

# 11 Transport & Access

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# 11 Transport & Access

## 11.1 Executive Summary

- 11.1.1 The Proposed Development will be accessed from Nisthouse Road via a priority access junction constructed at the location of an existing agricultural access. In order to construct the Proposed Development, bulk materials such as concrete and rock will be imported to the site from local sources, whilst specialist loads such as the turbine components will arrive on Orkney by ship and will be transported to site using specialist vehicles from Hatston Pier.
- 11.1.2 The construction activities will lead to increased traffic volumes across the Study Area during the construction phase only. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 7 of the construction programme. During this month, an average of 149 Heavy Goods Vehicles (HGVs) movements is predicted per day and it is estimated that there would be a further 16 car and light van movements per day to transport construction workers to and from the site.
- 11.1.3 Following commissioning of the Proposed Development, traffic flows will fall to two vehicles movements every fortnight.
- 11.1.4 No significant capacity issues are expected on any of the roads within the Study Area due to the additional construction traffic movements associated with the Proposed Development.
- 11.1.5 A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows.
- 11.1.6 An assessment of likely effect using Institute of Environmental Management and Assessment (IEMA) guidelines has been undertaken. This determined that, following mitigation measures, **minor**, non-significant effects could be expected relating to the increase in total flows and HGV flows within the study area at the following locations: Hundland Road, Nisthouse Road, Dounby, the A986, Finstown and along the A965.

## 11.2 Introduction

- 11.2.1 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 potential 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.
- 11.2.2 A high-level overview of the effects of the traffic movements has been considered in accordance with Institute of Environmental Assessment (now IEMA) Guidelines for the Environmental Assessment of Road Traffic. The document is referred to as the 'IEMA Guidelines' in this Chapter.
- 11.2.3 The assessment has been undertaken by Gordon Buchan BEng (Hons), MSc, CMILT, FCIHT, Divisional Director of Pell Frischmann.
- 11.2.4 The Chapter should be read in conjunction with the Transport Assessment (refer to **Appendix 11.1**).

## 11.3 Legislation, Policy and Guidelines

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

### **Legislation**

11.3.2 There is no legislation applicable to this Chapter.

### **Policy & Guidance**

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

#### **Scottish Planning Policy (SPP) (2014)**

11.3.4 The purpose of the SPP is to set out national planning policies which reflect Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. The document notes that:

*"Where a new development or a change of use is likely to generate a significant increase in the number of trips, a transport assessment should be carried out. This should identify any potential cumulative effects which need to be addressed."*

11.3.5 In relation to the construction of new developments, the SPP notes:

*"Consideration should be given to appropriate planning restrictions on construction and operation related transport modes when granting planning permission, especially where bulk material movements are expected, for example freight from extraction operations".*

#### **Planning Advice Note (PAN) 75**

11.3.6 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)**

11.3.7 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.

11.3.8 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)**

11.3.9 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.

- 11.3.10 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**

- 11.3.11 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.

- 11.3.12 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.”*

- 11.3.13 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.”*

**11.4 Consultation**

- 11.4.1 Consultation has been undertaken with Orkney Islands Council (OIC) Roads Department as detailed below in Table 11.1.

**Table 11.1 – Consultation Summary**

Organisation	Summary / Concerns Raised	Action Proposed
OIC Roads Services 27 May 2022	No consultation response has been received from Roads Services.	The transport assessments will be undertaken in line with proposed method outlined in the Scoping Report.
OIC Neighbourhood Services and Infrastructure 30 May 2022	Query from project team requesting information regarding Nisthouse Road.	OIC Officer noted that Nisthouse Road is adopted by the Council.

## 11.5 Assessment Methodology and Significance Criteria

11.5.1 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**

11.5.2 Consultation was undertaken with the following:

- OIC – Neighbourhood Services and Infrastructure Team; and
- OIC – Roads Services Team

11.5.3 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 11.4 above.

### **Study Area**

11.5.4 The Study Area for this assessment is as follows:

- The A965, between Hatston Pier and A965 / A986 junction;
- The A986, between A965 / A986 junction and Hundland Road;
- Hundland Road;
- Lochside; and
- Nisthouse Road.

11.5.5 The Study Area network is illustrated in **Figure 11.1** and has been based upon scoping discussion with OIC and previous wind farm developments on the islands.

11.5.6 The Study Area includes areas of material supply (quarries, etc), the site access junction, the local road network and the construction material and abnormal load delivery routes. It is also of sufficient size to include the main areas of workforce accommodation during the construction period.

**Desk Study**

- 11.5.7 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.

**Site Visit**

11.5.8 The Desk Study was later confirmed by a site visit and walk over of the Proposed Development site in June 2022. This included a detailed review of Hatston Pier and the routes leading to and from the Proposed Development site.

**Assessment of Potential Effect Significance**

11.5.9 The Institution 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**

11.5.10 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.

11.5.11 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 11.2.

**Table 11.2 – 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	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	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.  Includes roads with little or no traffic calming	Where roads have no adjacent settlements.  Includes new strategic trunk roads that would be little affected by additional traffic and suitable for

Receptor	Sensitivity			
	High	Medium	Low	Negligible
	control signals, waiting and loading restrictions, traffic calming measures.	traffic management measures.	or traffic management measures.	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.

11.5.12 The classifications are based upon the activities that can be expected in different areas and different types of streetscapes. 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.

11.5.13 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**

11.5.14 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.

11.5.15 Examples of sensitive areas include locations where there are hospitals, churches, schools and historical buildings.

11.5.16 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.

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

**Significance of Effects**

11.5.18 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 Design Manual for Roads and Bridges (DMRB) LA 104 Environmental Assessment and Monitoring (Revision 1) Table 3.8.1 and summarised below in Table 11.3.

**Table 11.3 – 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

11.5.19 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**

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

### ***Residual Effects***

- 11.5.21 Residual effects will be assessed following a similar methodology as the potential effects but taking into consideration the identified mitigation.

### ***Cumulative Effects***

- 11.5.22 Cumulative effects will take into consideration other developments in planning which have been granted planning consent, under construction or in operation which, with the addition of the Proposed Development could cumulatively impact upon receptors.

### ***Limitations to Assessment***

- 11.5.23 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.
- 11.5.24 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.
- 11.5.25 Assumptions on the original points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on surrounding areas may alter to those presented in the assessment.

## **11.6 Baseline Conditions**

### ***Pedestrian and Cyclist Networks***

- 11.6.1 A review of the OIC's online mapping application (<https://oic.maps.arcgis.com/apps/MapSeries>) indicates that there are no Core Paths located within the Proposed Development site boundary.
- 11.6.2 St Magnus Way, which is a pilgrimage route through Orkney, runs on-road along the A986 for approximately 1 km between the road leading to Loch of Wasdale and Howe Road and also travels along a section of Hundland Road, between the A986 and Durkadale Road. There is also a section of St Magnus Way which travels along the A965 through Finstown, however, footways are available for use along this section of the pilgrimage route.
- 11.6.3 From reviewing Sustrans' National Cycle Network (NCN) online information (<https://www.sustrans.org.uk/national-cycle-network>) there are no National Cycle Routes (NCRs) on Orkney, however, there is an on-road route not on the NCN which is located within the study area along the A986, between Brough and Bimbister.

### ***Road Access***

- 11.6.4 Access to the site will be taken from an access junction Nisthouse Road which will be upgraded to accommodate AILs and construction traffic. Enabling works would be delivered along Lochside Road to the northwest of the site to allow access to the proposed borrowpit, however this will only be used for the delivery of plant and equipment and not bulk materials and would only be used in the initial phases of the site works. All bulk deliveries will be via main access on Nisthouse Road.
- 11.6.5 The access junction would have the first 5 m surfaced in a bituminous macadam and appropriate junction markings and reflective junction markers would be provided at the access bell-mouth. The throat of the junction would be a minimum of 6 m to ensure that opposing vehicles can pass in safety.
- 11.6.6 The A965 is a two-way single carriageway which is mainly subject to the national speed limit. The speed limit along the A965 reduces to 30 mph when travelling through Finstown.
- 11.6.7 The A986 is a two-way single carriageway which is mainly subject to the national speed limit. The speed limit along the A986 reduces to 30 mph when travelling through Dounby.
- 11.6.8 Within the Study Area, Hundland Road is a two-way single carriageway which runs between Loch of Boardhouse and Loch of Hundland and serves as an alternative link between A986 and the A966.

Lochside is a narrow cul-de-sac which provides access to a small number of dwellings and agricultural land. Nisthouse Road is a narrow road located along the western side of the site. There are passing places along each of these roads to facilitate two-way traffic movements.

11.6.9 The A965, A986, Hundland Road, Lochside and Nisthouse Road are maintained by OIC.

**Existing Traffic Conditions**

11.6.10 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 over a week long period between 16<sup>th</sup> and 24<sup>th</sup> June 2022. The locations and sources for the data are indicated below and are shown in **Figure 11.2**:

- Ref. No. 1: Hundland Road;
- Ref. No. 2: Lochside; and
- Ref. No. 3: Nisthouse Road.

11.6.11 In addition to the ATC data, further traffic count data was obtained from the Department for Transport (DfT) website count sites on the A967 and A986 (sites 4, 5, 6 and 7).

11.6.12 The DfT count sites are as follows:

- Ref. No. 4: A986, south of A967 / A986 Priority Junction – Count Site ID No. 41010;
- Ref. No. 5: A986, north of Brough – Count Site ID No. 11008;
- Ref. No. 6: A965, west of Finstown – Count Site ID No. 20994; and
- Ref. No. 7: A965, east of Finstown – Count Site ID No. 40998.

11.6.13 These sites were identified as being areas where sensitive receptors on the access route would be located.

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

11.6.15 In order to obtain traffic data which was not affected by the Covid-19 travel restrictions, 2019 traffic flows were obtained from the DfT database. The 2022 traffic flows were calculated by applying a National Road Traffic Forecast (NRTF) low growth factor of 1.022 to the 2019 flows and are presented in Table 11.4.

11.6.16 The locations of the ATC and DfT count sites are illustrated in **Figure 11.2**. These sites were identified as being areas where sensitive receptors on the access route could be located.

**Table 11.4 – 24 Hour Average Traffic Flows (2022)**

Ref. No.	Location	Cars & Lights	HGV	Total
1	Hundland Road	130	37	168
2	Lochside	43	13	55
3	Nisthouse Road	19	2	21
4	A986, west of Loch of Banks	688	55	743
5	A986, north of Brough	1,559	109	1,668

Ref. No.	Location	Cars & Lights	HGV	Total
6	A965, west of Finstown	3,761	332	4,093
7	A965, east of Finstown	4,264	354	4,617

Please note minor variances due to rounding may occur.

11.6.17 Table 11.5 presents the results of the two-way five-day average and 85<sup>th</sup> percentile speeds observed at the ATC count locations.

**Table 11.5 – Speed Summary (2022)**

Ref. No.	Location	Mean Speed (mph)	85th %ile Speed (mph)	Speed Limit (mph)
1	Hundland Road	39.5	48.4	60.0
2	Lochside	27.3	36.0	60.0
3	Nisthouse Road	24.4	31.2	60.0

11.6.18 The results of the speed survey data which are presented in Table 11.5 suggest that there is compliance with the existing speed limits for the locations surveyed.

11.6.19 Speed information was not available for DfT count points.

**Accident Review**

11.6.20 Road traffic accident data for the period commencing 1st January 2018 through to the 30<sup>th</sup> June 2021 was obtained from the online resource crashmap.co.uk which uses data collected by the police about road traffic crashes occurring on British roads.

11.6.21 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 11.6, 11.7 and 11.8 summarise the accidents noted in the study area and the locations are presented in **Figure 11.3**.

**Table 11.6 – Accident History Summary**

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

11.6.22 There are four recorded incidents along road links within the Study Area within the survey period. A summary of the casualty types is presented in Table 11.7 and the types of vehicles involved in the accidents are presented in Table 11.8.

**Table 11.7 – Accident Casualty Type Summary**

Accident Severity	Cyclist	Child	Motorcyclist	Pedestrian	Car Driver / Passenger
Slight	0	0	0	0	2
Serious	0	0	0	0	1
Fatal	0	0	0	0	1

**Table 11.8 – Vehicles Involved in Accidents Summary**

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

11.6.23 Following a review of accident data, there does not appear to be any apparent accident trends within the study area.

#### ***Future Baseline***

11.6.24 Construction of the Proposed Development could commence during 2025 if consent is granted and is anticipated to take up to 12 months depending on weather conditions and ecological considerations.

11.6.25 To assess the likely effects during the construction and typical operational phase, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows.

11.6.26 The traffic flows were brought to a common year of 2025 using NRTF by applying low growth estimates for 2022 to 2025 is 1.016. The 2025 baseline flows are presented in Table 11.9 and these flows will be used in the Construction Traffic Impact Assessment.

**Table 11.9 – 2025 24 Hour Average Traffic Flows**

Ref. No.	Location	Cars & Lights	HGV	Total
1	Hundland Road	133	38	170
2	Lochside	44	13	56
3	Nisthouse Road	19	2	21
4	A986, west of Loch of Banks	699	56	755
5	A986, north of Brough	1,583	111	1,695
6	A965, west of Finstown	3,821	337	4,159

Ref. No.	Location	Cars & Lights	HGV	Total
7	A965, east of Finstown	4,332	359	4,691

Please note minor variances due to rounding may occur.

### **Receptor Sensitivity**

11.6.27 A review of sensitive receptors has been undertaken within the Study Area.

11.6.28 Table 11.10 details the receptors and their sensitivities for use within the following assessment. A justification for the sensitivity has been provided, based upon the details contained in Table 11.2.

**Table 11.10 – Summary of Receptor Sensitivity**

Receptor	Sensitivity	Justification
Hundland Road Users	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Nisthouse Road Users	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
A986 Road Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
A965 Road Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
Finstown Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Dounby Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.

11.6.29 Based on the indicators which are stated within the IEMA Guidelines, ‘Rule 2’ notes that an assessment should be undertaken if traffic flows exceed 10% in particularly sensitive areas. It should be noted that Finstown and Dounby are considered sensitive areas (which include churches and schools) and are subject to an assessment as construction traffic will increase by over 10 %.

11.6.30 All other locations within the study area are subject to ‘Rule 1’ and are assessed if traffic flows (or HGV flows) on highway links increase by more than 30 %.

### **Construction Phase**

11.6.31 The assessment is based upon the construction effects that may occur within the study area. In order to assess the effects, it is necessary to determine the likely traffic generation associated with the proposed development.

11.6.32 During the 12 month construction period, the following traffic will require access to the site:

- staff transport, either cars or staff minibuses;

- construction equipment and materials, deliveries of machinery and supplies such as crushed rock and concrete; and
  - abnormal loads consisting of the wind turbine sections and also a heavy lift crane, transported to site in sectional loads.
- 11.6.33 Average monthly traffic flow data were used to establish the construction trips associated with the site based on the assumptions detailed in **Appendix 11.1**.
- 11.6.34 The distribution of development trips on the network will vary depending on the types of loads being transported. All traffic will enter and exit the site by way of the site access junction on Nisthouse Road during the peak of construction activity.
- 11.6.35 Staff trips are assumed to originate from the south. It is assumed that 50% will arrive from Dounby and another 50% will arrive from Kirkwall. General site deliveries are also assumed to all originate from Kirkwall.
- 11.6.36 All bulk materials (road stone, cabling sand, etc) will likely originate from either Cursiter or Heddle Quarries to provide a robust assessment of trip generation.
- 11.6.37 Deliveries associated with ready-mix concrete are assumed to be delivered from Gairsty Quarry to the south-west of the site via the A967.
- 11.6.38 General construction and building supply deliveries will arrive from Kirkwall, whilst geotextile, cable and reinforcement deliveries will be made from the UK Mainland to Orkney via the freight ferry that docks at Hatston Pier.
- 11.6.39 All abnormal loads would be unloaded at Hatston Pier and would access the site via A965, A986, Hundland Road and Nisthouse Road. Full details of these loads are provided in **Appendix 11.1**.
- 11.6.40 The trip generation programme presented in Table 11.11 indicates that Month 7 is the peak period for construction activities. The activities are anticipated to generate an average of 165 movements per day (83 trips in and 83 trips out), of which 16 would be made by light vehicles (site staff, etc.) and 149 by HGV.

**Table 11.11 – Construction Traffic Generation Profile**

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Site Establishment	50	50										
General Site Deliveries	40	40	40	40	40	40	40	40	40	40	40	40
Access Tracks & Hardstand Stone		2,352	2,352	2,352	2,352	2,352	2,352					
Access Track Geotextiles		3			3							
Concrete Deliveries						754	754	754				

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Reinforcement Deliveries						14	14	14				
Cabling Sand							69	69	69			
Cabling Materials							5	5	5			
Cranage									6	6		
Turbine Delivery									53	53		
Turbine Escorts									42	42		
Substation & Ancillary Works							38	38	38	38		
Site Reinstatement & Commissioning											50	50
Staff	180	180	361	361	361	361	361	361	361	361	180	180
Total HGV	90	2,445	2,392	2,392	2,395	3,159	3,272	920	253	178	40	40
Total Cars / LGV	180	180	361	361	361	361	361	361	361	361	230	230
Total Movements	270	2,625	2,752	2,752	2,755	3,520	3,632	1,281	614	539	270	270
Total HGV per Day	4	111	109	109	109	144	149	42	11	8	2	2
Total Cars / LGV per Day	8	8	16	16	16	16	16	16	16	16	10	10
Total per Day	12	119	125	125	125	160	165	58	28	25	12	12

Please note minor variances due to rounding may occur.

11.6.41 Using the distribution of traffic described **Appendix 11.1**, the proposed traffic flows on the Study Area network at the peak of construction are illustrated in Table 11.12. The proposed construction delivery routes are presented in **Figure 11.4**.

**Table 11.12 – Peak Construction Month Daily Traffic Data**



Ref. No.	Location	Cars & Lights	HGV	Total
1	Hundland Road	16	149	165
2	Lochside	0	0	0
3	Nisthouse Road	16	149	165
4	A986, west of Loch of Banks	16	114	131
5	A986, north of Brough	8	114	123
6	A965, west of Finstown	8	114	123
7	A965, east of Finstown	8	114	123

Please note minor variances due to rounding may occur.

11.6.42 The peak month traffic data was combined with the future year (2025) 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 11.13.

**Table 11.13 – 2025 Peak Month Daily Traffic Data**

Ref. No.	Location	Cars & Lights	HGV	Total	Cars & Lights % Increase	HGV % Increase	Total Traffic % Increase
1	Hundland Road	149	186	335	12 %	394 %	97 %
2	Lochside	44	13	56	0 %	0 %	0 %
3	Nisthouse Road	35	151	186	86 %	6830 %	779 %
4	A986, west of Loch of Banks	715	171	886	2 %	204 %	17 %
5	A986, north of Brough	1,592	226	1,817	1 %	103 %	7 %
6	A965, west of Finstown	3,829	452	4,281	0 %	34 %	3 %
7	A965, east of Finstown	4,340	474	4,814	0 %	32 %	3 %

11.6.43 The total traffic movements are anticipated to increase by over 30% along Hundland Road and Nisthouse Road, 97% and 779%, respectively.

11.6.44 Whilst these increases are statistically significant, it is generally caused by the relatively low baseline traffic flows and will see an additional 165 journeys per day (83 inbound trips and 83 outbound trips). This represents an average of approximately 14 journeys every hour during construction activities, which is not considered significant in overall traffic terms.

11.6.45 HGV movements are anticipated to increase by over 30% along all road links, with the exception of Lochside. Again, whilst these increases are statistically significant, they are generally caused by low

baseline traffic flows and will see an additional 149 HGVs along Hundland Road and Nisthouse Road and an additional 114 HGVs along the A986 and A965, which represents approximately 12 and 10 HGVs per hour, respectively, which is not considered significant in overall terms.

11.6.46 A review of existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 “The NESAs 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 11.1**. The assessment clearly indicates that there are no road capacity issues associated with the Proposed Development.

11.6.47 It should also be noted the construction phase is transitory in nature and the peak of construction activities is short lived.

### ***Operational Phase***

7.1.1 It is predicted that during the operation of the Proposed Development there would be up to two vehicle movements per week for maintenance purposes. There may be occasional abnormal load movements to deliver replacement components in the unlikely event of a major failure.

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

## **11.7 Standard Mitigation**

11.7.1 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***

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

- Where possible the detailed design process would minimise the volume of material to be imported to site to help reduce HGV numbers.
- While this assessment considers the impact of 100% of the aggregate materials being imported to the site, as a robust assessment, it is anticipated that on-site borrow pits will provide 50% of aggregate material requirements for on-site works which will therefore reduce the number of aggregate deliveries assessed by half.
- All materials delivery lorries (dry materials) will be sheeted to reduce dust and stop spillage on public roads.
- 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.
- Wheel cleaning facilities will be established on the site.
- Appropriate traffic management measures will also be put in place at the site access junction to advise drivers to slow down and be aware of turning traffic.
- Provision of construction updates on the project website and distribution of a newsletter to residents within an agreed distance of the site.
- Requirement for all delivery drivers 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.

- 11.7.3 The Applicant will cover the cost of abnormal wear and tear on roads not designed for that purpose and propose that this imposed by a planning condition.
- 11.7.4 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 OIC. 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.
- 11.7.5 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.
- 11.7.6 There will be a daily road edge review and any debris and mud removed from the public carriageway using an onsite road sweeper to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works were complete.

### ***Specific Abnormal Load Mitigation***

- 11.7.7 All abnormal load deliveries will be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys will travel in the early morning periods before peak times while general construction traffic would generally avoid the morning and evening peak periods.
- 11.7.8 The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are narrower and road users are generally more accustomed to them.
- 11.7.9 Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:
  - On the A965 and A986 where the loads may straddle the centre line, where fast moving oncoming traffic may be encountered, etc.;
  - On the section of contraflow movement at the junction of the A965 and Grainshore Road;
  - Where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms; and
  - In locations where high speeds of general traffic are predicted.
- 11.7.10 Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).
- 11.7.11 The location and numbers of signs will be agreed post consent and would form part of the wider traffic management proposals for the Proposed Development.
- 11.7.12 Information on the turbine convoys will be provided to local media outlets such as local papers and local radio to help assist the public.
- 11.7.13 Information would relate to expected vehicle movements from Hatston Pier through to the site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.
- 11.7.14 The Applicant will also ensure information was distributed through its communication team via the project website, local newsletters and social media.

- 11.7.15 A Police escort will be required to facilitate the delivery of the predicted loads. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.
- 11.7.16 The abnormal loads convoys will be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.
- 11.7.17 The times in which the convoys would travel will need to be agreed with Police Scotland who have sole discretion on when loads can be moved.

#### **Abnormal Load Transport Management Plan**

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

#### **A Staff Travel Plan**

- 11.7.19 A Staff Travel Plan would be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:
- Appointment of a Travel Plan Coordinator (TPC);
  - Provision of public transport information;
  - Mini-bus service for transport of Site staff;
  - Promotion of a car sharing scheme; and
  - Car parking management.

#### **Operational Phase Mitigation**

- 11.7.20 Site entrance roads will be well maintained and monitored during the operational life of the development. 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 the public road network.

## 11.8 Receptors Brought Forward for Assessment

- 11.8.1 The IEMA Guidelines ‘Rule 1’ notes that an assessment should be undertaken if traffic flows (or HGV flows) exceed 30%.
- 11.8.2 The impact assessment presented in Table 11.13 indicates that traffic levels will exceed the 30% threshold for total traffic or HGV flows along Hundland Road, Nisthouse Road, A986, west of Loch of Banks, A986, north of Brough, A965, west of Finstown and A965, east of Finstown.
- 11.8.3 ‘Rule 2’ of the IEMA Guidelines notes that an assessment should be undertaken if traffic flows in sensitive areas increase by 10 % or more.
- 11.8.4 It is expected that total traffic flows will increase by over 10% in Dounby (see Table 11.13, Ref. No. 4 – A986, west of Loch of Banks) and total traffic is not expected to increase by over 10 % in Finstown (see Table 11.13, Ref. No. 6 – A965, west of Finstown). However, as HGV flows exceed 30 % through both Dounby and Finstown, both of these areas will be considered for further assessment.
- 11.8.5 The following receptors will therefore be brought forward for assessment:
- Hundland Road Users;
  - Nisthouse Road Users;
  - A986 Road Users;
  - A965 Road Users;
  - Finstown Residents; and
  - Dounby Residents.

## 11.9 Potential Effects

### **Construction**

- 11.9.1 An assessment of the likely effects has been undertaken using the previously described thresholds. The results of this are summarised below in Table 11.14. The likely effects have assumed that the proposed mitigation measures are in place.

**Table 11.14 – Construction Phase Effects Assessment**

<i>Receptor</i>	<b>Severance</b>	<b>Driver Delay</b>	<b>Pedestrian Delay</b>	<b>Amenity</b>	<b>Fear</b>	<b>Accidents &amp; Safety</b>
Hundland Road Users	moderate / minor	minor	minor	moderate / minor	moderate / minor	minor
Nisthouse Road Users	moderate / Minor	minor	minor	moderate / minor	moderate / minor	minor
A986 Road Users	minor / negligible	minor / negligible	minor	major / moderate	minor / negligible	minor
A965 Road Users	minor / negligible	minor / negligible	minor / negligible	minor	minor / negligible	minor
Finstown Residents	minor / negligible	minor / negligible	minor / negligible	minor	minor / negligible	minor
Dounby Residents	minor / negligible	minor / negligible	minor	moderate / minor	minor / negligible	minor

11.9.2 The effects on Hundland Road Users, Nisthouse Road Users, A986 Road Users, A965 Road Users, Finstown Residents and Dounby Residents have been reviewed and, following professional judgement, are classified as being **minor** and non-significant.

**Operation**

11.9.3 No operational effects are anticipated.

**Decommissioning**

11.9.4 The Applicant is seeking consent for an operational life of 40 years for the Proposed Development. With regards to decommissioning, 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

## 11.10 Additional Mitigation and Enhancement

**Port Management Plan**

11.10.1 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.

11.10.2 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 the harbour authorities. 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, ports team and Police.

11.10.3 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.

## 11.11 Residual Effects

**Construction**

11.11.1 The assessment confirms that the effects will be **minor** 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**

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

## 11.12 Cumulative Assessment

- 11.12.1 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.
- 11.12.2 The only consented wind farm application that is located near to the Proposed Development site and that would share portions of the assessed Study Area is Costa Head Wind Farm.
- 11.12.3 Costa Head Wind Farm is being developed by Hoolan Energy to the north-west of the Proposed Development. 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.
- 11.12.4 An Application has been approved to extend Cursiter Quarry, to the south-east of Finstown along Old Finstown Road. From reviewing the online planning documents, the proposed extension will see an approximate increase of four vehicle movements per day (two inbound trips and two outbound trips). The impact of these trips on the local transport network will be negligible and so no further review of the Cursiter Quarry extension is necessary.
- 11.12.5 Finstown Substation is to be located to the south-east of A986 / A965 junction was granted planning permission in April 2019 and a condition of the planning permission outlines that the substation is to be commenced within five years of that date. From reviewing the online planning documents, it is anticipated that the substation will take three and a half years. As the construction periods may overlap, traffic flows associated with the construction of the substation will be included in a combined sensitivity review.
- 11.12.6 The peak traffic flows for Finstown Substation were obtained from its planning application documents (see Table 11.15) and then compared to the future baseline year in Table 11.16.

**Table 11.15 – Combined Scheme Sensitivity Review Peak Traffic Summary**

Location	Finstown Substation		Nisthill Wind Farm		Total	
	Cars & Lights	HGV	Cars & Lights	HGV	Cars & Lights	HGV
Hundland Road	0	0	16	149	16	149
Lochside	0	0	0	0	0	0
Nisthouse Road	0	0	16	149	16	149
A986, west of Loch of Banks	0	0	16	114	16	114
A986, north of Brough	0	0	8	114	8	114
A965, west of Finstown	35	8	8	114	43	122
A965, east of Finstown	35	8	8	114	43	122

**Table 11.16 – Combined Scheme Sensitivity Traffic Impact Summary**

Location	Cars & Lights	HGV	Total	Cars & Lights % Increase	HGV % Increase	Total % Increase
Hundland Road	149	186	335	12%	394%	97%
Lochside	44	13	56	0%	0%	0%
Nisthouse Road	35	151	186	86%	6830%	779%
A986, west of Loch of Banks	715	171	886	2%	204%	17%
A986, north of Brough	1592	226	1817	1%	103%	7%
A965, west of Finstown	3864	460	4324	1%	36%	4%
A965, east of Finstown	4375	482	4857	1%	34%	4%

11.12.7 The combined traffic flows indicates that there will be a slight increase in flows along the A965 should the two developments be constructed concurrently, compared to the increase in traffic as a result of the Proposed Development presented in Table 11.13. If the two developments are constructed concurrently the total flows along the A965, will increase by an additional 2 %. There will, however, be more than sufficient spare road capacity to accommodate this in the event of the two sites being constructed at the same time.

11.12.8 Any effects of these sites being constructed at the same time would be mitigated through the use of an overarching Traffic Management and Monitoring Plan for all sites, which includes Costa Head Wind Farm should construction on the wind farm be delayed.

11.12.9 Furthermore, it is not predicted that the potential traffic flow increases could ever occur on the study area for the following reasons:

- It is extremely unlikely that the peak traffic conditions would occur at the same time due to differences in construction programmes, material supplies and developer resources; and
- All abnormal load deliveries cannot occur at three separate sites on the same day due to restrictions on the numbers of loads moving on the network at the same time set by Police Scotland.

## 11.13 Summary

11.13.1 The Proposed Development will lead to increased traffic volumes along road links within the Study Area during the construction phase. This increase will be temporary as traffic volumes will fall considerably outside of the peak period. It should also be noted that background traffic levels within the Study Area are considered low.

11.13.2 The AIL components will be delivered to the site from the Port of Entry at Hatston Pier. The movement of the AIL traffic would require temporary remedial works at a number of locations along the identified delivery route.

11.13.3 The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in month 7 of the construction programme. During this month, an average of 149 HGV movements is predicted per day and it is estimated that there would be a further 16 car and light van movements per day to transport construction workers to and from the site.



- 11.13.4 Traffic levels during the operational phase of Proposed Development would be one or two vehicles per week for maintenance purposes. Traffic levels during the decommissioning of the Proposed Development are expected to be lower than during the construction phase as some elements may be left in-situ and others broken up onsite.
- 11.13.5 No significant capacity issues are expected on any of the roads within the Study Area due to the additional construction traffic movements associated with the Proposed Development.
- 11.13.6 A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows.
- 11.13.7 An assessment of likely effect using IEMA guidelines has been undertaken. This determined that **minor**, non-significant effects could be expected relating to the increase in total flows and HGV flows within the study area at the following locations: Hundland Road, Nisthouse Road, Dounby, the A986, Finstown and along the A965.

**Table 11.17 – Summary of Effects**

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Construction					
Hundland Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor	Adverse
Nisthouse Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor	Adverse
A986 Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor	Adverse
A965 Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor	Adverse
Finstown Residents	Minor	Adverse	CTMP Proposals and improved signage	Minor	Adverse
Dounby Residents	Minor	Adverse	CTMP Proposals and improved signage	Minor	Adverse
Operation					
N/A	N/A	N/A	N/A	N/A	N/A
Decommissioning					
N/A	N/A	N/A	N/A	N/A	N/A

**Table 11.18 – Summary of Cumulative Effects**

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
Sensitivity review included in the assessment above for transport and access matters				

## 11.14 References

The Institution of Environmental Management and Assessment (2005). Guidelines for Environmental Impact Assessment.

The Institution of Environmental Management and Assessment (1993). Guidelines for the Environmental Assessment of Road Traffic.

Department for Transport (2020). Design Manual for Roads and Bridges, LA 104 Environmental Assessment and Monitoring. Available at:

<https://www.standardsforhighways.co.uk/prod/attachments/0f6e0b6a-d08e-4673-8691-cab564d4a60a?inline=true>

Department for Transport (2013). *Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESAs Manual"*. Available at: <http://www.sias.com/2013/TS/201303NesaManual.pdf>

Scottish Government (2014). Scottish Planning Policy (SPP). Available at:

<https://www.gov.scot/publications/scottish-planning-policy/documents/>

Scottish Government (2005). Planning Advice Note (PAN) 75. Available at:

<https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/>

Transport Scotland (2012). Transport Assessment Guidance. Available at:

[https://www.transport.gov.scot/media/4589/planning\\_reform\\_-\\_dpmtag\\_-\\_development\\_management\\_dpmtag\\_ref\\_17\\_-\\_transport\\_assessment\\_guidance\\_final\\_-\\_june\\_2012.pdf](https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management_dpmtag_ref_17_-_transport_assessment_guidance_final_-_june_2012.pdf)

Scottish Government (2014). Onshore Wind Turbines; Renewables Planning Advice. Available at:

<https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/>

Orkney Islands Council (2017). Orkney Local Development Plan (LDP). Available at:

<https://www.orkney.gov.uk/Service-Directory/O/Orkney-Local-Development-Plan.htm>

Orkney Islands Council Application Search and Submission. Available at:

[https://www.orkney.gov.uk/Service-Directory/D/application\\_search\\_submission.htm](https://www.orkney.gov.uk/Service-Directory/D/application_search_submission.htm)

Hoolan (2019). Costa Head Wind Farm. Available at:

<https://www.hoolanenergy.com/projects/costa-head>