



Kyleakin Fish Feed Factory

Marine Harvest

Environmental Impact Assessment - Volume 2 of 4: Main Report

Chapter 8: Traffic and Transport

Final

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8. Traffic and Transport

This document has been prepared on behalf of Marine Harvest (Scotland) Ltd (hereafter referred to as MH or 'the Applicant') to identify and consider the traffic and transport impacts of their proposed scheme to develop a Fish Feed Plant (hereby referred to as 'the Proposed Development') at Allt Anavig Quarry, Kyleakin, Isle Of Skye.

8.1 Methodology

8.1.1 Assessment Methodology

The traffic impact of the Proposed Development has been assessed utilising the following approach:

- relevant transport policies were reviewed;
- the road sections likely to be affected by the traffic associated with the Proposed Development have been identified;
- the existing character of the road network has been determined;
- existing traffic levels on the road network have been determined;
- the additional traffic generated by all stages of the Proposed Development has been estimated;
- the effect of the additional traffic has been assessed; and
- appropriate mitigation measures have been identified to ensure that any potential traffic impacts are kept to a minimum.

No significant visitor traffic is expected during any phase of the Proposed Development and as such has not been assessed within this chapter.

While the sources of raw materials have still to be confirmed, there is the potential for a number of roads to be used by general construction traffic and staff cars. Therefore, on this basis and to undertake a robust study it has been assumed that all construction traffic will potentially route via each of the surveyed locations on the road network as detailed in Section 8.1.4.

8.1.2 Area of Study

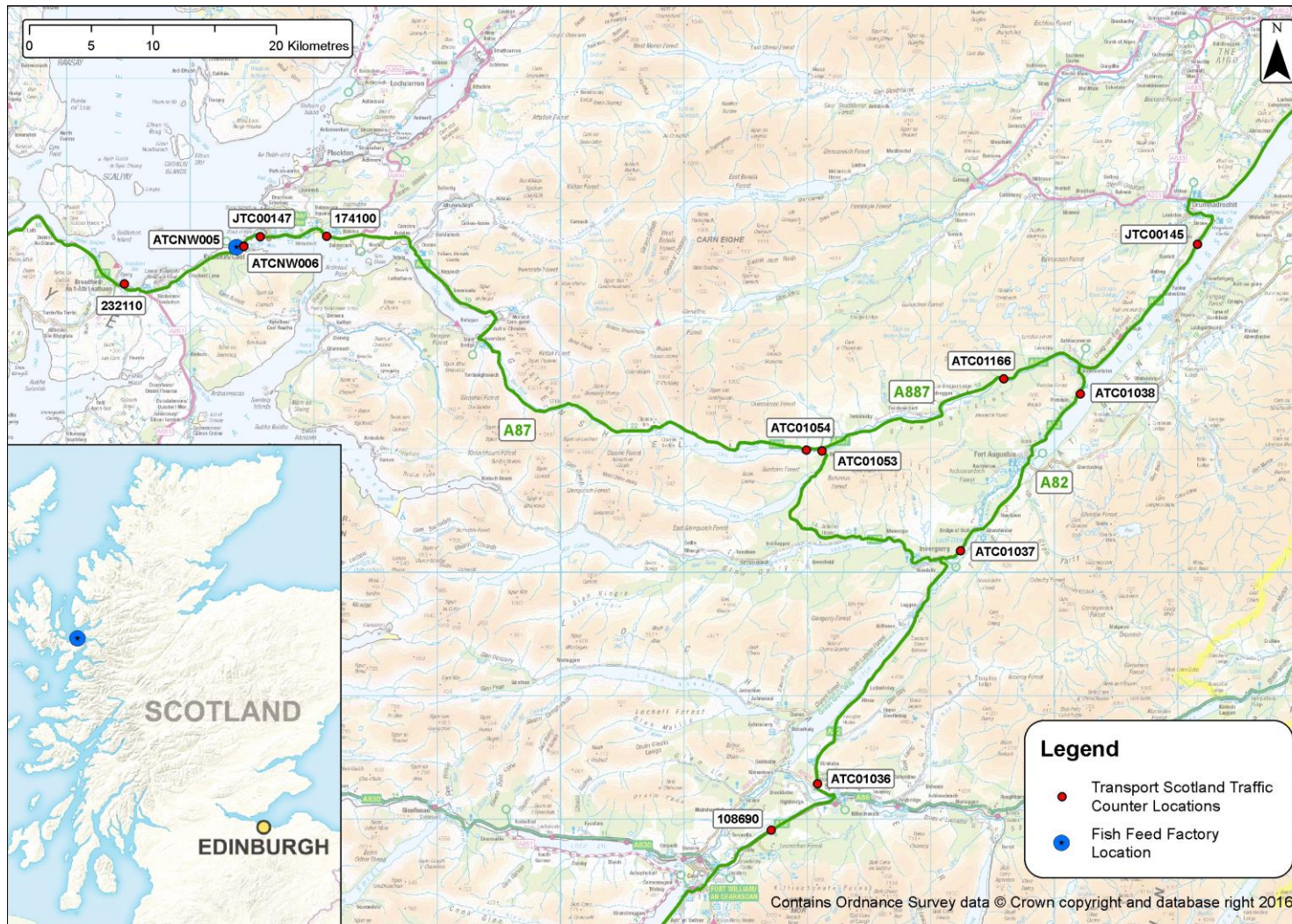
To define conditions for the Proposed Development in terms of access and transportation, a baseline study comprising a strategic route review and local access assessment was undertaken.

The Proposed Development is located at Allt Anavig Quarry on the east coast of the Isle of Skye, Inner Hebrides, in The Highland Council (THC) local authority area. The application site is located southwest of the Skye Bridge to Kyle of Lochalsh, approximately 700m west from the village of Kyleakin.

The traffic impact study area was defined as comprising the following sections of the road network, as shown on **Figure 8.1**:

- A87;
- A887; and
- A82.

Figure 8.1 : Local Road Network and Transport Scotland Counter Locations.



Access to the Proposed Development is taken directly from the A87 trunk road via an existing priority junction that leads directly into the site. The junction, which serves the existing Allt Anavig Quarry, is situated approximately 250m to the west of the Kyleakin Roundabout at the south of the Skye Bridge. The existing access is in good condition and has successfully accommodated traffic associated with the quarry, including a number of daily HGV movements. As such the existing access, in its current form, is predicted to comfortably accommodate traffic associated with all phases of the Proposed Development.

A Construction Traffic Management Plan (CTMP), details of which are provided in Section 8.5, will ensure that construction traffic routes to the site via designated routes.

The study area was not expanded any further as it is expected that construction traffic will disperse and be integrated within the wider strategic and local road network without any significant delay or effects.

An assessment of the predicted potential impacts on the road network and identified potential sensitive receptors, associated with vehicle movements during the construction and operation of the Proposed Development, has been undertaken and described in this section.

8.1.3 Sensitive receptors

A desktop assessment was undertaken to identify potential sensitive receptors e.g. settlements, schools etc. along the potential construction access routes.

The settlement of Kyleakin is located in close proximity to the Proposed Development, to the east of the A87 and as such is considered a sensitive receptor.

The ways in which the increase in traffic associated with the Proposed Development impacts upon the sensitive receptors are detailed within this assessment. Furthermore, the mitigation measures designed to minimise such impacts are also discussed within this chapter.

8.1.4 Collection of Baseline Data

Traffic flow data for the trunk road network within the study area has been obtained from the Transport Scotland Automatic Traffic Counter (ATC) database, for the following counter locations:

- ATCNW006 – A87 Kyleakin Roundabout to Broadford;
- ATCNW005 – A87 Skye Bridge;
- JTC00147 – A87 Kyle of Lochalsh to Skye Bridge Toll Booths;
- 174100 – A87 Kyle of Lochalsh;
- 232110 – A87 Broadford;
- ATC01054 – A87 Bunloyne to Glensheil;
- ATC01053 – A87 Invergarry to Bunloyne Junction;
- ATC01166 – A887 Invermoriston to Bunloyne (A87);
- ATC01038 – A82 Fort Augustus to Invermoriston;
- ATC01037 – A82 Invergarry to Fort Augustus;
- JTC00145 – A82 Invermoriston to Drumnadrochit;
- ATC01036 – A82 Spean Bridge to Invergarry; and
- 108690 – A82 Spean Bridge.

The data has been processed, using Design Manual for Roads and Bridges, Volume 13, Economic Assessment of Road Schemes, Section 1, The COBA Manual (DfT, 2012a), to estimate 5-day Annual Average Daily Traffic (AADT) flows for two way traffic. AADT relates to the 5-day week (Monday to Friday) over a 12 month time period. The AADT is established as an average of this whole time period in order to account for any holiday and seasonal variations over the 12 month period. In terms of traffic flow information for the road network surrounding the Proposed Development, enough information has been obtained to calculate a robust estimated AADT and to allow a suitable assessment to be made of the potential traffic impacts as a result of the Proposed Development.

Projected baseline traffic flows for the expected year of construction have been calculated by using the National Road Traffic Flows (NRTF) low-growth (all vehicles) factor. Use of a low-growth factor maximises the effects of the Proposed Development traffic and in essence presents a worst case scenario. **Table 8.4** highlights the AADT base flows with growth factors applied. Growth factors of 1.054, 1.042 and 1.031 were applied to the 2012, 2013 or 2014 base flows respectively in order to forecast the traffic flows to year 2017 levels which, for the purposes of this assessment, has been assumed to be the year of construction.

8.2 Assessment of Environmental Effects

The following environmental effects are addressed in this chapter in accordance with the IEMA Guidelines:

- accidents and safety;
- driver delay;
- fear, intimidation and pedestrian amenity / delay; and
- severance (of communities).

There are no general thresholds for determining the significance of increased traffic on highway safety. Professional judgement is therefore required in order to determine any detrimental impacts associated with the traffic generated by the Proposed Development.

The IEMA Guidelines also identify the following effects that should be considered with respect to traffic:

- air pollution, dust and dirt - these are considered within **the Air Quality and Odour Assessment**;
- hazardous loads - these are considered within **the Hydrogeology and Geology Assessment**;
- noise and vibration – these are considered within **Noise Assessment**;
- ecological effects – these are considered within **Ecology Impact Assessment**;
- heritage and conservation - these are considered within **Cultural Heritage Assessment**; and
- visual effects – these are considered within **Landscape and Visual Impact Assessment**.

8.2.1 Consultation

During the scoping and consultation exercise undertaken as part of the EIA process for the Proposed Development, scoping and consultation was undertaken with the organisations detailed in **Table 8.1** below:

Table 8.1 : Summary of Scoping Responses for Traffic and Transport

Authority	Response	Comment / Action Taken
Transport Scotland and The Highland Council (THC)	<p>All public roads affected by the development should be identified.</p> <p>A dilapidation survey should be undertaken.</p> <p>The assessment should consider traffic resulting from the development; current traffic flows; impacts of proposed traffic; mitigation measures; and residual effects.</p> <p>The Proposed Development should ensure sustainable transport requirements are met.</p> <p>The internal site layout should provide suitable and safe travel links for site access.</p> <p>Provision of parking should be to 'Road and Transport Guidelines for New Development' standards.</p>	<p>All points have been incorporated within assessment.</p> <p>Ken Aitken of Transport Scotland has confirmed via email on 28/07/16 that a dilapidation survey will not be required as part of this assessment given that the majority of construction traffic, in particular HGVs, are predicted to route via the trunk road network.</p>

8.2.2 Significance Criteria

The 'Guidelines for the Environmental Assessment of Road Traffic' referred to in above suggest that two broad principles are used as a screening process to focus the scale and extent of the assessment. These are:

"include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and

"Include any other specifically sensitive areas where traffic flows will increase by 10% or more."

Criteria for assessing the significance of the increases in traffic volumes as a result of the Proposed Development have been derived on this basis as shown in **Table 8.2**.

Table 8.2 : Significance of Effects in relation to Traffic Flow Increases

Significance Criteria	Increase in Traffic Flow
Major	Above 90%
Moderate	Between 60% and 90%
Minor	Between 30% and 60%
Negligible	Under 30%

While in the first instance, impacts are assessed against these criteria, an element of professional judgement must also be applied with respect to the carrying capacity of the roads being considered. Where existing traffic levels are exceptionally low (e.g. on some unclassified roads), any increase in traffic flow is likely to exceed these thresholds. Where this situation is identified it is important to consider any increase both in terms of its relative increase in respect of existing traffic flows, as well as the overall total flow in respect of the available capacity of the section of road being considered.

For example, a 100% increase in traffic flow on a road which currently only carries 90 vehicles AADT flow, will potentially indicate an impact of major significance if considered simply in terms of the significance criteria presented in **Table 8.2**. However, a typical 7.3m wide road is capable of accommodating approximately 57,600

two-way vehicles per day, in accordance with thresholds contained in Section 1 of DMRB 'Volume 15: Economic Assessment of Road Schemes in Scotland', The NESAs Manual (DfT, 2012). Therefore, such an increase will be unlikely to create major effects given the road's overall capacity. **Table 8.3** refers to the link speed and link capacity of varying road types.

Table 8.3 : Link Speed and Link Capacity

Road Category	Description	Speed Limit (mph)	Capacity (two way per day)
2	Urban – single 6.0m	30	38,400
3	Urban – single 10.0m	30	38,400
21	Rural – poor single 4.0m	60	6,720
22	Rural – poor single 5.5m	60	38,400
23	Rural – poor single 6.0m	60	43,200
24	Rural – typical single 6.0m	60	43,200
25	Rural – poor single 7.3m	60	57,600
26	Rural – typical single 7.3m	60	57,600
27	Rural – good single 7.3m	60	57,600

Any potential environmental effects including accidents and safety, driver delay, pedestrian amenity, pedestrian delay and severance are considered on a case by case basis using professional judgement and reasoned argument. The significance of any impact, the scale of which is outlined within **Table 8.2**, is assessed on the basis of the magnitude of the effect and the likelihood of the effect occurring.

8.3 Baseline Conditions

8.3.1 Description of Existing Conditions

The sections of the road network included within this assessment have been determined on the basis of the potential effect of increased traffic associated with the construction and operation of the Proposed Development.

8.3.2 Local Road Network

The A87 trunk road is a route of regional significance which travels between Uig in the Isle of Skye and the A82 to the south of Fort Augustus. The A87 is single carriageway along its entire length.

The A887 trunk road is a route of regional significance which travels between Invermoriston in the east and the A87 in the west, at Bunloyne Bridge. The A887 is predominantly single carriageway, with a small number of single track sections.

The A82 trunk road is a route of national significance which travels between Inverness in the north and Glasgow in the south. The A82 between Glasgow and the Stonymollan Roundabout, Balloch is dual carriageway with the remainder single carriageway.

8.3.3 Baseline Traffic Data

Existing traffic flow data was obtained from Transport Scotland ATC data at the locations in **Table 8.4**. **Figure 8.1** illustrates the location of each counter and the traffic flow characteristics for each counter location are summarised in **Table 8.4**.

Table 8.4 : Baseline and Projected AADT Flows

Counter	Location	Northbound / westbound baseline AADT (2012 / 2013 / 2014)	Southbound / eastbound baseline AADT (2012 / 2013 / 2014)	Combined AADT (2012 / 2013 / 2014)	Combined projected AADT (2017)	Combined HGV (2017)	% HGVs (2017)
ATCNW006	A87 Kyleakin Roundabout to Broadford	1660	1674	3334	3514	*	*
ATCNW005	A87 Skye Bridge	1852	1856	3708	3908	*	*
JTC00147	A87 Kyle of Lochalsh to Skye Bridge Toll Booths	1983	1979	3962	4129	*	*
174100	A87 Kyle of Lochalsh	1822	1817	3639	3791	223	5.88%
232110	A87 Broadford	2964	2954	5918	6237	457	7.33%
ATC01054	A87 Bunloyne to Glensheil	963	942	1905	2008	*	*
ATC01053	A87 Invergarry to Bunloyne Junction	573	531	1104	1163	*	*
ATC01166	A887 Invermoriston to Bunloyne (A87)	592	600	1192	1256	*	*
ATC01038	A82 Fort Augustus to Invermoriston	1207	1284	2491	2625	*	*
ATC01037	A82 Invergarry to Fort Augustus	1274	1224	2498	2575	*	*
JTC00145	A82 Invermoriston to Drumnadrochit	1741	1700	3441	3627	*	*
ATC01036	A82 Spean Bridge to Invergarry	1558	1612	3170	3341	*	*

Counter	Location	Northbound / westbound baseline AADT (2012 / 2013 / 2014)	Southbound / eastbound baseline AADT (2012 / 2013 / 2014)	Combined AADT (2012 / 2013 / 2014)	Combined projected AADT (2017)	Combined HGV (2017)	% HGVs (2017)
108690	A82 Spean Bridge	2467	2529	4996	5266	472	8.97%

*These ATC counters are volumetric only and do not provide HGV volumes

8.4 Predicted Impacts

8.4.1 Construction

8.4.1.1 Assessment of Construction Traffic Generation

The impact of the additional vehicles associated with the construction of the Proposed Development can be categorised as:

- additional traffic volumes associated with the construction activities for the Proposed Development travelling on the existing road network; and
- delays to non-development related journeys as a result of slow moving vehicles.

The assumed construction traffic numbers were obtained from the Jacobs Buildings team while the Process traffic numbers were received from Marine Harvest. **Table 8.5** and **Table 8.6** provide a summary of the traffic generated throughout the course of the 17 month construction programme, while **Table 8.7** and **Table 8.8** detail the increases in traffic flows on the road network as a result of the construction activities.

The majority of the construction material needed is expected to be transported to the site by road however the exact routes cannot be validated until the post-planning / pre-construction phase. Deliveries are expected to access to the site from the east, via the A82 (Invergarry) or A82 (Invermoriston) and A887 before transiting onto the A87 to reach the existing site access. Notwithstanding this, until supply contracts have been placed for the materials needed on site, details of the origin of construction vehicles and the route they will take will not be known for certain. To account for this, robust assumptions have been made regarding the proportion of construction vehicles using any particular route, most notably that 100% of construction traffic will pass all traffic counter locations and through sensitive receptors. This is an extremely robust approach as the volumes of traffic passing each counter location will in reality be significantly lower and therefore the assessment of construction traffic is very much worst case.

As outlined in **Table 8.5**, the total number of offsite vehicle movements generated during the construction of the Proposed Development is estimated to be 25,236 two way movements over the 17 month construction period. This figure includes 4,423 HGV movements and 20,812 car / light vehicle movements (referred to here as Light Goods Vehicles (LGV)). This equates to an average of 12 HGV two-way movements per day and an average of 56 car / light vehicle two-way movements per day throughout the 17 month programme.

It is important to note that with the construction programme being only 17 months long, the increases in traffic associated with the construction activities will be relatively short term.

Table 8.7 and **Table 8.8** show the percentage increases in total traffic and the percentage increases in HGVs respectively. The following paragraphs discuss the impacts on key sections of the road network (based on



strategic ATC locations) and sensitive receptors as a result of the increase in traffic associated with the construction of the Proposed Development.

Table 8.5 : Summary of All Predicted Construction Phase Traffic Generation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Total LGV Movements	16	18	1,532	1,955	1,601	1,623	2,041	1,703	1,698	1,696	1,312	1,676	2,015	1,619	85	126	96	20,812
Total HGV Movements	31	30	470	771	523	529	577	462	456	179	136	67	66	72	22	21	12	4,423
OVERALL TOTAL	47	48	2,002	2,725	2,124	2,152	2,619	2,164	2,154	1,875	1,448	1,743	2,081	1,692	107	147	109	25,236

Table 8.6 : Predicted Monthly / Daily Construction Traffic Movements

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Monthly Vehicle Trips	47	48	2,002	2,725	2,124	2,152	2,619	2,164	2,154	1,875	1,448	1,743	2,081	1,692	107	147	109	25,236
Average Total per Day	2	2	91	124	97	98	119	98	98	85	66	79	95	77	5	7	5	
Average HGV Total per Day	1	1	21	35	24	24	26	21	21	8	6	3	3	3	1	1	1	
Average LGV Total per Day	1	1	70	89	73	74	93	77	77	77	60	76	92	74	4	6	4	

Table 8.7 : Percentage Increase on Identified Links due to All Vehicle Movements during the Construction Phase

ATC Location	% Split at each ATC	% Increase in Total Vehicles																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A87 Kyleakin Roundabout to Broadford	100%	0.1%	0.1%	2.6%	3.5%	2.7%	2.8%	3.4%	2.8%	2.8%	2.4%	1.9%	2.3%	2.7%	2.2%	0.1%	0.2%	0.1%
A87 Skye Bridge	100%	0.1%	0.1%	2.3%	3.2%	2.5%	2.5%	3.0%	2.5%	2.5%	2.2%	1.7%	2.0%	2.4%	2.0%	0.1%	0.2%	0.1%
A87 Kyle of Lochalsh to Skye Bridge Toll Booths	100%	0.1%	0.1%	2.2%	3.0%	2.3%	2.4%	2.9%	2.4%	2.4%	2.1%	1.6%	1.9%	2.3%	1.9%	0.1%	0.2%	0.1%
A87 Kyle of Lochalsh	100%	0.1%	0.1%	2.4%	3.3%	2.5%	2.6%	3.1%	2.6%	2.6%	2.2%	1.7%	2.1%	2.5%	2.0%	0.1%	0.2%	0.1%
A87 Broadford	100%	0.0%	0.0%	1.5%	2.0%	1.5%	1.6%	1.9%	1.6%	1.6%	1.4%	1.1%	1.3%	1.5%	1.2%	0.1%	0.1%	0.1%
A87 Bunloyne to Glensheil	100%	0.1%	0.1%	4.5%	6.2%	4.8%	4.9%	5.9%	4.9%	4.9%	4.2%	3.3%	3.9%	4.7%	3.8%	0.2%	0.3%	0.2%
A87 Invergarry to Bunloyne Junction	100%	0.2%	0.2%	7.8%	10.6%	8.3%	8.4%	10.2%	8.5%	8.4%	7.3%	5.7%	6.8%	8.1%	6.6%	0.4%	0.6%	0.4%
A887 Invermoriston to Bunloyne (A87)	100%	0.2%	0.2%	7.2%	9.9%	7.7%	7.8%	9.5%	7.8%	7.8%	6.8%	5.2%	6.3%	7.5%	6.1%	0.4%	0.5%	0.4%
A82 Fort Augustus to Invermoriston	100%	0.1%	0.1%	3.5%	4.7%	3.7%	3.7%	4.5%	3.7%	3.7%	3.2%	2.5%	3.0%	3.6%	2.9%	0.2%	0.3%	0.2%
A82 Invergarry to Fort Augustus	100%	0.1%	0.1%	3.5%	4.8%	3.7%	3.8%	4.6%	3.8%	3.8%	3.3%	2.6%	3.1%	3.7%	3.0%	0.2%	0.3%	0.2%
A82 Invermoriston to Drumadrochit	100%	0.1%	0.1%	2.5%	3.4%	2.7%	2.7%	3.3%	2.7%	2.7%	2.3%	1.8%	2.2%	2.6%	2.1%	0.1%	0.2%	0.1%
A82 Spean Bridge to Invergarry	100%	0.1%	0.1%	2.7%	3.7%	2.9%	2.9%	3.6%	2.9%	2.9%	2.6%	2.0%	2.4%	2.8%	2.3%	0.1%	0.2%	0.1%
A82 Spean Bridge	100%	0.0%	0.0%	1.7%	2.4%	1.8%	1.9%	2.3%	1.9%	1.9%	1.6%	1.3%	1.5%	1.8%	1.5%	0.1%	0.1%	0.1%

Table 8.8 : Percentage Increase on Identified Links due to HGV Vehicle Movements during the Construction Phase

ATC Location	% Split at each ATC	% Increase in HGVs																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A87 Kyleakin Roundabout to Broadford*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A87 Skye Bridge*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A87 Kyle of Lochalsh to Skye Bridge Toll Booths*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A87 Kyle of Lochalsh	100%	0.6%	0.6%	9.6%	15.7%	10.7%	10.8%	11.8%	9.4%	9.3%	3.6%	2.8%	1.4%	1.3%	1.5%	0.4%	0.4%	0.2%
A87 Broadford	100%	0.3%	0.3%	4.7%	7.7%	5.2%	5.3%	5.7%	4.6%	4.5%	1.8%	1.4%	0.7%	0.7%	0.7%	0.2%	0.2%	0.1%
A87 Bunloyne to Glensheil*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A87 Invergarry to Bunloyne Junction*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A887 Invermoriston to Bunloyne (A87)*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A82 Fort Augustus to Invermoriston*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A82 Invergarry to Fort Augustus*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A82 Invermoriston to Drumnadrochit*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A82 Spean Bridge to Invergarry*	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A82 Spean Bridge	100%	0.3%	0.3%	4.5%	7.4%	5.0%	5.1%	5.6%	4.4%	4.4%	1.7%	1.3%	0.6%	0.6%	0.7%	0.2%	0.2%	0.1%

*These ATC counters are volumetric only and do not provide HGV volumes.

In terms of overall traffic impact, as confirmed in **Table 8.7** and **Table 8.8**, the construction of the Proposed Development will have a negligible impact upon the road network at all of the assessed counter locations in accordance with the criteria set out in **Table 8.1**.

8.4.1.2 Summary of Construction Traffic Generation Impacts

In terms of total traffic numbers, the construction of the Proposed Development will have a negligible impact upon all assessed locations on the road network, with the maximum increase in traffic of 10.6% occurring at counter ATC01053 on the A87 south of the junction with the A887, during month 4 of the programme. The construction programme will have less of an impact on all other assessed counter locations.

With regards to HGV movements, the percentage increases at the three assessed counter locations also represent a negligible impact on the road network, with the maximum increase in HGVs of 15.7% occurring at counter 174100 on the A87 at Kyle of Lochalsh, in accordance with the criteria detailed in **Table 8.2**. **Table 8.5** demonstrates that during the busiest month for HGVs (month 4), the total two-way HGV movements per day will be on average only 35. Throughout the 17 month duration of the programme, the HGV total per day is expected to average only 12 two-way movements. In addition to this, the effects of construction traffic will occur over a relatively short period and the existing road infrastructure is currently operating well below capacity, therefore further reducing the overall impact. Consequently, no significant environmental effects are predicted to arise from construction traffic generated by the Proposed Development.

It is also important to note that a potential worst case assessment of traffic impact has been undertaken, where it has been assumed that 100% of construction traffic will pass each counter location given the uncertainties relating to the sourcing of materials. In reality, it is likely that the traffic will disperse via the road network so that the additional traffic at each counter location will be less than the total number assessed, giving a lower overall impact.

8.4.1.3 Assessment of Environmental Impacts

Accidents and Safety

The average HGV movements over the 17 month programme will equate to approximately 12 two-way movements per day. These minimal increases in flow are considered to have a negligible effect on accidents and safety along the delivery routes.

Driver Delay

Traffic delays as a result of construction traffic could occur along the chosen site access route(s). The IEMA Guidelines note that *“these delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system”*.

The road network surrounding the application site is currently operating comfortably within capacity, which is confirmed by comparing the baseline AADT flows in **Table 8.4** with the anticipated capacity outlined within **Table 8.3**. As such, it is clear that the road is currently operating below its capacity and will continue to do so with the addition of construction traffic flows. The increases in flow will therefore have a negligible effect on driver delay. Notwithstanding this, mitigation will be provided as described in Section 8.6.

Fear, Intimidation and Pedestrian Amenity / Delay

Traffic volume, composition and speeds, in combination with pedestrian footways and crossings, contribute to the level of general unpleasantness, fear, intimidation and delay experienced by pedestrians and other vulnerable road users. It should be noted that, there is a footway on the south side of A87, opposite the site access, currently terminating at the restaurant opposite the site around 35m east of the site access. This footway connects to Kyleakin and crosses the Skye Bridge to Kyle of Lochalsh. The footway is also designated as a shared-use cycleway. A railway station is accessible at Kyle of Lochalsh, 2.5km from the site connected by the footway / cycleway.

There are no bus stops in the vicinity of the site access however the site is served by various bus routes passing the site access. These include the local Stagecoach service 51 between Kyleakin and Armadale via Broadford and the MacLean Coaches service 7100 between Plockton and Broadford, as well as Scottish Citylink services to Portree from Glasgow and Inverness. Bus stops in Kyleakin are within walking distance of the Proposed Development.

The HGVs accessing the Proposed Development would average approximately 12 two-way movements per day and these minimal flows will have a negligible effect on fear, intimidation and delay along the delivery routes. It is possible that a proportion of construction staff will travel into Kyleakin to make use of the nearest amenities, however traffic movements and associated impacts are likely to be negligible.

Severance

The IEMA Guidelines note that “Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery”.

The HGVs accessing the Proposed Development will average approximately 12 two-way movements per day. These minimal increases in flow are expected to have a negligible effect on severance given the low predicted volumes, lack of sensitive receptors in the vicinity of the site and the short term nature of the construction programme.

8.4.2 Operation

The predicted levels of traffic associated with the operation and maintenance of the Proposed Development are estimated to be:

- 2,492 HGVs transporting dry feeds annually;
- 681 HGVs transporting liquid feeds annually;
- 104 waste disposal HGVs annually;
- 52 HGVs transporting packing materials and maintenance items annually; and
- 1,363 HGVs transporting finished goods annually.

HGV movements will be expected to average approximately 36 two-way movements per day (assuming operations between 07:00-19:00 this averages 1.5 HGVs per hour). In addition to these HGV movements, 55 full time staff shall be accessing the site, with parking provided for up to 30 vehicles the staff will mostly be operating on a shift patters, with 3 shifts/24hrs, so these journeys will be spread throughout the day. Even when including all of these staff members the impact of the operational traffic falls substantially below the guidance thresholds outlined earlier in the chapter and consequently the environmental effects will be negligible. The number of LGVs during operation will be greatly reduced from those accessing the site during the construction phase although the number of HGVs shall be similar to those experienced during the peak month (month 4) of construction. As previously highlighted, the impact of such levels of traffic is negligible.

It should be noted that the numbers of operational HGV movements are markedly reduced for the Proposed Development when compared to an inland site. If there was no option for the incoming marine delivery of the raw materials and outgoing marine delivery of the finished product there would be marked increase in road deliveries. The number of two-way HGV movements removed from the road are estimated to be 23,174 per year; an average reduction of 52 two-way movements per day (assuming operations between 07:00-19:00 this averages a reduction of almost 4.5 HGVs per hour). Currently Marine Harvest fish farms on the west coast of Scotland are supplied by feed factories on the east coast of Scotland, this results in deliveries of feed being made by road to hubs on the west coast for onward transportation by sea to the farms. By removing the need for these journeys the environmental impact of the Proposed Development will therefore be considerably less in comparison to inland feed factory facilities where deliveries of both raw goods and supply of finished products are all made by road.

Assessment of parking provisions against The Highland Council maximum parking standards is not appropriate given the type of the development and the low number of staff expected on a daily basis. Furthermore, Marine Harvest have significant experience in operating developments of this type and are experienced in providing appropriate levels of parking. As such, the proposed provision of 30 spaces is appropriate for the 50 members of staff expected. Shift work will mean that all 55 members of staff will not be working at the same time.

8.5 Mitigation Measures

8.5.1 Construction

While this assessment clearly confirms that the additional construction and operational traffic will have a negligible effect on the road network and associated sensitive receptors, the following mitigation measures are proposed in line with good practice:

- a Construction Traffic Management Plan (CTMP) will be prepared prior to construction which will identify to all staff the appropriate and safe routes to and from the Proposed Development and will be agreed through consultation with THC. Contracts with hauliers will require the use of these routes;
- the Applicant will establish an 'Access Liaison Group' before construction commences and regular meetings will be held between the Applicant and the local Community Councils to inform the local residents of:
 - a) when construction will commence;
 - b) the schedule of works;
 - c) the direction from where HGV loads will be travelling from; and
 - d) a dedicated telephone number which the residents can contact to report any issues.
- The Group will also:
 - a) provide details of signage;
 - b) provide details of the dates of the meetings; and
 - c) obtain local residents feedback on other issues that need to be addressed including details of any forthcoming public events etc. that need to be considered.

The local Community Councils websites will also be used to provide information / updates during the construction period.

Continuous monitoring during construction is not necessary. It is proposed that the CTMP will provide for frequent inspections to be carried out to ensure that agreed mitigation measures, as outlined above, are being undertaken.

8.5.2 Operation

As previously identified, the traffic generated during operation will not have a significant impact on the existing road network and therefore mitigation is not necessary. Suitable signage will be erected advising of the appropriate access to the Proposed Development. Staff and HGV drivers may access Kyleakin or Kyle of Lochalsh during the day however these numbers are very small and should be accommodated without any impact on the road network.

As detailed in section 8.4, the potential for significantly more HGV movements to occur as the result of the development of a fish feed plant has been mitigated through the use of marine transport operations to take over 20,000 HGV two-way movements off of the road network.

8.6 Residual Impacts

8.6.1 Construction

While the nature of traffic increases will be short term and the impacts negligible, the mitigation measures outlined will minimise any residual impacts. A summary justification is as follows:

- a CTMP will minimise, as far as practicable, traffic impacts during construction;
- large sections of the proposed delivery routes are on trunk roads, which are established HGV routes;
- the maximum traffic increases as a result of construction related traffic will be temporary; and
- environmental effects identified will be managed through the mitigation measures outlined above, thus ensuring the impacts are not significant.

8.6.2 Operation

There will be negligible residual impacts on the existing road network from the operation of the Proposed Development. Operational HGVs will be at a similar level to those during the peak month (month 4) of construction. As earlier stated this increase only has a minor impact on traffic numbers and falls well within the range of negligible impact as highlighted in **Table 8.2**.

8.7 Cumulative Impacts

Scoping discussions with Jane Bridge of The Highland Council confirmed that no other developments were to be considered within a cumulative assessment with regards to traffic impacts.

8.8 Summary and Conclusions

The additional traffic generated as a result of the anticipated construction programme will result in increases of traffic flows on the strategic, regional and local roads leading to the Proposed Development. A robust assessment has been undertaken, both in relation to the estimates of construction traffic and the distribution of construction traffic within the assessed road network. Despite the robustness of the assessment, when considering actual volumes of traffic, the predicted increase in flows are of a negligible magnitude and will not have an effect on the practical operating capacity of these roads. Notwithstanding this, appropriate mitigation measures have been identified, including the provision of a CTMP, which will ensure that any potential traffic impacts are kept to a minimum. As such, the overall environmental effect is therefore considered not significant in terms of the EIA Regulations, assuming the appropriate mitigation measures are implemented.

The number of LGVs is significantly reduced during operation than during construction although HGV numbers will remain relatively consistent. The increases to the levels of traffic anticipated during the operational phase of the Proposed Development are not significant in terms of the EIA Regulations.

8.9 References

- Ref 8-1: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 available at: <http://www.legislation.gov.uk/ssi/2011/139/regulation/2/made>
- Ref 8-2: Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) available at: <http://www.legislation.gov.uk/uksi/2007/1518/contents/made>
- Ref 8-3: PAN 1/2013: Environmental Impact Assessment (Scottish Government, 2013) available at: <http://www.gov.scot/Publications/2013/08/6471>
- Ref 8-4: Institute of Environmental Management and Assessment (IEMA) (1993), 'Guidelines for the Environmental Assessment of Road Traffic'.



- Ref 8-5: The Institution of Highways and Transportation (1994), 'Guidelines for Traffic Impact Assessment'.
- Ref 8-6: Transport Scotland (2012), 'Transport Assessment Guidance'.
- Ref 8-7: Scottish Government (2014), 'Scottish Planning Policy'.
- Ref 8-8: Department for Transport (2012), 'Design Manual for Roads and Bridges', Volume 13 Section 1, Part 4 Traffic Input to COBA; Chapter 9 Conversion of Input Data to AAHT.
- Ref 8-9: Department for Transport (2012), 'Design Manual for Roads and Bridges', Volume 15 Economic Assessment of Road Schemes in Scotland; Section 1, The NESAs Manual.