figure 12.1 allowed the traffic flows to be split into vehicle classes and the data have been summarised into cars / light goods vehicles (Lights) and heavy goods vehicles (HGVs) (all goods vehicles >3.5 tonnes gross maximum weight).

12.6.8 Construction of the project could commence during 2025 if consent is granted and is anticipated to be complete by the 15th of September 2026, with a break for ecological and wider construction constraints occurring between the 15th September 2025 and March 2026.

12.6.9 To assess the likely effects during the construction and typical operational phase, base year traffic flows were determined by applying a National Road Traffic Forecast (NRTF) low growth factor to the surveyed traffic flows.

12.6.10 The traffic flows were brought to a common year of 2026 (where the peak of construction activities is expected to occur) using National Road Traffic Forecasts (Low Growth estimates). The 2026 baseline flows are presented in Table 12.4 and these flows will be used in the Construction Traffic Impact Assessment.

Table 12.4 – 2026 24 Hour Average Traffic Flows

Location	Cars & Lights	HGV	Total
A965 Finstown	4405	256	4661
Grainshore Road	3452	283	3735
A965 Kirkwall	7783	313	8096
A965 West of Finstown	3998	243	4241

Accident Review

12.6.11 Road traffic accident data for the five year period commencing 1st January 2015 through to the 31st December 2019 was obtained from the online resource crashmap.co.uk which uses data collected by the police about road traffic crashes occurring on British roads.

12.6.12 The statistics are categorised into three categories, namely "Slight" for damage only incidents, "Serious" for injury accidents and "Fatal" for accidents that result in a death. Tables 12.5, 12.6 and 12.7 summarise the accidents noted in the study area.

Table 12.5 – Accident History Summary

Accident Severity	Number of Recorded Incidents
Slight	8
Serious	1
Fatal	2

12.6.13 There are 11 recorded incidents, all occurring on the A965, of which two involved fatalities, one located to the west of Finstown and one at Rennibister.

Table 12.6 – Accident Casualty Summary

Accident Severity	Cyclist	Child	Motorcyclist	Pedestrian
Slight	1	0	1	1
Serious	0	0	0	0
Fatal	0	0	0	0

Table 12.7 – Vehicles Involved in Accidents Summary

Accident Severity	Cyclist	Motorcycle	Car	HGV	Bus	Young Driver
Slight	1	1	7	2	0	2
Serious	0	0	1	0	0	0
Fatal	0	0	2	1	0	1

12.6.14 The statistics indicate that the majority of accidents are "Slight" in nature and that there are a limited number of HGV incidents occurring in the five year review period.

12.6.15 One "Fatal" accident involved a young driver and a car (near Rennibister), whilst the other "Fatal" accident involved an HGV and a car (to the west of Finstown).

12.6.16 Within a three year window, five accidents were recorded with three being "Slight", one "Serious" and one "Fatal".

Construction Phase

12.6.17 During the construction period, a variety of different vessels will be used to transport staff, materials and components to Faray. These movements and vessels are described in the Transport Assessment (See Appendix 12.1)

12.6.18 Average monthly traffic flow data were used to establish the construction trips associated with the site based on the assumptions detailed in Appendix 12.1.

12.6.19 There are a number of ecological and weather constraints that will affect construction on Faray. These have been factored into provide an initial construction period commencing in 2025 between March and the 15th of September. Activities in this period will focus on initial works such as setting up the new slipway (to replace the existing facility which is life expired), works for the landing jetty, developing site compounds, borrow pits and access tracks.

12.6.20 By the 15th of September 2025, the site will be shut down to ensure that no construction activities are present during seal breeding season. The site will then recommence in March 2026 to allow sufficient time for the ecological constraints to pass along with likely adverse weather periods.

12.6.21 The 2026 construction would focus on the wind farm elements of the Proposed Development with the turbines being erected and commissioned before the 15th of September.

12.6.22 The likely traffic movements on the Mainland of Orkney associated with material deliveries have been used alongside the indicative programme to determine timescales for the various deliveries and trips and is detailed in Table 12.8.

12.6.23 The trip generation programme indicates that March 2026 is the peak period for construction activities. It is estimated that a total of 6 Car / LGV movements and 14 HGV movements per day, resulting in a total of 20 movements per day.

12.6.24 Using the distribution of traffic described Appendix 12.1, the proposed traffic flows on the study area network at the peak of construction are illustrated in Table 12.9.

Table 12.8 – Construction Traffic Generation Profile

Activity	March	April	May	June	July	August		March	April	May	June	July	August
Site Establishment	*10*	*10*	*10*			*26*		*30*				*15*	*15*
Emergency Access Works		*6*	*6*										
Slipway Fill Materials		*28*	*28*										
Slipway Concrete Material Imports		*19*	*19*										
Blunt End Sheet Piles			*20*	*20*									
Landing Jetty Fill Materials				*86*	*86*	*86*		*86*					
Landing Jetty Concrete Materials								*40*	*40*				
General Site Deliveries		*40*	*40*	*40*	*40*	*40*		*40*	*40*	*40*	*40*	*40*	*40*
Access Track & Compound Material Imports			*157*	*157*	*157*								
Reinforcement					*14*			*41*					
Concrete Aggregate & Cement Deliveries								*143*	*143*	*143*			
Cable Deliveries									*6*	*2*			
Cabling Sand									*116*	*116*			
Geotextile / Duct Deliveries				*10*				*6*	*2*				
Substation Deliveries								*34*	*34*				
Cranage											*20*		*20*
AIL Deliveries											*81*	*81*	
Commissioning												*40*	*40*
Reinstatement Works												*50*	*50*
Staff	*61*	*180*	*180*	*180*	*180*	*180*		*180*	*180*	*180*	*180*	*180*	*121*
Working Days	*31*	*30*	*31*	*30*	*31*	*31*		*31*	*30*	*31*	*30*	*31*	*31*
Total Daily LGV	*2*	*6*	*6*	*6*	*6*	*6*		*6*	*6*	*6*	*6*	*6*	*4*
Total Daily HGV	*1*	*4*	*10*	*11*	*10*	*5*		*14*	*13*	*10*	*5*	*8*	*6*
Total Vehicles per Day	*3*	*10*	*15*	*17*	*16*	*11*		*20*	*19*	*16*	*11*	*14*	*10*

Table 12.9 – Peak Construction Month Daily Traffic Data

Location	Cars & Lights	HGV	Total
A965 Finstown	0	8	8
Grainshore Road	0	12	12
A965 Kirkwall	0	2	2
A965 West of Finstown	0	0	0

12.6.25 The peak month traffic data was combined with the future year (2024) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is presented in percentage increases for each class of vehicle and is illustrated in Table 12.10.

Table 12.10 – 2024 Peak Month Daily Traffic Data

Location	Cars & Lights	HGV	Total	Cars & Lights % Increase	HGV % Increase	Total Traffic % Increase
A965 Finstown	4405	264	4669	0.00 %	3.12 %	0.17 %
Grainshore Road	3452	295	3747	0.00 %	4.24 %	0.32 %
A965 Kirkwall	7783	315	8098	0.00 %	0.64 %	0.02 %
A965 West of Finstown	3998	243	4241	0.00 %	0.00 %	0.00 %

12.6.26 A review of existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESA Manual". The theoretical road capacity has been estimated for each of the road links that makes up the study area and the assessment is presented in Appendix 12.1. The assessment clearly indicates that there are no road capacity issues associated with the Proposed Development.

Operational Phase

12.6.27 It is predicted that during the operation of the site there would be up to two vehicle movements per week to Kirkwall Harbour (the likely start and end point for boat trips to and from Faray) for maintenance purposes.

12.6.28 Given the low level of traffic generation associated with the operational phase, no further assessment has been undertaken.

12.7 Receptors Brought Forward for Assessment

12.7.1 The impact assessment indicates that traffic levels will not exceed the 30 % threshold for total traffic or HGV flows at any point within the study area. As such, Rule 1 of the IEMA guidance is not exceeded.

12.7.2 Rule 2 notes that an assessment should be undertaken if traffic flows exceed 10 % in particularly sensitive areas. This rule is also not exceeded and as such, no further assessment is required.

12.8 Standard Mitigation

A number of the mitigation measures set out in the following section are considered good practice for wind farm construction sites and can be considered to be part of normal construction mitigation for a site of this nature.

Construction Phase

12.8.1 Subject to consent, the Applicant will prepare a Construction Traffic Management Plan (CTMP) for agreement with Orkney Islands Council prior to construction works commencing. The following measures would be implemented through the CTMP during the construction phase:

- All materials delivery lorries (dry materials) will be sheeted to reduce dust and stop spillage on public roads.
- Traffic originating from Cursiter Quarry could be fully or part routed via Zion's Loan to avoid integration with other road users in Finstown. This option will be further considered by the Balance of Plant (BoP) contractor in liaison with OIC prior to commencement of construction activities on site.
- Specific training and disciplinary measures will be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway.
- Provision of construction updates on the project website and distribution of a newsletter to study area road residents on material delivery routes.
- Requirement for all delivery drivers supplying bulk materials for export to Faray from Hatston to attend an induction to include a safety briefing, the need for appropriate care and speed control, particularly in sensitive areas, identification of specific sensitive areas, identification of the specified route, and the requirement not to deviate from the specified route.
- The production and implementation of a Staff Travel Plan for use on the Orkney Mainland or where staff are to be billeted during construction, which will include pick up times and car sharing information for those travelling to and from site.

12.8.2 The Applicant will cover the cost of abnormal wear and tear on roads not designed for that purpose and proposes that this is imposed by a planning condition.

12.8.3 Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline will inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs will be coordinated with Orkney Islands Council. Any damage caused by traffic associated with the Proposed Development, during the construction period that would be hazardous to road users, will be repaired immediately.

12.8.4 Any damage to road infrastructure caused directly by construction traffic will be made good and street furniture that is removed on a temporary basis would be fully reinstated.

Specific Abnormal Load Mitigation

12.8.5 The ability for abnormal loads to interact with other traffic is restricted to movements around Hatston Pier only.

12.8.6 All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the OIC Marine Services) with the aim to minimise the effect on other port users. It is likely that the abnormal load movements will avoid ferry and passenger vessel embarking / disembarking periods.

12.8.7 Advance warning signs would be installed on the approaches to the pier. Information signage could be installed to help assist drivers and to improve general safety.

12.8.8 An Abnormal Load Transport Management Plan would be developed. This will include:

- procedures for liaising with OIC Marine Services and ferry operators to ensure that vehicles are not impeded by the loads;
- a diary of proposed delivery movements to liaise with port operators and users to avoid key dates and times; and
- proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the applicant, the construction contractor and port stakeholders. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Operational Phase Mitigation

12.8.9 Regular maintenance will be undertaken to keep the site access track drainage systems fully operational and the road surface in good condition and to ensure there are no adverse issues affecting potential future use.

12.9 Likely Effects

Construction

The traffic levels will not exceed the assessment thresholds on the Mainland of Orkney and as such no significant effects are anticipated.

Operation

12.9.1 No operational effects are anticipated.

Decommissioning

12.9.2 The Applicant is seeking in-perpetuity consent for the Proposed Development. In the event of decommissioning, or replacement of turbines, it is anticipated that the levels of effect would be similar but of a lesser level than those during construction. Decommissioning would be undertaken in line with best practice processes and methods at that time and will be managed through an agreed Decommissioning Environmental Management Plan.

12.10 Additional Mitigation and Enhancement

Port Management Plan

12.10.1 Following discussions with Orkney Islands Council's Marine Services, it is apparent that Hatston Pier is currently highly utilised with freight, oil support and cruise liner traffic. Many vessels, especially the cruise liners, book quay space many months in advance and it will not be possible to relocate them to allow access for turbine deliveries.

12.10.2 Following consent, the Applicant will need to undertake a procurement exercise with the turbine suppliers to agree timescales for the import of components through Hatston Pier. As part of this process, the turbine suppliers will be required to formulate a Port Management Plan with OIC Marine Services. The management plan will:

- agree timescales for deliveries to be made;
- agree quay space and temporary storage areas;
- agree crane and stevedore access arrangements;

- book quay space;
- detail the vessels that will undertake the deliveries; and
- agree access rights along the access road from the pier and the convoy management with Orkney Islands Council, OIC Marine Services and Police.

12.10.3 To ensure that there are no detrimental issues at Hatston Pier, the Applicant would produce a Port Management Plan secured by planning condition that will be agreed prior to the delivery of the first turbine component.

12.11 Residual Effects

Construction

12.11.1 The assessment confirms that the effects will be **negligible** and non-significant. The traffic effects associated with the construction phase are temporary in nature and are confined to the construction period only. No long lasting detrimental transport or access issues are associated with the Proposed Development.

Operation

12.11.2 There are no residual effects associated with the operational phase of the Proposed Development.

12.12 Cumulative Assessment

12.12.1 The use of Low NRTF growth assumptions has provided a basis for general local development growth within the study area. The use of NRTF covers other committed development traffic flows within the study area.

12.12.2 The only consented wind farm application that is located near to the proposed road study area and that would share portions of the assessed study area is Costa Head Wind Farm.

12.12.3 Costa Head Wind Farm is being developed by Hoolan Energy on the Mainland of Orkney and shares elements of the study road network for access. A statement by the Development Director of Hoolan Energy, states that the wind farm will have a grid connection date of 2023. This implies that the Costa Head site will be constructed in 2022 – 2023 ready for the connection and that as such, its construction activities will not coincide with those for the Proposed Development. As such, no further cumulative assessment is required.

12.12.4 Should the Costa Head Wind Farm construction be delayed, then construction activities could potentially coincide with works at the Proposed Development. In this scenario, traffic levels will be greater than those described in this chapter. Should this occur, then this will be mitigated by using an overarching Traffic Management and Monitoring Plan for both sites and by introducing a phased abnormal loads delivery plan which will be agreed with OIC. The implementation of the mitigation will reduce any effects to non-significant.

12.13 Summary

12.13.1 The Proposed Development will lead to increased traffic volumes on the A965 during the construction phase. This increase will be temporary.

12.13.2 An assessment of likely effect using IEMA guidelines has been undertaken. This determined that **negligible**, non-significant effects could be expected within the study network on the Mainland of Orkney, relating to the increase in HGV traffic operating on the route. All other receptors with the study area have been scoped out of the assessment.

Table 12.11 – Summary of Effects

Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Construction					
Traffic impacts within the study area road network	Negligible and not significant	Adverse	No additional mitigation than the standard mitigation and provision of a Port Management Plan.	Negligible and non-significant	Adverse
Operation					
No operational effects anticipated.					

Table 12.12 – Summary of Cumulative Effects

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
Traffic impacts within the study area	Minor	Costa Head Wind Farm (assuming construction date of 2023)	No cumulative effects	
Traffic impacts within Finstown	Minor	Costa Head Wind Farm (assuming construction date of 2024)	Minor	

12.14 References

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