

5 Human Environment

5.6 Traffic and Transport

5.6.1 *Baseline Information*

Introduction

5.6.1.1 This chapter details the assessment of likely significant transport and access effects associated with the modified Onshore Transmission Infrastructure (OnTI). This chapter focuses on the effects of increased traffic on the public road network during construction, operation and decommissioning. Such effects are most pronounced in close proximity to the area of the modified OnTI and the assessment is therefore restricted to the surrounding road network maintained by Aberdeenshire Council (the Council).

5.6.1.2 The chapter is supported by a series of Technical Appendices, namely:

- Appendix 5.6 A: Transport Assessment;
- Appendix 5.6 B: Construction Traffic Method Statement;
- Appendix 5.6 C: Construction Traffic Management Plan; and
- Appendix 5.6 D: Route Survey Report.

5.6.1.3 A previous assessment of the potential effects of the previous OnTI was carried out and is set out in the MORL ES (MORL, 2012). Since that time the location of the onshore substations has been changed (See Chapter 2.2 (Project Description)) from Peterhead to New Deer and the export cable landfall location has been altered from Fraserburgh to Inverboyndie. The export cable and onshore substations have been modified from Direct Current (DC) / Alternating Current (AC) infrastructure to AC infrastructure only. Accordingly, the impact assessment in this Chapter is a detailed assessment of the new infrastructure and location of the modified OnTI.

Consultations

5.6.1.4 Scoping discussions, summarised in Table 5.6-1 were undertaken with the Council and Transport Scotland (TS) in late May 2014. Discussions with the Council took the form of a meeting to discuss the scope and study parameters. Confirmation of the various points was summarised into a scoping letter and copied to TS.

5.6.1.5 Further consultation with the Council was undertaken on the suitability of the Abnormal Indivisible Load (AIL) route for the transformers and associated substation components with the AIL officers of the Council as noted in Technical Appendix 5.6 C.

Table 5.6 -1 Scoping Consultees

| Organisation | Consultation Response | MORL Approach |
|-----------------------|--|--|
| Aberdeenshire Council | Satisfied with the proposed methodology. Principally concerned with traffic management measures rather than the likely traffic impact. | Development of detailed technical appendices 5.6 B, 5.6 C and 5.6 D. |
| Transport Scotland | No response from TS. | Transport Assessment (Technical Appendix 5.6 A) undertaken in accordance with available TS guidance. |

Baseline Characteristics

5.6.1.6 The study area relating to transport issues is localised to those roads located either on the modified onshore export cable route corridor of the OnTI, near the OnTI or those providing access for the construction, operation or decommissioning of the OnTI.

5.6.1.7 The Transport Assessment Technical Appendix 5.6 A provides greater detail on the road network and its characteristics. The study area network is summarised as follows:

- A98: The primary east-west route through the northern coast of Aberdeenshire running between the A96 at Fochabers and Fraserburgh. The road is single carriageway along its entirety;
- A97: A distributor road route running from Banff south to Huntly and the A96. The road is single carriageway along its entirety;
- A947: A distributor road route running from Banff south through Turriff before joining the A96 south of Dyce. The road is single carriageway along its entirety;
- A948: A distributor road running from New Deer to Ellon and the A90. The road is single carriageway along its entirety;
- A981: A distributor road running from Fraserburgh to New Deer and the A948. The road is single carriageway along its entirety;
- B9105: A rural distributor road running from the A98 at Cook through Fintry to the A947 north of Turriff. The road is single carriageway along its entirety;
- B9170: A rural distributor road running from the A947 south of Turriff through Cuminestown and New Deer before proceeding south to Inverurie;
- B9121: A rural distributor road running between Whitehills and the A97 at Tipperty. A further section continues south from the A97 joining the B9025 at Slack of Scotston. The section of road within the study area is wide single track without passing places;
- The C9s: A minor rural road providing local access functions;
- The C7s: A minor rural road providing local access functions;
- The C29s: A minor rural road providing local access functions; and
- The C121B: A minor rural road providing local access functions.

5.6.1.8 The trunk road network is remote to the location of the OnTI and there are no rail facilities available that will be of practical use for the OnTI. As such, the vast majority of all transport associated with the OnTI will be focussed on road transport.

5.6.1.9 Port facilities for the import of AIL equipment are available at Peterhead to the east of the indicative location of the substations.

Desktop Studies

5.6.1.10 Desktop studies have been restricted to the identification of potential weight constraints relating to AIL deliveries and the collection of road traffic accident statistics. The results of these studies are presented in the AIL Route Survey Review (Technical Appendix 5.6 D) and Transport Assessments (Technical Appendix 5.6 A).

Site Specific Surveys

5.6.1.11 Traffic flow and speed data was not available from public sources and as such new traffic surveys using Automatic Traffic Counters (ATC) were undertaken over a full week in a month where flows are considered free of unusual occurrences or patterns (neutral month) to obtain representative traffic flows for use in the assessment. These counts collected data relating to vehicle flow, class of vehicle and speed for each direction and full details are provided in the Transport Assessment (Technical Appendix 5.6 A).

5.6.1.12 A summary of vehicle flows is provided in Table 5.6-2, Baseline Traffic Flows.

Table 5.6-2 Baseline Traffic Flows

| Survey Location | Time Period | Cars / Light Vehicles | Heavy Goods Vehicles (HGV) | Total Vehicles |
|--------------------------|-------------|-----------------------|----------------------------|----------------|
| A98 west of Boyndie | 12 Hours | 3466 | 856 | 4322 |
| | 24 Hours | 4174 | 989 | 5163 |
| B9121 south of Fiskaidly | 12 Hours | 227 | 50 | 278 |
| | 24 Hours | 279 | 58 | 337 |
| A98 west of the B9038 | 12 Hours | 5342 | 874 | 6217 |
| | 24 Hours | 6475 | 1003 | 7478 |
| A97 south of B9121 | 12 Hours | 1003 | 215 | 1219 |
| | 24 Hours | 1189 | 223 | 1411 |
| A947 near Keilhill | 12 Hours | 5196 | 907 | 6103 |
| | 24 Hours | 6471 | 1072 | 7543 |
| C9S east of Foulzie | 12 Hours | 48 | 16 | 64 |
| | 24 Hours | 59 | 18 | 78 |
| C7S west of Gorrachie | 12 Hours | 109 | 31 | 140 |
| | 24 Hours | 130 | 37 | 167 |
| B9105 south of Fintry | 12 Hours | 1004 | 223 | 1227 |
| | 24 Hours | 1217 | 255 | 1427 |
| A947 north of Turriff | 12 Hours | 5196 | 907 | 6103 |
| | 24 Hours | 6471 | 1072 | 7543 |
| A947 south of the B992 | 12 Hours | 3491 | 725 | 4216 |

| Survey Location | Time Period | Cars / Light Vehicles | Heavy Goods Vehicles (HGV) | Total Vehicles |
|---------------------------|-------------|-----------------------|----------------------------|----------------|
| | 24 Hours | 4588 | 895 | 5482 |
| A98 east of the B9027 | 12 Hours | 2576 | 735 | 3311 |
| | 24 Hours | 3029 | 838 | 3867 |
| B9170 west of Cuminestown | 12 Hours | 1515 | 377 | 1892 |
| | 24 Hours | 1870 | 438 | 2308 |
| C29S south of Cuminestown | 12 Hours | 327 | 73 | 401 |
| | 24 Hours | 416 | 87 | 503 |
| C121B west of C29S | 12 Hours | 190 | 43 | 233 |
| | 24 Hours | 234 | 51 | 285 |
| B9170 west of New Deer | 12 Hours | 1232 | 354 | 1587 |
| | 24 Hours | 1552 | 409 | 1962 |
| A948 west of the B9028 | 12 Hours | 826 | 188 | 1013 |
| | 24 Hours | 1094 | 225 | 1319 |
| A981 west of the B9028 | 12 Hours | 2241 | 393 | 2634 |
| | 24 Hours | 2865 | 465 | 3320 |

Legislative and Planning Framework

5.6.1.13 The assessment of traffic impact and consideration of access issues has been undertaken in line with the following policy statements and guidance:

- Scottish Planning Policy 2010;
- Draft Scottish Planning Policy document, published in 2013;
- Planning Advice Note 75 - Planning for Transport;
- Nestrans Regional Transport Strategy;
- Aberdeenshire Council Local Transport Strategy 2012; and
- Institute of Environmental Assessment (IEMA); Guidelines for the Environmental Assessment of Road Traffic, 1993.

5.6.1.14 Full details of the planning and guidance notes are provided in the Transport Assessment (Technical Appendix 5.6 A) accompanying this ES.

5.6.2 Impact Assessment

Summary of Effects and Mitigation

5.6.2.1 The assessment presents the potential effects of construction traffic, and identifies those which are likely to be significant enough in EIA terms to require further assessment, namely:

- 5.6.2.2 Severance – severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery resulting from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. These effects are considered to be of **minor significance**;
- 5.6.2.3 Driver delay – 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. These effects are considered to be of **minor significance**;
- 5.6.2.4 Pedestrian delay – the delay to pedestrians, as with driver delay, is likely only at, or close to the capacity of the system. These effects are considered to be of **minor significance**;
- 5.6.2.5 Pedestrian amenity – the guidelines for the environmental assessment of road traffic suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where traffic flow (or its lorry component) is halved or doubled. These effects are considered to be of **minor significance**;
- 5.6.2.6 Fear and intimidation – there are no commonly agreed thresholds for estimating levels of danger, or fear and intimidation, from known traffic and physical conditions. For reference, this effect has been combined into Severance;
- 5.6.2.7 Accidents and safety – the implications of local circumstances, or factors which elevate or lessen risks of accidents. These effects are considered to be of **minor significance**; and
- 5.6.2.8 Dust and dirt – the increased risk of dust or dirt on the public road or surrounding areas. These effects are considered to be of **moderate significance prior to mitigation**.
- 5.6.2.9 No consideration has given to operational traffic as the likely traffic generation levels are of such a low level that they do not meet the IEMA assessment criteria and as such no further consideration has been made as detailed in the Transport Assessment (Technical Appendix 5.6 A)
- 5.6.2.10 The mitigation measures for the various effects have been reviewed and are set out in a Construction Traffic Management Plan (CTMP), a framework document is included in Technical Appendix 5.6 C.

Summary of Effects

- 5.6.2.11 The summary of effects is presented in Table 5.6-3 and is based upon the detail contained in the Transport Assessment supplied in Technical Appendix 5.6 A. All effects are considered to be minor with the exception of Dust and Dirt which is considered to be moderate due to the large scale material movements associated with the construction of the OnTI. Following mitigation the effect is considered to be of **minor significance**.

Proposed Mitigation Measures and Residual Effects

- 5.6.2.12 Mitigation measures have been considered for the construction phase. The decommissioning phase will consider similar measures at that time, however the volumes of material being removed will be less than those associated with the construction phase and consequently any associated impacts will be reduced.

5.6.2.13 No consideration of the operational phase has been provided given the very low levels of traffic associated with the operation of the substation, maintenance of the landing point and associated cable maintenance.

5.6.2.14 Mitigation measures by design have been considered, for example the routing of construction traffic away from sensitive areas such as village centres, schools, etc. Given that the construction period is short lived and transitory, the principal mitigation measure is the provision of a CTMP to control construction traffic activities. The activities proposed are illustrated in greater detail in the CTMP, attached as Technical Appendix 5.6 C.

5.6.2.15 With the proposed mitigation measures in place, no significant residual effects are predicted.

Table 5.6-3 Impact Assessment Summary

| Effect | Receptor | Pre-mitigation Effect | Mitigation | Post-mitigation Effect |
|---|--|-----------------------|---|------------------------|
| <i>Construction & Decommissioning</i> | | | | |
| Severance & Intimidation | Links: B9105/B9121/C7s/C29s/C121B Settlements: Fintry and Cuminestown | Minor | None | Minor |
| Driver / Pedestrian Delay | Links: B9105/B9121/C7s/C29s/C121B Settlements: Fintry and Cuminestown | Minor | None | Minor |
| Pedestrian Amenity | Links: B9105/B9121/C7s/C29s/C121B Settlements: Fintry and Cuminestown | Minor | Construction Traffic Management Plan | Minor |
| Accidents & Safety | Links: B9105/B9121/C7s/C29s/C121B Settlements: Fintry and Cuminestown | Minor | Construction Traffic Management Plan & Abnormal Load Route Review | Minor |
| Dust & Dirt | Links: B9105/B9121/C7s/C29s/C121B Settlements: Fintry and Cuminestown | Moderate | Construction Traffic Management Plan | Minor |
| <i>Operation</i> | | | | |
| N/A | | | | |

Introduction to Impact Assessment

5.6.2.16 The full Transport Assessment is provided as separate Technical Appendix 5.6 A. The approach taken to estimate the effect of the modified OnTI has considered the construction, operational and decommissioning phases of the project on the surrounding road network.

5.6.2.17 The installation of the modified OnTI will require materials to be transported to site by road and, in addition to the above, the provision of construction compounds, storage facilities and laydown areas during construction phases. These will include the movement of AIL traffic associated with the substation elements.

- 5.6.2.18 There will also be a need to bring construction plant and materials (cable drums, concrete, pipes, blockwork, steel, etc.) to both the substations and modified export cable route sites. These will be delivered by standard HGVs. Construction workers and operatives commuting during the construction, commissioning, operation and maintenance and decommissioning periods will also generate light-vehicle traffic, such as cars and Light Goods Vehicles (LGVs).
- 5.6.2.19 The numbers of vehicles required for each element has been estimated and a construction programme (Technical Appendix 5.6 A) developed to identify the peak construction period. The effect of these construction traffic movements has been considered in percentage terms against a future base year.
- 5.6.2.20 The percentage impact assessment (the percentage increase of traffic flows as a result of the imposition of construction traffic) is then used to determine the magnitude of any effects and the need and likely form of any necessary mitigation.

Details of Impact Assessment

- 5.6.2.21 The study area network comprises the parts of the public road network that could be used by construction and operational traffic accessing the site. The roads identified as forming the likely route to site by construction traffic include the A97 / A98 / A947 / B9105 / B9170 / B9121 / C92S / C7S / C295.
- 5.6.2.22 Using indicative design parameters, a peak traffic flow has been estimated and this flow has been used to form the basis of all the assessments contained in the assessment. It therefore provides for a robust worst case assessment of the whole modified OnTI. The indicative peak month for construction is May 2018.
- 5.6.2.23 Existing traffic flows have been factored to the 2018 levels using National Road Traffic Forecast (NRTF) High Growth factors. This approach provides a robust approach in assessing traffic flows and the likely effect of development flows on the network at that point in time. This approach has been approved by the Council and allows for committed development traffic flows associated with other schemes that have been granted planning permission. The Council has advised that it are not aware of any other schemes in the planning system that would have a significant transport effect and that should be included in an assessment. The use of High NRTF factors provides more than sufficient flexibility to account for any schemes that may become committed between the planning in principle and detailed application stage.
- 5.6.2.24 Construction traffic flows have been compared against the factored base flows and the percentage impact reviewed.
- 5.6.2.25 Significant effects related to traffic movements during the operational phase are unlikely to arise. The traffic generated once the site is operational would be associated mainly with service and maintenance trips using mainly 4x4 type vehicles with potentially occasional HGV movements to access the site for heavier maintenance and repairs.
- 5.6.2.26 At the end of the development's operational life, there may be an effect on the local road network due to the movements of HGVs associated with the removal of equipment and materials. However, the number of vehicle movements is anticipated to be lower than that predicted for construction and any baseline data collected for the purposes of this assessment would not be relevant so far in the future.

5.6.2.27 In addition to the assessment of the increase in vehicular traffic, the issues relating to the movement of AIL traffic, creation of access junctions and traffic management issues have all been assessed. No significant detrimental effects have been identified in any of these subjects and all the relevant reports are contained in Technical Appendices 5.6 A, 5.6 B, 5.6 C and 5.6 D.

Rochdale Envelope Parameters Considered in the Assessment

5.6.2.28 The modified OnTI scheme has been split into component parts to enable an estimate of the construction traffic potential to be calculated. A worst case scenario has been presented to provide a robust assessment. The principal design parameters that affect the traffic generation are summarised below in Table 5.6-4.

Table 5.6-4 Rochdale Envelope Parameters Relevant to the Onshore Transport Impact Assessment

| Potential Effect | Rochdale Envelope Scenario Assessed |
|---|---|
| <i>Construction & Decommissioning</i> | |
| Changes to Construction Programme | A minimum construction period of 37 months has been assessed. Extending the programme would reduce the trips per day on the network, therefore a robust assessment has been undertaken. It has been assumed that 5.5 days per week construction is undertaken in line with normal practices of a scheme of this size. |
| Changes to the Size and Number of AIL Components | The assessment includes AIL components of a weight of 108 tonne by 7.8 m in length and a width of 3.75 m. This represents a maximum envelope to provide for a robust assessment. |
| Changes to Construction Methodology | The assessment assumes a worst case of excavating all cable trenches and removing any excess excavated material to provide a worst case flow of HGV trips on the road network. |
| <i>Operation</i> | |
| N / A | N / A |

5.6.2.29 The assessment is based upon construction traffic estimates derived over the estimated 37 month construction period for all three elements of the modified OnTI (Transmission Owner substation, MORL substation and export cables). The estimated construction traffic movements are provided in full in the Transport Assessment and are summarised in Table 5.6-5. Traffic flows have been assigned to the road network using the likely supply of construction materials and supply of labour.

Table 5.6-5 Construction Traffic Flows

| Survey Location | Time Period | Cars / Lights Vehicles | HGV | Total Vehicles |
|---------------------------|-------------|------------------------|-----|----------------|
| A98 west of Boyndie | 12 Hours | 0 | 50 | 50 |
| | 24 Hours | 0 | 50 | 50 |
| B9121 south of Fiskaidly | 12 Hours | 3 | 27 | 30 |
| | 24 Hours | 3 | 27 | 30 |
| A98 west of the B9038 | 12 Hours | 16 | 77 | 94 |
| | 24 Hours | 16 | 77 | 94 |
| A97 south of B9121 | 12 Hours | 3 | 28 | 31 |
| | 24 Hours | 3 | 28 | 31 |
| A947 near Keilhill | 12 Hours | 6 | 92 | 98 |
| | 24 Hours | 6 | 92 | 98 |
| C92S east of Foulzie | 12 Hours | 0 | 0 | 0 |
| | 24 Hours | 0 | 0 | 0 |
| C7s west of Gorrachie | 12 Hours | 4 | 30 | 34 |
| | 24 Hours | 4 | 30 | 34 |
| B9105 south of Fintry | 12 Hours | 9 | 68 | 77 |
| | 24 Hours | 9 | 68 | 77 |
| A947 north of Turriff | 12 Hours | 10 | 34 | 43 |
| | 24 Hours | 10 | 34 | 43 |
| A947 south of the B992 | 12 Hours | 0 | 8 | 8 |
| | 24 Hours | 0 | 8 | 8 |
| A98 east of the B9027 | 12 Hours | 0 | 54 | 54 |
| | 24 Hours | 0 | 54 | 54 |
| B9170 west of Cuminestown | 12 Hours | 3 | 26 | 29 |
| | 24 Hours | 3 | 26 | 29 |
| C29S south of Cuminestown | 12 Hours | 2 | 13 | 14 |
| | 24 Hours | 2 | 13 | 14 |
| C121B west of C295 | 12 Hours | 21 | 42 | 62 |
| | 24 Hours | 21 | 42 | 62 |
| B9170 west of New Deer | 12 Hours | 23 | 7 | 30 |
| | 24 Hours | 23 | 7 | 30 |
| A948 west of the B9028 | 12 Hours | 23 | 7 | 30 |
| | 24 Hours | 23 | 7 | 30 |
| A981 west of the B9028 | 12 Hours | 0 | 0 | 0 |
| | 24 Hours | 0 | 0 | 0 |

EIA Methodology

- 5.6.2.30 The assessment has been undertaken in accordance with the Institute of Environmental Management and Assessment (IEMA) 'Guidelines for the Environmental Assessment of Road Traffic' (1993). The IEMA guidelines include details 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 various receptors. The guidelines also identify the key effects that are most important when assessing the significance of traffic effects from an individual development: Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) entitled 'Assessment and Management of Environmental Effects' sets out four levels against which the magnitude of these effects should be assessed – major, moderate, minor and negligible.
- 5.6.2.31 The receptors that may be subject to any traffic effects arising from the construction of the OnTI are likely to be settlements along the construction traffic route and construction traffic routes. These settlements are classified by size, function, presence of school and community facilities, traffic calming or traffic management measures, vehicle speed limits and position on the roads hierarchy, using the criteria identified in Table 5.6-6. This classification is based upon professional judgement and relative sensitivity to the potential traffic effects of the modified OnTI.
- 5.6.2.32 Identification of receptor sensitivity requires the definition of both baseline conditions and estimation of conditions for the appropriate year of assessment. Each receptor will have a different value and level of sensitivity to change. Quantification of environmental effects is easier for some receptors than others. Traffic noise has been extensively researched and methods of measurement developed. Other effects such as severance are more subjective as there are no current proven or reliable techniques for study. Table 5.6-6 provides descriptions of receptor sensitivity based on DMRB guidelines HA 205/08 'Assessment and Magnitude of Environmental Effects'.
- 5.6.2.33 For many effects there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed up by data or quantified information where possible.
- 5.6.2.34 The IEMA guidelines identify general thresholds for traffic flow increases of 10 % and 30%. The guidelines also suggest that 30 %, 60 % and 90 % changes in traffic levels should be considered as "slight, moderate and substantial" effects respectively with regard to severance and intimidation. It is also generally considered that traffic flow increases of less than 10% are negligible, given that daily variation in background traffic flow may vary by this amount. Based on these guidelines and perceptions, the magnitude of the effect can be estimated for the traffic based effects using the criteria in Table 5.6-7.
- 5.6.2.35 To determine the overall significance of the effects, the results from the receptor sensitivity and impact magnitude classifications are correlated and classified using the scale summarised in Table 5.6-8. For the purposes of this assessment effects of Moderate or above are significant under the EIA Regulations.

Table 5.6-6 Receptor Sensitivity

| Sensitivity | Description |
|-------------|--|
| High | Typically receptors with high importance and rarity on an international and national scale and with limited potential for substitution. To include large rural settlements containing a high number of community and public services and facilities, areas with traffic control signals, waiting and loading restrictions, traffic calming measures and minor rural roads, not constructed to accommodate frequent use by HGV. |
| Medium | Typically receptors with high or medium importance and rarity on a regional scale and with limited potential for substitution. To include intermediate sized rural settlements containing some community or public facilities and services, areas with some traffic calming or traffic management measures and local A or B class roads, capable of regular use by HGV traffic. |
| Low | Typically receptors with low or medium importance and rarity on a local scale (on-site or neighbouring the site). To include small rural settlements with few community or public facilities or services, areas with little or no traffic calming or traffic management measures and trunk or A-class roads, constructed to accommodate significant HGV composition. |
| Negligible | Typically receptors with little importance and rarity. To include roads with no adjacent settlements including new strategic trunk roads or motorways that would be little affected by additional traffic. |

Table 5.6-7 Impact Magnitude

| High | Medium | Low | Negligible |
|--------------------------|-------------------------------|-------------------------------|------------------------------|
| >90% increase in traffic | 60% - 90% increase in traffic | 30% - 60% increase in traffic | 0% - 30% increase in traffic |

Table 5.6-8 Matrix for Determination of Significance of Effect

| Sensitivity Magnitude | High | Medium | Low | Negligible |
|--------------------------|----------|------------|------------|------------|
| High | Major | Major | Moderate | Minor |
| Medium | Major | Moderate | Minor | Negligible |
| Low | Moderate | Minor | Negligible | Negligible |
| Negligible | Minor | Negligible | Negligible | Negligible |

Impact Assessment

Construction

5.6.2.36 The construction traffic has been compared against the future base year (2018) traffic flows to determine the percentage impact on construction traffic on the road network. Table 5.6-9 illustrates the percentage increases in flows.

Table 5.6-9 Construction Traffic Peak Month Percentage Impact (Average Weekday)

| Survey Location | Time Period | Cars / Light Vehicles % Increase | HGV % Increase | Total Vehicles % Increase |
|---------------------------|-------------|----------------------------------|----------------|---------------------------|
| A98 west of Boyndie | 12 Hours | 0% | 5.48% | 1.08% |
| | 24 Hours | 0% | 4.74% | 0.91% |
| B9121 south of Fiskaidly | 12 Hours | 1.24% | 50.94% | 10.10% |
| | 24 Hours | 1.01% | 43.55% | 8.33% |
| A98 west of the B9038 | 12 Hours | 0.28% | 8.25% | 1.42% |
| | 24 Hours | 0.23% | 7.20% | 1.18% |
| A97 south of B9121 | 12 Hours | 0.28% | 12.23% | 2.38% |
| | 24 Hours | 0.24% | 11.76% | 2.06% |
| A947 near Keilhill | 12 Hours | 0.11% | 9.50% | 1.50% |
| | 24 Hours | 0.09% | 8.04% | 1.22% |
| C92S east of Foulzie | 12 Hours | 0% | 0% | 0% |
| | 24 Hours | 0% | 0% | 0% |
| C7s west of Gorrachie | 12 Hours | 3.45% | 90.91% | 22.82% |
| | 24 Hours | 2.88% | 76.92% | 19.10% |
| B9105 south of Fintry | 12 Hours | 0.84% | 28.57% | 5.88% |
| | 24 Hours | 0.69% | 25.00% | 5.06% |
| A947 north of Turriff | 12 Hours | 0.18% | 3.51% | 0.66% |
| | 24 Hours | 0.14% | 2.97% | 0.53% |
| A947 south of the B992 | 12 Hours | 0% | 1.03% | 0.18% |
| | 24 Hours | 0% | 0.84% | 0.14% |
| A98 east of the B9027 | 12 Hours | 0% | 6.89% | 1.53% |
| | 24 Hours | 0% | 6.04% | 1.31% |
| B9170 west of Cuminestown | 12 Hours | 0.19% | 6.47% | 1.44% |
| | 24 Hours | 0.15% | 5.57% | 1.18% |
| C29S south of Cuminestown | 12 Hours | 0.57% | 16.67% | 3.27% |
| | 24 Hours | 0.45% | 13.98% | 2.62% |
| C121B west of C295 | 12 Hours | 10.34% | 91.30% | 24.90% |
| | 24 Hours | 8.40% | 77.78% | 20.39% |
| B9170 west of New Deer | 12 Hours | 1.75% | 1.85% | 1.77% |
| | 24 Hours | 1.39% | 1.61% | 1.43% |
| A948 west of the B9028 | 12 Hours | 2.61% | 3.49% | 2.78% |
| | 24 Hours | 1.97% | 2.92% | 2.13% |
| A981 west of the B9028 | 12 Hours | 0% | 0% | 0% |
| | 24 Hours | 0% | 0% | 0% |

- 5.6.2.37 The impact review was undertaken for weekday conditions and the results indicate that the greatest impact of construction traffic will be on the B/C Class sections of the road network represented in the assessment by the B9105 / B9121 / C7s / C29s / C121B. This reflects the low number of trips and particular HGV trips on these sections of the road network. The comparison of development traffic flows with theoretical link capacities indicates that there is significant spare capacity on the local road network and no link capacity issues associated with the construction traffic would be anticipated.
- 5.6.2.38 With reference to the IEMA guidelines, total traffic flows are not predicted to increase by more than 30% on any link although HGV levels will increase by more than 30% on B9121 / C7s / C121B. The critical links are therefore considered to be the above along with B0105 and C29s which are considered to be sensitive locations. The maximum number of additional HGV movements per day is 92 on the A947. This is considered low when spread over the course of a day on an A Class road and equates to approximately 11 movements per hour.
- 5.6.2.39 A route evaluation has been carried out for the minor road network against the key environmental criteria identified by the IEMA guidelines. This is summarised in Table 5.6-3 for ease of reference.

Severance

- 5.6.2.40 The increase in traffic flow affecting receptors along the B9105 / B9121 / C7s / C29s / C121B is summarised in Table 8.3 of the Transport Assessment (Technical Appendix 5.6 A). Based on the two-way average daily total traffic flows, the severance / fear and intimidation effect is estimated to be of **minor significance** at the receptors along the access route and within Fintry and Cuminestown due to the low volumes of overall traffic. This effect is short lived and temporary only when construction works are ongoing at the affected areas.

Driver / Pedestrian Delay

- 5.6.2.41 There is the potential for limited driver delay during the peak construction phases due to the limited passing opportunities along the narrow sections of the B/C Class road network although localised improvements may be introduced where required to accommodate the safe movement of construction traffic. This effect is short lived and temporary only when construction works are ongoing in the immediate areas.
- 5.6.2.42 There is significant spare capacity along the links assessed and the driver / pedestrian delay impact is therefore estimated to be of **minor significance** at the receptors along the route.

Pedestrian Amenity

- 5.6.2.43 The magnitude of the impact on pedestrian amenity has been considered in terms of the threshold described in the Manual for Environmental Assessment (MEA). Therefore, based on the estimated two-way percentage increases in HGV traffic summarised in the Transport Assessment, the threshold for changes to pedestrian amenity has not been reached in any locations although the C7s and C121B are considered to be close to the threshold.
- 5.6.2.44 There are currently no pedestrian facilities along the C7s and C121B and limited pedestrian demand. Pedestrian footways are available within Cuminestown although the increase in HGV movements on the B9170 is lower at 6.47%.
- 5.6.2.45 With mitigation measures in place through the CTMP the pedestrian amenity impact is likely to be of **minor significance** at the receptors along the route and is considered short lived and temporary only occurring during construction periods in the local vicinity.

Accidents and Safety

5.6.2.46 Accident data was analysed along the B9105 / B9121 / C7s / C29s / C121B with the overall number of accidents considered to be low.

5.6.2.47 Due to the width of the route it will be necessary for construction vehicles to maintain a low speed along the minor road network. Construction working will also be limited to daytime working with the aim of further reducing the accident risk. With mitigation measures in place the accidents and safety impact is therefore estimated to be of **minor significance** at the receptors along the route. This effect is short lived and temporary only when construction works are ongoing at the affected areas.

Dust and Dirt

5.6.2.48 There are no specific guidelines to determine magnitude of effect of dust and dirt although its impact is likely to be limited to the immediate vicinity of the site access junctions, with mitigation proposed to ensure that the effect is of **minor significance**. This effect is short lived and temporary only when construction works are ongoing at the affected areas.

Operation

5.6.2.49 No operational traffic measures have been assessed due to the very low levels of traffic associated with this phase.

Decommissioning

5.6.2.50 The decommissioning phase is not considered as disruptive as the construction phase and as such no separate assessment has been undertaken.

Proposed Monitoring and Mitigation

Construction

5.6.2.51 All mitigation measures are detailed in the Construction Traffic Management Plan (CTMP) and AIL Route Survey Report (RSR) contained in Technical Appendices 5.6 C and 5.6 D).

5.6.2.52 The proposed access strategy has been designed to minimise the effect of construction traffic on rural C and U Class roads. Where possible, access junctions relating to the modified onshore export cable route will be positioned on the A and B class road network.

5.6.2.53 During the construction period the applicant will maintain a website containing the latest information relating to traffic movements associated with vehicles accessing the site. This will be agreed with the local roads authority.

5.6.2.54 The following measures are recommended in terms of site operation and maintenance during the construction phase:

- All materials delivery lorries (dry materials) will be sheeted to reduce dust and stop spillage on public roads; and
- Specific training and disciplinary measures will be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway, wheel wash facilities will be established at the site entrance.

- 5.6.2.55 The CTMP sets out measures to be put in place to reduce the effects of noise, dust and excessive speed.
- 5.6.2.56 Construction vehicles will be fitted with identification numbers to allow the public to identify any vehicles that may be speeding or causing specific issues and drivers will be required to pass through sensitive areas at low speed.
- 5.6.2.57 In order to mitigate against pedestrian amenity impacts, it is recommended that construction traffic is discouraged from travelling through settlements such as Fintry, Cuminestown, New Deer and New Blyth during peak school hours through the use of supply clauses in the principal contractor's contract.
- 5.6.2.58 A road sweeper would also be deployed on the various sections of the road network close to site access junctions to ensure that the road network is kept clean and free running.
- 5.6.2.59 Wherever possible, contractors will be encouraged to use low emissions vehicles through the CTMP to mitigate against air pollution.

Operation

- 5.6.2.60 No mitigation measures are considered necessary.

Decommissioning

- 5.6.2.61 Similar measures to the construction phase are proposed and will be investigated at that time.

5.6.3 Cumulative Impact Assessment

Summary

- 5.6.3.1 This section presents the results of assessment of the potential cumulative transport effects arising from the modified OnTI in conjunction with other existing or reasonably foreseeable onshore developments and activities. MORL's approach to the assessment of cumulative effects is described in Chapter 1.3: Environmental Impact Assessment.
- 5.6.3.2 Should any construction works associated with other developments, including those undertaken with respect to the MORL three consented wind farms or MORL Western Development Areas, be undertaken at the same time as the OnTI it is considered highly unlikely that any cumulative transport issues would result changes to the effects at identified receptors.
- 5.6.3.3 No committed developments are located within the vicinity of the study area that are not accounted for by the use of High NRTF factors in the future year flows and thus the cumulative effects will not be significant.
- 5.6.3.4 Cumulative issues relating to the operational phase are not considered significant.

5.6.4 References

Aberdeenshire Council (2012) Local Transport Strategy 2012.

The Highways Agency, Scottish Government, Welsh Assembly Government Llywodraeth Cynulliad Cymru and the Department for Regional Development Northern Ireland. Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) 'Assessment and Management of Environmental Effects'.

Institute of Environmental Assessment (IEMA) (1993). Guidelines for the Environmental Assessment of Road Traffic.

Nestrans (2013) Regional Transport Strategy.

The Scottish Government (2005) Planning Advice Note 75: Planning for Transport.

The Scottish Government (2010) Scottish Planning Policy 2010.

The Scottish Government (2013) Draft Scottish Planning Policy.