

# 11 Traffic and Transport

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# 11. Traffic and Transport

## Executive Summary

During construction the Proposed Development will be accessed from the A838 via an upgraded access junction currently used for access to the existing Cassley Hydro Power Station.

In order to construct the Proposed Development, bulk materials such as cement, sand and aggregate will be brought in from local suppliers from the south via the A838 and A836. Specialist loads such the turbine components will be transported to site from Invergordon using specialist vehicles via the A9, A839, A836 and A838.

The construction activities will lead to increased traffic volumes predominantly on the A836 and A838 during the construction phase only. Following commissioning of the Proposed Development, traffic flows will fall to approximately two vehicles every week.

An assessment of likely potential effects using IEMA Guidelines has been undertaken. This determined that minor, non-significant residual effects could be expected on the A836 and A838 road corridors from the site access junction through to Ardgay, relating to the increase in traffic operating on the route during the construction phase. There are no residual effects associated with the operational phase of the Proposed Development. Any effects during construction are reduced by mitigation proposals including a Construction Traffic Management Plan (CTMP).

The traffic effects during the operational phase of the Proposed Development are likely to be insignificant as expected traffic flows will be less than two vehicle movements per week, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operational phase are scoped out of the assessment.

The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 30 years on from the completion of the site. As elements of the Proposed Development may remain in-situ (such as cable trenches, access tracks, etc), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst-case assessment and as such, no further assessment of the decommissioning phase has been considered at this point in time and has been scoped out of the assessment.

## 11.1 Introduction

11.1.1 This chapter examines the transport and access issues associated with the Proposed Development and considers the likely significant effects on transport and access associated with the construction, operation, and decommissioning of the Proposed Development. The specific objectives of the chapter are to:

- describe the existing access network and transport baseline;
- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the 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.

11.1.2 The assessment has been carried out by Gordon Buchan BEng (Hons), MSc, CMILT, MCIHT, of Pell Frischmann Consultants Limited.

11.1.3 This chapter is supported by the following appendix:

- Appendix 11.1: Transport Assessment (including CTMP proposals and Route Survey Report);

11.1.4 Figures and technical appendices are referenced in the text where relevant.

## 11.2 Legislation, Policy and Guidelines

11.2.1 An overview of relevant transport planning policies has been undertaken and is summarised below for national and local government policies.

### **Legislation**

11.2.2 There is no specific relevant legislation relating to this chapter.

### **National Policy**

#### Planning Advice Note (PAN) 75

11.2.3 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.”*

#### Highland-wide Local Development Plan (2012)

11.2.4 The Highland-wide Local Development Plan (LDP) was adopted by The Highland Council (THC) in April 2012 and is the established planning policy for the Highlands. It sets out a settlement strategy and spatial framework for how the Council foresees development occurring in the forthcoming twenty-year period.

11.2.5 The LDP does not contain any specific wind farm traffic policy guidance in relation to the transport assessment for the Proposed Development. However, Policy 56 is relevant with regards to general transport policy. The relevant transport elements from this policy are:

*“Development proposals that involve travel generation must include sufficient information with the application to enable the Council to consider any likely on- and off- site transport implications of the development and should:*

*incorporate appropriate mitigation on site and/or off site, provided through developer contributions where necessary, which might include improvements and enhancements to the walking/cycling network and public transport services, road improvements and new roads; and*

*incorporate an appropriate level of parking provision, having regard to the travel modes and services which will be available and key travel desire lines and to the maximum parking standards laid out in Scottish Planning Policy or those set by the Council.*

*When development proposals are under consideration, the Council’s Local Development Strategy will be treated as a material consideration.*

*The Council will seek the implementation and monitoring of Green Travel Plans in support of significant travel generating developments.”*

## **Guidance**

### Transport Assessment Guidance (2012)

- 11.2.6 Transport Scotland’s 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 impacts 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.
- 11.2.7 The document notes that a TA will be required where a development is likely to have significant transport impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale, and type of development.

### Guidelines of the Environmental Assessment of Road Traffic (1993)

- 11.2.8 This transport assessment has reviewed the guidance described in the Guidelines of the Environmental Assessment of Road Traffic, 1993 published by IEMA.

### Guidance on the Preparation of Transport Assessments (2014)

- 11.2.9 THC has prepared guidance on how TA should be prepared for development sites within the Highlands. The guidance was published by THC in November 2014.
- 11.2.10 This assessment has noted the guidelines and has provided the required assessment.

## **11.3 Consultation**

- 11.3.1 Table 11.1 summarises the consultation responses from 2011 regarding transport and access matters and provides information on where and/or how they have been addressed in this assessment. The following regulatory bodies made comment on transport matters during scoping discussions:

- Energy Consents Unit (ECU);
- THC Transport Department (as local roads agency); and
- Transport Scotland (as trunk roads agency).

**Table 11.1 – 2011 Consultation Summary**

| <b>Consultee</b> | <b>Consultation Response</b>  | <b>Applicant Action</b>   |
|------------------|---|---|
| ECU              | The Environmental Statement should provide information relating to the preferred route options for delivering the turbines etc. via the trunk road network.   | Routing details for all construction loads are provided in the Transport Assessment (Appendix 11.1) |
|                  | The Environmental Impact Assessment should also address access issues, particularly those impacting upon the trunk road network, in particular, potential stress points at junctions, approach roads, borrow pits, bridges, site compound and batching areas etc. | Details for all construction loads are provided in the Transport Assessment (Appendix 11.1)         |

| Consultee          | Consultation Response   | Applicant Action   |
|--------------------|---|--|
|                    | <p>Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report:</p> <ul style="list-style-type: none"> <li>- the work has been undertaken, e.g. transport assessment;</li> <li>- what this has shown i.e. what impact if any has been identified, and</li> <li>- why it is not significant.</li> </ul> | A full impact and significance review has been undertaken and is detailed in this chapter and the Transport Assessment (Appendix 11.1)   |
| Transport Scotland | <p>The Environmental Statement should provide information relating to the preferred route options for the movement of heavy loads and anticipated construction staff movements via the trunk road network during the construction period. In addition, information must be supplied identifying potential environmental impacts on the trunk road once the development is operational, together with any required mitigation measures.</p>    | Routing details for all construction loads are provided in the Transport Assessment (Appendix 11.1)  |
|                    | <p>Potential trunk road related environmental impacts such as noise, air quality, safety etc should be assessed.</p>  | The effects of increased transport movements are detailed in this chapter. Detailed air quality and noise assessments are covered in the wider noise and air quality chapters. |
| THC                | No comments raised  | Noted. The assessment however has been undertaken in line with THC Transport Assessment Guidance.  |

11.3.2 Table 11.2 summarises the further consultation responses received during 2020 pre-application advice.

**Table 11.2 – 2020 Consultation Summary**

| <b>Consultee</b>   | <b>Consultation Response</b>   | <b>Applicant Action</b>   |
|--------------------|--|---|
| THC                | The Application should include the following: <ul style="list-style-type: none"> <li>- Transport Assessment;</li> <li>- Construction Traffic Management Plan; and</li> <li>- Abnormal Load Assessment, including Swept Path Analysis.</li> </ul> | A full impact and significance review has been undertaken and is detailed in this chapter and the Transport Assessment (Appendix 11.1). |
| Transport Scotland | The EIA should assess the potential impacts on the trunk road network. This should include an Abnormal Loads Route Assessment of the proposed route and Swept Path Analysis.   | A full impact and significance review has been undertaken and is detailed in this chapter and the Transport Assessment (Appendix 11.1). |

## **11.4 Assessment Methodology and Significance Criteria**

11.4.1 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 (IEMA, 2005). The document is referred to as the 'IEMA Guidelines' in this chapter.

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

- determine baseline conditions;
- review the Proposed Development to identify potential effects including any cumulative effects;
- evaluate significance of effects on receptors;
- identify mitigation; and
- assess residual effects.

11.4.3 This chapter considers effects on the following:

- The existing baseline transport conditions of the study area surrounding the Proposed Development site;
- The likely infrastructure requirements necessary to enable the Proposed Development;
- The likely effects and changes associated with the imposition of construction traffic on the local road network;
- What measures would be required to mitigate against any potential significant effects of the temporary construction traffic;
- The likely traffic conditions during the operational phase of the proposed development; and
- The likely traffic conditions during the decommissioning phase of the proposed development.

- 11.4.4 No cumulative transport effects have been assessed within this chapter (refer to Section 11.11 below). A review of the Caithness & Sutherland Local Development Plan indicates that there are no significant traffic generating developments proposed within the immediate study area that would be complete and open prior to the expected date of the Proposed Development being constructed.
- 11.4.5 The use of Low National Road Traffic Forecast (NRTF) traffic growth assumptions have provided a robust future year assessment scenario to account for the level of trip generation that can occur as a result of the types of local development that may occur within the study area and the effects of tourist traffic on the network.
- 11.4.6 The assessment is based on the Proposed Development as described in Chapter 4.

### **Consultation**

- 11.4.7 The scope of the assessment has been informed by consultation responses summarised in Tables 11.1 and 11.2, and the following guidelines/policies:
- Institute of Environmental Assessment, Guidelines for the Environmental Assessment of Road Traffic (1993);
  - IEMA Guidelines (2005);
  - Transport Scotland, Transport Assessment Guidance (2012);
  - Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) (Highways Agency, 2008); and
  - THC, Guidance on the Preparation of Transport Assessments (2014).

### **Study Area**

- 11.4.8 The Study Area includes local roads that are likely to experience increased traffic flows resulting from the Proposed Development. The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.
- 11.4.9 The Proposed Development would take access directly from one upgraded access junction.
- 11.4.10 Access for construction materials would be predominantly from the south via the A9, A836 and A838. Access via the B9176 Struie Road is not considered suitable for bulk materials deliveries due to the sinuous nature of the road and the natural constraints at the Allt Fearn Burn bridge, Strathroy River bridge and bends and at the River Avereon bridge. Bulk construction traffic would be prohibited from this route via the Balance of Plant (BoP) contract as the Applicant does not consider the road suitable for articulated Heavy Goods Vehicle (HGV) deliveries, where alternative routes such as the A9 and A836 exist.
- 11.4.11 Abnormal loads associated with the wind turbines only have one road available to access the site and this is via the A9, A839, A836 and A838, with loads passing through The Mound, Rogart and Lairg. A full description of the route is described in later sections with details of the constraints.
- 11.4.12 The study area for the assessment has therefore been assumed to be:
- The A838 between the site access and its junction with the A836;
  - The A9 (between Invergordon and The Mound);
  - The A836 (from the Dornoch Bridge to the junction with the A838); and
  - The A839 (between the A9 at The Mound and Lairg).
- 11.4.13 This study area, illustrated in Appendix 11.1 includes areas of material supply (quarries, etc), the site access junction, the trunk 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.

### ***Potential Effects Scoped Out***

- 11.4.14 The traffic effects during the operational phase of the Proposed Development are likely to be insignificant as expected traffic flows will be less than two vehicle movements per week, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operational phase are scoped out of the assessment.
- 11.4.15 The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 30 years on from the completion of the site. As elements of the Proposed Development may remain in-situ (such as cable trenches, access tracks, etc), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst-case assessment and as such, no further assessment of the decommissioning phase has been considered at this point in time and has been scoped out of the assessment.

### ***Desk Study***

- 11.4.16 The desk study included reviews and identification of the following:
- relevant transport planning policy;
  - collection of traffic flow and accident data;
  - review of accident data;
  - sensitive locations, such as within built up areas and at the site access junction;
  - any other traffic sensitive receptors in the area (core paths, routes, communities, etc.);
  - 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 (AIL) through a Route Survey including swept path assessments.

### ***Route Survey***

- 11.4.17 A route survey was undertaken in Spring 2020 to review the access route for AIL and to review potential access constraints and opportunities.

### ***Assessment of Potential Effect Significance***

#### Criteria for Assessing the Sensitivity of Receptors

- 11.4.18 The IEMA Guidelines (IEMA, 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 major new developments. The guidelines intend to complement professional judgement and the experience of trained assessors.
- 11.4.19 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.
- 11.4.20 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 11.3.

**Table 11.3 - Classification of Receptor Sensitivity**

| Receptor                       | Sensitivity  |  |   |  |
|--------------------------------|--|--|---|--|
|                                | High   | Medium   | Low   | Negligible   |
| Users of Roads                 | Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.<br><br>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.<br><br>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.<br><br>Includes roads with little or no traffic calming or traffic management measures. | Where roads have no adjacent settlements.<br><br>Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junction 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.  |

11.4.21 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.

#### Criteria for Assessing the Magnitude of Change

11.4.22 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 highways 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.

11.4.23 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 Guidelines 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*”;
- 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.*”;

- 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 enmity would be where the traffic flow (or its lorry component) is halved or doubled. Therefore, it is 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; and
- Accidents and safety – professional judgement would be used to assess the implication of local circumstances, or factors which may elevate or lessen risks of accidents.

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

Criteria for Assessing Cumulative Effects

11.4.25 No cumulative assessment has been undertaken in transport terms as detailed in following sections, as there will be no overlapping peak traffic flows with the Proposed Development.

Criteria for Assessing Significance

11.4.26 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 DMRB and summarised in Table 11.4.

**Table 11.4 - 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         |

11.4.27 In terms of the EIA Regulation, effects would be considered to be significant where they are assessed to be major or moderate. Where an effect could be one of major/moderate or moderate/minor, professional judgement would be used to determine which option should be applicable and whether the effect is significant or not.

- 11.4.28 The assessment is based upon average traffic flows in one-month periods. During the month, activities at the site may fluctuate between one day and another and it is not possible to fully develop a day-by-day traffic flow estimate as no BoP contractor has been appointed and external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc).

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

- 11.4.29 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.
- 11.4.30 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.
- 11.4.31 Assumptions on the origin 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.
- 11.4.32 Wide area review of traffic surveys was not undertaken due to the impact that COVID-19 restrictions have had on traffic flows and patterns. As such historic traffic data sources have been utilised.

## **11.5 Baseline Conditions**

### ***Baseline Traffic Surveys***

- 11.5.1 Access to the site would be taken directly from the A838 via an upgraded access junction that is currently used to access the existing Cassley Hydro Power Station. The junction will be widened and upgraded to allow for all construction and operational traffic requirements.
- 11.5.2 The A838 is a local distributor road that, within the study area, provides a connection to the north-west from Dalchork. The road is generally single carriageway with passing places.
- 11.5.3 The A836 is a district distributor road that provides connections between Tain and Thurso via Lairg and Tongue. The road is of a good standard and varies between 6 m and 7 m in width and is subject to a 60 miles per hour (mph) limit outwith settlements.
- 11.5.4 The A839 connects The Mound and A9 through to Lairg and beyond to Invercassley. The road is generally a modern two-lane road with a speed limit of 60 mph, with 30 mph restrictions within settlements.
- 11.5.5 The A838, A836 and A839 are all maintained and operated by THC.
- 11.5.6 The A9 is the main trunk road in the area and connects Polmont to Scrabster. The road is operated on behalf of Transport Scotland by BEAR Scotland. Within the study area, the road is subject to a 60 mph speed limit in the main.
- 11.5.7 The A9 and A836 within the study area form part of the North Coast 500 (NC500) tourist route. This 516 mile route is now a popular tourist sightseeing route around the north-west Highlands and Sutherland and has been responsible for an increase in traffic visiting the study network.
- 11.5.8 In order to assess the impact of development traffic on the study area, Annual Average Daily Traffic (AADT) flows were obtained from the UK Department for Transport (DfT) traffic database. It was not possible to collect new traffic flow data for the whole of the study network due to the ongoing impact on transport and access arising from the COVID-19 travel restrictions.
- 11.5.9 The count sites used were as follows:
1. A838 to the north of the site access junction;
  2. A836 within the centre of the settlement of Lairg;
  3. A839 to the west of Pittentrail;
  4. A836 to the west of Bonar Bridge;

5. A836 within the settlement of Ardgay;
  6. A9 to the south of The Mound; and
  7. A9 at Glenmorangie.
- 11.5.10 The locations of the traffic count sites used in this assessment are illustrated in Appendix 11.1. The DfT traffic data allow the traffic flows to be split in vehicle classes. The data was summarised into Cars / Light Goods Vehicles (LGV) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).
- 11.5.11 Table 11.5 summarises the AADT traffic data collected and used in this assessment.

**Table 11.5- Existing AADT Traffic Conditions**

| Survey Location           | Cars & LGV | HGV | Total |
|---------------------------|------------|-----|-------|
| A838 Site Access Junction | 73         | 9   | 82    |
| A836 Lairg                | 1,825      | 140 | 1,965 |
| A839 Lairg                | 830        | 27  | 857   |
| A839 Rogart               | 830        | 27  | 857   |
| A836 Bonar Bridge         | 1,683      | 106 | 1,789 |
| A836 Ardgay               | 1,706      | 128 | 1,834 |
| A9 south of The Mound     | 3,988      | 310 | 4,298 |
| A9 at Glenmorangie        | 7,383      | 494 | 7,877 |

### **Baseline Road Safety Review**

- 11.5.12 Road traffic accident data for the three year period commencing 1 January 2017 through to the 31 December 2019 was obtained from the online resource [crashmap.co.uk](http://crashmap.co.uk) which uses data collected by the police about road traffic crashes occurring on British roads.
- 11.5.13 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. The review included the A836 and A839 from the A9 towards the Proposed Development site.
- 11.5.14 A summary analysis of the incidents indicates that:
- 11 accidents were recorded within the study area roads within the five-year period;
  - Of those 11 accidents, 7 were classed as “Slight”, 2 as “Serious” and 2 as “Fatal”. One “Fatal” accident (between Ardgay and Bonar Bridge) involved a pedestrian casualty, the other (located to the west of Lairg) involved a motorcyclist;
  - No accidents were recorded on the A838 near the location of the proposed access junction;
  - Motorcycles were involved in 2 accidents, including 1 “Fatal” and 1 “Serious” incident.
  - Young drivers were involved in 2 “Slight” and 1 “Serious” accident;
  - There were no reported accidents involving a bus or a pedal cycle in the study area; and
  - There were only one HGV accident noted on the study area, located on the A838.
- 11.5.15 The analysis indicates that the vast majority of recorded accidents are categorised as being “Slight”.

## **Baseline Sustainable Travel Infrastructure Review**

- 11.5.16 There are no core paths recorded by THC near the site access junction. The closest core paths to the site are located to the south in and around Lairg. Only two core paths in Lairg are located near study area roads, namely: SU16.02 Gunn’s Wood and SU16.07 Balloan – Lairg. Neither core paths cross the A839.
- 11.5.17 The A838 does not have any pedestrian or cyclist infrastructure near the site access junction, although the A836 between the A9 and the A836 / A838 junction is listed as part of National Cycle Route 1 (NCR 1).

## **Future Baseline**

- 11.5.18 Construction of the Proposed Development could commence during 2023 if consent is granted and is anticipated to take up to 18 months depending on weather conditions and ecological considerations.
- 11.5.19 To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows.
- 11.5.20 The NRTF low growth factor for 2019 to 2023 is 1.027. These factors were applied to the 2019 survey data to estimate the 2023 base traffic flows shown in Table 11.6. This will be used in the Construction Peak Traffic Impact Assessment.

**Table 11.6 - Baseline 2023 Traffic Conditions<sup>1</sup>**

| <b>Survey Location</b>    | <b>Cars &amp; LGV</b> | <b>HGV</b> | <b>Total</b> |
|---------------------------|-----------------------|------------|--------------|
| A838 Site Access Junction | 75                    | 9          | 84           |
| A836 Lairg                | 1,874                 | 144        | 2,018        |
| A839 Lairg                | 852                   | 28         | 880          |
| A839 Rogart               | 852                   | 28         | 880          |
| A836 Bonar Bridge         | 1,728                 | 109        | 1,837        |
| A836 Ardgay               | 1,752                 | 131        | 1,884        |
| A9 south of The Mound     | 4,096                 | 318        | 4,414        |
| A9 at Glenmorangie        | 7,582                 | 507        | 8,090        |

- 11.5.21 In the scenario that the Proposed Development did not proceed, traffic growth will still occur.

## **11.6 Standard Mitigation**

### **Construction Phase Mitigation**

- 11.6.1 The following measures would be implemented through a Construction Traffic Management Plan (CTMP) during the construction phase. The CTMP would be agreed with THC prior to construction works commencing.

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<sup>1</sup> Please note that growth assumptions can lead to minor rounding errors in quoted figure within this chapter and appendices

- Where possible, further detailed design processes would minimise the volume of material to be imported to site to help reduce HGV numbers;
  - A site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times);
  - A Traffic Management Plan to control the operation of the access junctions;
  - All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
  - Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
  - Wheel cleaning facilities will be provided at both access junctions;
  - Normal site working hours would be limited to between 07:00 and 18:00 (Monday to Friday and 07:00 and 12:00 (Saturday) with no working on Sundays or public holidays, though component delivery and turbine erection may take place outside these hours;
  - Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the site.
  - All drivers would be required to attend a detailed induction prior to undertaking any works on the Proposed Development site.
- 11.6.2 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).
- 11.6.3 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.
- 11.6.4 Information on the turbine convoys will be provided to local media outlets such as local papers and local radio to help assist the public.
- 11.6.5 The Applicant will also ensure information was distributed through its communication team via the project website, local newsletters and social media.
- 11.6.6 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.
- 11.6.7 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.
- 11.6.8 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

- 11.6.9 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.

### ***Operational Phase Mitigation***

- 11.6.10 The site entrance will be well maintained and monitored during the operational life of the Proposed 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.

## **11.7 Receptors Brought Forward for Assessment**

### ***Construction Traffic***

- 11.7.1 During the 18 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.
- 11.7.2 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.
- 11.7.3 The distribution of construction trips on the network will vary depending on the types of loads being transported. All traffic will enter the site by way of the upgraded access junction off the A838. All trips will approach from the south using the A836 and A838, with construction staff expected to be based at both Lairg and Bonar Bridge.
- 11.7.4 Aggregates, sand and cement will be supplied from local sources and the assessment has assumed the facilities located to the east of Ardgay for the supply of these materials. General construction, building supply deliveries, geotextile, cable and reinforcement deliveries will be made from the A9 via the A836 and A838.
- 11.7.5 ALL deliveries associated with the turbine components will access from Invergordon via the A9, A839, A836 and A838.
- 11.7.6 Using the assumptions above (and provided in greater detail in Appendix 11.1: Transport Assessment), a construction programme has been developed for the Proposed Development. This has been used to determine timescales for the various deliveries and trips and is detailed in Table 11.7.
- 11.7.7 The results conclude that Month 10 is likely to be the peak period for the construction phase. The activities are anticipated to generate an average of 100 movements per day (50 trips inbound and 50 trips outbound), of which 46 would be made by light vehicles (site staff) and 52 by HGV.

- 11.7.8 Using the distribution of traffic described in Appendix 11.1, the proposed traffic flows on the study area network at the peak of construction are illustrated in Table 11.8.
- 11.7.9 Please note that the figures quoted in Table 11.7 are average flows that have been rounded to the nearest whole number. As such, there may be minor rounding errors reported.

**Table 11.7 - Construction Traffic Profile**

| <b>Activity</b>                             | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> | <b>10</b> | <b>11</b> | <b>12</b> | <b>13</b> | <b>14</b> | <b>15</b> | <b>16</b> | <b>17</b> | <b>18</b> |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Site Establishment &amp; Remediation</b> | 100      | 50       |          |          |          |          |          |          |          |           |           |           |           |           |           |           | 100       | 50        |
| <b>General Site Deliveries</b>              | 40       | 40       | 40       | 40       | 40       | 40       | 40       | 40       | 40       | 40        | 40        | 40        | 40        | 40        | 40        | 40        | 40        | 40        |
| <b>Bulk Material Deliveries</b>             |          |          |          |          |          | 755      | 755      | 755      | 755      | 755       | 755       |           |           |           |           |           |           |           |
| <b>Plant Deliveries</b>                     |          | 40       |          |          |          |          |          |          |          |           |           |           |           |           |           | 40        |           |           |
| <b>Batching Plant Raw Materials</b>         |          |          |          |          |          | 100      | 100      | 100      | 100      | 100       | 100       |           |           |           |           |           |           |           |
| <b>Reinforcement</b>                        |          |          |          | 14       |          | 14       |          | 14       |          | 14        |           |           |           |           |           |           |           |           |
| <b>Cable &amp; Ducting Deliveries</b>       |          |          |          |          |          | 6        |          | 6        |          | 6         |           |           |           |           |           |           |           |           |
| <b>Cabling Sand</b>                         |          |          |          |          |          |          |          | 167      | 167      | 167       | 167       | 167       | 167       |           |           |           |           |           |
| <b>Geotextile Deliveries</b>                |          |          | 61       |          | 61       |          | 61       |          |          | 61        |           |           |           |           |           |           |           |           |
| <b>Substation &amp; HV Building</b>         |          |          |          |          |          |          |          |          |          |           | 42        | 42        |           |           |           |           |           |           |

| Activity                        | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>AIL Cranage</b>              |           |           |           |           |           |           |           |           |           |            |           |           | 20        |           |           | 20        |           |           |
| <b>AIL Deliveries</b>           |           |           |           |           |           |           |           |           |           |            |           |           | 59        | 59        | 59        | 59        |           |           |
| <b>AIL Escorts</b>              |           |           |           |           |           |           |           |           |           |            |           |           | 50        | 50        | 50        | 50        |           |           |
| <b>Commissioning</b>            |           |           |           |           |           |           |           |           |           |            |           |           |           |           |           | 88        | 88        | 88        |
| <b>Staff</b>                    | 286       | 528       | 1,056     | 1056      | 1,056     | 1,056     | 1,056     | 1,056     | 1,056     | 1,056      | 1056      | 1,056     | 1,056     | 1,056     | 1,056     | 1,056     | 528       | 528       |
| <b>Total HGV</b>                | 140       | 130       | 101       | 54        | 101       | 915       | 956       | 1,082     | 1,062     | 1,143      | 1,104     | 249       | 286       | 99        | 99        | 159       | 140       | 90        |
| <b>Total Cars / LGV</b>         | 286       | 528       | 1,056     | 1,056     | 1,056     | 1,056     | 1,056     | 1,056     | 1,056     | 1,056      | 1,056     | 1,056     | 1,106     | 1,106     | 1,106     | 1,194     | 616       | 616       |
| <b>Total Movements</b>          | 426       | 658       | 1,157     | 1,110     | 1,157     | 1,971     | 2,012     | 2,138     | 2,118     | 2,199      | 2,160     | 1,305     | 1,392     | 1,205     | 1,205     | 1,353     | 756       | 706       |
| <b>Total HGV per Day</b>        | 6         | 6         | 5         | 2         | 5         | 42        | 43        | 49        | 48        | 52         | 50        | 11        | 13        | 5         | 5         | 7         | 6         | 4         |
| <b>Total Cars / LGV per Day</b> | 13        | 24        | 48        | 48        | 48        | 48        | 48        | 48        | 48        | 48         | 48        | 48        | 50        | 50        | 50        | 54        | 28        | 28        |
| <b>Total per Day</b>            | <b>19</b> | <b>30</b> | <b>53</b> | <b>50</b> | <b>53</b> | <b>90</b> | <b>91</b> | <b>97</b> | <b>96</b> | <b>100</b> | <b>98</b> | <b>59</b> | <b>63</b> | <b>55</b> | <b>55</b> | <b>62</b> | <b>34</b> | <b>32</b> |

**Table 11.8 – Peak Construction Month Daily Traffic Data**

| Survey Location           | Cars & LGV | HGV | Total |
|---------------------------|------------|-----|-------|
| A838 Site Access Junction | 48         | 52  | 100   |
| A836 Lairg                | 24         | 50  | 74    |
| A839 Lairg                | 24         | 2   | 26    |
| A839 Rogart               | 24         | 2   | 26    |
| A836 Bonar Bridge         | 24         | 50  | 74    |
| A836 Ardgay               | 12         | 50  | 62    |
| A9 south of The Mound     | 0          | 2   | 2     |
| A9 at Glenmorangie        | 0          | 6   | 6     |

11.7.10 The peak month traffic data was combined with the future year (2023) 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 11.9. Please note there may be minor rounding errors quoted in the tables.

**Table 11.9 - 2023 Peak Month Daily Traffic Data**

| Location                  | Cars & LGV | HGV | Total | Cars & LGV % Increase | HGV % Increase | Total Traffic % Increase |
|---------------------------|------------|-----|-------|-----------------------|----------------|--------------------------|
| A838 Site Access Junction | 123        | 61  | 184   | 64.02 %               | 562.15 %       | 118.70 %                 |
| A836 Lairg                | 1,898      | 194 | 2,092 | 1.28 %                | 34.87 %        | 3.67 %                   |
| A839 Lairg                | 876        | 30  | 906   | 2.82 %                | 6.56 %         | 2.93 %                   |
| A839 Rogart               | 876        | 30  | 906   | 2.82 %                | 6.56 %         | 2.93 %                   |
| A836 Bonar Bridge         | 1,752      | 159 | 1,911 | 1.39 %                | 46.06 %        | 4.04 %                   |
| A836 Ardgay               | 1,764      | 182 | 1,946 | 0.68 %                | 38.14 %        | 3.30 %                   |
| A9 south of The Mound     | 4,096      | 320 | 4,416 | 0.00 %                | 0.57 %         | 0.04 %                   |
| A9 at Glenmorangie        | 7,582      | 513 | 8,095 | 0.00 %                | 1.09 %         | 0.07 %                   |

11.7.11 A review of existing road capacity has been undertaken using the DMRB, 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 and that no further assessment is required.

### **Receptor Review**

- 11.7.12 The impact assessment indicates that traffic levels will not exceed the 30 % threshold for total traffic within the study area, with the sole exception of the A838. The 10 % threshold for HGV traffic is exceeded on the A838 and on the A836 within Lairg, Bonar Bridge and Ardgay and a further assessment is required, as detailed below.
- 11.7.13 A review of receptors has been undertaken to allow assessment against the criteria laid out in the IEMA Guidelines and the supporting thresholds. The receptor sensitivities within the study area are noted below in Table 11.10 and are based upon the descriptions contained in Table 11.3.

**Table 11.10 – Receptor Sensitivity Summary**

| <b>Receptor</b>                                    | <b>Sensitivity</b> | <b>Justification</b>   |
|--|--------------------|--|
| Road Users of the A838 at the Site Access Junction | High               | A class road not subject to high HGV traffic flows   |
| Road Users of the A836 in Lairg                    | Low                | A class road with no traffic calming features  |
| Road Users of the A836 in Bonar Bridge             | Low                | A class road with no traffic calming features  |
| Road Users of the A836 in Ardgay                   | Low                | A class road with no traffic calming features  |
| Residents on the A836 frontage in Lairg            | Low                | Rural settlement with few community or public facilities or services on the road frontage        |
| Residents on the A836 frontage in Bonar Bridge     | Medium             | Intermediate sized rural settlement, containing some community or public facilities and services |
| Residents on the A836 frontage in Ardgay           | Low                | Rural settlement with few community or public facilities or services on the road frontage        |

## **11.8 Potential Effects**

### **Construction**

- 11.8.1 An assessment of the likely effects has been undertaken using the previously described thresholds. The results of this are summarised below in Table 11.11. The likely effects have assumed that the proposed mitigation measures described in Section 11.6 are in place.

**Table 11.11 – Construction Phase Effects Assessment**

| <i>Receptor</i>                               | <i>Severance</i> | <i>Driver Delay</i> | <i>Pedestrian Delay</i> | <i>Amenity</i> | <i>Fear</i> | <i>Accidents &amp; Safety</i> |
|---|------------------|---------------------|-------------------------|----------------|-------------|-------------------------------|
| <b>A838 Users at the Site Access Junction</b> | moderate         | moderate            | minor                   | minor          | moderate    | moderate                      |
| <b>A836 Lairg Users</b>                       | minor            | minor               | minor                   | minor          | minor       | minor                         |
| <b>A836 Bonar Bridge Users</b>                | minor            | minor               | minor                   | minor          | minor       | minor                         |
| <b>A836 Ardgay Users</b>                      | minor            | minor               | minor                   | minor          | minor       | minor                         |
| <b>Lairg A836 residents</b>                   | minor            | minor               | minor                   | minor          | minor       | minor                         |
| <b>Bonar Bridge A836 residents</b>            | minor            | minor               | minor                   | minor          | minor       | minor                         |
| <b>Ardgay A836 residents</b>                  | minor            | minor               | minor                   | minor          | minor       | minor                         |

11.8.2 The effects noted on the A838 have been reviewed against the physical characteristics of the road at the site access location, where pedestrian flows are insignificant due to the lack of infrastructure and pedestrian destinations. As such, professional judgement has been used and the severance, pedestrian delay and amenity criteria can be reclassified as “minor” or “moderate”.

11.8.3 Further mitigation measures are required on the A838 and these are detailed in the following section.

## **11.9 Additional Mitigation and Enhancement**

11.9.1 Whilst no further assessment is required following the assessment noted in Section 11.7, further mitigation measures are proposed to further improve the operation of the construction phase and to ensure the highest levels of road safety.

### ***Wear & Tear Agreement***

11.9.2 THC will require an agreement to cover the cost of abnormal wear and tear on the A838 between its junction with the A836 junction and the site access.

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

11.9.4 During construction activities, a road wear and tear review would be undertaken with THC every two months.

- 11.9.5 Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.
- 11.9.6 There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

#### ***Site Access Traffic Management Plan***

- 11.9.7 A review of A838 passing places would be undertaken post consent with THC transport officers to agree a list of strategic passing place enhancements.
- 11.9.8 The review will consider passing places that would be extended and widened (within the limits of the adopted road boundary). This review will help improve journey times on the A838 in the single carriageway section and reduce potential conflicts with other road users.
- 11.9.9 Upon agreement of the passing place improvements, the passing places would be upgraded prior to the start of bulk deliveries being made to site.

#### ***Additional Traffic Management Measures***

- 11.9.10 Additional site specific measures could further improve road safety across the study area. These are:
- A voluntary 15 mph speed limit for HGV traffic associated with the site when passing through Ardgay, Bonar Bridge and Lairg. This will help reduce fear and amenity issues within the settlements and help improve road safety.
  - The greater use of on-site borrow pits would help reduce the number of HGV movements leading to and from site than what has been assumed within this assessment.
- 11.9.11 These measures will be delivered as part of a wider ranging CTMP, secured by planning condition.

### **11.10 Residual Effects**

#### ***Construction***

- 11.10.1 The assessment confirms that the residual effects will be minor and non-significant following mitigation. This conclusion has been based upon professional judgement following a review of the actual numbers of movements on the proposed study area which whilst result in a statistically high percentage, impact are low in physical numbers.
- 11.10.2 The traffic effects associated with the construction phase are however temporary in nature and are confined to the construction period only (anticipated to be 18 months). No long lasting detrimental transport or access issues are associated with the Proposed Development. The proposed measures will help reduce the impacts of construction traffic and will improve road safety for all road users during this period.

### **11.11 Cumulative Assessment**

- 11.11.1 The use of 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.
- 11.11.2 Sites that do not have planning consent cannot be considered as committed schemes and cannot be included in the Proposed Development assessment as they may be refused or may not progress beyond scoping.
- 11.11.3 Three consented wind farm sites are located in close proximity to the Proposed Development site. These are Creag Riabhach (located to the north on the A836 near Crask Inn), Lairg 2 Wind Farm (located to the south of Lairg) and Braemore (located to the south of the A839, west of Achany).

- 11.11.4 Creag Riabhach is due to start construction in late 2020, with construction due to complete in March 2022. As such, all construction activities will have ceased by the time that works will commence at the Proposed Development.
- 11.11.5 Lairg 2 was consented in June 2020 and construction activities are unlikely to commence until 2023 / 2024 due to the need to discharge planning conditions, grid connection timescales and general procurement requirements. The developer of the Lairg 2 site has recently announced that they intend to submit a new planning application for the site to extend the turbine tip heights. The new planning application will involve a new consultation and consideration period, which will delay the construction process and will place the peak of construction activities outwith the construction period for the Proposed Development at Sallachy. As such, it is unlikely that the respective traffic flows will coincide.
- 11.11.6 Braemore was consented in 2017, but construction works have yet to commence (planning permission for the site expires in October 2022). A review of the planning submission documents for site revealed that there is no detailed transport review of the site and as such it is not possible to include its trip estimates into this assessment.
- 11.11.7 No other significant traffic generating developments were noted in the study area that may occur during the construction period associated with The Proposed Development.
- 11.11.8 Any crossover of traffic with the Proposed Development flows and those associated with future developments would be addressed via a Traffic Management Plan. The inclusion of further traffic flows in the base line (i.e. including non-consented traffic) will dilute the potential impact that the Proposed Development will have. As such, the approach taken is considered to be an overly robust assessment and no significant residual effects are anticipated.

## **11.12 Summary**

- 11.12.1 The Proposed Development will lead to increased traffic volumes on the A838 and A836 during the construction phase. This increase will be temporary.
- 11.12.2 An assessment of likely effect using IEMA Guidelines has been undertaken. This determined that minor, non-significant effects could be expected along the A838 and A836 between the site access junction and Ardgay, 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.
- 11.12.3 Operational and decommissioning effects have been scoped out of the assessment.
- 11.12.4 No cumulative effects were anticipated.

**Table 11.12 – Summary of Effects**

| Description of Effect   | Significance of Potential Effect |                        | Mitigation Measure   | Significance of Residual Effect |                        |
|---|----------------------------------|------------------------|--|---------------------------------|------------------------|
|   | Significance                     | Beneficial/<br>Adverse |  | Significance                    | Beneficial/<br>Adverse |
| Construction  |                                  |                        |  |                                 |                        |
| Traffic effects on the A838   | Moderate                         | Adverse                | Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for ALL movements, provision of localised road improvement works. | Minor                           | Adverse                |
| Operation   |                                  |                        |  |                                 |                        |
| No operational effects anticipated.   |                                  |                        |  |                                 |                        |
| Decommissioning   |                                  |                        |  |                                 |                        |
| Any decommissioning effects would be less than those predicted for the construction phase and have therefore been scoped out of the assessment. |                                  |                        |  |                                 |                        |

**Table 11.13 – Summary of Cumulative Effects**

| Receptor | Effect | Cumulative Developments | Significance of Cumulative Effect |                        |
|----------|--------|-------------------------|-----------------------------------|------------------------|
|          |        |                         | Significance                      | Beneficial/<br>Adverse |
| None     | None   | None                    | None                              | None                   |

## 11.13 References

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