

**Volume 4: Appendix 3.8 – Combined Transport
Statement (TS) & Construction Traffic Management
Plan (CTMP)**

Emmock and Tealing 400 kV Overhead Line Tie-Ins

Appendix 3.8 Outline Construction Traffic Management Plan

Combined Transport Statement & Construction Traffic Management Plan

September 2025



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LIST OF ABBREVIATIONS

Term in full	Abbreviations	Definition
Abnormal Indivisible Load	AIL	Loads / vehicles which exceed the maximum vehicle weight, axle weight or dimensions which are set out in the Road Vehicles (Construction and Use) Regulations 1986 as amended.
Angus Council	AC	Relevant local road authority for the Angus Council local government boundary.
Automatic Traffic Counter	ATC	Equipment which is laid across a road and measures traffic characteristics such as the number of vehicles passing over it, speed and classification.
Average Daily Traffic	AADT	The average traffic flow over the course of a day which passes a particular location on the road network each day.
Construction Traffic Management Plan	CTMP	Document which outlines traffic management measures to mitigate adverse impacts associated with construction related traffic.
Department for Transport	DfT	UK Government Department for Transport
Design Manual for Roads and Bridges	DMRB	Design Manual for Roads and Bridges
Electronic Service Delivery for Abnormal Loads	ESDAL	Outlines who needs to be notified about a proposed abnormal load delivery route.
Environmental Impact Assessment Report	EIAR	A document detailing the effects a project would have on the environment.
Heavy Goods Vehicle	HGV	All goods vehicles > 3.5 tonnes gross maximum weight.
The Institution of Environmental Management and Assessment	IEMA	The Institution of Environmental Management and Assessment
Light goods vehicles	LGV	All commercial vehicles < 3.5 tonnes gross maximum weight.
Miles per Hour	mph	Measurement unit of speed on British roads.
National Cycle Network	NCN	Designated National Cycle Routes within the UK.
National Road Traffic Forecast	NRTF	Factors used to apply future year growth to traffic flows.
Ordnance Survey	OS	Great Britain's national mapping agency.
Planning Advice Note	PAN	Scottish Government's planning guidance documents.
Route Survey Report	RSR	Report assessing the suitability of a route to transport abnormal loads.
Transport Scotland	TS	Transport Scotland

1. INTRODUCTION

1.1 Purpose of the Transport Assessment

Pell Frischmann Consultants Ltd. (PF) has been commissioned by LUC (Land Use Consultants) Ltd., on behalf of Scottish & Southern Electricity Networks Transmission (SSEN Transmission), to undertake a combined Transport Statement and Construction Traffic Management Plan (CTMP) for the various elements required to construct and operate the Proposed Development, which incorporates the diversion of the final easterly sections of two existing OHLs (Alyth to Tealing and Tealing to Westfield 275 kV OHLs) for tie-in to the proposed Emmock 400 kV substation and for a 275 kV tie-back between Emmock substation and the existing Tealing Substation, hereafter referred to as the 'Proposed Development'..

- 1.1.1 The 'Site' is the land on which the Proposed Development is located.
- 1.1.2 No liability is accepted for the use of all or part of this report by third parties. This report is © Copyright of PF 2025 and SSEN Transmission. No section of this report may be reproduced without prior written approval.
- 1.1.3 This report identifies the key transport and access issues associated with the Proposed Development and provides a review of the likely traffic movements in the Study Area (afterdefined). The report identifies where mitigation works may be required to accommodate the predicted traffic impacts associated with the Proposed Development, to be developed during detailed design. It should be read in conjunction with the **Environmental Impact Assessment Report** ("EIAR") for full details of the Proposed Development.

1.2 Report Structure

- 1.2.1 Following this introduction, the report is structured as follows:
 - Chapter Two describes the Site and proposed development background;
 - Chapter Three reviews the relevant transport and planning policies;
 - Chapter Four sets out the methodology used within this assessment;
 - Chapter Five describes the baseline transport conditions;
 - Chapter Six describes the trip generation and distribution of traffic in the study area;
 - Chapter Seven summarises the traffic impact assessment;
 - Chapter Eight considers mitigation proposals in the form of a Framework CTMP; and
 - Chapter Nine summarises the findings of the Transport Statement and outlines the key conclusions.

2. SITE BACKGROUND

2.1 Site Location

- 2.1.1 The Proposed Development would connect existing overhead line (OHL) located to the west of Tealing to the proposed Emmock Substation located approximately 2.25 kilometres (km) to the west of Tealing. The substation and connection tie-ins are located with the Angus Council (AC) administrative area.
- 2.1.2 The Proposed Development connection tie-ins are located on land currently used for agriculture. Access to the Site would be taken from the public road maintained by AC.
- 2.1.3 The location of the Proposed Development is shown on **Figure 2.1: Site Location** below.

Figure 2.1 Site Location

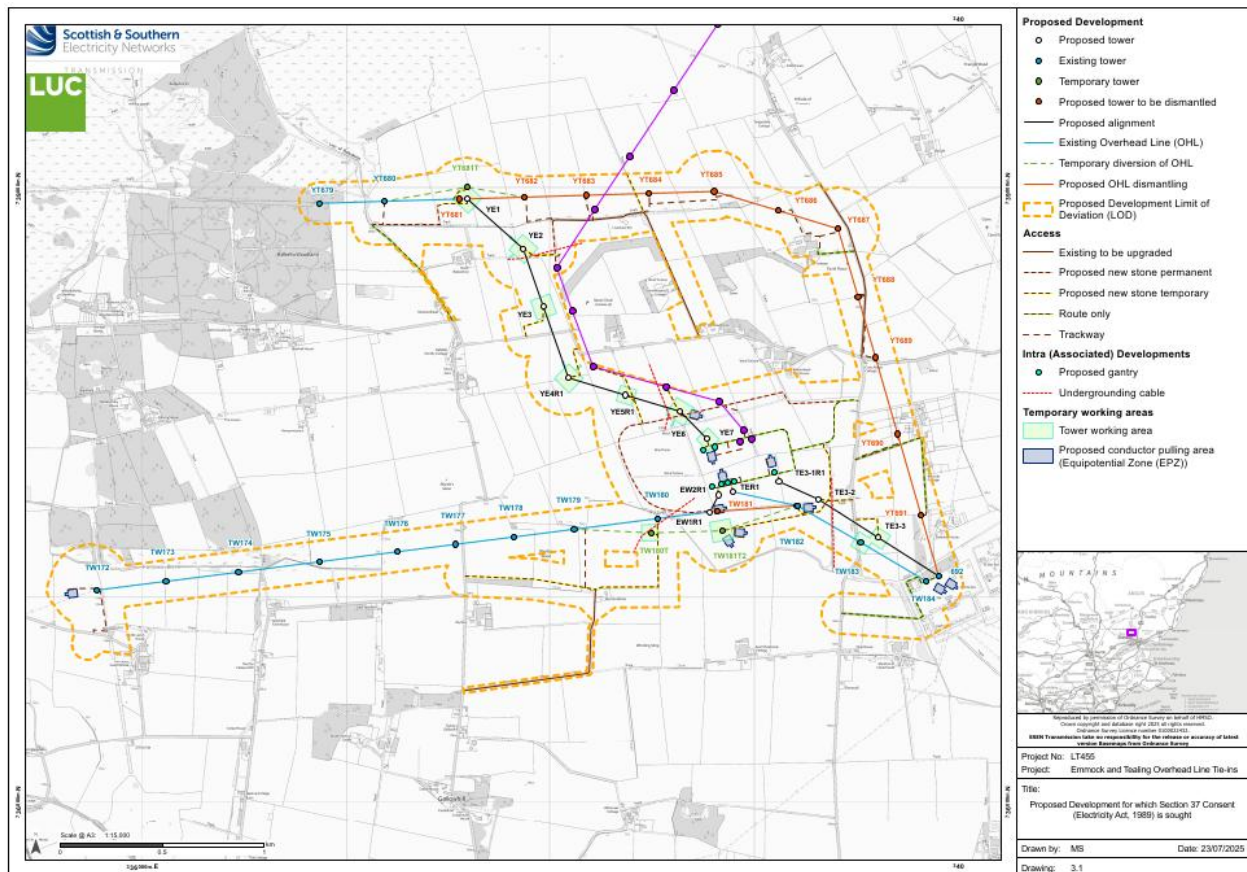


The proposed Emmock Substation provides the termination point to the proposed Kintore to Tealing 400 kV OHL.

2.2 Description of the Proposed Development

- 2.2.1 The Proposed Development is illustrated in **Figure 2.2: Proposed Development Layout**.

Figure 2.2: Proposed Development Layout



The construction of the Proposed Development would be undertaken at similar times as the Kintore to Tealing 400 kV OHL for efficiency but is the subject of a separate application under Section 37 of the Electricity Act 1989. The Section 37 application is described in detail in the **EIAR, Volume 2, Chapter 1: Introduction and Background**.

3. TRANSPORT & PLANNING POLICY

3.1 Introduction

3.1.1 This part of the report provides an overview of the relevant national and local transport planning policy and guidance.

3.2 National Policy and Guidance

National Planning Framework 4 (2023)

The National Planning Framework 4 (NPF4) was approved by Scottish Parliament on 11 January 2023 and was adopted by Scottish Ministers on 13 February 2023.

Policy 11: Energy within the NPF4 notes, amongst other things, that:

“Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:

- *Wind farms including repowering, extending, expanding and extending the life of existing wind farms;*
- *Enabling works, such as grid transmission and distribution infrastructure.”*

In addition, project design and mitigation will demonstrate how the following impacts are addressed:

- *“Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
- *Public access, including impact on long distance walking and cycling routes and scenic routes;*
- *Impacts on road traffic and on adjacent trunk roads, including during construction; and*
- *Cumulative impacts”.*

3.2.1 Policy 13: Sustainable Transport within the NPF4 notes the following in relation to Transport Assessments and Travel Plans:

“Where a development proposal will generate a significant increase in the number of person trips, a transport assessment will be required to be undertaken in accordance with the relevant guidance.”

“Development proposals for significant travel generating uses, or smaller-scale developments where it is important to monitor travel patterns resulting from the development, will only be supported if they are accompanied by a Travel Plan with supporting planning conditions/obligations. Travel plans should set out clear arrangements for delivering against targets, as well as monitoring and evaluation.”

Planning Advice Note (PAN) 75

3.2.2 Planning Advice Note (PAN) 75: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

“... transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning.”

“All planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact.”

Transport Assessment Guidance (2012)

- 3.2.3 Transport Scotland's Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of TA reports for development proposals in Scotland such that the likely transport impacts can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.
- 3.2.4 The document notes that a TA will be required where a development is likely to have significant transport impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

3.3 Local Policy and Guidance

Angus Local Plan

The development plan for Angus currently consists of NPF4 and the Angus Local Development Plan (LDP), adopted in September 2016. A new Local Development Plan (AngusPlan) is being prepared but is at the very early stages of preparation. Current anticipated timescales for adoption is 2030.

Within the LDP, a Supplementary Guidance note, "Renewable and Low Carbon Energy Development" (June 2017) is provided and is relevant to this application. The note states:

"3.2: Traffic Access

Any project proposal may be required to prepare and submit a route assessment and traffic management plan, which demonstrates:-

- *How access is to be achieved;*
- *Selected routes have been assessed and are capable of accommodating traffic generated;*
- *Traffic management over the construction phase; and*
- *Longer term access requirements.*

If road improvements are required, these must be approved by Angus Council Roads. Site access should allow all vehicles visiting the Site to have space to manoeuvre to ensure safe access and egress.

The formation of new or upgrading of existing tracks over open countryside/uplands should be designed to avoid generating run off/surface water flooding and be re-instated on completion of construction, where they will not be regularly in use to service the development. Provision must be made for the re-instatement of any existing and proposed tracks when the site is decommissioned.

3.3: Public Access

Public rights of access under the Scottish land reform legislation exist over most land. Linear access may take place over core paths or public rights of way, or over other paths and tracks, which are generally within access rights. Access rights also generally apply to areas of land such as farmland, woodland and open land, regardless of the presence of paths or tracks. Recreational water access to rivers and lochs is also within access rights and may be a particular consideration for hydro-electric schemes.

Appropriate consideration of access will depend on the nature and location of the proposed development and existing patterns and levels of public use. New development should not significantly reduce people's ability to take recreational access. Where proposals will result in restrictions to access over core paths, public rights of way or other linear access routes, there will normally be a requirement for provision of an alternative route. Solar farms can remove large areas of land from public access, and may significantly affect people's ability to take access in their local area or to pass through an area, even in locations where there are no linear access routes and levels of public access are generally low. In such cases there may be a need to provide access corridors

through or around the development. Visual impacts and other impacts on the amenity of the area will be a consideration where there is a well-used route such as a core path or an area of land which has a high recreational amenity value.”

3.4 Policy and Guidance Summary

- 3.4.1 The Proposed Development can align with the stated transport policy objectives and the proposed mitigation measures will ensure compliance with national and local objectives.

4. ASSESSMENT METHODOLOGY

4.1 Introduction

4.1.1 There are three phases of the life of the Proposed Development. These are:

- The Construction Phase;
- The Operational Phase; and
- The Decommissioning Phase.

4.2 Project Phases – Transport Overview

Of all of the three phases, the construction phase is considered to have the greatest impact in terms of transport. Construction plant, bulk materials and staff will travel to Site, these may potentially cause a significant increase in traffic on the Study Area (afterdefined).

- 4.2.1 The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.
- 4.2.2 The decommissioning phase involves fewer trips on the network than the construction phase, as elements of infrastructure are likely to be left in place (such as access tracks and platform areas), adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.
- 4.2.3 It should be noted however the construction effects are short lived and transitory in nature, whilst the operational phase assessment has been assumed to be based on typical operating conditions with occasional operational and maintenance traffic during the operational life of the Proposed Development.

5. BASELINE TRANSPORT CONDITIONS

5.1 Access Arrangement

Access to the Site will be taken from the public road network at Emmock Road and on Tealing Road (located to the north of the proposed substation site). Construction material deliveries will originate from the A90 corridor located to the east.

- 5.1.1 To accommodate traffic movements associated with the construction phase, inbound access to the Site will be taken from the A90 at the Moatmill access junction.
- 5.1.2 The Moatmill junction has been successfully used for deliveries associated with the nearby Seagreen offshore wind farm grid connection works. The same route, with a new extension through to Emmock Road will be used to enable access to the Site from the A90.
- 5.1.3 Traffic management will be used to ensure that the Moatmill junction is only used by construction traffic as a Left In junction. This is being proposed to ensure that traffic does not try to turn across the A90 dual carriageway mainline lanes.
- 5.1.4 To cater for traffic exiting the construction Site, it is proposed that traffic will exit the Site and use Emmock Road to connect back to the A90 at Emmock Roundabout. The roundabout will also allow traffic originating from the north to safely U-turn and access the Moatmill junction.
- 5.1.5 No construction traffic will be permitted to access the Site via Tealing Road. In addition, the section of Emmock Road running south to Dundee and Old Glamis Road will be barred for Heavy Goods Vehicle (HGV) traffic.
- 5.1.6 Once construction works have been completed, Site access will be via Emmock Road from the Emmock Roundabout. Traffic flows associated with this phase are very small and estimated to be circa 10 movements per day, which is not significant and below typical daily variations in daily traffic flows.

5.2 Study Area

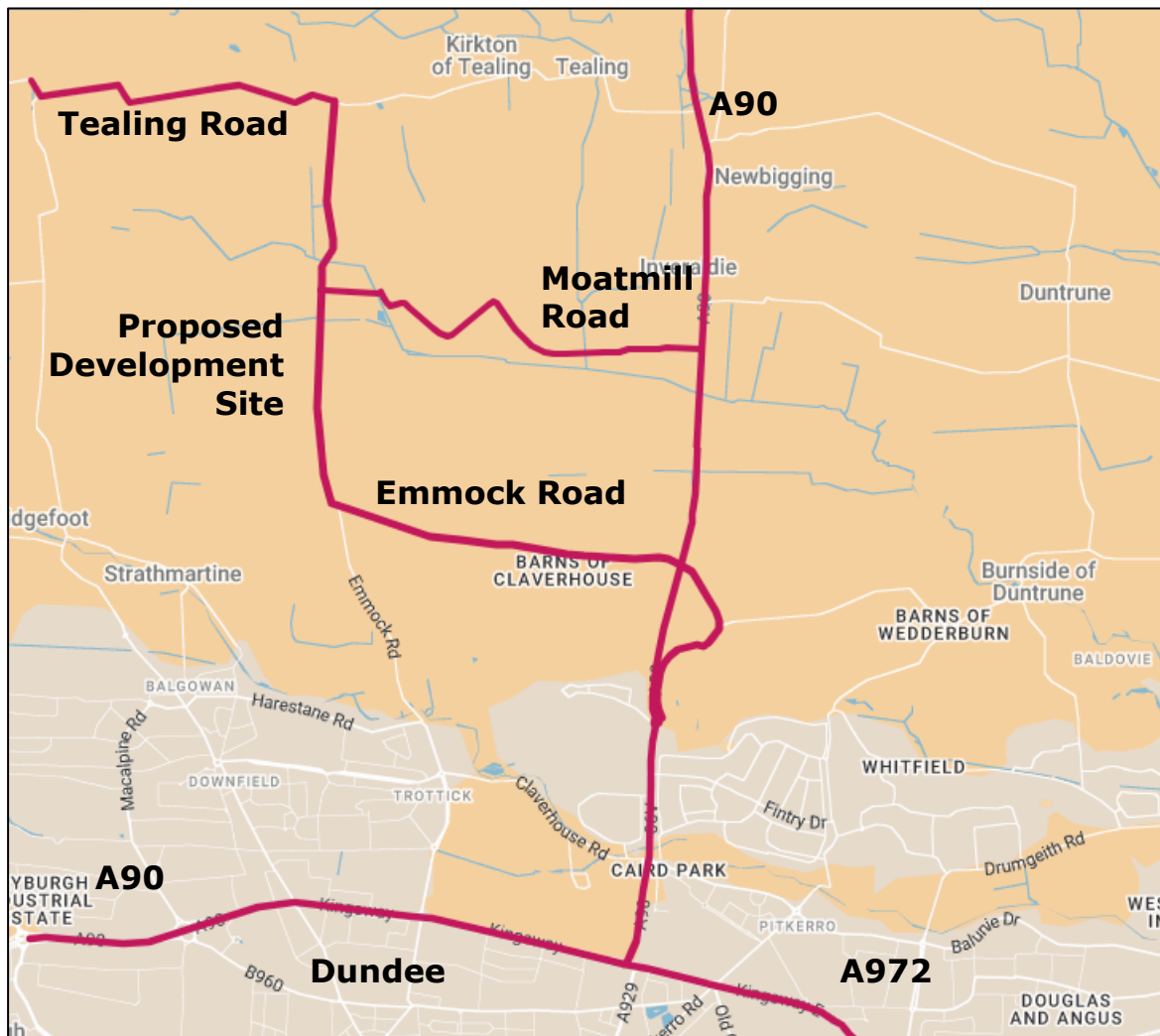
The proposed study area ("Study Area") is based upon the route that would be used by construction traffic accessing the Proposed Development. These include routes used for bulk material deliveries, staff movements and component transport.

The Study Area assessed is as follows:

- Emmock Road (from the Emmock Roundabout through to the Tealing Road junction);
- Tealing Road (between the Emmock Road Junction and Newlandhead Farm);
- Moatmill Road;
- A90 (between Forfar and Dundee);
- A90 Kingsway West; and
- A972 Kingsway East.

The Study Area is illustrated in **Figure 5.1: Study Area**.

Figure 5.1: Study Area



5.3 Pedestrian & Cyclist Links

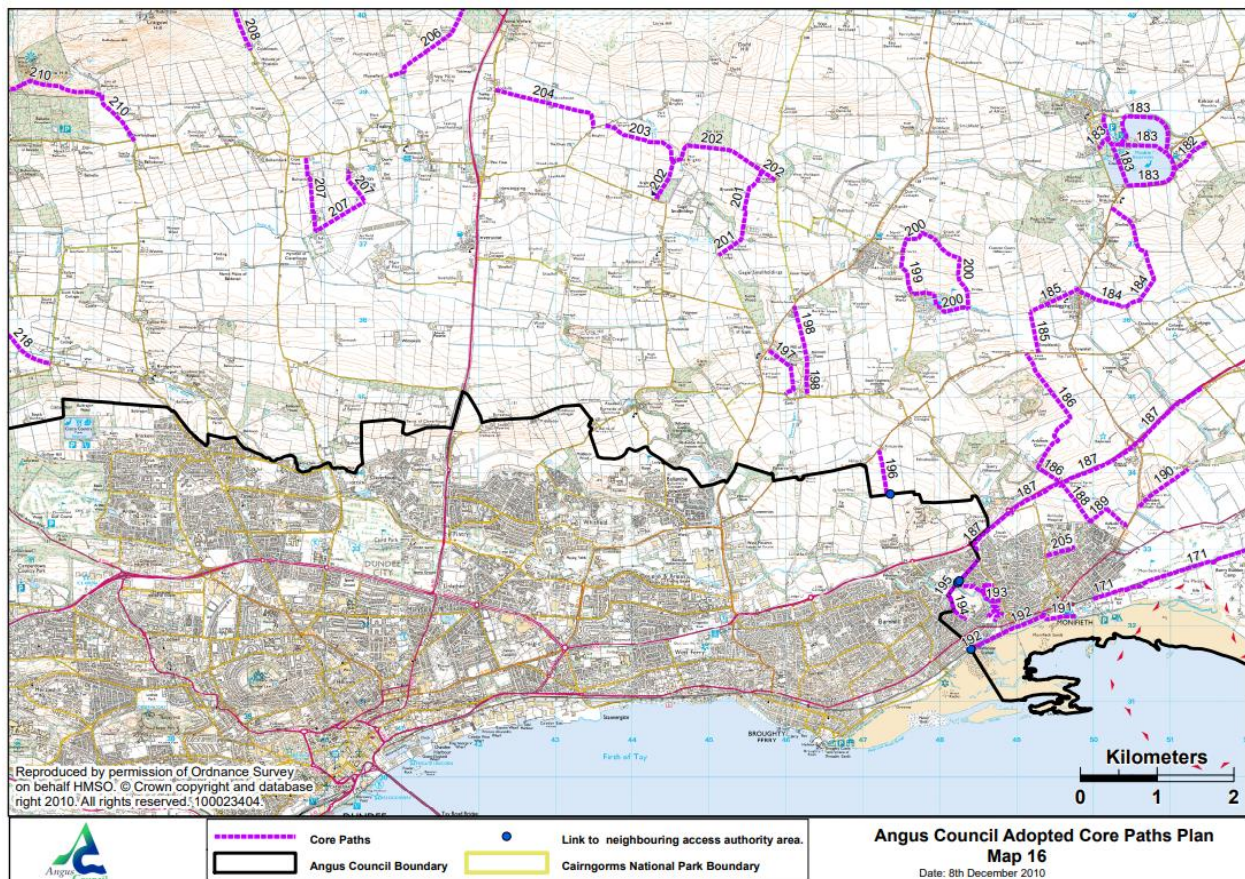
A review of the AC Core Paths Plan¹ has been undertaken. An extract for the Study Area is provided in **Figure 5.2: Core Path Plan Extract**. No Core Paths are present on Emmock Road, the closest path being Path 207, located on the Tealing Road which would be barred to construction traffic.

- 5.3.1 A review of the Dundee City Council Core Path² also notes no Core Paths on Emmock Road within their administrative boundaries.
- 5.3.2 The A90 features footways to the south of the A90 Emmock Road Roundabout. Controlled pedestrian crossings are provided at various points, along with a pedestrian over bridge at Finavon Road.
- 5.3.3 No pedestrian facilities are provided on Emmock Road or Tealing Road.

¹ Angus Council, Core Path Plan: https://www.angus.gov.uk/core_paths_map [Accessed August 2025]

² Dundee City Council, Core Path Plan: <https://www.dundee.gov.uk/outdoor-access-in-dundee/core-paths> [Accessed August 2025]

Figure 5.2: Core Path Plan Extract



A review of the Sustrans National Cycle Network³ (NCN) indicates that there are no national cycle routes located in close proximity to the Site or Study Area.

5.4 Road Access

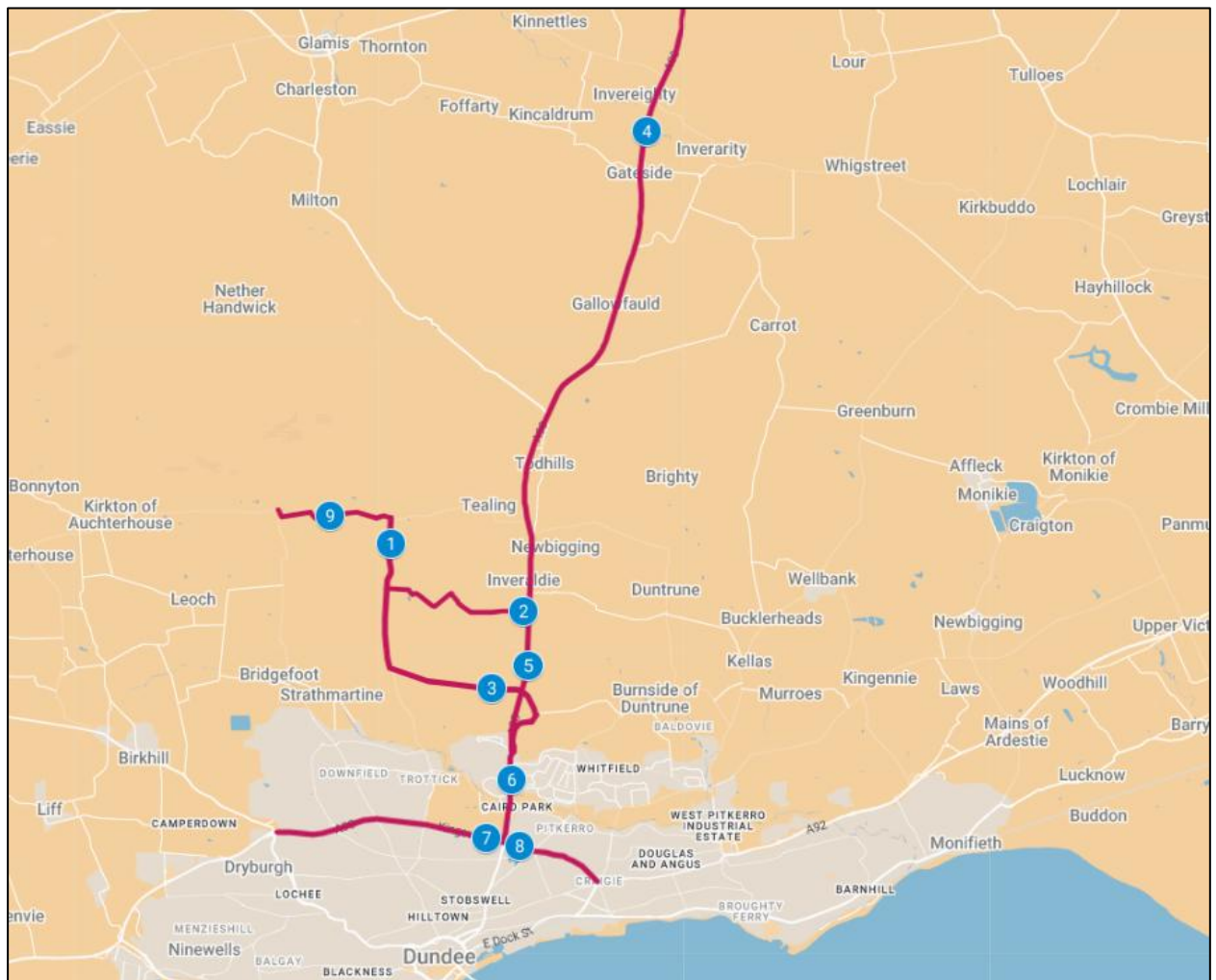
- 5.4.1 Emmock Road is a U class public road operated by AC. The road provides links from the A90 at the Emmock Roundabout (located in the Dundee City Council administrative area) through to its junction with the C6 Tealing Road. The road varies in its width along its length and is circa 4.5 – 5 metres (m) in width to the northwest of the A90. To the southeast of the A90, the road is circa 6 m in width.
- 5.4.2 Emmock Road connects to the A90 at Emmock Roundabout, a circa 46 m inscribed circle diameter, four arm roundabout.
- 5.4.3 Tealing Road is a C Class secondary distributor road and connects Auchterhouse to the A90. The road is maintained by AC and is circa 5.5 – 6 m in width within the study area.
- 5.4.4 Moatmill Road (U319) is operated by AC and was in use for traffic associated with the Seagreen Offshore Wind Farm grid connection and substation project. The road has been upgraded to accommodate Seagreen traffic and a new bridge has been provided for Seagreen Abnormal Indivisible Load (AIL) traffic.
- 5.4.5 Moatmill Road connects to the A90 trunk road at a compact at grade junction. A circa 80 m deceleration lane is provided for southbound traffic turning right in Moatmill Road.
- 5.4.6 An upgraded access track is to be provided between Moatmill Road and Emmock Road to facilitate access to the Site. This will reuse existing tracks and will feature new sections of track to accommodate HGV traffic.

³ Sustrans: <https://www.sustrans.org.uk/national-cycle-network/> [Accessed August 2025]

- 5.4.7 The A90 forms the trunk road connection between Perth and Aberdeen and is operated on behalf of Scottish Ministers by Transport Scotland. The road is a dual carriageway and is generally subject to a 70 miles per hour (mph) speed limit for car and Light Goods Vehicle (LGV) traffic, with all major junctions illuminated.
- 5.4.8 The A90 turns west towards Perth at its junction with the Kingsway in Dundee. To the east, the road becomes the A972 Kingsway East. This urban dual carriageway is operated by Transport Scotland on behalf of Scottish Ministers. The road is generally subject to a 40 mph speed limit and features pedestrian crossing and overbridges.

5.5 Existing Traffic Conditions

- 5.5.1 A review of traffic flow data has been undertaken using the Traffic Scotland traffic database and new Automatic Traffic Count (ATC) surveys.
- 5.5.2 ATC traffic surveys were undertaken at the following locations between the 16th and 22nd of April 2024:
1. Emmock Road (near the location of the proposed substation access junction);
 2. Moatmill Road;
 3. Emmock Road (at the A90 overbridge); and
 9. Tealing Road.
- 5.5.3 Traffic Scotland data for 2024 was obtained for the following locations:
4. A90 to the south of Forfar (Count site JTC00063);
 5. A90 south of Moatmill Road (Count site JTC00064);
 6. A90 south of Emmock Roundabout (Count site JTC00555);
 7. A90 Kingsway West (Count site JTC00557); and
 8. A972 Kingsway East (Count site JTC00554).
- 5.5.4 The locations of the survey points are illustrated in **Figure 5.3: Traffic Survey Locations**. The two-way traffic flows for 2024 are summarised in **Table 5.1: 24 Hour Daily Traffic Flows (2024)**.

Figure 5.3: Traffic Survey Locations

Table 5.1: 24 Hour Average Daily Traffic Flows (2024)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road (Site Access)	716	6	722
2	Moatmill Road	108	14	122
3	Emmock Road	776	3	779
4	A90 Forfar	19,913	5,198	25,111
5	A90 south of Moatmill Road	19,371	3,392	22,763
6	A90 south of Emmock Roundabout	26,306	3,318	29,624
7	A90 Kingsway West	35,788	6,868	42,656
8	A972 Kingsway East	22,275	3,182	25,457
9	Tealing Road	466	153	619

5.6 Accident Review

Road traffic accident data for the five-year period commencing 01 January 2019 through to the 31 December 2023 was obtained from the online resource Crashmap⁴ which uses data collected by the police about road traffic crashes occurring on British roads. Accident data recorded along the local roads within the Study Area, and in the vicinity of junctions joining the local road network, was analysed.

- 5.6.1 Transport Assessment guidance requires an analysis of the accident data on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the site has been identified as being within a high accident area.
- 5.6.2 The statistics are categorised into three categories, namely “Slight” for damage only incidents, “Serious” for injury accidents and “Fatal” for accidents that result in a death.

A review of accident trends within the immediate Study Area (Emmock Road, Tealing Road and the A90 between the Tealing Junction and Emmock Roundabout) has been undertaken using data from the online resource crashmap.co.uk.

- 5.6.3 In total, three accidents occurred on Emmock Road. These included two “Slight” accidents and one “Serious” accident. Of these three incidents, one “Slight” single vehicle accident occurred during winter months (December – March) when poor weather conditions may have exacerbated the risk of an accident occurring. The “Serious” accident involved a pedal cyclist and a motorcyclist, with the remaining “Slight” accident involving a young driver (under 25).
- 5.6.4 There were no recorded accidents at the junction of the A90 and Moatmill Road during the review period.
- 5.6.5 Whilst the junction is not being used for construction traffic, the A90 Tealing junction was also reviewed. Two accidents were noted, both occurring in winter months (December – March). One “Slight” accident and one “Serious” accident were recorded, the “Serious” accident involving a motorcyclist.
- 5.6.6 Six accidents were reported at the A90 Emmock Roundabout. Of these, three occurred during winter months (December – March) and four involved single vehicles, indicating that driving style was the major factor. Two accidents were classified as “Slight” and four as “Serious”. HGV traffic was involved in one “Slight” and one “Serious” accident. One “Serious” accident involved one vehicle driven by a young driver (under 25) and resulted in six injuries.

Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development or within the Study Area that currently require to be addressed or would be exacerbated by the proposed construction traffic. A CTMP however will be provided to assist all road users.

5.7 Future Baseline

- 5.7.1 Construction of the Proposed Development is expected to commence in 2026, if consent is granted, and is anticipated to take approximately four years, depending on weather conditions. The peak of construction traffic activities is expected to occur in 2028 and this has been used as the future assessment year.
- 5.7.2 To assess the likely effects during the construction and typical operational phase, base year flows were forecast by applying a National Road Traffic Forecast (NRTF) low growth factor to the 2024 flows in **Table 5.2: 24 Hour Average Daily Traffic Flows (2028)**. The NRTF low growth factor for 2024 to 2028 is 1.021. This will be used in the Construction Peak Traffic Impact Assessment.

⁴ Crashmap: <https://www.crashmap.co.uk/Search> [Accessed August 2025]

Table 5.2: 24 Hour Average Daily Traffic Flows (2028)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road (Site Access)	731	6	737
2	Moatmill Road	110	14	125
3	Emmock Road	792	3	795
4	A90 Forfar	20,331	5,307	25,638
5	A90 south of Moatmill Road	19,778	3,463	23,241
6	A90 south of Emmock Roundabout	26,858	3,388	30,246
7	A90 Kingsway West	36,540	7,012	43,552
8	A972 Kingsway East	22,743	3,249	25,992
9	Tealing Road	476	156	632

Please note that rounding errors can occur.

6. TRIP GENERATION & DISTRIBUTION

6.1 Trip Generation

6.1.1 During the construction period, the following traffic will require access to the Proposed Development Site:

- Staff transport, in either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock; and
- Abnormal loads associated with the OHL development.

SSEN Transmission civil engineers have undertaken a preliminary design of the OHL. Using this design a Bill of Materials and resulting traffic generation has been undertaken. The peak of construction activities is predicted to occur in Quarter four of 2028 and will result in the peak daily traffic generation described below.

- Peak Car & LGV Movements (2 way): 30 vehicles;
- Peak HGV Movements (2 way): 32 vehicles; and
- Peak Total Traffic (2 way): 62 vehicles.

6.1.2 Traffic levels will fall following the peak month. The assessment however has used the peak as the worst case scenario to ensure a robust assessment has been undertaken and that all relevant mitigation has been considered.

6.2 Traffic Distribution

6.2.1 Aggregate, ready mix concrete and other bulk materials are expected to be sourced from local sources, with likely suppliers located as close to the A90 corridor as possible.

6.2.2 Local quarries to the north and east of the Proposed Development have been considered, with a split assumed based upon input from SSEN Transmission's contractor advisors. The split of quarry traffic is 20% of bulk material to be imported from the north and 80% from sources to the east (using the A90 and A972).

General construction traffic and the supply of specialist items, including tower sections, cabling, ducting, etc, is assumed to originate from the Central Belt and will access the Study Area via the A90 from the west.

6.2.3 Staff working at the Site will be based locally and it is assumed that 90% will be based to the south in Dundee and the surrounding areas. Of these, an even split has been assumed between origin / destination points between the A90 (West) and A972.

6.2.4 The remaining 10% of staff are assumed to access the Site from the A90 (north).

6.2.5 For all traffic, the following routing assumptions have been used:

- All inbound traffic will enter the development area from Emmock Road and Tealing Road, using Moatmill Road and the A90 (northbound carriageway);
- Traffic originating from the north will undertake a U turn at Emmock Roundabout. No right hand turns from the A90 will be permitted at the Moatmill Junction; and
- All traffic departing the Site will exit the Site via Emmock Road and will join the A90 at Emmock Roundabout.

6.2.6 Traffic associated with the construction phase has been distributed to these routes. The resulting traffic generation is summarised in **Table 6.1: Distributed Construction Traffic (2 Way / Day)**.

Table 6.1: Distributed Construction Traffic (2 Way / Day).

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road (Site Access)	30	32	62
2	Moatmill Road	15	16	31
3	Emmock Road	30	16	46
4	A90 Forfar	2	0	2
5	A90 south of Moatmill Road	14	16	30
6	A90 south of Emmock Roundabout	28	32	60
7	A90 Kingsway West	14	32	46
8	A972 Kingsway East	14	0	14
9	Tealing Road	30	32	62

Please note that rounding errors can occur.

- 6.2.7 To facilitate access on Emmock Road, a number of passing places are proposed to minimise conflicts between construction traffic and other road users. These works, which could be permanent or temporary features (to be determined by AC) are outlined in **Volume 4, Appendix 3.5 Public Road Improvement Works** .

6.3 Abnormal Indivisible Load Deliveries

- 6.3.1 There are no AIL component deliveries associated with the Proposed Development. An erection crane will be required for the tower works; however it is expected that the crane used for the Kintore – Tealing 400 kV OHL project would be used for these works.

7. TRAFFIC IMPACT ASSESSMENT

7.1 Construction Impact

- 7.1.1 The combined average daily development traffic was added to the future year (2028) traffic data. A comparison was then made between this traffic and the baseline flows to determine the percentage increase in traffic flows. The impact is detailed in **Table 7.1: Peak Combined Traffic Flow and Construction Traffic Percentage Impact**.

Table 7.1: Peak Combined Traffic Flow and Construction Traffic Percentage Impact (vehicles per day)

Site Ref.	Survey Location	Cars & LGV	HGV	Total Traffic	% Car & LGV Increase	% HGV Increase	% Total Traffic Increase
1	Emmock Road (Site Access)	761	38	799	4.1%	522.4%	8.4%
2	Moatmill Road	125	30	156	13.6%	111.9%	24.9%
3	Emmock Road	822	19	841	3.8%	522.4%	5.8%
4	A90 Forfar	20,333	5,307	25,640	0.0%	0.0%	0.0%
5	A90 south of Moatmill Road	19,792	3,479	23,271	0.1%	0.5%	0.1%
6	A90 south of Emmock Roundabout	26,886	3,420	30,306	0.1%	0.9%	0.2%
7	A90 Kingsway West	36,554	7,044	43,598	0.0%	0.5%	0.1%
8	A972 Kingsway East	22,757	3,249	26,006	0.1%	0.0%	0.1%
9	Tealing Road	506	188	694	6.3%	20.5%	9.8%

Please note rounding errors can occur.

Total traffic movements are not predicted to increase by more than 25% across the Study Area. The highest percentage increase occurs on Moatmill Road with an increase by 24.9%. Whilst this could be considered statistically significant, the increase is primarily due to the low level of existing traffic at this location. The actual increase in traffic is only 31 vehicles per working day, which on average is an additional 2.5 vehicles per hour (assuming a 12-hour working period).

- 7.1.2 The increases in HGV flows listed above are not considered significant in terms of overall total flows and are high due to the low base HGV flows on the assessed roads. It should also be noted the construction phase is transitory in nature.
- 7.1.3 A review of existing road capacity has been undertaken using the "The NESa Manual", formerly part of the Design Manual for Roads and Bridges (DMRB). The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in **Table 7.2: Theoretical Capacity Review**.

Table 7.2: Theoretical Capacity Review

Site Ref.	Survey Location	2028 Baseline	Theoretical Capacity	2028 Base + Development Flows	Spare Capacity (%)
1	Emmock Road (Site Access)	737	3,360	799	76.2%
2	Moatmill Road	125	3,360	156	95.4%
3	Emmock Road	795	3,360	841	75.0%
4	A90 Forfar	25,638	81,600	25,640	68.6%

Site Ref.	Survey Location	2028 Baseline	Theoretical Capacity	2028 Base + Development Flows	Spare Capacity (%)
5	A90 south of Moatmill Road	23,241	81,600	23,271	71.5%
6	A90 south of Emmock Roundabout	30,246	72,000	30,306	57.9%
7	A90 Kingsway West	43,552	72,000	43,598	39.4%
8	A972 Kingsway East	25,992	72,000	26,006	63.9%
9	Tealing Road	632	3,360	694	79.3%

Please note rounding errors can occur.

- 7.1.4 The results indicate there are no road capacity issues with the Proposed Development and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

7.2 Associated Development

- 7.2.1 The Proposed Development will overlap with the proposed Emmock Substation and Kintore to Tealing 400 kV OHL projects. The combined traffic generation in 2028 for these “Associated Development” projects is summarised below in **Table 7.3**.

Table 7.3: 2028 Combined Associated Development Traffic Flows

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road	240	254	494
2	Moatmill Road	120	127	247
3	Emmock Road	225	254	479
4	A90 Forfar	312	242	554
5	A90 south of Moatmill Road	327	248	575
6	A90 south of Emmock Roundabout	340	254	594
7	A90 Kingsway West	170	133	303
8	A972 Kingsway East	170	121	291
9	Tealing Road	120	120	240

Please note rounding errors can occur.

- 7.2.2 The Associated Development traffic was added to the future year (2028) traffic data along with that of the Proposed Development. A comparison was then made between this traffic and the Proposed Development flows to determine the percentage increase in traffic flows. The impact is detailed in **Table 7.4: Peak Associated Development and Combined Traffic Flow and Construction Traffic Percentage Impact**.

Table 7.4: Peak Associated Development & Combined Traffic Flow and Construction Traffic Percentage Impact (veh per day)

Site Ref.	Survey Location	Cars & LGV	HGV	Total	% Car & LGV Increase	% HGV Increase	% Total Traffic Increase
1	Emmock Road (Site Access)	1,001	292	1,293	3.1%	12.3%	5.0%
2	Moatmill Road	245	157	403	6.5%	11.3%	8.3%
3	Emmock Road	1,047	273	1,320	2.9%	6.2%	3.6%
4	A90 Forfar	20,645	5,549	26,194	0.0%	0.0%	0.0%
5	A90 south of Moatmill Road	20,121	3,727	23,848	0.1%	0.4%	0.1%
6	A90 south of Emmock Roundabout	27,226	3,674	30,900	0.1%	0.9%	0.2%
7	A90 Kingsway West	36,724	7,177	43,901	0.0%	0.4%	0.1%
8	A972 Kingsway East	22,927	3,370	26,297	0.1%	0.0%	0.1%
9	Tealing Road	626	308	934	5.0%	11.6%	7.1%

7.2.3 A review of road capacity has also been undertaken using the “The NESA Manual”. The results are summarised in **Table 7.5: Theoretical Capacity Review**.

Table 7.5: Peak Associated Development Scenario Theoretical Capacity Review

Site Ref.	Survey Location	2028 Baseline	Theoretical Capacity	2028 Base + Associated Development + Development Flows	Spare Capacity (%)
1	Emmock Road (Site Access)	737	3,360	1,293	61.5%
2	Moatmill Road	125	3,360	403	88.0%
3	Emmock Road	795	3,360	1,320	60.7%
4	A90 Forfar	25,638	81,600	26,194	67.9%
5	A90 south of Moatmill Road	23,241	81,600	23,848	70.8%
6	A90 south of Emmock Roundabout	30,246	72,000	30,900	57.1%
7	A90 Kingsway West	43,552	72,000	43,901	39.0%
8	A972 Kingsway East	25,992	72,000	26,297	63.5%
9	Tealing Road	632	3,360	934	72.2%

The assessment indicates that the Study Area road network has sufficient capacity to accommodate both the peak traffic associated with the Proposed Development, along with that of the Associated Developments of the Emmock Substation and Kintore to Tealing 400 kV OHL projects.

8. FRAMEWORK CONSTRUCTION TRAFFIC MANAGEMENT PLAN

8.1 Proposed Measures

8.1.1 The following measures would be implemented through a CTMP during the construction phase. The CTMP would be agreed with AC prior to construction works commencing:

- Where possible the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A Site worker transport and travel arrangement plan, including transport modes to and from the work site (including pick up and drop off times);
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the Site entrance points, depending on the views of AC;
- Appropriate traffic management measures would be put in place on Tealing Road and Emmock Road at the Site access points to avoid conflict with general traffic, subject to the agreement of AC. Typical measures would include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;
- A 40 mph speed limit is placed on the A90 northbound to improve safety for all road users in the vicinity of the Moatmill Road junction. In addition, no Right Turn (diagram 612) signs would be placed at the junction to ban construction traffic from crossing A90 traffic streams. Diversion signs at Emmock Roundabout would be provided;
- Provide construction updates on the project website and/or a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary speed limit of 20 mph for all construction vehicles travelling on the Tealing Road, Emmock Road and Moatmill Road;
- All drivers would be required to attend an induction to include:
 - A tool box talk safety briefing;
 - The need for appropriate care and speed control;
 - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations through the urban areas); and
 - Identification of the required access routes and the controls to ensure no departure from these routes.

AC may require an agreement to cover the cost of abnormal wear and tear on roads within the Study Area. Video footage of the pre-construction phase condition of the construction vehicle's route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with AC. Any damage caused by traffic associated with the Proposed Development, during the construction period that would be hazardous to public traffic, would be repaired immediately.

8.1.2 Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.

8.1.3 There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

8.2 Emmock Road Passing Areas

8.2.1 To improve access on Emmock Road, a series of passing places will be created as part of the Emmock Substation project.

- 8.2.2 The passing places will allow for a 6 m wide passing area to be provided and will feature a minimum of 7 m long tapers at either end. The locations of the laybys will be agreed with AC and secured via a suitably worded planning condition.
- 8.2.3 A layby is proposed at the Fithie Burn bridge to ensure safe access over this structure.
- 8.2.4 The proposed Site access junction on Emmock Road will feature road widening to allow traffic to pass in safety. The junction from the private track connecting Moatmill Road and Emmock Road (to the north of Craigowl Farm) will also be widened to allow passing traffic.

8.3 Public Information

- 8.3.1 The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.

8.4 Pedestrian Management

- 8.4.1 The Principal Contractor would ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the core path and at crossing points. Advisory speed limit signage would also be installed on approaches to areas where core path users may interact with construction traffic.
- 8.4.2 Signage would be installed on the Site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This would also be emphasised in weekly tool box talks.

9. SUMMARY & CONCLUSIONS

9.1.1 Pell Frischmann has been commissioned by LUC, on behalf of SSEN Transmission, to undertake a combined Transport Statement and CTMP for a proposed Tie-In project associated with Emmock Substation and the Kintore to Tealing 400 kV OHL projects.

9.1.2 The assessment has reviewed access to the Site and likely traffic generation associated with the construction phase. It is estimated that 62 daily trips would be associated with the Proposed Development at the peak of construction resulting in a maximum impact of 24.9% on Moatmill Road.

In addition, a review of the theoretical road capacity was undertaken for the Study Area which showed that with the addition of construction traffic associated with the Proposed Development, there was significant spare capacity within the road network. The effects of construction traffic are temporary in nature and are transitory.

9.1.3 A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction phase traffic flows. It is considered that these can be secured by condition with AC.

The Proposed Development will lead to a temporary increase in traffic volumes within the Study Area during the construction phase only, however this can be appropriately and effectively managed. It is therefore concluded that there are no transport related matters which would preclude the consenting and construction of the Proposed Development.