Bowdun Offshore Wind Farm, Onshore EIA Report

Volume 1, Chapter 14: Traffic and Transport

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14.1 Introduction

14.1.1 This chapter of the Onshore Environmental Impact Assessment (EIA) Report presents the assessment for the onshore infrastructure of the Bowdun Offshore Wind Farm ('the Project') on Traffic and Transport receptors. The onshore infrastructure of the project, is the works landward of Mean Low Water Springs (MLWS), including the intertidal area, and is referred to as the Proposed Development.

14.1.2 This chapter assesses the potential likely impacts and effects of the Proposed Development on traffic and transport as a result of the construction phase. This chapter assesses the significance of these effects against recognised guidelines and, where required, appropriate mitigation measures are described.

14.1.3 The traffic effects during the operational and decommissioning phases of the Proposed Development have been scoped out of this assessment as they are expected to be far less than what is being assessed during the construction phase.

14.1.4 This chapter includes a review of the existing traffic and transport baseline conditions within the Traffic and Transport Study Area identified in Section 14.2 . For this purpose, the road network has been reviewed, and traffic counts have been undertaken. Analysis of this information and consideration of how to minimise impacts resulting from the additional traffic, over and above the determined baseline, introduced by the Proposed Development, along with proposed mitigation measures, are presented in this chapter.

14.1.5 Throughout this chapter, the changes to the baseline environment caused by actions during the Proposed Development's lifetime are referred to as 'impacts', while the consequences of impacts of the Proposed Development and its construction and operation are referred to as 'effects'.

14.1.6 The Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (IEMA 2023) (hereafter referred to as the IEMA Guidelines) confirms this distinction, stating that "*impacts are the changes resulting from an action*" and "*effects are the consequences of these impacts*".

14.1.7 Consistent with advice set out in the IEMA Guidelines, Guidelines for Traffic Impact Assessment (The Institution of Highways and Transportation (IHT), 1994), and Transport Assessment Guidance (Transport Scotland, 2012), this chapter assesses the impacts of the construction phase of the Proposed Development. Details on the numbers of the expected construction vehicles generated and their most likely access routes to their respective working locations are outlined.

14.1.8 The estimates of construction duration and construction traffic within this chapter are based on professional judgement, from experience gained across many similar assessments, in addition to a range of assumptions relating to the Proposed Development.

14.2 Traffic and Transport Study Area

14.2.1 The Proposed Development, outlined in Volume 1, Chapter 2: The Proposed Development, is located west/southwest of Stonehaven in the local authority area of Aberdeenshire.

14.2.2 The Traffic and Transport Study Area, shown in Figure 14.1 in Annex – Figures, includes the existing local road network, strategic road network, and non-motorised user routes that may be impacted by the construction and associated traffic related to the Proposed Development.

14.2.3 Given that material sources are unknown at this time, the assumed construction access routes are not definitive but professional judgement, and a precautionary approach has been used to select the most likely routes. It is predicated that all general construction traffic will arrive via the primary road network and exit at the nearest junction to the working location.

14.2.4 The assumed construction access routes, identified in Section 14.8 (Construction Access Routes) determined the extent of the assessed Traffic and Transport Study Area.

14.3 Policy Context

14.3.1 1IntroductionPolicy specific to Traffic and Transport, is contained in the National Planning Policy Framework 4 (Scottish Government 2023) and the Aberdeenshire Local Development Plan 2023 (Aberdeenshire Council 2023).

14.3.2 The Proposed Development and its impacts were considered in the context of the National Planning Framework 4 (NPF4). It is a "*long-term spatial strategy with a comprehensive set of national planning policies to form part of the statutory development plan*" for Scotland. NPF4 confirms the statutory position that the "*statutory development plan for any given area of Scotland consists of the National Planning Framework and the relevant LDP(s)*". NPF4 identifies national developments and other strategically important development opportunities in Scotland. A summary of policy provisions relevant to Traffic and Transport are provided in Table 14.1.

Table 14.1: Summary of NPF4 relevant to Traffic and Transport

Relevant Policy	Policy Summary
Energy Policy (Policy 11)	This policy supports development proposals for all forms of renewable, low-carbon and zero emission technologies, including the repowering, extending, expanding, and extending the life of existing wind farms. This policy explicitly highlights the requirement that all project design and mitigation must demonstrate how the impacts on road traffic and on adjacent trunk roads, including during construction, are addressed.
Sustainable Transport (Policy 13)	This policy refers to the requirement for a Transport Assessment to be carried out "where a development proposal will generate a significant increase in the number of person trips" in accordance with the relevant guidance.

14.3.3 The NPF4 sets out that developments should support sustainable transport. Due to the remote location of the Proposed Development, there are limited opportunities to consider sustainable travel. The design of the Proposed

Development has however attempted to minimise negative impacts on road safety such that the needs of all road users are appropriately considered.

14.3.4 The Proposed Development and its impacts were also considered in the context of the Aberdeenshire Local Development Plan (LDP) 2023 which highlights Aberdeenshire as "*an area with a high quality of life and distinctive places, and where new developments are designed as effectively as possible to improve this, help deliver sustainable, low carbon places and contribute positively towards the health and wellbeing of its residents*".

14.3.5 The Aberdeenshire LDP 2023 identifies policies to apply to local developments to help achieve Aberdeenshire Council's goals. A summary of policy provisions relevant to Traffic and Transport are provided in Table 14.2.

Table 14.2: Summary of Aberdeenshire LDP 2023 relevant to Traffic and Transport

Relevant Policy	Policy Summary
Open Space and Access in New Development (Policy P2)	This policy highlights that existing and potential public access routes (including core paths and other routes, such as public rights of way) should be protected. It notes that new developments must include appropriate opportunities for informal recreation and safe active travel, including walking and cycling, wheeling (travelling by wheelchair) and riding.
Renewable Energy (Policy C2)	This policy supports renewable energy developments, including wind as well as storage projects, which are in suitable locations with appropriate design. It is noted that assessment of the acceptability of such developments will need to take account of numerous effects, including road traffic. It is also highlighted that "unacceptable significant adverse effects on the amenity of dwellinghouses, such as from noise, or on tourism and recreation interests including core paths and other established routes used for public walking, riding or cycling, or to protected species should also be avoided".
Providing Suitable Services (Policy RD1)	This policy outlines the requirement that development must be able to appropriately function through the provision of appropriate infrastructure. Where a new private access is required onto a public road then it must be designed to the satisfaction of Aberdeenshire Council's Road and Transportation Service or Transport Scotland (in the case of access onto a trunk road). It is also noted that a "Transport Assessment (or for smaller proposals a Transport Statement) may be asked for, to demonstrate that the development (and any proposed mitigation measures) will not have significant transport impacts on existing transport infrastructure and services".
Developer Obligations (Policy RD2)	This policy outlines that where the Proposed Development (by itself or cumulatively) would give rise to the need for new or improved infrastructure or services (that is not directly provided as part of the development), then planning obligations or other appropriate means to secure such provision may need to be put in place. Planning obligations, including those securing financial contributions, must meet each of the following tests: • be necessary to make the proposed development acceptable in planning terms; • serve a planning purpose;

Relevant Policy	Policy Summary
	• relate directly or cumulatively to the proposed development; • fairly and reasonably relate in scale and kind to the proposed development; and • be reasonable in all other respects.

14.3.6 While NPF4 and the Aberdeenshire LDP 2023 both refer to the requirement for a Transport Assessment to be carried out, this would typically involve subsequent reference to the Scottish Government guidance, i.e., Transport Assessment Guidance (TAG) (Transport Scotland, 2012), which describes the necessary considerations in the production of a Transport Assessment; process, scope and purpose as well as the level of assessment required and consideration as to how Travel Plans can be implemented.

14.3.7 A Transport Statement is deemed to be surplus to requirements because this assessment demonstrates that the Proposed Development will not generate any significant long-term traffic movements. Notwithstanding this, there are similarities between certain information required for this chapter and that usually provided within a Transport Assessment and so while TAG has some relevance to this assessment, the following guidance is deemed more relevant.

14.3.8 In undertaking the assessment of the potential traffic and transport effects on the road network, the IEMA Guidelines (IEMA, 2023) provide specific guidance on the assessment of road traffic impacts and provide the basis for a systematic, consistent, and comprehensive coverage for the appraisal of traffic impacts for a wide range of development project types.

14.3.9 The IEMA Guidelines are not intended to be exhaustive, nor do they provide reference for specific problems that may occur in assessing the environmental impact of traffic. They are intended to complement professional judgement and the experience of trained assessors, acknowledging that the significance of environmental impact associated with certain traffic loads can vary depending on the location and characteristics of the proposed development.

14.3.10 Other guidance referred to in this assessment includes:

- Volume 15 Economic Assessment of Road Schemes in Scotland, Section 1 The NESA Manual (Design Manual for Roads and Bridges (DMRB), 2015);
- LA 104 Environmental assessment and monitoring (DMRB), 2020);
- LA 112 Population and human health (DMRB, 2020);

14.4 Consultation

14.4.1 The approach to consultation for the Proposed Development is set out in Volume 1, Chapter 4: Stakeholder Engagement and Consultation. A summary of the issues raised during consultation activities undertaken to date specific to Traffic and Transport is presented in Table 14.3, together with how these issues have been considered in the production of this assessment.

Table 14.3: Summary of key consultation issues raised during consultation activities undertaken for the Proposed Development relevant to Traffic and Transport

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
11/09/2024	2024 Bowdun Scoping Opinion (Aberdeenshire Council, 2024)	Aberdeenshire Council states that condition surveys, traffic surveys and route appraisals will be required for all routes associated with the delivery of the project from the boundaries of the trunk road network as appropriate, including routes identified within Section 15.5 of the Scoping Report for the life cycle of the project. From a public road perspective as part of this Onshore Scoping Report a review will likely be required of the following (this list is non-exhaustive); existing road widths, passing provisions, construction makeup, drainage, visibility, junction radii, road markings, and statutory undertaker's plant. The resulting review may result in requirements for road widening, passing provision, junction radii increases, edge strengthening, drainage solutions, street furniture relocation, and statutory undertaker's plant rerouting or lowering as part of the proposals of the overall development, along with the remedial works to reinstate these elements. A Transport Assessment is required for this development and discussions should be undertaken with this consultee.	Comments noted, assessment has been undertaken in line with the proposed methodology outlined in the Scoping Report. A comprehensive Construction Traffic Management Plan (CTMP) and Abnormal Load (AL) Management Plan will be produced by the appointed contractor prior to construction of the Proposed Development that will assess and manage the proposed construction routes in detail. Details of information included within the CTMP is included in Section 14.10 (Additional Mitigation and Residual Effect). As detailed in Section 14.6 (Impacts Scoped Out of the Assessment), the traffic effects during the operational and decommissioning phases of the Proposed Development have been scoped out of this assessment as any impacts and effects are expected to be far less than what is being assessed during the construction phase. This chapter explains that the Proposed Development will not generate any Significant long-term traffic movements and as such a Transport Assessment is not deemed necessary.
13/09/2024	2024 Bowdun Scoping Opinion (Network Rail, 2024)	Network Rail strongly suggests that potential impacts of both the construction and operational development on the current and future safe and efficient operation of the railway are assessed.	Comments noted, assessment has been undertaken in line with the proposed methodology outlined in the Scoping Report. As detailed in Section 14.6 (Impacts Scoped Out of the Assessment), the traffic effects during

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
		Network Rail asks for the inclusion of a Traffic Assessment that assesses the effects of construction traffic on existing traffic flows and the public road network and details of proposed construction and engineering works in the vicinity of the railway line.	the operational and decommissioning phases of the Proposed Development have been scoped out of this assessment as any impacts and effects are expected to be far less than what is being assessed during the construction phase. This chapter explains that the Proposed Development will not generate any Significant long-term traffic movements and as such a Transport Assessment is not deemed necessary.
22/08/2025 03/10/2025	2025 Pre-Application Feedback Forms	Concerns around potential closures of footpaths/roads. Reinstatement of woodlands is a priority. Safety concerns around use of Drumlithie A90 junction.	Details surrounding impacts to Non-motorised User delay, amenity and safety as a result of the construction of the Proposed Development has been included within Section 14.10 (Assessment of Significance). Volume 1, Chapter 16 (Socio-Economics, Tourism and Recreation) provides some further study on local amenity access. A comprehensive Construction Traffic Management Plan (CTMP) and AL Management Plan will be produced by the appointed contractor prior to construction of the Proposed Development that will assess and manage the proposed construction routes in detail. Details of information included within the CTMP is included in Section 14.10 (Additional Mitigation and Residual Effect).

14.5 Data Sources

14.5.1 Traffic flows, accident data, active travel routes, and public transport data has been reviewed and analysed to inform this Traffic and Transport baseline assessment.

Desktop Study

14.5.2 Traffic and Transport information, within the Traffic and Transport Study Area, was collected through a detailed desktop review of existing studies and datasets which are summarised in Table 14.4.

14.5.3 Furthermore, a review of existing available data, supplemented with commissioned traffic surveys, were used to establish the baseline conditions. Section 14.8 includes full details of the analysis undertaken to develop the Traffic and Transport baseline.

Table 14.4: Summary of Key Data Sources

Title	Source	Extent	Year	Author
Core Paths	https://www.data.gov.uk/dataset/96f6298c-2457-447f-9dd0-2bfb19f68973/paths-and-core-paths-aberdeenshire	Aberdeenshire	2025	Scottish Government
Traffic Count Data	Transport Scotland	Traffic and Transport Study Area	2025	Transport Scotland
Traffic Count Surveys	Nationwide Data Collection (NDC)	Traffic and Transport Study Area	2025	NDC
Public Transport Data	https://datacutter.basemap.co.uk/DataCutter	UK	2024	Basemap
Trunk Road Accident Data	Transport Scotland	Traffic and Transport Study Area	2019-2024	Transport Scotland
STATS19 Road Safety Data	https://www.data.gov.uk/dataset/cb7ae6f0-4be6-4935-9277-47e5ce24a11f/road-accidents-safety-data	UK	1979-2024	Department for Transport (DfT)

Identification of Sensitive Receptors

14.5.4 A three-step process was used to identify sensitive receptors within the Traffic and Transport Study Area that could be affected by the construction phase of the Proposed Development. This process is described below:

- Step 1: Sites of international, national, and local importance within the Traffic and Transport Study Area were identified using a number of sources. These sites included medical, educational, recreational and community facilities.
- Step 2: Information was compiled on the relevant sensitivity for each of these sites and classified as high, medium, low, or negligible.
- Step 3: Using the above information and professional judgement, sites were included for further consideration if:

- a designated site directly overlaps with the Proposed Development and therefore has the potential to be directly affected by the Proposed Development; or
- sites and associated features were located within the Traffic and Transport Zone of Influence (ZoI) i.e., within the indicated Traffic and Transport Study Area (see Figure 14.1 in Annex – Figures) and adjudged to experience impacts associated with the Proposed Development.

Site-Specific Surveys

14.5.5 A summary of the site-specific survey undertaken to inform this assessment is outlined in Table 14.5.

14.5.6 A total of 19 Automatic Traffic Counts (ATCs) were completed by Nationwide Data Collection between April and May 2025. The traffic on these surveyed days is representative of neutral traffic conditions, as defined by TAG Unit M1.2 Data Sources and Surveys (Department for Transport (DfT), 2024), with no public holidays, school holidays or special events found to be ongoing in the area during this period.

14.5.7 All traffic surveys were conducted between Tuesday 22 April 2025 and Monday 28 April 2025, except for ATC10 (A92) which was surveyed over two periods due to the traffic counter being damaged. Data were therefore captured from Tuesday 22 April 2025 to Thursday 24 April 2025 and Wednesday 30 April 2025 to Sunday 4 May 2025 for this specific location. Figure 14.2 (Annex – Figures) shows the location of these counters along with the traffic counts sourced from Transport Scotland.

14.5.8 The observed traffic data were factored to 2031 future year (first construction year) and is presented in Section 14.8 (Future Baseline Scenario).

Table 14.5: Summary of Site-Specific Survey Data

Title	Extent of Survey	Overview of Survey	Survey Contractor	Date
Traffic Surveys	Assumed construction access routes on Figure 14.2 in Annex – Figures	Traffic count and traffic speed data	Nationwide Data Collection	2025

14.6 Methodology for Assessment of Effects

Overview

14.6.1 The Traffic and Transport assessment of effects has followed the methodology set out in Volume 1, Chapter 3: EIA Methodology. Specific to the Traffic and Transport assessment, the following guidance documents have also been considered:

- Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (IEMA, 2023) (hereafter referred to as the IEMA Guidelines);
- Transport Assessment Guidance (TAG) (Transport Scotland, 2012);
- Guidelines for Traffic Impact Assessment (The Institution of Highways and Transportation (IHT), 1994);
- Design Manual for Roads and Bridges, LA 104 Environmental Assessment and Monitoring (Standards for Highways, 2020);
- Design Manual for Roads and Bridges, LA 112 Population and Human Health (Standards for Highways, 2020).

Criteria for Assessment

14.6.2 Information about the Proposed Development (including the MDS discussed in Section 14.6) and the proposed activities within all stages of the Proposed Development construction shall be combined with information about the environmental baseline to identify the potential interactions between the Proposed Development and the environment.

14.6.3 These potential interactions are known as potential impacts. The potential impacts are then assessed for the level of significance of their effect on the receiving environment/receptors.

14.6.4 An 'Impact' is defined as a change caused by an action that occurs during a project's lifetime. This includes changing the environment through either project actions or the presence of the Proposed Development. Impacts are categorised through various characteristics as shown in Table 14.6.

Table 14.6: Descriptions of Categories Related to EIA Impacts

Impact Categories	Description
Direct or Indirect	Direct impacts occur at the same time as an action and occur within the same area, as opposed to indirect impacts which still result from an action but arise later or in a different area.
Adverse or Beneficial	Adverse impacts have an adverse effect on the environment while beneficial impacts have a beneficial effect on the environment.
Reversible or Irreversible	Reversible impacts are temporary, with natural recovery possible, unlike irreversible impacts, where natural recovery is not possible.
Cumulative	Impacts that arise from a combination of the Proposed Development and other projects.
Transboundary	When an impact has an effect on an area that falls within the boundary of another European Economic Area (EEA).

Impact Categories	Description
Inter-related	The potential effects of multiple impacts from the construction, O&M and decommissioning of the Proposed Development, affecting one receptor.

14.6.5 'Effect' is defined as the term used to express the consequence of an impact. Effects fall into the same groups as the categories for impacts previously listed in Table 14.6.

14.6.6 When determining the significance of effects, a process is used which involves defining the magnitude of the potential impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 3: EIA Methodology.

Receptor Sensitivity

14.6.7 The assessment requires quantifying the sensitivity or importance of receptors, and, critically, to identify the level of significance that such a change may have.

14.6.8 Receptors include natural resources or human groups that have the potential to be affected by the potential impacts of the Proposed Development. A receptor's recoverability, value/importance, and vulnerability will all be considered when determining the sensitivity of each receptor. The sensitivity of the impacts will be categorised within the scale below:

- negligible;
- low;
- medium; and
- high.

14.6.9 The receptors that may be affected by traffic impacts arising from the construction of the Proposed Development are likely to exist adjacent to the construction traffic routes. The sensitivity of these receptors is typically classified by size and function (in terms of settlements, the presence of school and community facilities, traffic calming or traffic management measures, vehicle speed limits and position on the roads hierarchy) using typical criteria such as those identified in DMRB LA 104 Environmental Assessment and Monitoring (Standards for Highways, 2020) and DMRB LA 112 Population and Human Health (Standards for Highways, 2020), and summarised in Table 14.7. The classification is based upon professional judgement and relative sensitivity to the potential traffic effects of the Proposed Development.

Table 14.7: Receptor Sensitivity

Sensitivity	Description
Negligible	Receptors with negligible sensitivity to traffic flows and those sufficiently distant from affected roads and junctions or where no receptors are present.
Low	Low concentrations of receptors with some sensitivity to traffic flows including urban/residential/built-up areas with good footway provision commensurate for

Sensitivity	Description
	its use, demand and footfall and other receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.
Medium	Some concentrations of receptors with some sensitivity to traffic flows including congested junctions, urban/residential/built-up areas with narrow footway provision for its use, demand and footfall or with receptors where there are no/limited setbacks from affected roads and junctions, unsegregated cycleways, roads with some concentrations of road collisions ('clusters').
High	High concentration of receptors with greatest sensitivity due to site-specific characteristics which make them particularly sensitive to changes in traffic flow, high concentrations of road collisions ('clusters') with reference to PIA data, urban/residential/built-up roads without commensurate footway provision, high footfall, severely congested junctions.

14.6.10 The classification of receptors into these categories is based upon professional judgement and relative sensitivity to the potential traffic effects of the Proposed Development.

Magnitude of Impact

14.6.11 IEMA Guidelines are used to assess the environmental impact of road traffic associated with major new developments, excluding projects such as new trunk roads or railways which have separate and established procedures. The IEMA Guidelines are intended to complement professional judgement and the experience of trained assessors, as the perception of changes in traffic is dependent upon a wide range of factors including volume, speed, function, and composition, e.g., percentage of heavy goods vehicles. It is important to acknowledge that the significance of impact associated with certain traffic loads can vary depending on the location and characteristics of the Proposed Development.

14.6.12 The criteria for defining magnitude in this chapter are outlined in Table 14.8. Each assessment considered the spatial extent, duration, frequency and reversibility of impact when determining magnitude which are outlined within the magnitude section of each impact assessment (e.g. a duration of hours or days would be considered for most receptors to be of short-term duration, which is likely to result in a low magnitude of impact).

Table 14.8: Definition of Terms relating to Magnitude of Impact

Magnitude of Impact	Definition
High	Increase in traffic flow above 90% (Adverse)
	Decrease in traffic flow above 90% (Beneficial)
Medium	Increase in traffic flow between 60% and 90% (Adverse)
	Decrease in traffic flow between 60% and 90% (Beneficial)
Low	Increase in traffic flow between 30% and 60% (Adverse)
	Decrease in traffic flow between 30% and 60% (Beneficial)
Negligible	Increase in traffic flow below 30% (Adverse)
	Decrease in traffic flow below 30% (Beneficial)

14.6.13 The following IEMA Guidelines rules were used as a screening framework to define the roads identified within the Traffic and Transport Study Area that were considered further in the impact assessment:

- Rule 1 – include road links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs 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 (IEMA Guidelines: Sensitive areas include "*accident blackspots, conservation areas, hospitals, and links with pedestrian flows*").

14.6.14 Where existing traffic levels are exceptionally low, on some unclassified roads for example, any increase in traffic flow is likely to result in a predicted increase in traffic levels which exceeds 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.

14.6.15 For example, a 30% increase in traffic flow on a road which currently only carries 1,000 vehicles annual average daily traffic (AADT) flow could potentially indicate a major significance effect if it was considered simply in terms of the IEMA Guidelines rules. However, a typical 7.3 m wide rural single carriageway road can accommodate greater than 57,600 vehicles per day (two-way), as indicated by the thresholds contained in DMRB Volume 15, Section 1, The NESA Manual (Standards for Highways, 2015). Therefore, such an increase would be unlikely to have a significant impact, given the road's overall capacity. Table 14.9 summarises the capacity (the maximum sustainable flow of traffic passing per day, under favourable road and traffic conditions) for varying road types.

Table 14.9: NESA Road Categories, Link Speeds and Link Capacities

Road Category	Description	Speed Limit (mph)	Capacity (two way per day)
2	Urban – single 6.0m	30	38,400
3	Urban – single 7.3m	30	38,400
8	Urban – dual 2 lane	30/40/50	144,000
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
31	Rural – dual 2 lane	70	163,200

14.6.16 While in the first instance, impacts are assessed against the criteria outlined in Table 14.8, an element of professional judgement must also be applied with respect to the carrying capacity of the roads being considered, which is an acceptable and well utilised approach for assessments such as these.

14.6.17 In addition, the following environmental impacts are considered on a case-by-case basis in this chapter using professional judgement and reasoned argument in accordance with the IEMA Guidelines:

- severance (of communities);
- driver delay;
- non-motorised user delay;
- non-motorised user amenity;
- fear and intimidation (of all non-motorised users);
- road safety; and
- Abnormal Loads.

Severance

14.6.18 Severance is the perceived division that can occur within a community and access to the services and facilities therein e.g., separation by impacts associated with construction and improvement projects resulting from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself.

14.6.19 Changes in journey times and amenity for non-motorised users may be such that they affect, adversely or beneficially, the degree to which a locality is subject to 'community severance'. In considering the impacts of the Proposed Development, community severance is defined as the separation of residents from facilities and services they use within their community caused by changes in traffic flows. However, the correlation between the degree of severance and the physical barrier of the road and its traffic is not straightforward.

14.6.20 Factors that need to be considered in determining whether severance is likely to be an important issue include road width, traffic flow and composition, traffic speeds, the availability of crossing facilities and the number of movements that are likely to cross the affected route. Different groups may also be more impacted, specifically vulnerable groups such as older age, younger age, and those with health issues, as they may be more sensitive to traffic conditions than others.

14.6.21 Within DMRB LA 112 Population and human health (DMRB LA 112) (Standards for Highways, 2020), the magnitude of impact (change) resulting from severance is described using the five-point scale summarised in Table 14.10. This has been adapted for the purposes of this assessment to include the IEMA Guidelines' identification that *"changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and substantial' changes in severance respectively"* (IEMA, 2023).

Table 14.10: Severance Magnitude of Impact

Magnitude of Impact	Description	Change in Traffic Flow
High	Introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision, i.e., people are likely to be deterred from making trips to an extent enough to induce a re-organisation of their habits. This would lead to a	Increase (adverse) or decrease (beneficial) in traffic flow above 90%

Magnitude of Impact	Description	Change in Traffic Flow
	change in the location of centres of activity or in some cases to a permanent loss to a community. Alternatively, considerable hindrance will be caused to people trying to make their existing journeys.	
Medium	Introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision i.e., some residents, particularly children and elderly people, are likely to be dissuaded from making trips. Other trips will be made longer or less attractive.	Increase (adverse) or decrease (beneficial) in traffic flow between 60% and 90%
Low	Introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision i.e., the current journey pattern is likely to be maintained, but there will probably be some hindrance to movement.	Increase (adverse) or Decrease (beneficial) in traffic flow between 30% and 60%
Negligible	Very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision.	Increase (adverse) or decrease (beneficial) in traffic flow below 30%
No Change	No loss or alteration of characteristics, features, elements, or accessibility; no observable impact in either direction.	No change (0%)

Driver Delay

14.6.22 Traffic delays to existing traffic can occur at several points within the Traffic and Transport Study Area, including:

- at a site entrance where there will be additional turning movements;
- on the roads surrounding the Proposed Development and on the journey routes taken to sites by construction traffic where there is likely to be additional traffic and/or impacts of additional parked cars;
- at key intersections along the assumed construction routes which may be affected by increased traffic; and
- at side roads where gaps in traffic may be reduced by additional traffic, thereby lengthening delays.

14.6.23 Driver delay impacts 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. To inform the assessment of driver delay, the theoretical capacity of the roads has been considered by referencing the capacity information presented in Table 14.9.

Non-motorised User Delay

14.6.24 This delay, as with driver delay, is 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. To inform the assessment of non-motorised user delay, the theoretical capacity of the roads has been considered by referencing the capacity information presented in Table 14.9.

Non-motorised User Amenity

14.6.25 Non-motorised user amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic.

14.6.26 The magnitude of the impact on non-motorised user amenity is considered in terms of the 'threshold' described in the IEMA Guidelines, which suggest that a meaningful change in amenity would be where 'traffic flow (or its HGV component) is halved or doubled' (IEMA, 2023).

Fear and Intimidation

14.6.27 The magnitude of the impact on fear and intimidation has been considered in reference to the IEMA Guidelines, which advise that any impact is dependent on the total volume of traffic, the HGV composition, vehicle speeds, proximity of traffic to people or the lack of protection caused by such factors as narrow pavement widths and conclude that there are no commonly agreed thresholds for estimating levels of danger, or fear and intimidation from known traffic and physical conditions.

14.6.28 However, the IEMA Guidelines do present useful thresholds defining the degree of hazard to non-motorised users by average traffic flow, composition and speed as presented in Table 14.11, which could be used as a first approximation of the likelihood of non-motorised user fear and intimidation, although other factors are important as well, e.g., proximity to traffic, footway widths etc. Professional judgement has therefore been used to determine the impact of construction traffic based on these factors.

Table 14.11: Fear and Intimidation Degree of Hazard

Average Vehicles per Hour (a)	Total 18-hour HGV Flows (b)	Average Speed (mph) (c)	Degree of Hazard
>1,800	>3,000	>40	30
1,200 to 1,800	2,000 to 3,000	30 to 40	20
600 to 1,200	1,000 to 2,000	20 to 30	10
<600	<1,000	<20	0

14.6.29 IEMA Guidelines state that the score from each of the three individual elements is combined to give an overall 'level' of fear and intimidation as defined in Table 14.12.

Table 14.12: Levels of Fear and Intimidation

Level of Fear and Intimidation	Total Hazard Score (a)+(b)+(c)
Extreme	>70
Great	41 to 70
Moderate	21 to 40
Small	0 to 20

14.6.30 The magnitude of impact is then approximated with references to the changes of level of fear and intimidation between the baseline conditions and the increase associated with the construction traffic as described in Table 14.13.

Table 14.13: Fear and Intimidation Magnitude of Impact

Magnitude of Impact	Change in Step/Traffic Flows (AADT) from Baseline Conditions
High	Two step changes in level
Medium	One step change in level, with: >400 vehicles increase in average 18 hr all vehicle two-way flow; and/or >500 heavy vehicles increase in total 18 hr heavy vehicle flow.
Low	One step change in level, with: <400 vehicles increase in average 18 hr all vehicle two-way flow; and/or <500 heavy vehicles increase in total 18 hr heavy vehicle flow.
Negligible	No step changes

14.6.31 While these factors can be quantified, and it is likely to be a combination of traffic volume and speed that would point to a certain degree of hazard, professional judgement has also been exercised in determining the degree of fear and intimidation. Due consideration is to be given to areas such as high-speed sections of road, locations of turning points and accesses, areas exposed to higher-than-average levels of school children, the elderly or other vulnerable groups.

Road Safety

14.6.32 The increase in traffic volume associated with the Proposed Development is the main factor in the potential increase in risk regarding accidents and safety, as is the transfer of dirt and debris from the site and associated vehicles onto the surrounding road network.

14.6.33 The IEMA Guidelines state that through calculating the expected increase in vehicle-kilometres on different classes of road, it will be possible to make an initial simple statistical assessment of the likely increase (or decrease) in the number of accidents resulting from changes in traffic flows and composition.

14.6.34 The following impact criteria set out in Table 14.14 is based on the IEMA Guidelines and good practice. These criteria have been developed to reflect that a smaller real terms change has a greater magnitude when considering collisions and safety.

Table 14.14: Road Safety Magnitude of Impact

Magnitude	Change in Annual Collision Rate and Percentage Increase in General Traffic
Major	A change in annual collision rate of at least one collision and above 90% increase in general traffic
Moderate	A change in annual collision rate of at least one collision and between 60% and 90% increase in general traffic
Minor	A change in annual collision rate of at least one collision and between 30% and 60% increase in general traffic
Negligible	A change in annual collision rate of less than one collision and below 30% increase in general traffic

14.6.35 A collision cluster assessment is also considered a relevant approach to identify potential impacts. Collision clusters, defined as being a total of four collisions within a 50-metre radius of any collision within five years, are identified during a detailed review of the baseline accidents to determine the road safety sensitivity of areas within the Traffic and Transport Study Area.

14.6.36 However, the IEMA Guidelines also state that where a development is expected to produce a change in the character of the traffic (e.g., HGV movements on rural roads), then data on existing accident levels may not be sufficient. As such, professional judgement will be needed to assess the implications on the local road network.

Abnormal Loads

14.6.37 It is expected that there would be a maximum of one AL and associated escort vehicle (one AL plus three LGVs) deliveries per day. Current estimates suggest that there would be a total of approximately 10 AL deliveries during construction programme.

14.6.38 AL vehicles will only be assessed on the assumed AL routes. The current origins of these AL are currently unknown, however, for the purpose of this assessment, these routes are consistent with the general construction vehicle routes except for ALs following the A93 instead of the B9077. This routing is based on assumptions made for adjacent developments, including the Hurlie 400kV Substation development, and is highlighted in Figure 14.3 in Annex – Figures. The exact routing of ALs will be confirmed by an AL Route Assessment prior to delivery.

Significance of Effect

14.6.39 The magnitude of the impact and the sensitivity of the receptor are combined when determining the significance of the effect upon the receptor. The particular method employed for this assessment is presented in Table 14.15 and Table 14.16.

14.6.40 Where a range is suggested for the significance of effect, for example, minor to moderate, it is possible that this may span the significance threshold. The technical specialist's professional judgement will be applied to determine which outcome defines the most likely effect, which takes in to account the sensitivity of the receptor and the magnitude of impact. Where professional judgement is applied to quantify final significance from a range, the assessment will set out the factors that result in the final assessment of significance. These factors may include the likelihood that an effect will occur, data certainty and relevant information about the wider environmental context.

14.6.41 The EIA Regulations require the identification and reporting of significant environmental effects. For the purposes of this assessment:

- a level of moderate or more will be considered a 'significant' effect in terms of the EIA Regulations; and
- a level of minor or less will be considered 'not significant' in terms of the EIA Regulations.

Table 14.15: Matrix Used for the Assessment of the Significance of the Effect

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	**Low**	**Medium**	**High**
Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor	Minor or Moderate	Moderate or Major	Major

Table 14.16: Definition of Significance

Impact	Justification
Negligible	No effects or those that are beneath levels of perception, within normal bounds of variation, or within the margin of forecasting error.
Minor	These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the Proposed Development.
Moderate	These beneficial or adverse effects have the potential to be important and may influence the decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse or beneficial effect on a particular resource or receptor.
Major	These beneficial or adverse effects are very important and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national, or regional importance. However, a major change in a site or feature of local importance may also enter this category.

14.7 Key Parameters for Assessment

Maximum Design Scenario

14.7.1 The Maximum Design Scenario (MDS) identified in Table 14.17 are those parameters expected to have the potential to result in the greatest effect on an identified receptor or receptor group. Any other development scenario within the Project Design Envelope (PDE), will result in the same, or less, level of environmental effect. The scenario has been selected from the details provided in Volume 1, Chapter 2: The Proposed Development.

Table 14.17: Maximum Design Scenario Considered for Each Potential Impact as Part of the Assessment of Likely Significant Environmental Effects on Traffic and Transport

Potential Impact	Phase			Maximum Design Scenario
	C	O&M	D	
The impact of additional vehicle movements on the road network on drivers and non-motorised users.	P	O	O	Peak construction traffic impact at each count location regardless of when it occurs

Potential Impact	Phase			Maximum Design Scenario
	C	O&M	D	
				during the construction programme. Since the Study Area covers a large area, peak construction movements at each count location on the assumed construction routes differs across the construction programme. Therefore, these locations have been assessed during their distinct peak periods for construction traffic movements. This situation would not realistically occur; however, this is a very robust approach and the potential peak construction impacts at each counter location is considered to assess the MDS impacts experienced by all locations within the Study Area across the construction programme.
The impact of additional vehicle movements on the road network on drivers and non-motorised users.	P	O	O	Peak construction traffic impact at each count location regardless of their being route choice. Until contractors have been appointed, and materials sources have been identified, it is not possible to determine exactly how many vehicles would reach the site using each of the assumed construction access routes. Hence in the interests of robustness, the assessment has assumed a precautionary approach to determine construction traffic and the routes they will use. If, for example, two routes were identified to the desired destination based on whether the origin was from the north or south then both routes were assessed for all traffic.

14.7.2 Once contractors have been appointed and materials sourced, it is expected that generated construction traffic will be within the parameters assessed and reported in this chapter; various construction access routes will be used to arrive on site and traffic would disperse prior to reaching some of the sensitive receptors and is not predicted to adversely affect the assessed levels of significance.

14.7.3 Consequently, the information presented in this chapter is deemed robust and in accordance with good practice and professional judgement. The assumed construction access routes, vehicles and other arrangements provided are based on the Traffic and Transport Study Area assessment, baseline assessment, and current construction projections for this Proposed Development and Jacobs' experience of construction and operation of similar projects.

Impacts Scoped Out of the Assessment

14.7.4 On the basis of the baseline environment and the Project Description outlined in Volume 1, Chapter 2: The Proposed Development, impacts scoped out of the assessment for Traffic and Transport are outlined, together with a justification for scoping out, in Table 14.18. These impacts were proposed to be scoped out in the Scoping Report (TWP, 2024) and no concerns were raised by key consultees within the Scoping Opinion.

Table 14.18: Impact Scoped Out of the Assessment for Traffic and Transport (Tick Confirms the Impact is Scoped Out)

Potential Impact	Phase			Justification
	C	O&M	D	
The impact of additional vehicle movements on the road network on drivers and non-motorised users.	×	✓	✓	Operation and maintenance of the Proposed Development is likely to generate an infrequent number of additional vehicle movements on the road network. The Proposed Development will not require any manned facilities and requires only infrequent maintenance activities. Therefore, the potential impact of additional vehicle movements on the road network and other transport receptors during operation and maintenance of the Proposed Development is unlikely to result in significant effects and is scoped out of the assessment for traffic and transport. Decommissioning of the Proposed Development will generate a lower number of additional vehicle movements on the road network than the construction phase. This is because retired infrastructure/equipment would either be left in situ or transported away from site in bulk, reducing the number of additional vehicle movements required to facilitate decommissioning of the Proposed Development. Measures to be included in the CTMP, updated as necessary, will also be employed during the decommissioning phase. Therefore, the potential impact of additional vehicle movements on the road network and other transport receptors during decommissioning of the Proposed Development, based upon the baseline conditions that could be estimated at this time, would be no higher than those impacts during the construction phase and is scoped out of the assessment for traffic and transport.

14.8 Baseline Environment

Overview of Baseline Environment

14.8.1 The following sections provide a summary of the Traffic and Transport baseline environment.

14.8.2 The identification of appropriate baseline conditions for the traffic and transport assessment have been informed from a desk-based assessment, the collection of baseline traffic data, assumed construction access route review, public transport review and active travel review.

Construction Access Routes

14.8.3 Standard procurement practice means that a contractor and supply-chain for materials will not be selected prior to the Proposed Development being consented. Given that material sources are unknown at this time, the assumed construction access routes are not definitive but professional judgement, and a precautionary approach has been used to select the most likely routes. It is predicated that all general construction traffic will arrive via the primary road network and exit at the nearest junction to the working location.

14.8.4 It was important to identify the likely construction access routes that construction traffic will use to/from the Proposed Development during the construction phase so that potential impacts and sensitive receptors could be defined. Informed by a desk-based review of the surrounding road network, review of existing and proposed developments near to the Traffic and Transport Study Area, and professional judgement, routing predictions have been identified and outlined for the purpose of this assessment. The extent of this assumed construction access route network is illustrated in Figure 14.3 in Annex – Figures.

14.8.5 Each construction access route, identified in Section 15.8 (Construction Access Routes), has been reviewed through a desk-based study for constraints such as weight restrictions, low bridges, and HGV restrictions. Despite all LGVs being assessed only on the identified construction routes, in practice, light vehicles are likely to be more widely distributed and the approach that they only use a defined set of construction access routes means that the assessment provides a robust approach.

14.8.6 AL vehicles have been assumed to use routes that are consistent with the general construction traffic routes with the exception of AL following the A93 instead of the B9077. These routes will be confirmed by a future commissioned Abnormal Load Route Assessment once the substation design and transformer sizes have been finalised.

14.8.7 A Construction Traffic Management Plan (CTMP) will be agreed, in consultation with the Planning and Road authorities post-consent. This will address scheduling, traffic management, stacking areas for deliveries and diversions for ALs, if required. Traffic management measures to minimise the impact of the construction phase of the Proposed Development on local residents shall be a focus of the CTMP.

Road Network

A90(T)

14.8.8 The A90 trunk road roughly dissects the PPP Application Boundary in half. It is generally a dual carriageway road, routeing broadly northeast to southwest between Fraserburgh and Edinburgh via Aberdeen, Stonehaven, Forfar, Dundee, Perth, Dunfermline and South Queensferry (only its section between Ellon and Fraserburgh is single carriageway). Its section between Perth and the Queensferry Crossing, at South Queensferry, is of Motorway standard and is the M90.

14.8.9 The stretch between Dyce and Dundee, within the Study Area, can easily accommodate HGV traffic and is judged to be of a good standard dual carriageway road and is generally subject to the national speed limit. The speed limit does reduce to 40 mph at Stonehaven Roundabout, the junction where the Aberdeen Western Peripheral Route (AWPR) section of the A90(T) and the A90(T)/A92(T) intersect.

A92(T)

14.8.10 The A92 trunk road routes broadly northeast to southwest through along the east coast between the A956 at Charlestown and the A90(T) to the north of Stonehaven. This section of road can easily accommodate HGV traffic and is judged to be a good standard of dual carriageway subject to the national speed limit.

14.8.11 Any equipment/materials coming from the south of Aberdeen have the potential to use this section of road to reach the A90 to route to the relevant area of the Proposed Development.

A92

14.8.12 A non-trunked section of the A92 connects between the south of Stonehaven and Dundee via Inverbervie, Gourdon, Johnshaven, Montrose, and Arbroath. This road hugs the east coast and routes adjacent to the Landfall location of the Proposed Development.

14.8.13 It is generally a single carriageway road except for dualled sections northeast of Dundee and within Arbroath. It can easily accommodate HGV traffic and is generally subject to a speed limit of 60 mph, except for a national speed limit on the dualled section between Dundee and Arbroath, and reduced speed limit sections (30 mph or 40 mph) in the settlements of Kinneff, Inverbervie, St. Cyrus, Montrose, Marywell, Arbroath, and Dundee.

A93

14.8.14 The A93 is a distributor road that provides connections from Aberdeen through to Perth via Deeside and Glenshee. The section of interest in this assessment and within the Study Area is between the A90 and the A957 at Crathes.

14.8.15 It is a single carriageway road that can easily accommodate HGV traffic and is generally subject to a speed limit of 60 mph except for lower speed (30 mph or 40 mph) sections within Peterculter, Drumoak, Park, and Crathes. The road is approximately 7 m in width.

A956(T)

14.8.16 The A956 trunk road routes from east to west from south of Aberdeen to the A92(T). It can easily accommodate HGV traffic and is judged to be a good standard dual carriageway road, predominantly subject to the national speed limit, except for a 40 mph section northeast from the A92(T).

14.8.17 Any equipment/materials coming from the south of Aberdeen have the potential to use this section of road to reach the A90 to route to the relevant area of the Proposed Development.

A957 Slug Road

14.8.18 An A road which routes broadly southeast to northwest between Stonehaven and the A93 at Crathes. Access to the Substation of the Proposed Development will be taken from this road and then through Fetteresso Forest.

14.8.19 The road varies in its width along its length and is circa 6.5 m to 7.3 m in width and capable of accommodating HGV traffic. It is generally subject to a speed limit of 60 mph, except for short 30 mph sections within Stonehaven and Crathes.

B967

14.8.20 The B967 is a single carriage road that connects the A90(T) and A92 to the north of Inverbervie. The road can accommodate HGV traffic and is judged to be of a reasonably good standard, between 5.5 m and 6 m in width, and is subject to the national speed limit.

14.8.21 This road would provide access to the Onshore Export Cable Corridor and Landfall area from the A90(T) for construction traffic while allowing traffic to stay on the A92 trunk road longer.

B979

14.8.22 The B979 is a single carriage road that connects the A93 and B9077 to the east of Peterculter. The road can accommodate HGV traffic and is judged to be of a good standard, approximately 7 m in width, and is subject to the national speed limit.

14.8.23 This road would provide access to the Substation for construction traffic from the north via the A90(T), B9077, and A957.

B9077

14.8.24 The B9077 is a local distributor road that connects the communities of South Deeside Road between Aberdeen and its junction with A957 Slug Road. The road can accommodate HGV traffic and is judged to be of good standard and is between 6.5 m and 7 m in width.

B9120

14.8.25 The B9120 is a local distributor road that connects the communities to the east and west of Laurencekirk, between Fettercairn and the A92. The route is intersected by the A90(T) via a staggered priority junction. The road can accommodate HGV traffic and is judged to be of good standard, approximately

6 m in width, and is subject to the national speed limit except for a lower 30 mph section within Laurencekirk.

14.8.26 This road would provide an access option to the Onshore Export Cable Corridor and Landfall area from the A90(T) for construction traffic from the south.

Auchenblae Road

14.8.27 This is a local road providing direct access between the southbound direction of the A92(T) and the centre of Stonehaven. It is judged to be a good standard of single carriageway road, approximately 6.5 m wide, that can accommodate HGV traffic and is subject to a 30 mph speed limit.

14.8.28 This road would provide access to the Onshore Export Cable Corridor and Substation for construction traffic from the A90(T) southbound and northbound (via Broomhill Road) directions.

Broomhill Road

14.8.29 This is a local road through an industrial area that provides direct access between the northbound and southbound carriageways of the A92(T) via Auchenblae Road. It is judged to be a good standard of single carriageway road that can accommodate HGV traffic and varies in its width along its length between approximately 6.5 m and 7.3 m. The road is subject to a 30 mph speed limit except for the western section that is subject to the national speed limit

14.8.30 This road would provide access to the Onshore Export Cable Corridor and Substation for construction traffic from the A90(T) northbound and southbound (via Auchenblae Road) directions.

Farrochie Road

14.8.31 Farrochie Road is a local road providing access to residential streets in the northwest of Stonehaven. It is a narrow single carriageway road, approximately 6 m wide, however can still comfortably accommodate HGV traffic and is subject to a 30 mph speed limit.

14.8.32 This road would provide access to the Substation from the A90(T) (via Broomhill Road/Auchenblae Road).

C1K

14.8.33 The C1K is a rural road providing access to areas west of Stonehaven. It is a narrow single carriageway road, approximately 6 m wide, however should still be able to accommodate HGV traffic sufficiently and is subject to the national speed limit.

14.8.34 This road would provide access to the Onshore Export Cable Corridor for construction traffic.

C14K

14.8.35 The C14K is a local road providing access to areas west of Inverbervie. It is a narrow single carriageway road, approximately 5 m wide, and is subject to a 30 mph within Inverbervie and the national speed limit to the west. This road is potentially unable to currently accommodate two HGVs passing side by side

and so may need to be managed carefully through traffic management measures or temporary passing places installed if deemed necessary. This will be confirmed by the contractor before construction commences.

14.8.36 This road would provide access to Onshore Export Cable Corridor for construction traffic.

C19K Station Road / Glenbervie Road

14.8.37 The C19K is a local road providing access between the A90(T) and local settlements including Drumlithie and Auchenblae. It is a reasonably good standard single carriageway road, approximately 6 m to 6.5 m wide, and is subject to the national speed limit, except for a 30 mph section within Glenbervie.

14.8.38 While this road is certainly able to comfortably accommodate HGV traffic it is noted that safety concerns have been raised surrounding a potentially significant amount of HGV traffic entering and exiting the A90 at the at-grade A90 / Glenbervie Road junction. Consideration will be given as to the requirement for any traffic management measures such as speed reductions or approval for left in / left out movements only to be included in the approved delivery routes of the CTMP. These will be confirmed by discussions between the contractor, Transport Scotland and Aberdeenshire Council before construction commences.

14.8.39 This road would provide access to the Onshore Export Cable Corridor from the A90(T) for construction traffic.

C20K

14.8.40 The C20K is a tertiary road providing localised access between the A90(T) and the B967 to the northwest of Inverbervie. It is a narrow singletrack road, approximately 3.5 m and 4 m wide, and is subject to the national speed limit. This road is unable to currently accommodate two HGVs passing side by side and so may need to be managed carefully through traffic management measures or temporary passing places installed if deemed necessary. This will be confirmed by the contractor before construction commences.

14.8.41 This road would provide access to the Onshore Export Cable Corridor from the A90(T) for construction traffic.

C21K

14.8.42 The C21K is a tertiary road providing localised access between the A90(T) and the B967 to the northwest of Inverbervie. It is a narrow singletrack road, approximately 3.5 m and 4 m wide, and is subject to the national speed limit. This road is unable to currently accommodate two HGVs passing side by side and so may need to be managed carefully through traffic management measures or temporary passing places installed if deemed necessary. This will be confirmed by the contractor before construction commences.

14.8.43 This road would provide access to the Onshore Export Cable Corridor from the A90(T) for construction traffic.

Traffic Volumes

14.8.44 The Traffic volumes from the commissioned 2025 ATC traffic surveys, as described in Section 14.3 (Site-Specific Surveys), are reported in Table 14.19 as the sum of the recorded two-way traffic flows. The locations of these counts are shown in Figure 14.2 in Annex – Figures.

Table 14.19: Commissioned Traffic Counts

Count	Location	Survey Dates	Two-way 7 Day Average	
			Total	HGVs
ATC1	A957 Slug Rd, south of B9077	22/04-28/04	1,366	35
ATC2	A957 Slug Rd, east of Proposed Development access	22/04-28/04	1,222	20
ATC3	C1K, south of Proposed Development	22/04-28/04	435	4
ATC4	A957 Slug Rd, west of A90	22/04-28/04	2,292	22
ATC5	Farrochie Rd, northeast of Farrochie Gardens	22/04-28/04	3,573	27
ATC6	Broomhill Rd, west of A90	22/04-28/04	3,501	27
ATC7	Auchenblae Rd, east of A90	22/04-28/04	4,015	43
ATC8	Auchenblae Rd, east of Malcolm's Mount	22/04-28/04	6,303	32
ATC9	Broomhill Rd, south of Auchenblae Rd	22/04-28/04	5,139	26
ATC10	A92, southeast of A90	22/04-24/04 30/04-04/05	6,076	80
ATC11	C19K Station Rd, northwest of A90	22/04-28/04	1,048	48
ATC12	C19K Glenbervie Rd, west of Drumlithie	22/04-28/04	395	24
ATC13	Unnamed Rd, between A90 and Roland Rd	22/04-28/04	501	3
ATC14	C20K, south A90	22/04-28/04	123	1
ATC15	B967, west of Gobbs Farm	22/04-28/04	862	18
ATC16	C14K, west of Three Wells	22/04-28/04	227	4
ATC17	B9120, northwest of Brae Cottages	22/04-28/04	723	12
ATC18	A92, east of Benholm	22/04-28/04	4,037	70
ATC19	A92, east of A934	22/04-28/04	8,285	89

14.8.45 Traffic volumes were also sourced from Transport Scotland's permanent trunk road ATCs, as referenced in Section 14.3 (Desktop Study), and are reported in Table 14.20. The locations of these counts are shown in Figure 14.2 in Annex – Figures.

Table 14.20: Transport Scotland Traffic Counts

Count	Location	Survey Year	Two-way AADT	
			Total	HGVs
123488	A90, south of A956	2024	13,582	1,643
ATC00051	A90, northeast of A957 Slug Rd	2024	28,265	5,059
ATC00052	B9077, southwest of B979	2024	5,410	357

Count	Location	Survey Year	Two-way AADT	
			Total	HGVs
ATC00054	A93 North Deeside Rd, northwest of Peterculter	2024	6,565	722
ATC00062	A96, west of A90	2024	27,337	2,406
ATC00203	A90 AWPR, north of A92	2024	14,552	2,765
ATC00204	A90, New Milltimber Brae Bridge	2024	24,983	4,847
ATC00205	A90, northbound off-slip at Culter House	2024	6,776	847
ATC00206	A90, southbound off-slip at Culter House	2024	3,650	332
ATC00207	A90, south of A944	2024	29,898	5,232
ATC00208	A90, north of A944	2024	26,886	3,576
ATC00209	A90, southbound on-slip from C89C Chapel of Stoneywood – Fairley Rd	2024	9,845	1,103
ATC00210	A90, northbound off-slip to C89C Chapel of Stoneywood – Fairley Rd	2024	9,825	1,100
ATC00212	A90, north of C89C Chapel of Stoneywood – Fairley Rd	2024	12,459	n/a
ATC00228	A96, west of Airport Rd	2024	27,653	2,959
ATC00230	C89C Chapel of Stoneywood – Fairley Rd	2024	21,225	2,420
ATC00232	A956, Cleanhill Junction	2024	11,332	1,677
ATC00329	A93 North Deeside Rd, west of Bridge Of Dee	2024	4,038	509
JTC00055	A92, east of A90	2024	18,706	2,806
JTC00056	A90, southwest of Dunnottar	2024	22,613	4,771
JTC00057	A90, east of Laurencekirk	2019	22,051	4,234
JTC00058	A90, south of North Water Bridge	2024	21,146	3,214
JTC00059	A90, north of Brechin	2024	8,313	790
JTC00060	A90, west of Brechin	2024	21,423	5,634
JTC08330	A90, between A92 and Broomhill Rd	2019	27,143	3,121

Future Baseline Scenario

14.8.46 The EIA Regulations require that "*a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort, on the basis of the availability of environmental information and scientific knowledge*" is included within the EIA Report.

14.8.47 If the Proposed Development does not come forward, an assessment of the 'without development' future baseline conditions has also been carried out and is described within this section.

14.8.48 The construction programme is outlined in Volume 1, Chapter 2: The Proposed Development. Construction of the Proposed Development is estimated to commence during 2031 if consent is granted and is anticipated to last approximately 48 months depending on weather conditions and ecological

considerations. To assess the likely effects during this period, baseline traffic flows were factored to 2031 by applying a TEMPro low growth factor to the base traffic flows.

14.8.49 An average of the Scottish national and Aberdeenshire regional TEMPro growth factors was used to balance the use of national projections with local variations in growth. The national factor provides a broad overview of trends, while the regional factor accounts for specific local conditions and development plans. This approach helps to create a more realistic and accurate traffic forecast.

14.8.50 The factors applied to the survey data to estimate the 2031 base traffic flows, are shown in Table 14.21. This forecast forms the baseline for the assessment of traffic and transport related effects within this chapter.

Table 14.21: 2031 Traffic Growth Factors

Year	Growth to 2031
2019	1.065
2023	1.041
2024	1.031
2025	1.021

14.8.51 Applying these factors to the traffic counts presented in Table 14.19 and Table 14.20 results in updated 2031 baseline traffic flows shown in Table 14.22.

Table 14.22: 2031 Baseline Traffic Counts

Count	Location	Two-way AADT	
		Total	HGVs
ATC1	A957 Slug Rd, south of B9077	1,395	36
ATC2	A957 Slug Rd, east of Proposed Development access	1,248	20
ATC3	C1K, south of Proposed Development	444	4
ATC4	A957 Slug Rd, west of A90	2,341	22
ATC5	Farrochie Rd, northeast of Farrochie Gardens	3,649	28
ATC6	Broomhill Rd, west of A90	3,576	28
ATC7	Auchenblae Rd, east of A90	4,101	44
ATC8	Auchenblae Rd, east of Malcolm's Mount	6,438	33
ATC9	Broomhill Rd, south of Auchenblae Rd	5,249	27
ATC10	A92, southeast of A90	6,206	82
ATC11	C19K Station Rd, northwest of A90	1,070	49
ATC12	C19K Glenbervie Rd, west of Drumlithie	403	25
ATC13	Unnamed Rd, between A90 and Roland Rd	512	3
ATC14	C20K, south A90	126	1
ATC15	B967, west of Gobbs Farm	880	18
ATC16	C14K, west of Three Wells	232	4
ATC17	B9120, northwest of Brae Cottages	738	12

Count	Location	Two-way AADT	
		Total	HGVs
ATC18	A92, east of Benholm	4,123	71
ATC19	A92, east of A934	8,462	91
123488	A90, south of A956	14,007	1,695
ATC00051	A90, northeast of A957 Slug Rd	29,150	5,218
ATC00052	B9077, southwest of B979	5,579	368
ATC00054	A93 North Deeside Rd, northwest of Peterculter	6,770	745
ATC00062	A96, west of A90	28,193	2,481
ATC00203	A90 AWPR, north of A92	15,007	2,851
ATC00204	A90, New Milltimber Brae Bridge	25,765	4,998
ATC00205	A90, northbound off-slip at Culter House	6,988	874
ATC00206	A90, southbound off-slip at Culter House	3,764	343
ATC00207	A90, south of A944	30,834	5,396
ATC00208	A90, north of A944	27,728	3,688
ATC00209	A90, southbound on-slip from C89C Chapel of Stoneywood - Fairley Rd	10,153	1,137
ATC00210	A90, northbound off-slip to C89C Chapel of Stoneywood – Fairley Rd	10,133	1,135
ATC00212	A90, north of C89C Chapel of Stoneywood – Fairley Rd	12,849	n/a
ATC00228	A96, west of Airport Rd	28,519	3,051
ATC00230	C89C Chapel of Stoneywood – Fairley Rd	21,889	2,495
ATC00232	A956, Cleanhill Junction	11,687	1,730
ATC00329	A93 North Deeside Rd, west of Bridge Of Dee	4,164	525
JTC00055	A92, east of A90	19,291	2,894
JTC00056	A90, southwest of Dunnottar	23,321	4,921
JTC00057	A90, east of Laurencekirk	23,482	4,509
JTC00058	A90, south of North Water Bridge	21,808	3,315
JTC00059	A90, north of Brechin	8,573	814
JTC00060	A90, west of Brechin	22,094	5,811
JTC08330	A90, between A92 and Broomhill Rd	28,905	3,324

14.8.52 The road traffic impact of the Proposed Development will be because of temporary additional traffic volumes associated with the construction activities (both staff and HGV movements), on the existing road network, and affecting users of that road network (including drivers, and those walking, wheeling, cycling, or travelling by public transport).

14.8.53 If the Proposed Development does not progress, traffic volumes are expected to increase along existing roads due to natural traffic growth, as demonstrated in Table 14.22. Additional impacts as a result of the Proposed Development will, however, be avoided and the impact in this case will be Neutral.

Public Transport

14.8.54 Figure 14.4 in Annex – Figures shows the rail and bus services that could potentially be impacted by the construction phase of the Proposed Development.

14.8.55 Stonehaven railway station is the nearest station at approximately 4.8 km to the east of the PPP Application Boundary at the Substation Search Area. Given the distance from the Proposed Development, if staff were to travel by train, then it is likely that a minibus shuttle service would be required to transport staff to and from compounds and work site locations.

14.8.56 Rail services that serve Stonehaven and may be impacted by the construction phase are listed in Table 14.23. Impacts could be due to both cable installation by Horizontal Directional Drilling (HDD) underneath the track, and through increasing the busyness of services through use by construction or operational staff.

Table 14.23: Rail Service Overview (source: thetrainline.com)

Rail Operators	Route Summary	Services*
Scotrail **London North Eastern Railway**	Stonehaven – Aberdeen	36 outbound services per day (AM: 6 / IP: 11 / PM: 7 / OP: 12 33 inbound services per day (AM: 7 / IP: 11 / PM: 6 / OP: 9
Scotrail **CrossCounty** **London North Eastern Railway**	Stonehaven – Dundee	23 outbound services per day (AM: 6 / IP: 6 / PM: 4 / OP: 7 26 inbound services per day (AM: 5 / IP: 7 / PM: 5 / OP: 9
Scotrail **Cross Country** **London North Eastern Railway**	Stonehaven – Edinburgh	16 outbound services per day (AM: 4 / IP: 6 / PM: 3 / OP: 3 15 inbound services per day (AM: 3 / IP: 5 / PM: 3 / OP: 4
Scotrail	Stonehaven – Glasgow	7 outbound services per day (AM: 2 / IP: 1 / PM: 1 / OP: 3 7 inbound services per day (AM: 1 / IP: 2 / PM: 1 / OP: 3
Scotrail	Stonehaven – Inverurie	6 outbound services per day (AM: 1 / IP: 2 / PM: 1 / OP: 2 7 inbound services per day (AM: 1 / IP: 4 / PM: 1 / OP: 1
Scotrail **CrossCounty** **London North Eastern Railway**	Stonehaven – Montrose	33 outbound services per day (AM: 7 / IP: 11 / PM: 6 / OP: 9 34 inbound services per day (AM: 6 / IP: 9 / PM: 7 / OP: 12
Caledonian Sleeper	Stonehaven - London	1 outbound service per day (AM: 0 / IP: 0 / PM: 0 / OP: 1 1 inbound service per day (AM: 1 / IP: 0 / PM: 0 / OP: 0

* AM (0700-1000), IP (1000-1600), PM (1600-1900), OP (1900-0700)

14.8.57 The nearest bus stops to the Proposed Development are on the A92, approximately 2 km to the northeast of the Landfall site, and on the A90, close

to the Onshore Export Cable Corridor, to the southeast of Drumlithie. If staff were to travel by bus, then it is likely that a minibus shuttle service would be required to transport staff to and from compounds and work site locations.

14.8.58 Bus services that may be impacted by the construction or operational phase traffic, or that could be used by construction or operational staff, are listed in Table 14.24.

Table 14.24: Bus Service Overview

Bus Route	Bus Operator	Route Summary	Services
4A	Stagecoach North	Stonehaven Circular (Barclay St)	6 services per day (AM: 1 / IP: 4 / PM: 1 / OP: 0)
4C	Stagecoach North	Stonehaven Circular (Barclay St)	7 services per day (AM: 1 / IP: 5 / PM: 1 / OP: 0)
8	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	9 outbound services per day (AM: 2 / IP: 6 / PM: 1 / OP: 0) 9 inbound services per day (AM: 0 / IP: 0 / PM: 3 / OP: 6)
8A	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	8 outbound services per day (AM: 0 / IP: 0 / PM: 2 / OP: 6) 9 inbound services per day (AM: 4 / IP: 5 / PM: 0 / OP: 0)
8S	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	1 outbound service per day (AM: 1 / IP: 0 / PM: 0 / OP: 0) 1 inbound service per day (AM: 0 / IP: 1 / PM: 0 / OP: 0)
9	Short's Travel	Laurencekirk – Montrose	1 outbound service per day (AM: 1 / IP: 0 / PM: 0 / OP: 0) 1 inbound service per day (AM: 0 / IP: 1 / PM: 0 / OP: 0)
19	First Aberdeen	Culter – Tillydrone	60 outbound service per day (AM: 11 / IP: 24 / PM: 11 / OP: 14) 60 inbound service per day (AM: 11 / IP: 22 / PM: 11 / OP: 16)
26	Smith & Sons	Stonehaven (Westfield Park / Mackie Academy / Barclay Street) – Laurencekirk (Kinnear Square) / Luthermuir (Main Street)	7 outbound service per day (AM: 2 / IP: 3 / PM: 2 / OP: 0) 7 inbound service per day (AM: 2 / IP: 3 / PM: 2 / OP: 0)
107	Stagecoach North	Stonehaven – Montrose	5 outbound service per day (AM: 1 / IP: 2 / PM: 1 / OP: 1) 5 inbound service per day (AM: 1 / IP: 3 / PM: 1 / OP: 0)
201	Stagecoach North	Aberdeen (Union Square Bus Station) – Braemar (Auchendryne Square) / Ballater (Golf Road)	13 outbound service per day (AM: 3 / IP: 6 / PM: 2 / OP: 2) 16 inbound service per day (AM: 4 / IP: 5 / PM: 4 / OP: 3)
202	Stagecoach North	Aberdeen (Union Square Bus Station) – Braemar (Auchendryne Square) / Ballater (Golf Road)	14 outbound service per day (AM: 2 / IP: 5 / PM: 3 / OP: 4) 11 inbound service per day (AM: 2 / IP: 5 / PM: 1 / OP: 3)

Bus Route	Bus Operator	Route Summary	Services
X7	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	5 outbound service per day (AM: 1 / IP: 0 / PM: 0 / OP: 4) 2 inbound service per day (AM: 0 / IP: 0 / PM: 1 / OP: 1)
X7	Stagecoach East	Aberdeen (Union Square Bus Station) / Montrose (High Street) / Arbroath (Bus Station) – Dundee (Bus Station) / Invergowrie (Main Street)	18 outbound service per day (AM: 3 / IP: 6 / PM: 3 / OP: 6) 20 inbound service per day (AM: 2 / IP: 7 / PM: 3 / OP: 8)
X8	Stagecoach North	Aberdeen (Union Square Bus Station) – Chapelton (Landle Court) / Stonehaven (Forest Park)	8 outbound service per day (AM: 1 / IP: 5 / PM: 2 / OP: 4) 8 inbound service per day (AM: 2 / IP: 5 / PM: 0 / OP: 1)

Active Travel

14.8.59 The assumed construction access routes are largely rural in nature and therefore, the roads do not generally have footways, except for sections within most of the smaller and larger settlements in the Traffic and Transport Study Area.

14.8.60 It is noted that there is the potential for conflict with vulnerable non-motorised users, for example, on Core Paths or footways that children may use for walking or cycling to school. Figure 14.9 in Annex – Figures shows that Glenbervie Primary School is situated in proximity to the PPP Application Boundary and so this is one area where construction vehicle movements will need to be carefully managed.

14.8.61 A desk-based study was carried out to review the existing active travel network within the Study Area and is shown in Figure 14.5 in Annex – Figures.

14.8.62 There are numerous Core Paths and other notable active travel routes within the Study Area that may be impacted by the assumed construction vehicle routes as illustrated in Figure 14.5 in Annex – Figures. Horse riders may also use rural lanes and walking/cycling routes, but these would be expected to be in small numbers with no evidence to the contrary.

Road Safety

14.8.63 Traffic collisions within the Traffic and Transport Study Area have been reviewed using data acquired from Transport Scotland for the trunk road network and STATS19 data from the Department for Transport (DfT) for all other roads. This used both data from 2015 to 2019 inclusive, the last five years of available data that is not affected by the COVID-19 pandemic, and from 2019 to 2023 inclusive, the last five full years of available data. This assessment particularly reviewed locations of collision clusters, defined as four collisions within a 50-metre radius of each other within five years.

14.8.64 A summary of collisions within the Study Area between 2015 to 2023 are provided in Table 14.25 to Table 14.27. The locations of these collisions are shown in Figure 14.6 and Figure 14.7 in Annex – Figures. In addition to the vehicle

types shown in Table 14.26, the records show that four pedestrians were involved in collisions between 2015-2019 with one being fatal (2015) and one being serious (2017) and four pedestrians involved between 2019-2023, however all of these were classed as of slight severity.

Table 14.25: Collisions by Severity

Severity	2015-2019		2019-2023	
	Number	Percentage	Number	Percentage
Fatal	8	5%	8	7%
Serious	58	37%	60	56%
Slight	90	58%	40	37%
Total	156	100%	108	100%

Table 14.26: Vehicle Types Involved in All Collisions

Vehicle Type	2015-2019		2019-2023	
	Number	Percentage	Number	Percentage
Pedal Cycle	12	4%	3	2%
Car	197	71%	140	69%
Bus	5	2%	3	2%
LGV	17	6%	19	9%
HGV	20	7%	19	9%
Other	27	10%	18	9%
Total	278	100%	202	100%

Table 14.27: Casualties Involved in All Collisions by Severity

Severity	2015-2019		2019-2023	
	Number	Percentage	Number	Percentage
Fatal	10	4%	10	6%
Serious	84	37%	82	47%
Slight	136	59%	82	47%
Total	230	100%	174	100%

14.8.65 Table 14.26 details that cars make up the largest percentage of vehicles involved in collisions, at over two thirds, however, that percentage has decreased slightly over the 2019-2023 5-year period. Additionally, HGVs have only been involved in a small percentage of accidents at less than 10% during both periods. When LGVs are added, goods vehicles as a total have been involved in less than 20% of accidents during both periods.

14.8.66 Table 14.28 and

14.8.67 Table 14.29 show the national statistics for collisions by severity and by vehicle type on ‘all rural roads’ (i.e., A Roads, B roads, C Roads, U roads), respectively.

Table 14.28: National Collision Severity Statistics on Rural Roads

Severity	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015-2019	2019-2023
Fatal	2.2%	2.3%	2.6%	2.6%	2.7%	2.9%	2.8%	3.0%	2.8%	2.5%	2.9%
Fatal or Serious	26.9%	26.4%	27.5%	29.3%	30.2%	31.3%	31.9%	32.5%	32.5%	28.1%	31.7%
Slight	70.9%	71.2%	70.0%	68.0%	67.1%	65.8%	65.3%	64.5%	64.6%	69.5%	65.5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 14.29: National Collision Vehicle Type Statistics on Rural Roads

Severity	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015-2019	2019-2023
Pedal Cycle	4.0%	4.1%	4.3%	4.1%	4.1%	6.6%	5.0%	4.3%	4.0%	4.1%	4.8%
Car	75.6%	75.9%	75.4%	75.4%	75.5%	71.4%	72.1%	73.3%	74.0%	75.6%	73.3%
Bus	0.7%	0.7%	0.7%	0.7%	0.6%	0.4%	0.5%	0.6%	0.6%	0.7%	0.6%
LGV	6.4%	6.2%	6.2%	6.4%	6.9%	7.6%	8.5%	8.1%	7.9%	6.4%	7.8%
HGV	4.5%	4.0%	3.9%	3.9%	3.8%	4.0%	3.9%	3.6%	3.7%	4.0%	3.8%
Other	8.8%	9.1%	9.5%	9.6%	9.0%	9.8%	10.0%	10.2%	9.8%	9.2%	9.8%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

14.8.68 Analysis shows that accidents in the Traffic and Transport Study Area are generally more severe than the rest of the UK on average. Anecdotal evidence suggests this is likely due to longer stretches of lower trafficked roads, a larger percentage or rural or semi-rural roads, and worse weather/visibility particularly in winter months.

14.8.69 The vehicle type breakdown of the collisions within the Study Area is broadly similar to the national breakdown, although the HGV percentage is slightly higher.

14.8.70 Figure 14.8 in Annex – Figures shows the location of the identified collision clusters within the Study Area between 2015-2019. Analysis of the collision locations indicates that there was one accident cluster location:

- at the A92/A957 junction, there were five collisions recorded in this vicinity. Of these collisions one was classified as 'serious' and the other four as 'slight'.

14.8.71 Figure 14.8 in Annex – Figures also shows the location of the identified collision clusters within Study Area between 2019-2023. Analysis of the collision locations indicates that there were two accident cluster locations:

- at the A90/North Water Bridge junction (north of the River North Esk), there were four collisions recorded in this vicinity. Of these collisions all were classified as 'serious'; and
- at the A90/North Water Bridge junction (south of the River North Esk), there were four collisions recorded in this vicinity. Of these collisions one was classified as 'serious' and the other three as 'slight'.

Key Trip Generators / Attractors

14.8.72 Within the vicinity of the Proposed Development and associated assumed construction access routes, key trip generators/attractors include:

- travel between residential areas;
- retail centres;
- public transport stops/hubs;
- local services;
- education sites;
- health/medical care sites;
- local amenities;
- active travel routes; and
- the road network.

14.8.73 The main residential areas within the Study Area include Stonehaven, Arbuthnott, Brechin, Drumlithie, Drumoak, Gourdon, Inverbervie, Johnshaven, Laurencekirk, Montrose, Peterculter, and Stracathro, with travel between their respective main centres as well as the large urban centres of Aberdeen and Dundee.

Sensitive Receptors

14.8.74 The potential sensitive receptors that have been identified, because of the traffic and transport impacts associated with the Proposed Development, include the following:

- road network and the people using it, most importantly the emergency services, but also including those using public transport – potential delay, severance, and disruption impacts;
- non-motorised users and cyclists on surrounding footways, paths and cycleways – potential delay, severance, and disruption impacts;
- residents – potential disruption due to local intrusion, dust, and dirt;
- local businesses and employees – potential disruption due to potential temporary road closures, local intrusion, dust, and dirt;
- construction vehicle drivers – potential safety concerns; and
- Aberdeenshire Council, Transport Scotland and/or their agents, and other landowners – potential deterioration of local road surfaces.

14.8.75 Figure 14.9 in Annex – Figures shows the location of specifically identified sensitive receptors in addition to the residential areas within the Study Area.

Data Limitations and Assumptions

14.8.76 There is some information on the Proposed Development construction that is currently uncertain, however, the assessment will identify potential effects based on the design parameters available at this time and provide a robust assessment appropriate for PPP.

14.8.77 The assessment is based upon average traffic flows in one-month periods. During the month, activities at the Proposed Development may fluctuate between one day and another. It is not possible to fully develop a day-by-day traffic flow estimate at this stage and external factors can also impact upon

activities on a day-by-day basis (weather conditions, availability of materials, time of year, etc.).

14.8.78 As detailed in Paragraph 14.5.7, the ATC 10 traffic survey counter was damaged (cut) during the initial survey period, and so had to be replaced and surveyed for additional days. Traffic flows at this counter have therefore been combined between two periods; Tuesday 22nd April to Thursday 24th April and Wednesday 30th April to Sunday 4th May.

14.8.79 This data were deemed to be acceptable for use as analysis showed both weeks of data were comparable (within 5%) and analysis of surrounding traffic counts showed all days of the week to be broadly similar. All data were captured during a neutral period, within school term time, and provides a suitable estimate of baseline traffic to be used within this assessment.

14.8.80 For the purposes of this assessment, the key assumptions set out in Table 14.30 were applied, taking a precautionary approach.

Table 14.30: Key Assumptions of the Proposed Development for the Traffic and Transport Assessment

Item		Assumptions
1.	Construction activities included in traffic demand.	All construction activities for the Proposed Development and supporting infrastructure including utilities, site offices and welfare facilities.
2.	Duration of construction works.	Estimated to be 48 months in line with Chapter 2 (The Proposed Development) in Volume 1 of this EIAR.
3.	Requirement for ALs.	ALs are anticipated for the delivery of some large components (e.g., cable drums, transformers and direct pipe drill sections).
4.	Working hours	Precise working hours will be subject to agreement with the local planning authority. It is anticipated that construction will occur during normal working hours (i.e., Monday to Friday: 07:00 – 19:00 and Saturday: 07:00 – 13:00). Sunday working may be required; environmental mitigation and plant maintenance only. No civils works without prior agreement with the local planning authority. Where impact to local receptors (i.e., residents, wildlife etc.) is anticipated, there may be a requirement for 24-hour working. The ability to work 24 hours would minimise impact during construction of the scheme and facilitate more efficient operations.
5.	Hourly profile of traffic.	It is anticipated that construction workers will arrive in the hour before the working day and depart in the hour after the working day. All other traffic will be spread approximately evenly throughout the working day.
6.	Traffic interaction between construction compounds and working areas.	It is predicted that these movements will primarily be transport of crew in site/minibus vehicles and HGVs transporting construction materials. Construction materials will be transported directly to where they are required as far as practicable to avoid double handling.
7.	Location of workforce.	Both locally based resources and those housed in temporary accommodation (rented houses and hotel spaces).

Item		Assumptions
8.	Construction access route principles.	It is proposed that routes will look to avoid/minimise time spent on the local road network, routing via trunk and primary roads as much as possible.
9.	Construction worker travel.	Anticipated to be by car and van. Car sharing will be encouraged where it is practicable.
10.	Use of car parks for construction activities.	Worker vehicles will park on site at the construction compounds, avoiding use of local roads/car parks.
11.	Definition of a Light Goods Vehicle (LGV).	Any vehicle with a maximum gross weight of 3.5 tonnes.
12.	Definition of a Heavy Goods Vehicle (HGV).	Any vehicle exceeding 3.5 tonnes gross weight.
13.	Definition of ALs.	Any vehicle exceeding: • a weight of 44 tonnes; • an axle load of 10 tonnes for a single non-driving axle and 11.5 tonnes for a single driving axle; • a width of 2.9 metres; and • a length of 18.65 metres.

14.8.81 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 the Study Area may alter to those presented in the assessment.

14.8.82 Construction material estimates are based on experience of what is likely to be required for a project of this size and are appropriate for enabling a robust assessment of effects to be made.

14.8.83 It is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant environmental effects on Access, Traffic and Transportation.

14.9 Embedded Measures and Mitigation

14.9.1 As part of the Proposed Development design process, several embedded measures have been proposed to reduce the potential for impacts on Traffic and Transport (Table 14.31). They are considered at every stage of the Proposed Development through design and best practice and, as there is a commitment to implementing these measures, these have been considered in the assessment presented in Section 14.10 (i.e. the determination of magnitude and therefore significance assumes implementation of these measures). These embedded measures are considered standard industry practice for this type of development.

Table 14.31: Embedded Measures Adopted as Part of the Proposed Development

Ref.	Embedded Measures Adopted as Part of the Proposed Development	Justification
GEN3	A CTMP (as part of the CEMP) will be prepared and implemented during the construction phase of the Project.	The movement of construction vehicles entering or exiting construction sites and utilising the road network would be controlled, to avoid or reduce potential impacts on sensitive receptors. Construction activity

Ref.	Embedded Measures Adopted as Part of the Proposed Development	Justification
		generated vehicles will travel on predefined construction access routes to and from the Proposed Development to reduce the effects on local traffic. The CTMP will document measures to promote the efficient transportation of components and materials to site, whilst reducing congestion and disruption that might impact negatively on local communities, general traffic, and emergency services. Consideration will be given as to the requirement for any traffic management measures such as speed reductions or approval for left in / left out movements only to be included in the approved delivery routes of the CTMP. These will be confirmed by discussions between the contractor, Transport Scotland and Aberdeenshire Council before construction commences.
TT1	Commitment to design any required road/access upgrades to required design standard and to reinstate to original layout/condition if required.	This includes 'making good' any amendments to public roads for access, such as passing places. All construction upgrades will be constructed to adoptable standards which will also allow the option for the roads authority to adopt after use, if considered to be of public benefit.

14.9.2 In some cases, particularly where likely significant environmental effects are identified, there may be further mitigation measures required that are not 'embedded' to the Proposed Development design ahead of the assessment (additional mitigation). These are to be discussed in the sections on "Additional Mitigation and Residual effect" and "Future Monitoring" sections below.

14.10 Assessment of Significance

14.10.1 Table 14.17 summarises the potential effects arising from the construction phase of the Proposed Development, as well as the MDS against which each impact has been assessed. An assessment of the likely significance of the effects of the Proposed Development on the Traffic and Transport receptors caused by each identified impact is given below.

Construction Phase

14.10.2 In line with IEMA Guidelines, the impact assessment has initially considered the assessment of road traffic in the construction phase of the Proposed Development. An assessment of the impacts on active travel routes follows.

14.10.3 The road traffic impact of the Proposed Development will be as a result of temporary additional traffic volumes associated with the construction activities (staff, LGV, HGV, and AL movements), on the existing road network, and affecting users of that road network (including drivers, and those walking, wheeling, cycling, or travelling by public transport).

14.10.4 Volume 1, Chapter 2: The Proposed Development includes the estimated works timetable for the proposed construction programme.

Staff Movements

14.10.5 Construction of the Proposed Development will require the movement of workers to and from various points within the PPP Application Boundary, throughout the entire Construction Phase. Due to the general rural nature of the Study Area, it is expected that all workers will use private vehicles to travel to and park at a construction compound. It is predicted that from here they will generally consolidate to a smaller number of LGVs to travel to specific construction locations. The appointed contractor will also be required to ensure that their staff may not park on public roads (except within the work areas).

14.10.6 The movement of workers and HGVs will have minimal overlap since the workers generally need to arrive and depart at their respective locations before and after goods vehicles are in use at the compounds or working areas.

14.10.7 Due to the very low number of vehicles expected to be required for the movement of construction workers, and the dispersed locations of the work sites, the traffic resulting from worker movements is relatively insignificant when compared to the numbers of HGVs and therefore deemed to have a minimal impact on their own.

Construction Traffic

14.10.8 The construction phase of the Proposed Development will require the delivery and removal of various construction materials and equipment including stone, asphalt, engineered fill, and facility equipment. The vehicles used for this purpose will be Rigid HGVs, Articulated HGVs, and LGVs, and their volumes are estimated based on the construction phase programme requirements to deliver and remove these various materials from Site. AL and escort vehicles, predominantly associated with transformers and cable drums, have also been included. Table 14.32 shows the peak construction traffic at each works location (Substation and assumed access points) during the course of the construction programme.

Table 14.32: Peak Average Daily Construction Traffic at each Works Location

Works Location	HGV Movements	LGV Movements	Total Movements
Substation	13	83	96
AP1 (Landfall)	13	43	56
AP2	14	7	21
AP3	6	3	9
AP4	2	1	3
AP5	7	4	11
AP6	7	4	11
AP7	7	4	11
AP8	6	3	9
AP9	23	11	34

Works Location	HGV Movements	LGV Movements	Total Movements
AP11	5	2	7
AP12	2	1	2
AP13	6	3	9
AP14	17	8	25
AP15	8	4	12
AP16	16	8	24
AP17	17	9	26
AP18	22	11	32
AP19	9	4	13
AP20	11	5	16
AP21	6	3	9
AP22	22	11	33
AP23	0	0	1
AP24	10	5	15
AP25	13	7	20
AP26	7	3	10
AP27	7	4	11
AP28	6	3	8
AP29	9	4	13
AP30	16	8	24
AP31	5	2	7
AP32	1	1	2
AP33	1	0	1
AP34	4	2	6

14.10.9 Standard procurement practice means that a contractor and supply-chain for materials will not be selected prior to the Proposed Development being consented. Given that material sources are unknown at this time, the assumed construction access routes are not definitive, but professional judgement and a precautionary approach has been used to select the most likely routes. It is assumed that all traffic will arrive via the trunk and primary road network and exit via the nearest junction to the local road network for access to the relevant construction compounds and working areas.

14.10.10 The routing predictions for construction workers, other light vehicles, HGVs, and AL are provided in Section 14.8 (Construction Access Routes). Each assumed construction access route has been reviewed through a desktop study for constraints such as weight restrictions, low bridges, and HGV restrictions. In practice, light vehicles are likely to be more widely distributed and the assumption that they use a more concentrated set of construction access routes means that the assessment provides a cautionary approach.

Magnitude of Impact

14.10.11 During the construction programme, it is forecast that an average peak total of 333 (99 HGV) construction vehicle trips will be made per day.

14.10.12 It is expected that there would be a maximum of one AL and associated escort vehicle (one AL plus three LGVs) deliveries per day. Current estimates suggest that there would be a total of approximately 10 AL deliveries during construction programme.

14.10.13 To undertake as comprehensive an assessment of the traffic impacts as possible, the impact of construction vehicles (LGVs, HGVs, and AL) at each traffic counter along the proposed construction access routes has been assessed during its peak construction phase.

14.10.14 Since the peak construction movements at each location on the construction routes differs across the construction programme, these locations have been assessed during their distinct peak periods for construction traffic movements.. This is a very robust approach with the potential peak construction impacts at each counter location considered.

14.10.15 Additionally, AL vehicles have only been assessed on the assumed AL routes. These routes are consistent with the general construction vehicle routes highlighted in Figure 14.3 (Annex – Figures) except for AL following the A93 instead of the B9077. The exact routing of AL will be confirmed by an AL Route Assessment prior to delivery.

14.10.16 Construction vehicles associated with the construction phase have been appropriately distributed across the Study Area network based on the assumed works associated with each site access point location. The absolute and percentage increases when compared with the baseline outlined in Table 14.33 for each of the traffic count locations in the Study Area.

Table 14.33: Peak Construction Traffic at each ATC Location

Count	2031 Base		Peak Two-way Daily Construction Traffic		2031 Base + Peak Two-way Daily Construction Traffic		2031 Base + Peak Two-way Daily Construction Traffic (%increase)	
	Total	HGV/AL	Total	HGV/AL	Total	HGV/AL	Total	HGV/AL
ATC1	1,395	36	126	31	1,522	67	9%	87%
ATC2	1,248	20	126	31	1,375	51	10%	151%
ATC3	444	4	129	59	573	63	29%	1444%
ATC4	2,341	22	126	31	2,467	53	5%	138%
ATC5	3,649	28	126	31	3,776	59	3%	112%
ATC6	3,576	28	198	65	3,774	93	6%	236%
ATC7	4,101	44	198	65	4,299	109	5%	148%
ATC8	6,438	33	198	65	6,636	98	3%	199%
ATC9	5,249	27	198	65	5,447	92	4%	245%
ATC10	6,206	82	183	76	6,389	158	3%	93%
ATC11	1,070	49	129	59	1,199	108	12%	120%

Count	2031 Base		Peak Two-way Daily Construction Traffic		2031 Base + Peak Two-way Daily Construction Traffic		2031 Base + Peak Two-way Daily Construction Traffic (%increase)	
	Total	HGV/AL	Total	HGV/AL	Total	HGV/AL	Total	HGV/AL
ATC12	403	25	56	11	459	36	14%	45%
ATC13	512	3	99	39	611	42	19%	1283%
ATC14	126	1	127	58	253	59	101%	5678%
ATC15	880	18	162	82	1,042	100	18%	446%
ATC16	232	4	82	27	314	31	35%	661%
ATC17	738	12	126	31	864	43	17%	250%
ATC18	4,123	71	143	39	4,266	110	3%	54%
ATC19	8,462	91	143	39	8,605	130	2%	43%
123488	14,007	1,695	333	99	14,340	1,794	2%	6%
ATC00051	29,150	5,218	333	99	29,483	5,317	1%	2%
ATC00052	5,579	368	89	13	5,668	381	2%	4%
ATC00054	6,770	745	4	1	6,774	746	0%	0%
ATC00062	28,193	2,481	333	99	28,526	2,580	1%	4%
ATC00203	15,007	2,851	333	99	15,340	2,950	2%	3%
ATC00204	25,765	4,998	333	99	26,098	5,097	1%	2%
ATC00205	6,988	874	45	7	7,033	880	1%	1%
ATC00206	3,764	343	45	7	3,809	349	1%	2%
ATC00207	30,834	5,396	333	99	31,167	5,495	1%	2%
ATC00208	27,728	3,688	333	99	28,061	3,787	1%	3%
ATC00209	10,153	1,137	313	51	10,466	1,188	3%	4%
ATC00210	10,133	1,135	313	51	10,446	1,186	3%	5%
ATC00212	12,849	n/a	333	99	13,182	n/a	3%	n/a
ATC00228	28,519	3,051	333	99	28,852	3,150	1%	3%
ATC00230	21,889	2,495	333	99	22,222	2,594	2%	4%
ATC00232	11,687	1,730	333	99	12,020	1,829	3%	6%
ATC00329	4,164	525	4	1	4,168	526	0%	0%
JTC00055	19,291	2,894	333	99	19,624	2,993	2%	3%
JTC00056	23,321	4,921	333	99	23,654	5,020	1%	2%
JTC00057	23,482	4,509	333	99	23,815	4,608	1%	2%
JTC00058	21,808	3,315	333	99	22,141	3,414	2%	3%
JTC00059	8,573	814	333	99	8,906	913	4%	12%
JTC00060	22,094	5,811	333	99	22,427	5,910	2%	2%
JTC08330	28,905	3,324	333	99	29,238	3,423	1%	3%

Note: Red coloured numbers denote the instances where IEMA Guidelines are exceeded, and locations require further assessment.

14.10.17 The following points have been considered when assessing the potential impact of these increases:

- The predicted daily average increase in traffic has been based on the estimated peak construction traffic at each counter location on the proposed construction access routes. This situation would not realistically occur as the peak construction traffic would be dispersed across all routes and not impact on every assumed construction access route traffic counter simultaneously. This approach follows best practice and is extremely robust and overestimates impacts.
- No additional traffic as a result of future development has been applied to the baseline traffic used in the assessment. Therefore, through best practice, the assessment can be deemed to be robust (i.e., if committed development traffic flows were added, the calculated percentage increases would be less (e.g., an increase of 100 vehicles to a nominal existing flow of 5,000 vehicles means a percentage increase of 2.0%, whereas an increase of 100 vehicles to a nominal future year flow of, 6,000 vehicles means a percentage increase of 1.7%).
- The increase in traffic during the construction phase is temporary.
- The two instances where a high percentage increase in total traffic is highlighted in red is due to the low number of existing traffic on the assumed construction access route recorded at the count locations.
- All instances where a high percentage increase in HGV traffic is highlighted in red are due to the low number of existing HGVs on the proposed construction access routes recorded at the count locations.
- The predicted temporary percentage of HGV proportion is still relatively comparable with existing HGV proportions at each location (less than 10% change in proportion at all locations except two).
- The maximum estimated increase in HGV movements is a total of 99, on average, per day, where some construction activities overlap. This is equivalent to approximately 10 HGV movements per hour (averaged over an assumed 10-hour delivery period).
- The maximum estimated increase in all traffic is a total of 333 vehicle movements, on average, per day. This is equivalent to approximately 33 vehicle movements per hour (averaged over an assumed 10-hour delivery period).
- It should be noted that these maximum increases are predominantly on the strategic road network with the local road network increases generally significantly low.

14.10.18 The percentage increase in total traffic flows because of the additional construction traffic is below the 30% IEMA threshold value for further assessment at all survey locations in the Study Area, except for the C14K and C20K local roads.

14.10.19 It should also be noted that the maximum number of construction vehicle trips made on the network (i.e., 333 trips per day) projected under the construction phase programme, will only last for three months. The total daily volume of construction vehicles on the network during every other month course of the

construction programme is projected to be less than this volume. This assessment adopts a robust approach in terms of the potential network-wide construction vehicle impacts.

14.10.20 In line with IEMA Guidelines, the impact assessment has initially considered the assessment of road traffic in the construction phase of the Proposed Development. An assessment of the impacts on active travel routes follows.

Severance

14.10.21 The IEMA Guidelines (IEMA, 2023) note that "*severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery*". The assessed magnitude of the severance impact is presented in Table 14.34 based on the methodology outlined in Section 14.6. This considers that a temporary increase of up to 99 HGV two-way movements and up to 234 non-HGV two-way movements (i.e., equivalent to approximately 10 HGV movements and 23 non-HGV movements per hour), at these locations will have at worst, a High significance of impact at one location on the C20K local road (south A90), however, this is only a temporary situation during the construction programme.

Table 14.34: Significance of Impact on Severance

Count	Location	2031 Base + Peak Two-way Daily Construction Traffic (% increase)	Magnitude of Impact
ATC1	A957 Slug Rd, south of B9077	9%	Negligible
ATC2	A957 Slug Rd, east of Proposed Development access	10%	Negligible
ATC3	C1K, south of Proposed Development	29%	Negligible
ATC4	A957 Slug Rd, west of A90	5%	Negligible
ATC5	Farrochie Rd, northeast of Farrochie Gardens	3%	Negligible
ATC6	Broomhill Rd, west of A90	6%	Negligible
ATC7	Auchenblae Rd, east of A90	5%	Negligible
ATC8	Auchenblae Rd, east of Malcolm's Mount	3%	Negligible
ATC9	Broomhill Rd, south of Auchenblae Rd	4%	Negligible
ATC10	A92, southeast of A90	3%	Negligible
ATC11	C19K Station Rd, northwest of A90	12%	Negligible
ATC12	C19K Glenbervie Rd, west of Drumlithie	14%	Negligible
ATC13	Unnamed Rd, between A90 and Roland Rd	19%	Negligible
ATC14	C20K, south A90	101%	High
ATC15	B967, west of Gobbs Farm	18%	Negligible
ATC16	C14K, west of Three Wells	35%	Low
ATC17	B9120, northwest of Brae Cottages	17%	Negligible
ATC18	A92, east of Benholm	3%	Negligible
ATC19	A92, east of A934	2%	Negligible

Driver Delay

14.10.22 Traffic delays caused by construction vehicles on the assumed construction access routes and any temporary traffic management required, particularly on the AL route, could occur. 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*".

14.10.23 The road network surrounding the Proposed Development and along the vehicle access routes are operating comfortably within capacity, which is confirmed when comparing the 2031 baseline plus construction traffic AADT flows against the anticipated capacity outlined within Table 14.9. For example, on the C20K local road to the south of the A90 at Drumlithie, it is estimated that this is theoretically capable of accommodating 6,720 two-way vehicle movements per day. The estimated maximum increase in traffic movements associated with the Proposed Development at this location is 127 vehicles per day in addition to a two-way 2031 baseline flow of 126 per day. As such, the road is currently operating well below its theoretical capacity and will continue to do so with the addition of construction traffic flows. The assessed magnitude of impact on driver delay at these locations is presented in Table 14.35.

Table 14.35: Significance of Impact on Driver Delay

Count	Location	Theoretical Road Capacity	2031 Base + Peak Two-way Daily Construction Traffic	Magnitude of Impact
ATC1	A957 Slug Rd, south of B9077	57,600	1,522	Negligible
ATC2	A957 Slug Rd, east of Proposed Development access	57,600	1,375	Negligible
ATC3	C1K, south of Proposed Development	38,400	573	Negligible
ATC4	A957 Slug Rd, west of A90	57,600	2,467	Negligible
ATC5	Farrochie Rd, northeast of Farrochie Gardens	38,400	3,776	Negligible
ATC6	Broomhill Rd, west of A90	38,400	3,774	Negligible
ATC7	Auchenblae Rd, east of A90	38,400	4,299	Negligible
ATC8	Auchenblae Rd, east of Malcolm's Mount	38,400	6,636	Negligible
ATC9	Broomhill Rd, south of Auchenblae Rd	38,400	5,447	Negligible
ATC10	A92, southeast of A90	57,600	6,389	Negligible
ATC11	C19K Station Rd, northwest of A90	43,200	1,199	Negligible
ATC12	C19K Glenbervie Rd, west of Drumlithie	43,200	459	Negligible
ATC13	Unnamed Rd, between A90 and Roland Rd	43,200	611	Negligible
ATC14	C20K, south A90	6,720	253	Negligible

Count	Location	Theoretical Road Capacity	2031 Base + Peak Two-way Daily Construction Traffic	Magnitude of Impact
ATC15	B967, west of Gobbs Farm	43,200	1,042	Negligible
ATC16	C14K, west of Three Wells	6,720	314	Negligible
ATC17	B9120, northwest of Brae Cottages	43,200	864	Negligible
ATC18	A92, east of Benholm	57,600	4,266	Negligible
ATC19	A92, east of A934	57,600	8,605	Negligible

Non-motorised User Delay

14.10.24 While there is the potential for an increase in traffic flow at all locations assessed, the level of change of up to approximately 10 HGV movements and 23 non-HGV movements per hour is such that the magnitude of impact on non-motorised user delays is anticipated to be Negligible (reflecting the road capacities). Considering the impact is temporary, there is a Negligible magnitude of impact on non-motorised user delay for crossing the roads at all receptor locations, as summarised in Table 14.35.

Non-motorised User Amenity

14.10.25 Amenity is defined as the relative pleasantness of a journey. The volume and composition of traffic are very important determinants of amenity, as are other factors e.g., footpath width and distance from traffic; any barriers between non-motorised users and vehicle traffic; the quality of any street furniture, route signing and planting, and presences of crossings.

14.10.26 For the construction related assessment, based on the available information, the magnitude of the impact on non-motorised user amenity has been considered in terms of the threshold described in the IEMA Guidelines, which suggests that "*a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled*". Hence, based on the estimated two-way average daily percentage increase in construction traffic and the estimated two-way average daily percentage increase in HGV traffic, summarised in Table 14.34, it is anticipated that the Proposed Development construction traffic could see more than two-fold increase in HGV traffic on some of the roads under consideration. However, given the temporary nature of the impact, the low percentage of overall traffic increase, and the spare capacity on the roads at these receptor locations, professional judgement has been used to determine the magnitude of impact on non-motorised user amenity, as shown in Table 14.36.

Table 14.36: Significance of Impact on Non-motorised User (NMU) Amenity

Count	Location	Base + Peak Two-way Daily Construction Traffic (% increase)		Magnitude of Impact
		Total	HGV/AL	
ATC1	A957 Slug Rd, south of B9077	9%	87%	Low

Count	Location	Base + Peak Two-way Daily Construction Traffic (% increase)		Magnitude of Impact
		Total	HGV/AL	
ATC2	A957 Slug Rd, east of Proposed Development access	10%	151%	Medium
ATC3	C1K, south of Proposed Development	29%	1444%	Medium
ATC4	A957 Slug Rd, west of A90	5%	138%	Medium
ATC5	Farrochie Rd, northeast of Farrochie Gardens	3%	112%	Medium
ATC6	Broomhill Rd, west of A90	6%	236%	Medium
ATC7	Auchenblae Rd, east of A90	5%	148%	Medium
ATC8	Auchenblae Rd, east of Malcolm's Mount	3%	199%	Medium
ATC9	Broomhill Rd, south of Auchenblae Rd	4%	245%	Medium
ATC10	A92, southeast of A90	3%	93%	Low
ATC11	C19K Station Rd, northwest of A90	12%	120%	Medium
ATC12	C19K Glenbervie Rd, west of Drumlithie	14%	45%	Low
ATC13	Unnamed Rd, between A90 and Roland Rd	19%	1283%	Medium
ATC14	C20K, south A90	101%	5678%	Medium
ATC15	B967, west of Gobbs Farm	18%	446%	Medium
ATC16	C14K, west of Three Wells	35%	661%	Medium
ATC17	B9120, northwest of Brae Cottages	17%	250%	Medium
ATC18	A92, east of Benholm	3%	54%	Low
ATC19	A92, east of A934	2%	43%	Low

Fear and Intimidation

14.10.27 Traffic volume, composition and speeds, pedestrian footways and crossings all contribute to the level of general pleasantness, fear, and intimidation experienced by pedestrians and other vulnerable road users.

14.10.28 Using the IEMA Guidelines outlined in Section 14.6 (Fear and Intimidation), the change in level of fear and intimidation experienced by all pedestrians, cyclist and other vulnerable road users during construction of the Proposed Development is Negligible, as outlined in Table 14.37.

Table 14.37: Magnitude of Impact on Fear and Intimidation

Count	Location	2031 Baseline hazard score	2031 Baseline level of fear and intimidation	2031 Baseline + construction hazard score	2031 Baseline + construction level of fear and intimidation	Magnitude of Impact
ATC1	A957 Slug Rd, south of B9077	50	Great	50	Great	Negligible
ATC2	A957 Slug Rd, east of Proposed Development access	50	Great	50	Great	Negligible
ATC3	C1K, south of Proposed Development	30	Moderate	30	Moderate	Negligible
ATC4	A957 Slug Rd, west of A90	60	Great	60	Great	Negligible
ATC5	Farrochie Rd, northeast of Farrochie Gardens	50	Great	50	Great	Negligible
ATC6	Broomhill Rd, west of A90	50	Great	50	Great	Negligible
ATC7	Auchenblae Rd, east of A90	50	Great	50	Great	Negligible
ATC8	Auchenblae Rd, east of Malcolm's Mount	50	Great	50	Great	Negligible
ATC9	Broomhill Rd, south of Auchenblae Rd	50	Great	50	Great	Negligible
ATC10	A92, southeast of A90	60	Great	60	Great	Negligible
ATC11	C19K Station Rd, northwest of A90	40	Moderate	40	Moderate	Negligible
ATC12	C19K Glenbervie Rd, west of Drumlithie	30	Moderate	30	Moderate	Negligible
ATC13	Unnamed Rd, between A90 and Roland Rd	30	Moderate	30	Moderate	Negligible
ATC14	C20K, south A90	20	Small	20	Small	Negligible
ATC15	B967, west of Gobbs Farm	40	Moderate	40	Moderate	Negligible
ATC16	C14K, west of Three Wells	30	Moderate	30	Moderate	Negligible
ATC17	B9120, northwest of Brae Cottages	40	Moderate	40	Moderate	Negligible

Count	Location	2031 Baseline hazard score	2031 Baseline level of fear and intimidation	2031 Baseline + construction hazard score	2031 Baseline + construction level of fear and intimidation	Magnitude of Impact
ATC18	A92, east of Benholm	60	Great	60	Great	Negligible
ATC19	A92, east of A934	60	Great	60	Great	Negligible

14.10.29 The identified receptor locations can accommodate regular use by HGV traffic, and as such up to an additional 99 HGVs per day on these roads, is not expected to have a significant impact on pedestrians and other vulnerable road users. Furthermore, given that these roads are operating comfortably within capacity at these receptor locations, the thresholds outlined in Table 14.9, and the temporary duration of the impact, professional judgement has been used to determine a Not Significant impact on non-motorised user fear and intimidation at these locations.

Road Safety

14.10.30 The assessed peak construction traffic for the Proposed Development assumes up to 333 (99 HGV) movements per day and is considered to have at worst, a Minor significance impact on accidents and safety. Furthermore, the roads forming the core of the assumed construction access route network are either well-established haulage routes that can accommodate significant HGV composition or are routes capable of regular use by HGV traffic.

14.10.31 Collision rates were calculated and used to assess the potential change in collisions. This analysis is provided in Table 14.38 for 2015-2019 and Table 14.39 for 2019-2023. The assessed length is the length of the road network for which the observed baseline traffic flow is representative.

Table 14.38: Collision Assessment (2015-2019)

Count	Description	Assessed Length (km)	2031 Base		2031 Base + Construction		Change
			AADT	Annual Collisions	AADT	Annual Collisions	
ATC1	A957 Slug Rd, south of B9077	10.9	1,395	0.20	1,482	0.22	0.0
ATC2	A957 Slug Rd, east of Proposed Development access	7.1	1,248	0.82	1,335	0.87	0.1
ATC3	C1K, south of Proposed Development	8.0	444	0.00	573	0.00	0.0
ATC4	A957 Slug Rd, west of A90	0.5	2,341	0.00	2,427	0.00	0.0
ATC5	Farrochie Rd, northeast of Farrochie Gardens	0.9	3,649	0.00	3,736	0.00	0.0
ATC6	Broomhill Rd, west of A90	0.1	3,576	0.00	3,774	0.00	0.0
ATC7	Auchenblae Rd, east of A90	0.2	4,101	0.00	4,299	0.00	0.0
ATC8	Auchenblae Rd, east of Malcolm's Mount	0.3	6,438	0.00	6,636	0.00	0.0

Count	Description	Assessed Length (km)	2031 Base		2031 Base + Construction		Change
			AADT	Annual Collisions	AADT	Annual Collisions	
ATC9	Broomhill Rd, south of Auchenblae Rd	1.5	5,249	0.00	5,447	0.00	0.0
ATC10	A92, southeast of A90	13.3	6,206	3.27	6,389	3.36	0.1
ATC11	C19K Station Rd, northwest of A90	1.1	1,070	0.20	1,199	0.23	0.0
ATC12	C19K Glenbervie Rd, west of Drumlithie	1.0	403	0.00	459	0.00	0.0
ATC13	Unnamed Rd, between A90 and Roland Rd	1.0	512	0.00	611	0.00	0.0
ATC14	C20K, south A90	1.1	126	0.00	253	0.00	0.0
ATC15	B967, west of Gobbs Farm	9.6	880	0.41	1,002	0.47	0.1
ATC16	C14K, west of Three Wells	6.6	232	0.20	314	0.28	0.1
ATC17	B9120, northwest of Brae Cottages	8.0	738	0.41	864	0.48	0.1
ATC18	A92, east of Benholm	10.3	4,123	1.63	4,266	1.69	0.1
ATC19	A92, east of A934	1.1	8,462	0.41	8,605	0.42	0.0

Table 14.39: Collision Assessment (2019-2023)

Count	Description	Assessed Length	2031 Base		2031 Base + Construction		Change
			AADT	Annual Collisions	AADT	Annual Collisions	
ATC1	A957 Slug Rd, south of B9077	10.9	1,395	0.61	1,482	0.65	0.0
ATC2	A957 Slug Rd, east of Proposed Development access	7.1	1,248	0.41	1,335	0.44	0.0
ATC3	C1K, south of Proposed Development	8.0	444	0.00	573	0.00	0.0
ATC4	A957 Slug Rd, west of A90	0.5	2,341	0.00	2,427	0.00	0.0
ATC5	Farrochie Rd, northeast of Farrochie Gardens	0.9	3,649	0.00	3,736	0.00	0.0

Count	Description	Assessed Length	2031 Base		2031 Base + Construction		Change
			AADT	Annual Collisions	AADT	Annual Collisions	
ATC6	Broomhill Rd, west of A90	0.1	3,576	0.00	3,774	0.00	0.0
ATC7	Auchenblae Rd, east of A90	0.2	4,101	0.00	4,299	0.00	0.0
ATC8	Auchenblae Rd, east of Malcolm's Mount	0.3	6,438	0.00	6,636	0.00	0.0
ATC9	Broomhill Rd, south of Auchenblae Rd	1.5	5,249	0.00	5,447	0.00	0.0
ATC10	A92, southeast of A90	13.3	6,206	1.43	6,389	1.47	0.0
ATC11	C19K Station Rd, northwest of A90	1.1	1,070	0.41	1,199	0.46	0.0
ATC12	C19K Glenbervie Rd, west of Drumlithie	1.0	403	0.00	459	0.00	0.0
ATC13	Unnamed Rd, between A90 and Roland Rd	1.0	512	0.20	611	0.24	0.0
ATC14	C20K, south A90	1.1	126	0.00	253	0.00	0.0
ATC15	B967, west of Gobbs Farm	9.6	880	0.41	1,002	0.47	0.1
ATC16	C14K, west of Three Wells	6.6	232	0.00	314	0.00	0.0
ATC17	B9120, northwest of Brae Cottages	8.0	738	0.41	864	0.48	0.1
ATC18	A92, east of Benholm	10.3	4,123	0.82	4,266	0.85	0.0
ATC19	A92, east of A934	1.1	8,462	0.20	8,605	0.21	0.0

14.10.32 While there is a change in annual collisions because of the change in background traffic, the changes resulting from the Proposed Development are small. During both five-year assessment periods there are no locations where a change in collisions is forecast to be one or above.

14.10.33 The impact resulting from the Proposed Development, when compared with the 2031 Baseline, is not severe and is unlikely to be perceptible. This will particularly be the case because changes in traffic flows associated with construction traffic will be temporary.

14.10.34 Notwithstanding this, concerns surrounding access to and from the A90, adjacent to Drumlithie in particular, were raised during Pre-Application Consultation. These concerns will be taken on board with discussion and agreement between Transport Scotland, Aberdeenshire Council, the contractor

and haulage companies before construction commences. All traffic management solutions will be considered where appropriate, with temporary advanced warning signage, temporary reduced speed limits, movement bans, and agreed approved haulage routes. For the Drumlithie junction in particular this may involve only left in/left out movements and associated diversions. These measures will be managed through the CTMP.

14.10.35 Access to the Substation will be taken from the existing bellmouth on A957 Slug Road, northwest of Stonehaven. This junction was previously upgraded as a result of the Fetteresso Substation construction and will likely be upgraded as a result of associated works for the proposed Hurlie 400kV Substation. It is assumed that the junction will be designed to local authority planning standards and will be appropriate for the type of traffic that will use the access during construction and operation of the Proposed Development. Figure 14.3 in Annex – Figures shows the PPP Application Boundary including assumed construction access routes.

14.10.36 Given that anticipated construction traffic increases will be temporary and managed through the implementation of a CTMP, it is concluded that there will not be a long-term determinable increase on the risk of accidents. The appointed contractor of the Proposed Development will carry out a Road Safety Audit prior to the commencement of works after the Proposed Development has been consented. This will result in high safety standard in relation to the Traffic Management measures implemented.

14.10.37 Based on the calculated change in collision rate, location of collision clusters (outlined in Section 14.8 (Road Safety)), change in traffic flows, and professional judgement it has been determined that the magnitude of the accidents and safety impact is, at worst, Low (i.e., a Not Significant impact) at the receptor locations identified, as summarised in Table 14.40, and is of temporary duration. Values shown in red are where IEMA Guideline thresholds are exceed.

Table 14.40: Significance of Impact on Road Safety at Receptor Locations

Count	Location	Base + Peak Two-way Daily Construction Traffic (% increase)	Significance of Impact on Road Safety
ATC1	A957 Slug Rd, south of B9077	9%	Negligible
ATC2	A957 Slug Rd, east of Proposed Development access	10%	Negligible
ATC3	C1K, south of Proposed Development	29%	Negligible
ATC4	A957 Slug Rd, west of A90	5%	Negligible
ATC5	Farrochie Rd, northeast of Farrochie Gardens	3%	Negligible
ATC6	Broomhill Rd, west of A90	6%	Negligible
ATC7	Auchenblae Rd, east of A90	5%	Negligible
ATC8	Auchenblae Rd, east of Malcolm's Mount	3%	Negligible
ATC9	Broomhill Rd, south of Auchenblae Rd	4%	Negligible
ATC10	A92, southeast of A90	3%	Negligible

Count	Location	Base + Peak Two-way Daily Construction Traffic (% increase)	Significance of Impact on Road Safety
ATC11	C19K Station Rd, northwest of A90	12%	Negligible
ATC12	C19K Glenbervie Rd, west of Drumlithie	14%	Negligible
ATC13	Unnamed Rd, between A90 and Roland Rd	19%	Negligible
ATC14	C20K, south A90	101%	Low
ATC15	B967, west of Gobbs Farm	18%	Negligible
ATC16	C14K, west of Three Wells	35%	Low
ATC17	B9120, northwest of Brae Cottages	17%	Negligible
ATC18	A92, east of Benholm	3%	Negligible
ATC19	A92, east of A934	2%	Negligible

Abnormal Loads

14.10.38 With regard to the movement of AL vehicles, it is expected that there would only be approximately 10 loads transported over the duration of the 48-month construction programme. These deliveries (1 AL and 3 LGV support vehicles) would be limited to a maximum of one per day. It is also noted that AL vehicles are likely to retract to the size of an HGV for their return journey once the loads have been delivered to the destination.

14.10.39 Nevertheless, AL vehicles are restricted in the hours that they can operate. An AL Transport Management Plan will be developed. All AL deliveries would be undertaken at appropriate times (to be discussed and agreed with Aberdeenshire Council, Transport Scotland and Police Scotland) with the aim of minimising the effects on the road network. It is likely that the AL convoys would travel in the early morning periods before peak times while general construction traffic would generally avoid the morning and evening peak periods.

14.10.40 Most potential conflicts between construction traffic and other road users will occur with AL traffic. Potential conflicts between the ALs and other road users can occur at a variety of locations and circumstances, such as:

- On sections of single carriageway road or narrow road sections;
- At locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- Where traffic turns at a road junctions, requiring other traffic to be restrained on other approach arms; and
- In locations where high speeds of general traffic are predicted.

14.10.41 A police escort will be required to facilitate the delivery of the predicted ALs. It is proposed that an advance escort will warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy will remain in radio contact at all times where possible.

14.10.42 Advance warning signs would be installed on the approaches to the affected road network. This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

14.10.43 The location and numbers of signs would be agreed post consent and would form part of the wider Traffic Management Proposal for the project. The AL Transport Management Plan would also 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 and times;
- A protocol for working with local businesses and residents to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- 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.

14.10.44 Regardless, given the low number of AL vehicles and the short duration over which AL vehicles would be on the local road network, this number of AL vehicles would not give rise to any significant environmental impacts and effects within the study area. As a result, no further assessment of the effects associated with AL vehicles has been undertaken, although the vehicle numbers have been included in the total HGV trip numbers used for the assessment

Sensitivity of the Receptor

14.10.45 The roads summarised in Section 14.8 (Road Network) are part of the assumed construction traffic access route network. Consideration has been given to the existing condition, ability to accommodate HGV traffic, characteristics and receptors identified during the baseline review. Those locations experiencing either a Moderate or Major impact (based on

14.10.46 Table 14.33) for Total or HGV construction traffic are summarised in Table 14.41.

Table 14.41: Receptor Sensitivity

Count	Receptor	Sensitivity	Rationale
ATC1	Users of A957 Slug Rd (south of B9077)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, capable of regular use by HGVs and are suitable for ALs.

Count	Receptor	Sensitivity	Rationale
ATC2	Users of A957 Slug Rd (east of Proposed Development access)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, capable of regular use by HGVs and are suitable for ALs.
ATC3	Users of C1K (south of Proposed Development)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, can accommodate significant traffic flow and are capable of regular use by HGVs. Alternative routes can be taken by the general public.
ATC4	Users of A957 Slug Rd (west of A90)/Residents of Stonehaven	Low	Residential area with no community/public facilities. No traffic calming and suitable for HGV traffic. Less than 4,000 vehicles per day and low bus frequency.
ATC5	Users of Farrochie Rd (northeast of Farrochie Gardens)/Residents of Stonehaven	Low	Residential area with no community/public facilities. No traffic calming and suitable for HGV traffic. Less than 4,000 vehicles per day and low bus frequency.
ATC6	Users of Broomhill Rd (west of A90)/Residents of Stonehaven	Medium	Adjacent to residential area. No traffic calming and suitable for HGV traffic. Less than 4,000 vehicles per day and low bus frequency. However, does provides access to/from Trunk Road network (A90).
ATC7	Users of Auchenblae Rd (east of A90)/Residents of Stonehaven	Medium	Arterial route for residential area and provides access to/from Trunk Road network (A90). Greater than 4,000 vehicles per day.
ATC8	Users of Auchenblae Rd (east of Malcolm's Mount)/Residents of Stonehaven	Medium	Arterial route for residential area and provides access to/from Trunk Road network (A90). Greater than 4,000 vehicles per day and frequent bus route.
ATC9	Users of Broomhill Rd (south of Auchenblae Rd)/Residents of Stonehaven	Medium	Adjacent to residential and commercial areas. No traffic calming and suitable for HGV traffic. Greater than 4,000 vehicles per day. Road provides access to/from Trunk Road network (A90).
ATC10	Users of A92 (southeast of A90)/Users of the NCN	High	Adjacent to Trunk Road network (A90). On-road section of National Cycle Network (Dunnottar Castle to Catterline section). Traffic less than 8,000 per day, however, high frequency bus route.
ATC11	Users of C19K Station Rd, (northwest of A90)/Residents of Drumlithie	Low	Adjacent to small settlement. No traffic calming and suitable for HGV traffic. Less than 4,000 vehicles per day. Alternative routes exist for use by the general public.
ATC12	Users of C19K Glenbervie Rd (west of Drumlithie)/Residents of Drumlithie	Low	Adjacent to small settlement. No traffic calming and suitable for HGV traffic. Less than 4,000 vehicles per day. Access to/from Trunk Road network (A90), however, similar alternative routes exist for use by the general public.

Count	Receptor	Sensitivity	Rationale
ATC13	Users of Unnamed Rd (between A90 and Roland Rd)/Residents of Drumlithie	Low	Adjacent to small settlement. No traffic calming and suitable for HGV traffic. Less than 4,000 vehicles per day. Access to/from Trunk Road network (A90), however, similar alternative routes exist for use by the general public.
ATC14	Users of C20K (south A90)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, can accommodate significant traffic flow and are capable of regular use by HGVs. Alternative routes can be taken by the general public.
ATC15	Users of B967 (west of Gobbs Farm)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, can accommodate significant traffic flow and are capable of regular use by HGVs. Alternative routes can be taken by the general public.
ATC16	Users of C14K (west of Three Wells)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, can accommodate significant traffic flow and are capable of regular use by HGVs. Alternative routes can be taken by the general public.
ATC17	Users of B9120 (northwest of Brae Cottages)	Negligible	Roads with no adjacent settlements that would be hardly affected by additional traffic, can accommodate significant traffic flow and are capable of regular use by HGVs. Alternative routes can be taken by the general public.
ATC18	Users of A92 (east of Benholm)	Medium	Main route to/from coastal settlements and Stonehaven. Greater than 4,000 vehicles per day and frequent bus route.
ATC19	Users of A92 (east of A934)/Residents of Montrose	High	Main route to/from Montrose and Dundee. Greater than 8,000 vehicles per day and frequent bus route.

Significance of the Effect

14.10.47 The magnitude of the impacts of construction traffic on the identified sensitive receptors has been assessed based on traffic volumes and professional judgement and summarised in Table 14.42.

Table 14.42: Summary of Magnitude of Impacts

Count	Location	Severance	Driver Delay	NMU Delay	NMU Amenity	Fear and Intimidation	Road Safety
ATC1	A957 Slug Rd, south of B9077	Negligible	Negligible	Negligible	Low	Negligible	Negligible
ATC2	A957 Slug Rd, east of Proposed Development access	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC3	C1K, south of Proposed Development	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC4	A957 Slug Rd, west of A90	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC5	Farrochie Rd, northeast of Farrochie Gardens	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC6	Broomhill Rd, west of A90	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC7	Auchenblae Rd, east of A90	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC8	Auchenblae Rd, east of Malcolm's Mount	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC9	Broomhill Rd, south of Auchenblae Rd	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC10	A92, southeast of A90	Negligible	Negligible	Negligible	Low	Negligible	Negligible
ATC11	C19K Station Rd, northwest of A90	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC12	C19K Glenbervie Rd, west of Drumlithie	Negligible	Negligible	Negligible	Low	Negligible	Negligible
ATC13	Unnamed Rd, between A90 and Roland Rd	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC14	C20K, south A90	High	Negligible	Negligible	Medium	Negligible	Low
ATC15	B967, west of Gobbs Farm	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC16	C14K, west of Three Wells	Low	Negligible	Negligible	Medium	Negligible	Low
ATC17	B9120, northwest of Brae Cottages	Negligible	Negligible	Negligible	Medium	Negligible	Negligible
ATC18	A92, east of Benholm	Negligible	Negligible	Negligible	Low	Negligible	Negligible
ATC19	A92, east of A934	Negligible	Negligible	Negligible	Low	Negligible	Negligible

14.10.48 Based on the sensitivity of the receptors (Table 14.41) and the summary of magnitude of impacts (Table 14.42), the significance of effects of the additional construction related traffic movements during the construction phase are provided in Table 14.43, classified using the significance of effects matrix shown in Table 14.15.

Table 14.43: Significance of Effects

Count	People using...	Sensitivity	Severance	Driver Delay	NMU Delay	NMU Amenity	Fear and Intimidation	Road Safety
ATC1	A957 Slug Rd, south of B9077	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC2	A957 Slug Rd, east of Proposed Development access	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC3	C1K, south of Proposed Development	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC4	A957 Slug Rd, west of A90	Low	Negligible	Negligible	Negligible	Minor	Negligible	Negligible
ATC5	Farrochie Rd, northeast of Farrochie Gardens	Low	Negligible	Negligible	Negligible	Minor	Negligible	Negligible
ATC6	Broomhill Rd, west of A90	Medium	Negligible	Negligible	Negligible	**Moderate**	Negligible	Negligible
ATC7	Auchenblae Rd, east of A90	Medium	Negligible	Negligible	Negligible	**Moderate**	Negligible	Negligible
ATC8	Auchenblae Rd, east of Malcolm's Mount	Medium	Negligible	Negligible	Negligible	**Moderate**	Negligible	Negligible
ATC9	Broomhill Rd, south of Auchenblae Rd	Medium	Negligible	Negligible	Negligible	**Moderate**	Negligible	Negligible
ATC10	A92, southeast of A90	High	Minor	Minor	Minor	Minor	Minor	Negligible
ATC11	C19K Station Rd, northwest of A90	Low	Negligible	Negligible	Negligible	Minor	Negligible	Negligible
ATC12	C19K Glenbervie Rd, west of Drumlithie	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC13	Unnamed Rd, between A90 and Roland Rd	Low	Negligible	Negligible	Negligible	Minor	Negligible	Negligible
ATC14	C20K, south A90	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible
ATC15	B967, west of Gobbs Farm	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC16	C14K, west of Three Wells	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC17	B9120, northwest of Brae Cottages	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ATC18	A92, east of Benholm	Medium	Negligible	Negligible	Negligible	Minor	Negligible	Negligible

Count	People using...	Sensitivity	Severance	Driver Delay	NMU Delay	NMU Amenity	Fear and Intimidation	Road Safety
ATC19	A92, east of A934	High	Minor	Minor	Minor	Minor	Minor	Negligible

14.10.49 The additional traffic caused by construction activities for the Proposed Development would result in increases of traffic flows on the surrounding road network. Overall, on the basis that the predicted traffic increases are particularly robust and the actual traffic volume increases are not deemed to be considerable (and with the predicted flows well within the practical operating capacity of these roads), it is assessed based on professional judgement that the estimated increases in construction traffic would have a Negligible significance effect on all identified sensitive receptors except for four locations where a Moderate significance effect is expect based on Non-Motorised User Amenity.

14.10.50 Auchenblae Road (ATC 7 and ATC 8) and Broomhill Road (ATC 6 and ATC 9) are the only locations predicted to experience a significant effect as the result of the Proposed Development construction. It is noted, however, that the embedded mitigation of the CTMP will be implemented with the aim of minimising disruption and ultimately reducing these effects to a non-significant level. These measures are further discussed in the 'Additional Mitigation and Residual Effect' section of this chapter.

Public Transport

14.10.51 There will be a requirement to lay cabling underneath the rail line near Glenbervie. However, with the use of trenchless techniques (such as HDD) any impact will be minimal. Scheduling of these works is still to be determined.

14.10.52 Within the vicinity of the Proposed Development and along the assumed construction routes, several bus routes have been identified, as outlined in Section 14.8 (Public Transport). Table 14.44 provides a review of the perceived impacts to each of these routes.

Table 14.44: Bus Service Overview

Bus Route	Bus Operator	Route Summary	Significance of Effect Review
4A	Stagecoach North	Stonehaven Circular (Barclay St)	Negligible. Bus service follows a section of the assumed construction route on Farrochie Road and Kirkton Road – bus routing maintained, minimal potential impact to journey times expected.
4C	Stagecoach North	Stonehaven Circular (Barclay St)	Negligible. Bus service follows a section of the assumed construction route on Farrochie Road and Kirkton Road – bus routing maintained, minimal potential impact to journey times expected.
8	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	Negligible. Bus service follows a section of assumed construction routing outside of the Study Area on the A92(T) – bus routing maintained, minimal potential impact to journey times expected.
8A	Stagecoach North	Aberdeen (Union Square Bus Station) –	Negligible. Bus service follows a section of assumed construction

Bus Route	Bus Operator	Route Summary	Significance of Effect Review
		Stonehaven (Forest Park)	routing outside of the Study Area on the A92(T) – bus routing maintained, minimal potential impact to journey times expected.
8S	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	Negligible. Bus service follows a section of assumed construction routing outside of the Study Area on the A92(T) – bus routing maintained, minimal potential impact to journey times expected.
9	Short's Travel	Laurencekirk – Montrose	Negligible. Bus service crosses the assumed construction routing on the A90(T) and A92 – bus routing maintained, minimal potential impact to journey times expected.
19	First Aberdeen	Culter – Tillydrone	Negligible. Bus service follows a short section of assumed AL route on the A93 – bus routing maintained, minimal potential impact to journey times expected.
26	Smith & Sons	Stonehaven (Westfield Park / Mackie Academy / Barclay Street) – Laurencekirk (Kinnear Square) / Luthermuir (Main Street)	Negligible. Bus service follows a section of assumed construction route on the A90(T) and C19K local road – bus routing maintained, minimal potential impact to journey times expected.
107	Stagecoach North	Stonehaven – Montrose	Negligible. Bus service crosses the assumed construction routing on the A92 – bus routing maintained, minimal potential impact to journey times expected.
201	Stagecoach North	Aberdeen (Union Square Bus Station) – Braemar (Auchendryne Square) / Ballater (Golf Road)	Negligible. Bus service follows a section of assumed AL route on the A93 – bus routing maintained, minimal potential impact to journey times expected.
202	Stagecoach North	Aberdeen (Union Square Bus Station) – Braemar (Auchendryne Square) / Ballater (Golf Road)	Negligible. Bus service follows a section of assumed AL route on the A93 – bus routing maintained, minimal potential impact to journey times expected.
X7	Stagecoach North	Aberdeen (Union Square Bus Station) – Stonehaven (Forest Park)	Negligible. Bus service follows a section of assumed construction routing outside of the Study Area on the A92(T) – bus routing maintained, minimal potential impact to journey times expected.
X7	Stagecoach East	Aberdeen (Union Square Bus Station) / Montrose (High Street) / Arbroath (Bus Station) – Dundee (Bus Station) /	Negligible. Bus service follows a section of assumed construction routing outside of the Study Area on the A92(T) and follows a large section of the A90, south of Stonehaven – bus routing

Bus Route	Bus Operator	Route Summary	Significance of Effect Review
		Invergowrie (Main Street)	maintained, minimal potential impact to journey times expected. A92(T) and A92
X8	Stagecoach North	Aberdeen (Union Square Bus Station) – Chapelton (Landle Court) / Stonehaven (Forest Park)	Negligible. Bus service follows a section of assumed construction routing outside of the Study Area on the A92(T) – bus routing maintained, minimal potential impact to journey times expected.

Active Travel

14.10.53 Within the vicinity of the Traffic and Transport Study Area, National Cycle Network, Core Paths, and other active travel routes have been identified, as shown in Figure 14.5 in Annex – Figures.

14.10.54 Increased traffic has the potential to impact communities, especially where urban streets become busier and have the potential to increase severance. Previous Sections of this chapter have assessed the impacts of the construction phase on severance, non-motorised user delay and amenity, respectively.

14.10.55 While the impact to the majority of the Study Area is Negligible, there is likely to be a Low impact to the use of National Cycle Network, Core Paths and local paths, particularly based on delay and amenity caused by additional construction vehicles routes following the same route or transecting it. Due to the low percentage increase in overall traffic levels, the locations, sensitivities, and temporary nature of the potential impacts it is deemed that the potential effects on Active Travel would be at worst Minor and therefore Not Significant.

Additional Mitigation and Residual Effect

14.10.56 Mitigation measures will be required to reduce the significance of effects identified.

14.10.57 In addition to this, several traffic management measures and initiatives will be introduced to minimise the intrusive impacts of construction related traffic. The temporary impacts that the construction phase will have on traffic and movement through the Study Area will be mitigated through the adoption of a regulated and approved CTMP (mitigation reference GEN3) and Construction Logistics Plan (CLP) (GEN3). The CTMP and CLP will comprise 'live' documents insofar as they are subject to ongoing future refinement by the appointed contractor in collaboration and agreement with the Roads Authorities.

14.10.58 In this context, the assessment of post mitigation impacts has been undertaken on the assumption that key measures set out in the CTMP will be developed as appropriate by the appointed contractor and be implemented during the construction phase of the Proposed Development. A CTMP will be developed and form part of the Construction (CEMP) see Volume 2, Appendix 2.2.

14.10.59 The appointed contractor will agree any temporary traffic measures and will then adopt and monitor an appropriate way of working, in consultation with

Aberdeenshire Council, Transport Scotland and/or their agents, and Police Scotland as appropriate.

14.10.60 Construction activity generated vehicles will travel on predefined construction access routes to and from the Proposed Development to reduce the effects on local traffic. The CTMP will document measures to promote the efficient transportation of components and materials to construction sites, whilst reducing congestion and disruption which might impact negatively on local communities or general traffic and in particular emergency services. Potential measures and considerations include the following:

- Regulated site working hours, i.e., construction traffic will, where practicable, avoid heavy volumes of movement during peak periods, particularly in the morning and evening peak hours when general traffic levels will be higher than normal.
- Liaison with other local development projects throughout the construction phase of the Proposed Development such that there is no significant overlap in works activities, deliveries, AL movements, traffic management measures etc.
- Consideration of the needs of vulnerable users e.g., NMUs on approved Core Paths and Right of Ways; wheeled users and appropriate mitigation for persons with psychological issues including dementia.
- A communications protocol to avoid delays with emergency vehicle traffic.
- Consideration of other local road works/construction activity in the local area so there are no conflicts and a collaborative approach is undertaken. Early programming is essential.
- Detailed assessment of all traffic management measures where overlap in working areas at the same time periods is anticipated.
- During the construction phase, where appropriate, additional warning and speed control signs will be installed, temporarily or otherwise, with the agreement of the Roads Authority. Signage will be installed to warn road and recreational route users to the presence of the works access and the associated likely presence of large or slow-moving construction traffic.
- At some locations the potential for conflict on the road could be easily mitigated by the stationing of a “Stop-Go” banksman with appropriate communications between the two and the construction vehicle drivers.
- A wheel wash facility and road sweeper shall be provided to minimise any mud and debris on the surrounding public road network and prevent the introduction and spread of non-native or invasive plant material onto the construction sites.
- The need for, and extent of, temporary parking restrictions will be discussed with Aberdeenshire Council when construction vehicle access routes are confirmed. Consideration will be given to suitable alternative parking arrangements where on-street and off-street parking is restricted because of the Proposed Development.
- If required, the temporary closure of roads and/or public footways to facilitate construction activity will be discussed with Aberdeenshire Council Access Officer(s) at an early stage during the detailed design of the

Proposed Development and suitable alternatives/diversions agreed. Identified Public Rights of Way and Core Paths will require an Aberdeenshire Council order to divert. All routes will be reinstated to their original state, or better. Considering the length and nature of some closures, suitable consideration will be given to mitigation, including the use of minibuses to transport users, and providing alternatives, which may necessitate due consideration of suitable crossing facilities, to extant standards, that minimise delay and optimise safety for all users.

- To minimise inconvenience to the local community in terms of obstructive parking, adequate car parking for site personnel, visitors and deliveries will be provided within the Site. Car parking will not be permitted on any of the public road network or on land that bounds the construction sites' access, so that sight lines will be maintained and to minimise the potential for obstruction and delay for other road users.

14.10.61 The appointed contractor will nominate a suitably qualified person to be responsible for the co-ordination of all elements of traffic and transport during the construction process (liaison officer). This person will liaise with the local community so that the community has a direct point of contact within the contractor organisation who they can contact for information purposes or to discuss matters pertaining to the traffic management.

~~14.10.62~~ It is proposed that consultation is undertaken with representatives of Aberdeenshire Council, Transport Scotland, the local community, and, if appropriate, the Police

14.10.63 To facilitate a transparent and collaborative approach with the local community the following measures will be put into practice:

- A diary of proposed delivery movements will be created to liaise with the communities to avoid key dates such as festivals etc. The publication of notices and provision of advice to the public and employers in the area where the likely increased driver delay may result.
- The creation of an online Frequently Asked Questions and information portal that can be interrogated by the public on construction issues and delivery programmes.
- Working with local businesses such that that construction traffic does not interfere with deliveries or normal business traffic.

14.10.64 Entrance roads will be maintained and monitored during the construction phase of the Proposed Development. This will be done as part of the CTMP and will involve monitoring the access junction and public road network in the vicinity of the Proposed Development so that mud and debris from construction activities are not tracked on to the road network. Furthermore, monitoring of the public road network will be undertaken as part of the road conditions surveys, that will likely be required as part of the planning conditions attached to the consent.

14.10.65 A construction specific Travel Plan (TT2) is also proposed to provide the mechanism to support and promote shared and sustainable travel for staff, contractors and visitors travelling to the work sites. The Travel Plan would seek

to eliminate the barriers preventing users of the Proposed Development from accessing via sustainable travel modes, improving travel choices, and managing single occupancy car use. The plan would also indicate the approved routes to Site and the approved parking locations.

14.10.66 In order to maintain safe access to core paths and public right of ways during the Proposed Development construction activities, the following mitigation measures are proposed (GEN2):

- Robust signage, to be agreed with Aberdeenshire Council, to warn construction traffic of the presence of NMUs.
- Effective communication with the public throughout the construction programme, so that they are aware in advance of timings for AL movements and can amend travel plans if necessary. Such communication may include:
  - on-site signage;
  - information boards and way-marking;
  - leafleting;
  - information on Proposed Development website;
  - input to community newsletters; and
  - engagement with relevant community groups.
- A key point of contact for the contractor will be advertised to the public that they can contact throughout construction regarding access issues.

14.10.67 Considering that the nature of construction traffic increases would be short-term and combined with the successful implementation of the required mitigation measures described above and contained within the CTMP there will be a Negligible/Minor magnitude of residual traffic and transport impact (i.e., Not Significant) predicted during the Construction Phase. It is acknowledged that inconveniencies will be caused in some areas due to the increase traffic and traffic management measures proposed, however these impacts will only be of a temporary duration.

14.10.68 Auchenblae Road (ATC 7 and ATC 8) and Broomhill Road (ATC 6 and ATC 9), are the only locations predicted to experience a Significant effect. These effects are to Non-motorised User amenity, however won't hinder the ability to complete Non-motorised User trips and will be managed carefully through the CTMP. As such, with the implementation of the proposed mitigation measures outlined above, the significance of the potential effects are reduced to a Minor (Not Significant) level.

Proposed Monitoring

14.10.69 This section outlines the proposed monitoring applicable to ensure that the embedded mitigation measures minimise all identified potential significant adverse impacts related to Traffic and Transport. Proposed monitoring measures are outlined in Table 14.45.

Table 14.45: Proposed Monitoring and the Method of Implementation for Traffic and Transport

Potential Environmental Effect	Monitoring Commitment	Means of Implementation
Inconvenience to the local community (delay, severance, amenity etc.)	The appointed contractor will agree temporary traffic measures and will then adopt and monitor an appropriate way of working, in consultation with Aberdeenshire Council, Transport Scotland and/or their agents, and Police Scotland, as appropriate. Several traffic management measures and initiatives will be introduced to minimise the intrusive impacts of construction related traffic. The temporary impacts that the construction phase will have on traffic and movement through the Study Area will be mitigated through the adoption of a regulated and approved CTMP and Construction Logistics Plan (CLP). Additionally, a construction specific Travel Plan is proposed to provide the mechanism to support and promote shared and sustainable travel for staff, contractors and visitors travelling to the work sites. The plan would also indicate the approved routes to Site and the approved parking locations. Any deviations from these plans can be reported throughout the construction process and addressed by the contactor.	Implementation of the CTMP committed as embedded mitigation within the scheme. Likely to also be secured via a planning condition.
Road surfacing and debris	Entrance roads will be maintained and monitored during the construction phase of the Proposed Development. This will be done as part of the CTMP and will involve monitoring the access junction and public road network in the vicinity of the Proposed Development to ensure mud and debris from construction activities are not tracked on to the road network.	Implementation of the CTMP committed as embedded mitigation within the scheme. Likely to also be secured via a planning condition.

Potential Environmental Effect	Monitoring Commitment	Means of Implementation
	Furthermore, monitoring of the public road network will be undertaken as part of the road conditions surveys, that will likely be required as part of the planning conditions attached to the consent.	
Movement of rail line and impact to rail services.	The appointed contractor will agree HDD measures and will then adopt and monitor an appropriate way of working, in consultation with Aberdeenshire Council, Network Rail and/or their agents. Cable installation will involve the use of HDD to route the cable underneath the track. The use of trenchless techniques and the scheduling of these works to occur when trains are not in service, will ensure that there will be no disruption to operational services. There may also be the need for asset inspections before and after works take place and similarly no disruption to rail passenger services are predicted.	Likely to be secured via a planning condition if required.

14.11 Inter-Related Effects

14.11.1 For Traffic and Transport, the following potential impacts were considered:

- The impact of additional vehicle movements on the road network and non-motorised users; and
- The impact of traffic management on the road network and non-motorised users;

14.11.2 These inter-related effects (project lifetime effects) are predicted to arise during the construction, O&M phase, and decommissioning of the Proposed Development, however, there is no overlap expected between each of these phases.

14.12 Cumulative Effects Assessment

Methodology

14.12.1 The Cumulative Effects Assessment (CEA) assesses the impact associated with the Proposed Development together with other relevant projects and activities. Cumulative effects are defined as the effect of the Proposed

Development in combination with the effects from a number of different projects, on the same receptor or resource.

14.12.2 The projects selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise of the long list of Cumulative Projects included in Table 3.9 within Volume 1, Chapter 3: EIA Methodology. Full details on CEA methodology are provided in Volume 1, Chapter 3: EIA Methodology where further information is provided in relation to the other projects and how this information is obtained and applied to the assessment. Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

14.12.3 The justification for screening other projects in or out of the CEA for Traffic and Transport are outlined in Table 14.46.

Table 14.46: Screening of Other Projects for Consideration within the CEA for Traffic and Transport

Project	Overlap with the Proposed Development	Screened into CEA (Yes/No)
Hurlie 400 kV Substation APP/2024/1951, ENQ/2024/1176, ENQ/2024/0146	The estimated construction period (January 2026 to September 2029) precedes the Proposed Development construction period (2031 to 2035). Potential overlaps will be mitigated by the CEMP and CTMP.	No
Grains Of Fetteresso Indoor Play Area APP/2025/0058	No overlap anticipated due to the distance from the Proposed Development. Unknown dates of construction and operation. Potential overlaps will be mitigated by the CEMP and CTMP.	No
The Waters BESS ENQ/2024/1615, ENQ/2024/1830	Unknown dates of construction and operation. Potential overlaps will be mitigated by the CEMP and CTMP.	No
Fetteresso 132 kV Substation Upgrade ENQ/2025/1103, ENQ/2025/1000	The estimated construction period (2027 to 2029) precedes the Proposed Development construction period (2031 to 2035). Potential overlaps will be mitigated by the CEMP and CTMP.	No
S36 Windfarm, Fetteresso Forest, ECU00001851, APP/2019/1341	No overlap anticipated due to the distance from the Proposed Development. Unknown dates of construction and operation. Potential overlaps will be mitigated by the CEMP and CTMP.	No
Glenskinnan Renewable Energy Park ENQ/2025/0960		No
Craigneil Wind Farm ENQ/2024/0640		No
Meetlaw Farm Battery Energy Storage System, APP/2022/2676		No

Project	Overlap with the Proposed Development	Screened into CEA (Yes/No)
East Coast Viners Solar Storage Project APP/2022/1701	Unknown dates of construction and operation. Potential overlaps will be mitigated by the CEMP and CTMP.	No
Tealing to Kintore 400 kV OHL ENQ/2024/1397, ECU00005225	The estimated construction period (2026 to 2029) precedes the Proposed Development construction period (2031 to 2035). Potential overlaps will be mitigated by the CEMP and CTMP.	No
Droop Hill Solar Park ENQ/2025/0368, APP/2025/0560	No overlap anticipated due to the distance from the Proposed Development. Unknown dates of construction and operation. Potential overlaps will be mitigated by the CEMP and CTMP.	No
Glendye Wind Farm 132 kV OHL ENQ/2024/1818, ECU0005197	Unknown dates of construction and operation. Potential overlaps will be mitigated by the CEMP and CTMP.	No
Bridgend Farm BESS ENQ/2024/0747, APP/2025/0089		No
Quithel 50 MW BESS ENQ/2023/1713		No
Northeast Of Drumlithie BESS ENQ/2023/0093		No

Cumulative Effects Assessment

14.12.4 It has been concluded that there are no potential significant cumulative impacts when considered in combination with impacts identified for other environmental discipline assessments in this EIA Report ('Same Project' cumulative impacts). This is based on a review of the Proposed Development, professional judgement, and experience gained in numerous similar projects.

14.12.5 Additionally, a review of potential cumulative impacts on traffic and active travel sensitive receptors from 'Other Projects' has been undertaken, based on the projects outlined in Table 14.46.

14.12.6 It should be noted that the Proposed Development, Hurlie Substation and Fetteresso Overhead Line connection projects will all be operating in the same area and while there is not expected to be much overlap it is possible that some areas will experience continuous disruption from consecutive works. It is also possible that while there is no significant overlap of adjacent works currently expected there is a risk that programmes will slip, and this could become as issue.

14.12.7 However, it has been concluded that there are unlikely to be any significant cumulative impacts from a traffic and transportation perspective. This has been determined taking into consideration the following factors relating to other projects: the proposed size of the development, the likely or unknown

construction timing, and the lack of supporting information available from the planning application, i.e., the magnitude of the impact of the proposed development has not been deemed necessary to undertake a separate traffic impact assessment.

14.12.8 The Construction Traffic Management Plan will include feasible, appropriate, and safe methods of access for construction traffic to the Proposed Development as well as aiming to reduce impacts on residents, and pedestrians (including non-motorised users) as a result.

14.12.9 The appointed Contractor will liaise with other local development projects throughout the construction phase of the Proposed Development to avoid any significant overlap in works activities, deliveries, AL, traffic management measures etc. as much as feasibly possible.

14.13 Summary of Impacts, Mitigation, Likely Significant Environmental Effects and Monitoring

14.13.1 Table 14.42 summarises the magnitude of impact for each location deemed to exceed the IMEA thresholds indicated in Section 14.6 (Magnitude of Impact).

14.13.2 When these impacts were considered alongside the sensitivity of the receptors, four locations (two each on Auchenblae Road (ATC 7 and ATC 8) and Broomhill Road (ATC 6 and ATC 9) within Stonehaven) were deemed likely to experience Significant Effects as a result of impacts on NMU amenities.

14.13.3 Once mitigation measures, outlined in Section 14.10 (Additional Mitigation and Residual Effect), are implemented these effects are reduced to a Minor (Not Significant) level.

14.13.4 As identified in Section 14.10, monitoring of the effectiveness of transportation mitigation measures and the levels of construction traffic would be undertaken by the appointed contractors and/or Aberdeenshire Council representatives, managed through the CTMP, TMP, and CLP, on a regular basis to confirm these measures prove effective at reducing impacts.

14.13.5 Regarding the trunk road network and railway line, the appointed contractor will agree HDD measures and will then adopt and monitor an appropriate way of working, in consultation with Aberdeenshire Council, Transport Scotland, Network Rail, and/or their agents.

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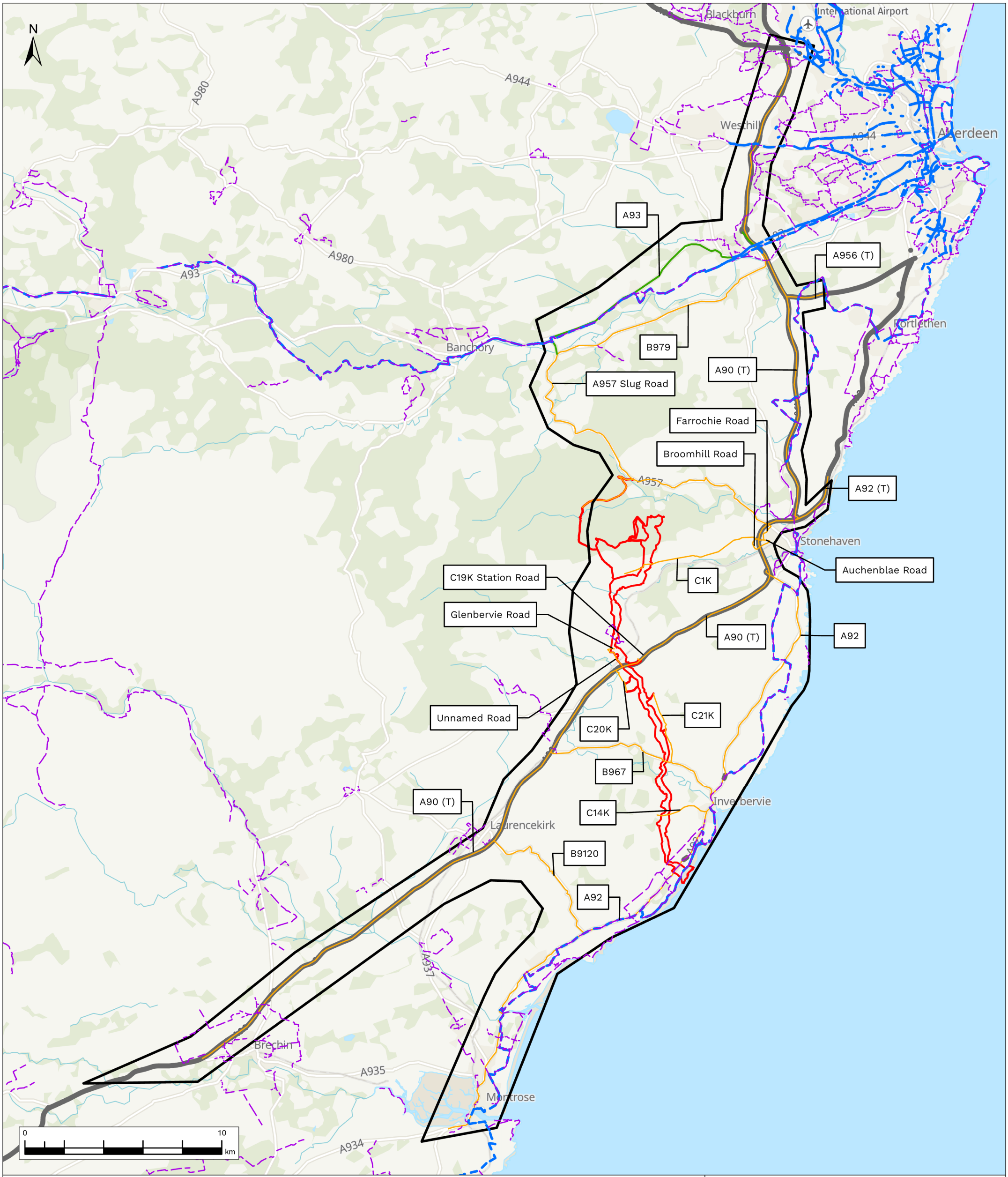
Annex – Figures



Legend

- PPP Application Boundary
- Traffic and Transport Study Area
- Abnormal Loads Only
- Assumed Construction Route
- Trunk Road Network
- Core Paths
- National Cycle Network

Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Study Area

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
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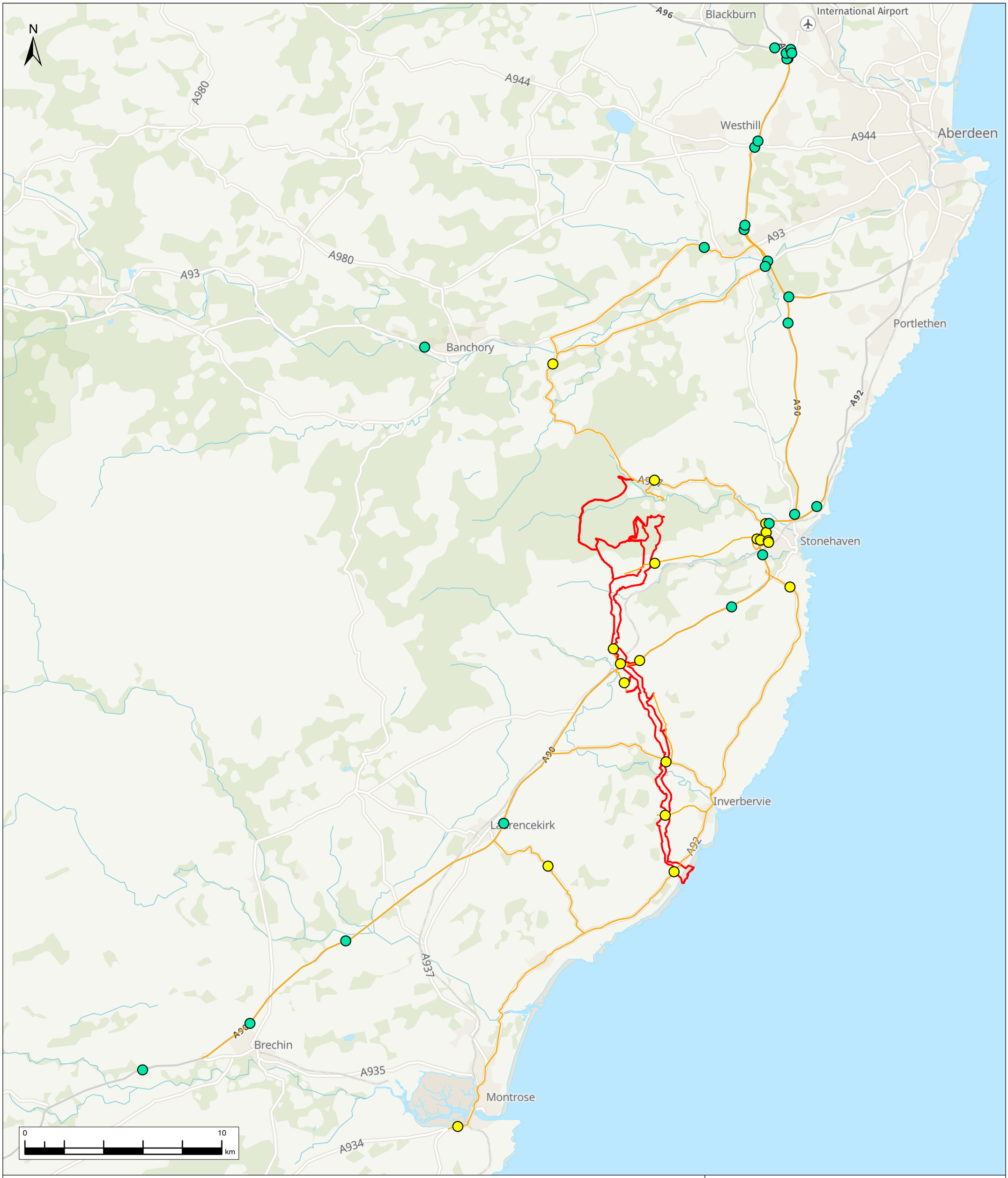
Aconnex Number: TWP-BOW-JCB-ONE-DWG-00008

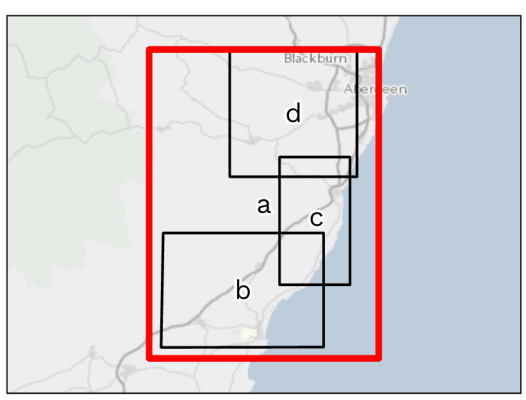
Drawing Status: FINAL

Figure 14.1



Legend

- PPP Application Boundary
- Survey Counts
- TS Counts
- Assumed Construction Route



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Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
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Jacobs No.		B2487500				

Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Count Locations

Aconnex Number	Drawing Status
TWP-BOW-JCB-ONE-DWG-00009	FINAL

Figure 14.2a

N

ATC3
JTC00056
ATC12
ATC11
ATC13
ATC14
ATC15
ATC16
JTC00057
ATC17
ATC18
JTC00058
JTC00059
JTC00060
ATC19

Auchenblae
Fordoun
Arbuthnott
Fettercairn
Laurencekirk
Gourdon
Inverbervie
Edzell
Edzell Woods
Luthermuir
Marykirk
Craigo
Johnshaven
Bush
St Cyrus
Little Brechin
Careston
Brechin
Hillside
Montrose
Lunan
Friockheim
Inverkeilor
Letham
Leysmill

A92
A937
A935
A934
A933

0 5 km

Legend

- PPP Application Boundary
- Survey Counts
- TS Counts
- Assumed Construction Route

Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Count Locations

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
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Aconnex Number: TWP-BOW-JCB-ONE-DWG-00009

Drawing Status: FINAL

Figure 14.2b

N

ATC2
ATC3
ATC4
ATC5
ATC6
ATC7
ATC8
ATC9
ATC10
ATC11
ATC12
ATC13
ATC14
ATC15
ATC16
ATC00051
ATC00203
JTC00055
JTC00056
JTC08330

A957
A90
B979
A92
A90
A90
B967
B967
A92

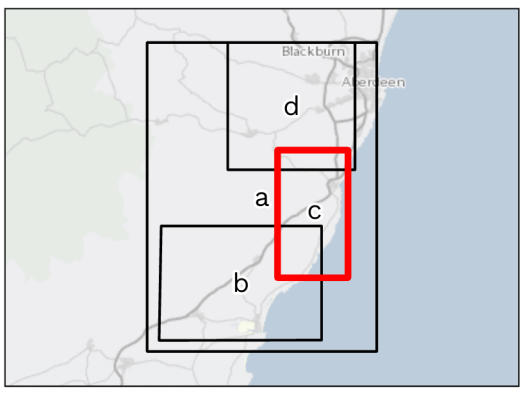
Toddie Brae
Brae of Glenbervie
Kinkell
Causeywell Brae
Moor of Auchendreich
Whitewater Moss

Cowie
Stonehaven
Drumlithie
Fordoun
Arbuthnott
Roadside of Kinneff
Catterline
Inverbervie
Gourdon

0 5 km

Legend

- PPP Application Boundary
- Survey Counts
- TS Counts
- Assumed Construction Route



Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Count Locations

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Aconnex Number: TWP-BOW-JCB-ONE-DWG-00009

Drawing Status: FINAL

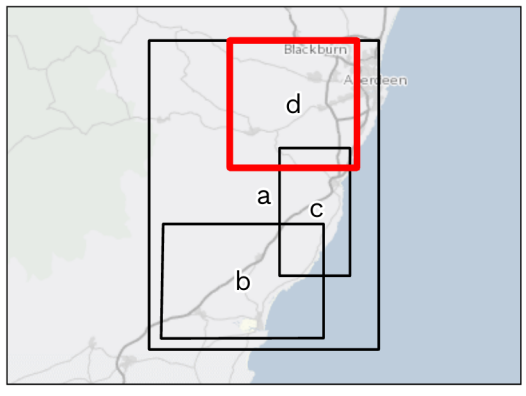
Figure 14.2c

N

Kinellar
Blackburn
Aberdeen International Ai
Sauchen
A944
A96
ATC00062
ATC00212
ATC00230
ATC00228
ATC00209
ATC00210
Newhills
Dunecht
Kirkton of Skene
Kingswells
Westhill
ATC00208
ATC00207
A944
Echt
Garlogie
A90
ATC00206
Bieldside
ATC00205
ATC00054
Peterculter
ATC00204
ATC00052
Kirkton of Maryculter
ATC00232
A956
Drumoak
123488
A980
Inchmarlo
ATC00329
Crathes
Banchory
Woodlands
ATC1
Netherley
Strachan
A957
ATC2
0
5
km

Legend

- PPP Application Boundary
- Survey Counts
- TS Counts
- Assumed Construction Route



Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Count Locations

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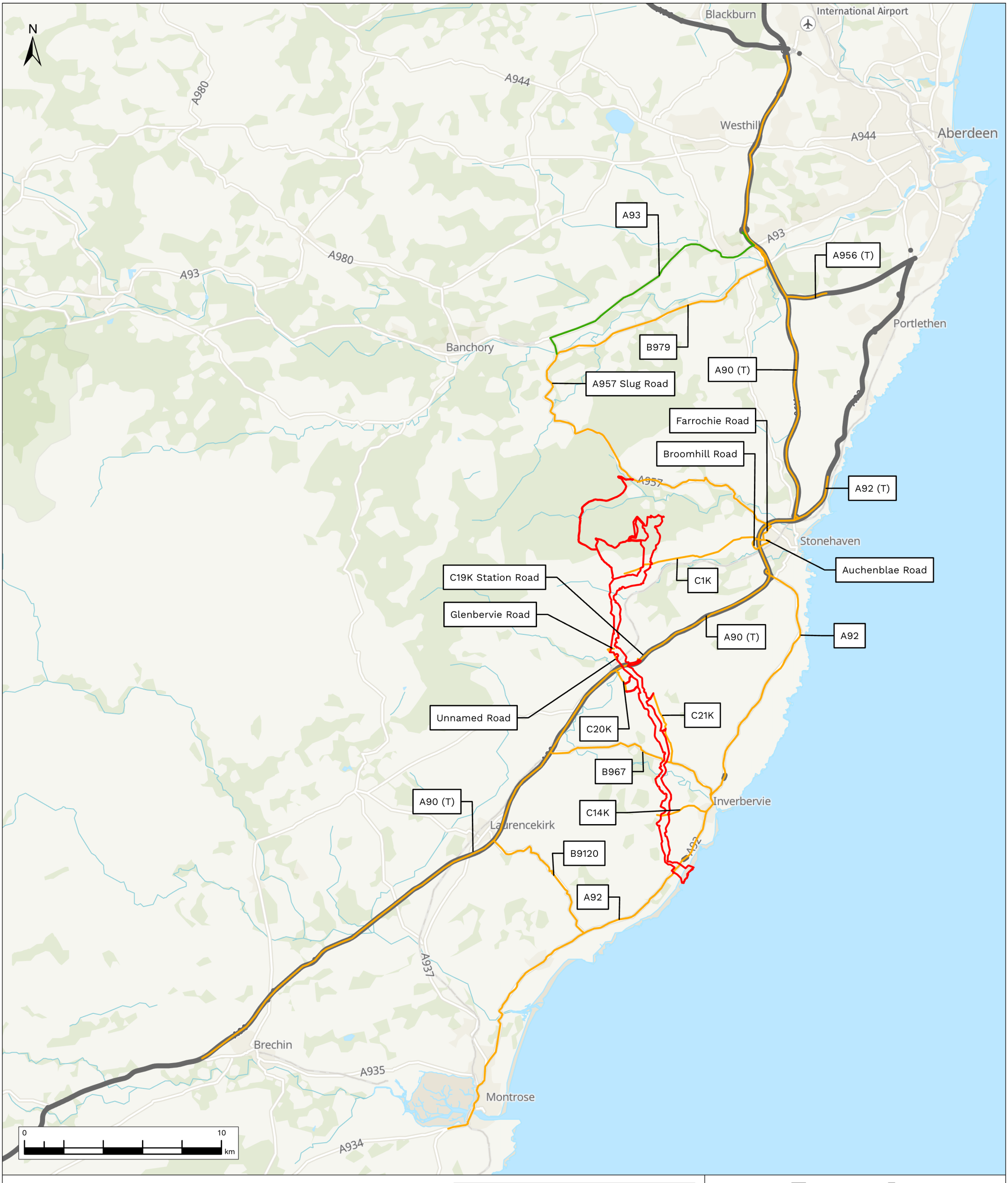
Drawing Status: FINAL

Figure 14.2d



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Jacobs No.		B2487500				

Jacobs

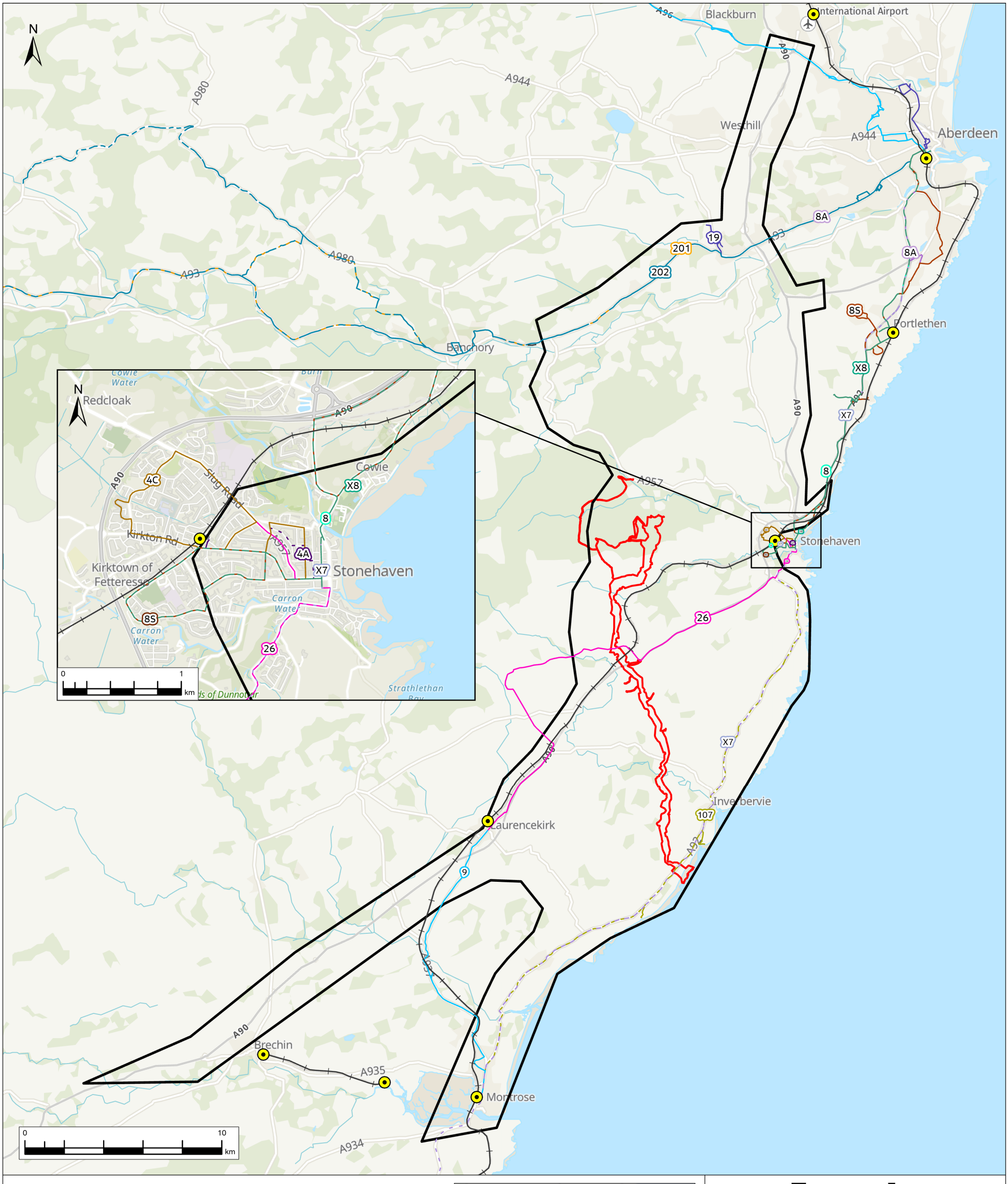
Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Construction Routes

Aconnex Number	Drawing Status
TWP-BOW-JCB-ONE-DWG-00010	FINAL

Figure 14.3



Legend

- PPP Application Boundary
- Traffic and Transport Study Area
- Railway Station
- Railway Line

Bus Routes
Service Number

- 107
- 19
- 201
- 202
- 26
- 4A
- 4C
- 8
- 8A
- 8S
- 9
- X7
- X8

Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Public Transport

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
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Drawing Status: FINAL

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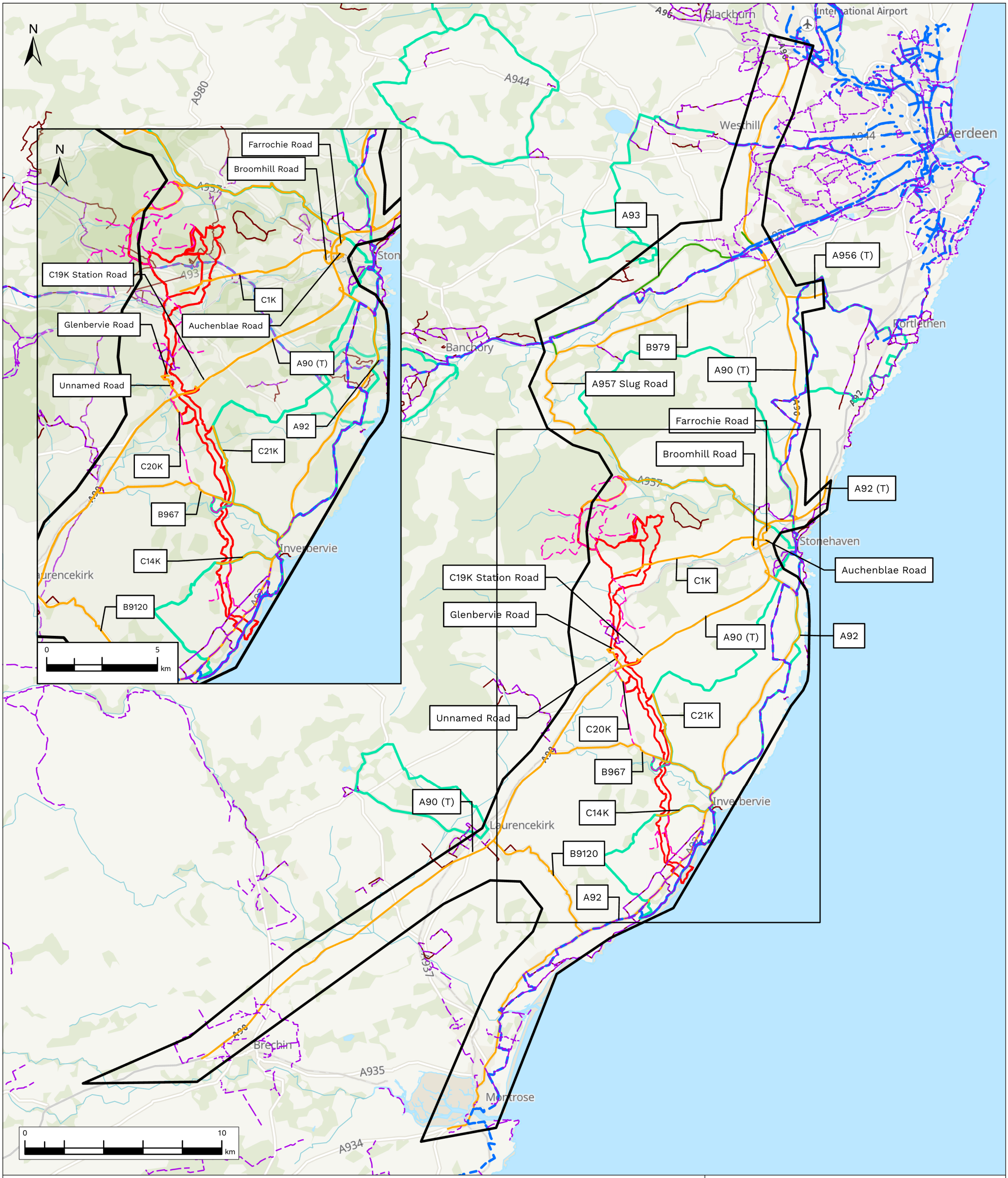


Legend

- PPP Application Boundary
- Traffic and Transport Study Area
- National Cycle Network
- Local Paths
- Recreational Cycle Routes
- Path Network
- Core Paths
- Assumed Construction Route
- Abnormal Loads Only

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
Scale @ A3		Scale: 1:180,000	DO NOT SCALE			
Jacobs No.		B2487500				

Jacobs

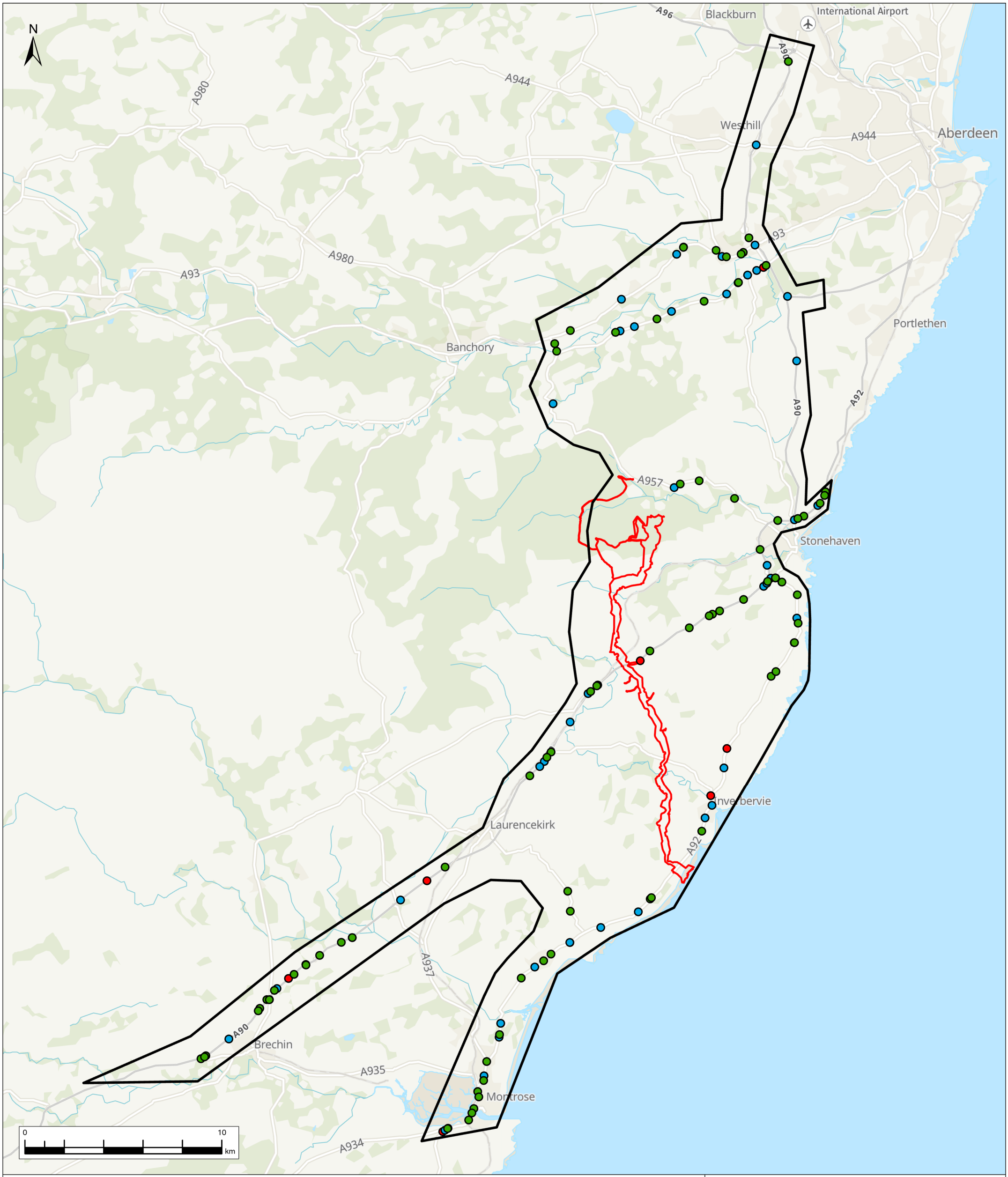
Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Active Travel

Aconnex Number	Drawing Status
TWP-BOW-JCB-ONE-DWG-00012	FINAL

Figure 14.5



Legend

- PPP Application Boundary
- Traffic and Transport Study Area

Traffic Collisions (2015-2019)

Accident Severity

- Fatal
- Serious
- Slight

Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Collisions 2015-2019

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
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Drawing Status: FINAL

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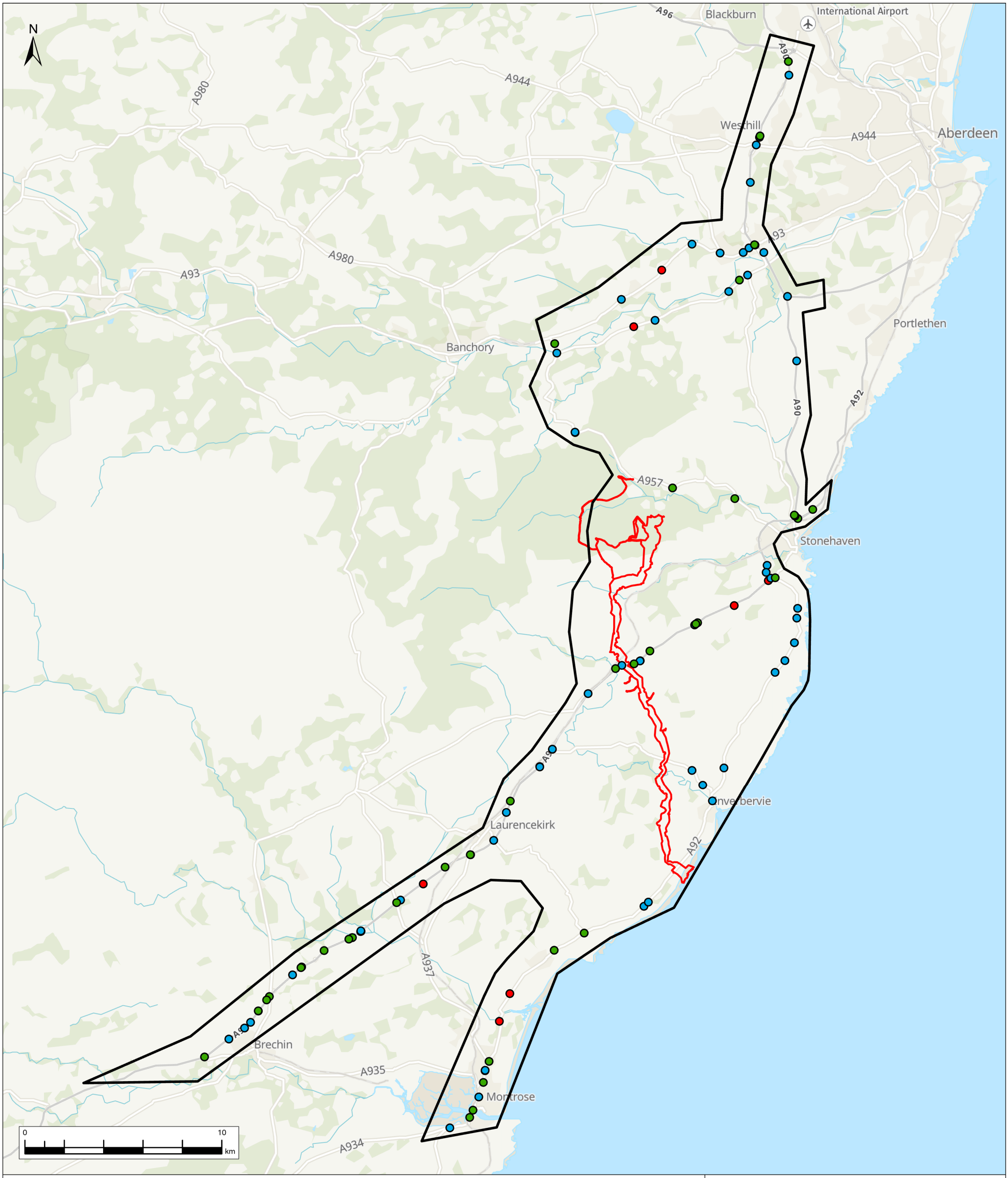


Legend

- PPP Application Boundary
- Traffic and Transport Study Area

Traffic Collisions (2019-2023)

Accident Severity

- Fatal
- Serious
- Slight

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
Scale @ A3		Scale: 1:180,000	DO NOT SCALE			
Jacobs No.		B2487500				

Jacobs

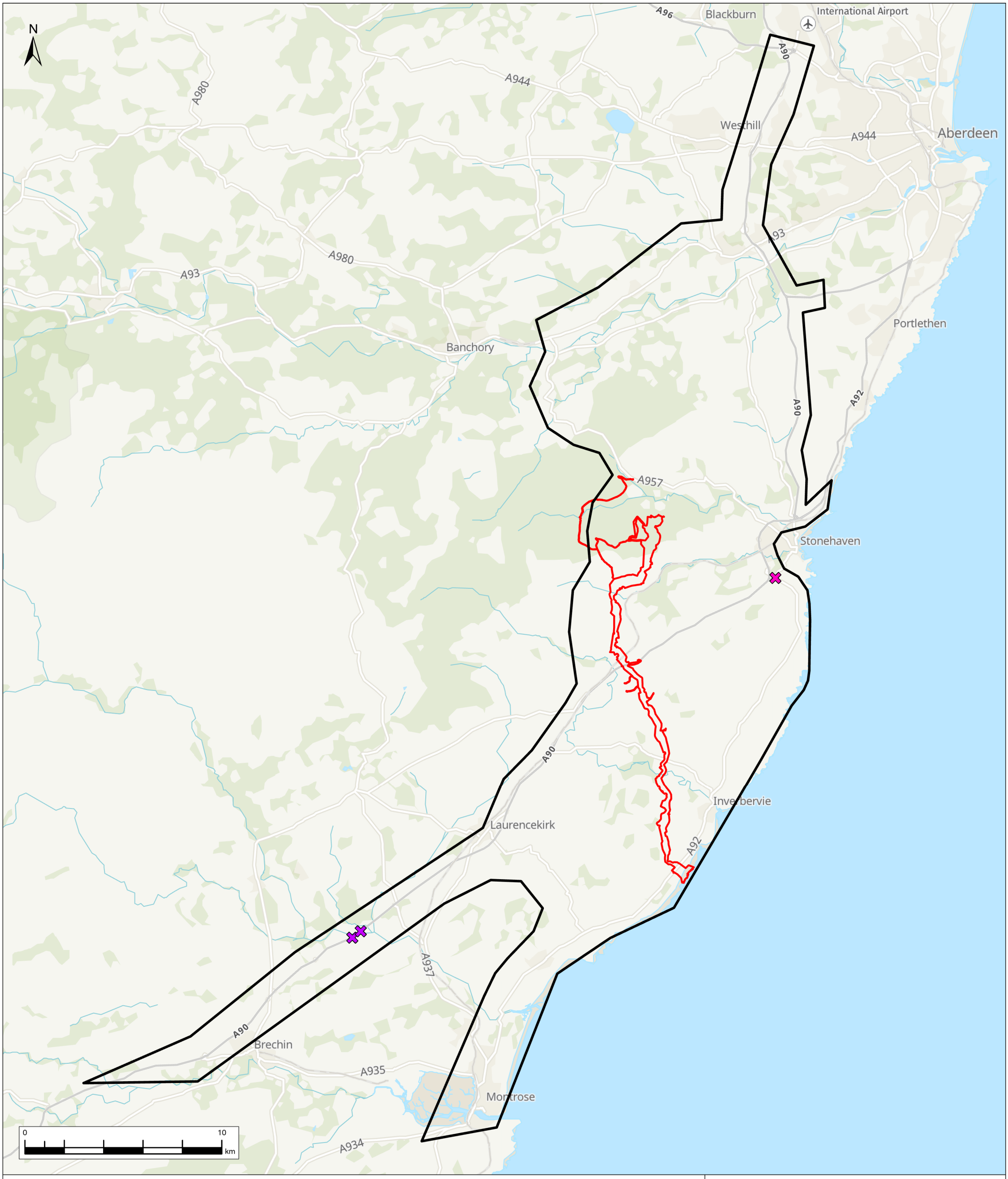
Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Collisions 2019-2023

Aconnex Number	Drawing Status
TWP-BOW-JCB-ONE-DWG-00014	FINAL

Figure 14.7



Legend

- PPP Application Boundary
- Traffic and Transport Study Area
- Traffic Collision Cluster 2015-2019
- Traffic Collision Clusters 2019-2023

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
Scale @ A3		Scale: 1:180,000	DO NOT SCALE			
Jacobs No.		B2487500				

Jacobs

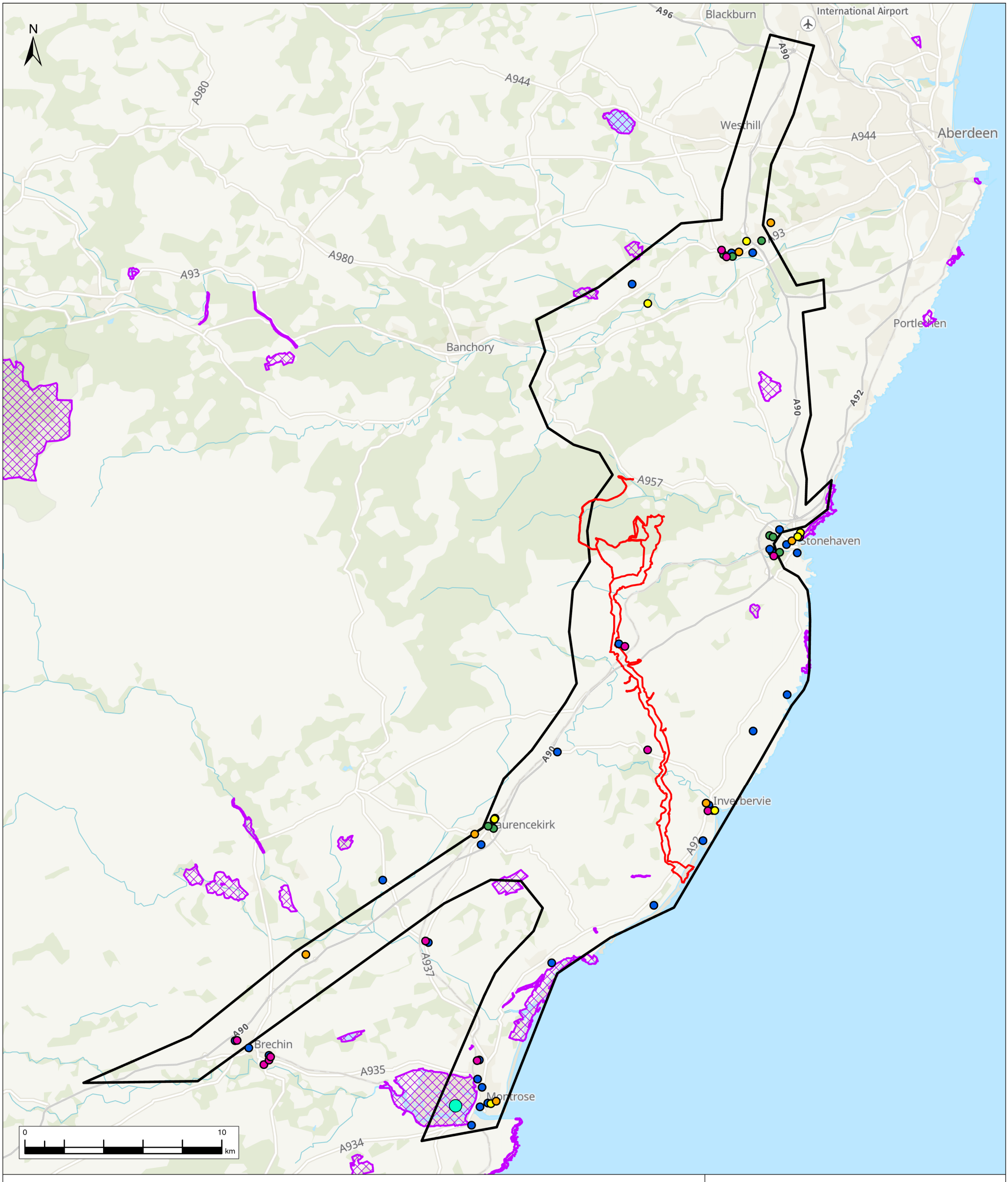
Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Traffic Collision Clusters 2015-2023

Aconnex Number	Drawing Status
TWP-BOW-JCB-ONE-DWG-00015	FINAL

Figure 14.8



Legend

- PPP Application Boundary
- Traffic and Transport Study Area

Sensitive Receptors

- Care/Nursing Home
- Community Centre/Facility
- Medical Centre/Facility
- School/Education Centre
- Sports/Leisure Centre
- Port of Montrose
- Site of Special Scientific Interest

Jacobs

Client: THISTLE WIND PARTNERS

Project: Bowdun Offshore Wind Farm
Onshore EIA Report

Drawing Title: Sensitive Receptors

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
02	NOV 25	FINAL	CS	JC	JC	GG
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Aconnex Number: TWP-BOW-JCB-ONE-DWG-00016

Drawing Status: FINAL

Figure 14.9