LT521 Bingally 400 / 132 kV Substation and Overhead Line Tie-in

Transport Statement

SSEN Transmission

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Quality information

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		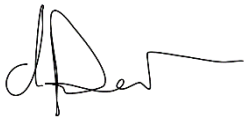	
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Revision History

Revision	Revision date	Details	Name	Position
1	18/10/24	Working Draft for SSEN Review	Ryan Blair	Project Manager
2	25/11/24	Draft 2 Responding to SSEN comments	Ryan Blair	Project Manager
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1. Introduction

1.1 Background

1.1.1 AECOM has been commissioned by Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to assist with the development of the proposed Bingally Substation and proposed Bingally overhead line (OHL) tie-in. These proposed developments form one of the elements of the projects required to be delivered as part of the Accelerated Strategic Transmission Investment (ASTI) project for the upgrade of the existing Beauly-Denny 275 kV circuit to 400 kV.

1.1.2 This Transport Statement (TS) accompanies the Bingally 400/132 kV Substation Voluntary Environmental Appraisal (EA) (AECOM, 2025) and Bingally 400 kV Overhead Line Tie-In Environmental Assessment (AECOM, 2025).

1.2 Site Location

1.2.1 The Site Location Plan is illustrated in **Figure 1-1** below. The proposed Bingally Substation and proposed Bingally OHL tie-in are located approximately 1.2 km east and 2.2 km south of Tomich, respectively. The nearest residential properties are located approximately 1 km from the proposed developments.

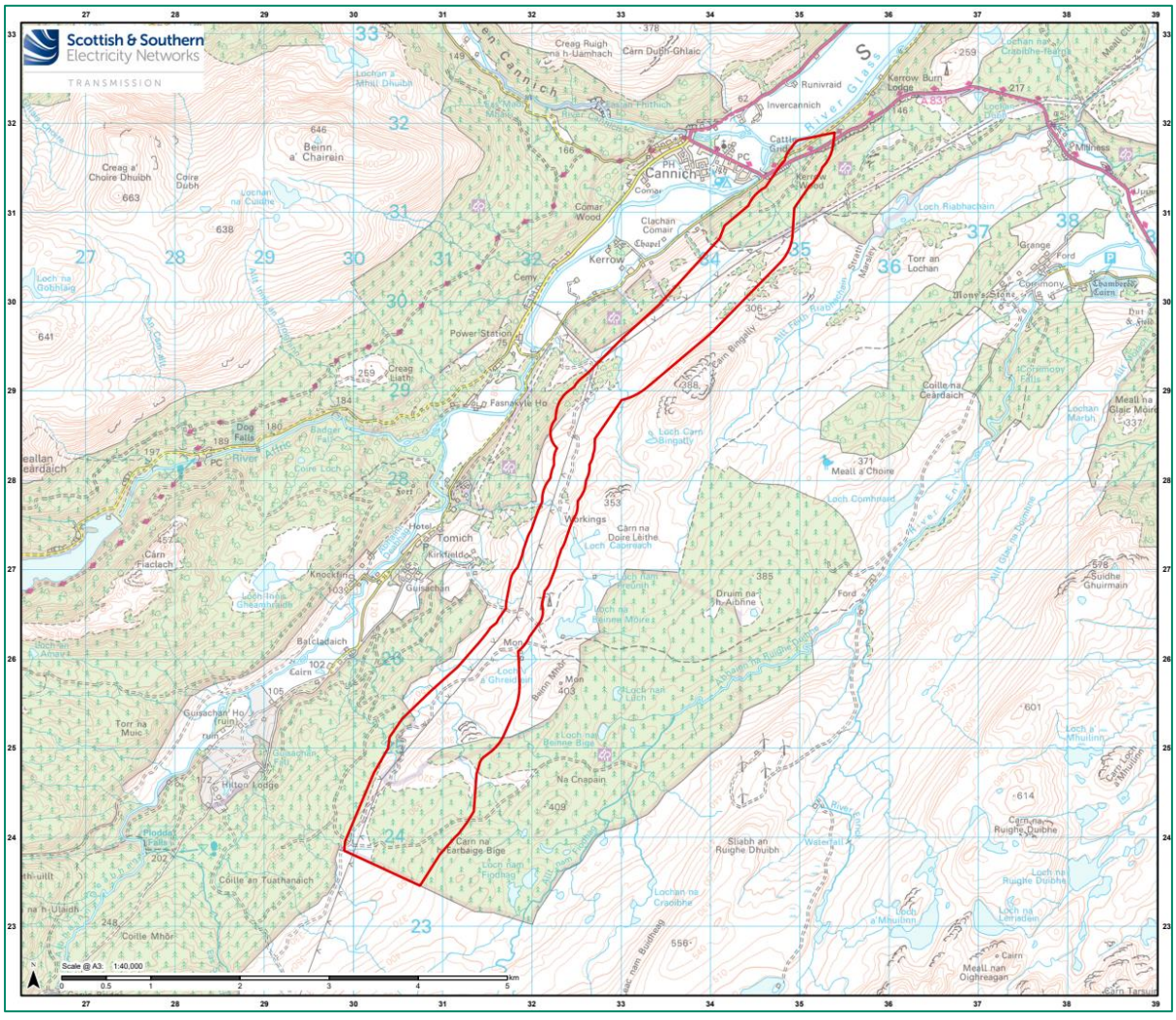

Figure 1-1 Site Location Plan

2. Legislative and Planning Policy Context

2.1 Introduction

2.1.1 In accordance with the development planning process, the proposed developments are required to comply with various national, regional and local transport planning policies. This section, therefore, incorporates a brief overview of the relevant policy and strategy documents and highlights how the proposed developments satisfy these policies. In addition to this, relevant aspects of specific transport guidance are also detailed.

2.2 National Transport Policy, Strategy and Guidance

Guidelines for the Environmental Assessment of Traffic and Movement (2023)

2.2.1 Guidelines for the Environmental Assessment of Road Traffic were originally published in 1993 by the Institute of Environmental Assessment and were updated in 2023 by the Institute of Environmental Management & Assessment (IEMA), now named the Environmental Assessment of Traffic and Movement. The scope of the guidelines covers the environmental impact of road traffic associated with development and provide a basis for the systematic and consistent appraisal of the environmental impacts of road traffic and provide the basis for this assessment.

National Transport Strategy (NTS2) (2020)

2.2.2 NTS2 sets out an ambitious and compelling vision for Scotland's transport system for the next 20 years. The vision is to have a sustainable, inclusive, safe, and accessible transport system, helping to deliver a healthier, fairer, and more prosperous Scotland for communities, businesses, and visitors.

- Four priorities support the vision:
- Reduce inequality;
- Take climate action;
- Help deliver inclusive economic growth; and
- Improve health and wellbeing.

2.2.3 This TS has been prepared in line with the objectives of NTS2. A Draft CTMP included within this appendix suggests measures which can be taken to reduce the impacts of construction traffic on local roads, aligning with the aims of the NTS2.

National Planning Framework 4 (2023)

2.2.4 The National Planning Framework 4 (NPF4) was adopted by the Scottish Ministers on 13 February 2023, following approval by the Scottish Parliament in January. This replaces National Planning Framework 3 (NPF3) 2014, Scottish Planning Policy (SPP) 2014 and Regional Plans.

2.2.5 The NPF4 sets out overarching spatial principles to support the planning and delivery of the three key National Planning Policy areas:

- Sustainable Places;
- Liveable Places; and
- Productive Places.

2.2.6 Tackling the climate and nature crises, through climate mitigation and adaptation, sits front and centre within the policies of the NPF4. Sustainable transport (Policy 13) plays a vital role in creating sustainable places and responding to the climate emergency. The proposed developments aim to enable sustainability by increasing resilience in the electricity network supporting all three key policy areas of NPF4.

Transport Assessment Guidance (2012)

2.2.7 Transport Assessment Guidance (TAG), produced by Transport Scotland in 2012, provides guidance and information as to the content, methodology and approach of Transport Assessments (TAs), TS and Travel Plans (TPs) produced in support of development sites. It details the importance of establishing the existing transport infrastructure and travel characteristics, as well as the development proposal itself, and the measures which will be included to improve infrastructure and services to encourage sustainable travel to the proposed developments.

2.2.8 This TS has been prepared in line with the methodology of TAG.

Planning Advice Note (PAN) 75 – Planning for Transport (2005)

2.2.9 Planning Advice Note (PAN) 75 – Planning for Transport is a planning circular produced by the Scottish Government which provides good practice on planning and transport. This includes guidance on integrating transport, transport modelling, policy development, development management, planning agreements and environmental assessment.

2.2.10 In terms of TAs and TS, it states in Paragraph 41 that "*all planning applications that involve the generation of person trips should provide information which covers the transport implications of the development."* It identifies that for smaller developments, "*the information on transport implications will enable local authorities to monitor potential cumulative impact*."

2.2.11 PAN 75 also provides guidance on the preparation of TPs. Paragraph 42 states that they are "*documents that set out a package of positive and complementary measures for the overall delivery of more sustainable travel patterns for a specific development*." For detailed planning applications, it identifies that the TP produced should "*incorporate a variety of measures and targets to encourage sustainable travel, such as Mode Share Targets, an implementation time scale and an agreed monitoring and review process*." A Framework Construction Traffic Management Plan has been incorporated within **Section 8** of this report.

2.2.12 This TS has been prepared in line with the methodology set out in PAN 75.

2.3 Regional Transport, Policy, Strategy and Guidance

2.3.1 The Transport (Scotland) Act 2005 placed a statutory duty on the seven Regional Transport Partnerships (RTPs) in Scotland to produce a Regional Transport Strategy (RTS) for their area. The RTS influences all the future plans and activities of the organisation and informs future national and local transport strategies. The Highlands are within the Highlands and Islands Transport Partnership (HITRANS) region.

HITRANS Regional Transport Strategy Refresh (2018)

2.3.2 HITRANS produced a Draft Updated Regional Transport Strategy in May 2017. This remains subject to approval by Scottish Ministers and therefore the RTS produced in 2008 is the currently adopted RTS for the region.

2.3.3 HITRANS' RTS 2008 provides a regional policy context for the proposed developments. It sets out a vision to "*enhance the region's viability*." To deliver the vision, the strategy notes that the critical issue of connectivity needs to be addressed and thus "*improving interconnectivity of the whole region to strategic services and destinations*" is included as a delivery objective. The planning objectives for the strategy are to:

- Enable the region to compete and to support growth;
- Enable the people of the region to participate in everyday life;
- Improve the safety and security of travel;
- Manage the impacts of travel on the region's environmental assets; and
- Improve the health of the region's people.

2.3.4 This TS has been prepared in line with the objectives of the RTS by examining the impact of the proposed developments on the environment in the region and assisting the region to compete and grow economically, supporting use of its natural renewable resources.

2.4 Local Transport Policy, Strategy and Guidance

Highland-Wide Local Development Plan

2.4.1 The Highland-Wide Local Development Plan (HwLDP) was adopted by THC in 2012 and sets out the Council's priorities and policies for the delivery of new development across the region. The vision for the HwLDP is that:

"By 2030, Highland will be one of Europe's leading regions. We will have created sustainable communities, balancing population growth, economic development and the safeguarding of the environment across the area and have built a fairer and healthier Highlands."

2.4.2 Policy 56 entitled 'travel' sets out the requirements that new developments should adhere to from a transportation perspective. This states that:

"*Development proposals that involve travel generation must include sufficient information with the application to enable the Council to consider any likely on- and off-site mitigation measures and should:*

- *be well served by the most sustainable modes of travel available in the locality from the outset, providing opportunity for modal shift from private car to more sustainable transport modes wherever possible, having regard to key desire lines;*
- *…ensure that opportunities for encouraging walking and cycling are maximised;*
- *be designed for the safety and convenience of all potential users;*
- *incorporate appropriate mitigation on site and / or off site, provided through developer contributions where necessary, which might include improvements and enhancements to the walking / cycling network and public transport services, road improvements and new roads; and*
- *incorporate an appropriate level of parking provision, having regard to the travel modes and services which will be available and key travel desire lines and to the maximum parking standards laid out in Scottish Planning Policy or those sets by the Council"*.

2.4.3 This TS has been prepared in line with the objectives of the HwLDP.

3. Baseline Transport Characteristics

3.1 Introduction

3.1.1 This section provides an overview of the characteristics of the sites at present as well as the baseline characteristics of the surrounding transport network.

3.2 Vehicular Conditions

3.2.1 Vehicular access to the proposed developments will be via the upgrade and extension of the existing track to accommodate construction traffic. The track is accessed from the public road network at an existing junction with the A831. Study area roads include the A831 and Main Street in Cannich.

3.2.2 The A831 routes past the site access track on an east to west alignment between the A82 at Drumnadrochit and Cannich. To the west of Cannich, the A831 then routes on a north to south alignment between Cannich and Beauly. It is a single carriageway road which is predominantly rural in nature. National speed limits apply to the A831 outside of the urban environs on its route, and a 40 mph speed limit applies through Cannich with a short 30 mph section at the A831/ Main Street junction.

3.2.3 Main Street routes north to south and is parallel to the River Glass providing access to the existing Fasnakyle Power Station. National speed limits apply to the route outside of urban environs on its route which is largely rural in nature.

3.3 Baseline Traffic Flows

3.3.1 Traffic surveys were undertaken at several locations on the local road network. The traffic surveys took the form of automatic traffic counts (ATC) and a junction turning count (JTC) which took place during the 7-day period between 6 June 2024 and 12 June 2024. ATCs were undertaken at seven locations and were recording data for a 7-day period while JTCs were undertaken at three locations and were undertaken on 6 June 2024 and were recording data between the hours of 07:00 – 10:00 and 14:00 – 19:00.

3.3.2 The locations of the traffic surveys are shown in **Appendix A Survey Locations** and are summarised below as follows:

- A831 – 4 Automatic Traffic Counter surveys and 1 junction turning count survey; and
- Main Street – 1 Automatic Traffic Counter survey.

3.3.3 The full output of the data collected and used in the Bingally 400/132 kV Substation Voluntary EA (AECOM, 2025) and Bingally 400 kV Overhead Line Tie-In EA (AECOM, 2025) are presented in **Appendix B Traffic Survey Data**. The results of the ATC surveys are summarised in **Table 3-1** below.

Table 3-1 Bingally ATC Data AADT

ATC	Location	Light Vehicles	Heavy Vehicles	Total Vehicles
ATC1	A831 Site Drumnadrochit to Site Access	634	2	636
ATC2	A831 Site Access - Cannich	645	2	647
ATC3	A831 Cannich Village	647	6	653
ATC4	A831 North of Cannich	413	5	418
ATC5	Main Street Cannich to Fasnakyle Power Station	695	4	699

Source: ATC Surveys

3.4 Traffic Growth Forecast

3.4.1 To provide an appropriate baseline against which to compare forecast construction traffic flows, it has been necessary to apply a growth factor to the 2024 traffic survey data to arrive at anticipated baseline flows during the forecast peak construction period in 2027.

3.4.2 To obtain this, the Trip End Model Presentation Program (TEMPro) version 8.1 has been used. The software uses National Trip End Model (NTEM) data to forecast the percentage increase in traffic flows between two years, in this case 2023 and 2027. Analysis of NTEM data can be made by:

- Geographical area;
- Transport mode;
- Travel time of day;
- Purpose of journey;
- Years of interest; and
- Type of trip.

3.4.3 For the proposed developments, the following details have been applied to obtain the growth factor:

- Dataset version – 80;
- Dataset scenario – Regional;
- Result type – Trip ends by time period;
- Base year – 2024;
- Future year – 2027;
- Trip Purpose Group – All purposes;
- Time Period – Weekday AM peak period;
- Trip End Type – Origin / Destination;
- Area Description – Highlands and Islands; and
- Mode – Car Driver.

3.4.4 The resulting output from the TEMpro calculations was that a growth factor of 1.0285 should be applied to 2024 data to achieve a baseline traffic flow level for 2027.

3.5 Core Paths

3.5.1 Within the study area, there are two core paths which interact with the study area. IN05.02 is a track which routes east-west and crosses the proposed Bingally Substation access track adjacent to Tomich. IN05.03 is a hillside track which passes through the proposed development sites and intersects the proposed Bingally Substation access track south of Tomich.

3.6 Accident History

3.6.1 The Crashmap database[2] has been reviewed to establish the historical accident record from the last five years on the road network adjacent to the sites. On study area roads in the vicinity of the sites this data shows 0 fatal, 0 serious, and 0 slight injury accidents were reported.

[2] Crashmap, 2024. *Crashmap* [online]. [Accessed 04 October 2024]. Available from: https://www.crashmap.co.uk/

4. Sensitivity of Receptors

4.1 Introduction

4.1.1 This section sets out the approach for determining the sensitivity of receptors on each road link assessed within the Bingally 400 / 132 kV Substation Voluntary EA (AECOM, 2025) and Bingally 400 kV Overhead Line Tie-In EA (AECOM, 2025).

4.2 Determining Sensitivity of Receptors

4.2.1 Receptors are locations or land-uses categorised by sensitivity or environmental value. **Table 4-1** describes the receptor sensitivity adopted for the assessment of traffic from the proposed developments.

Table 4-1 Sensitivity of Receptors

Receptor Sensitivity	Description
Very High	The receptor has little or no ability to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.
High	The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of international importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value or is of regional importance.
Low	The receptor is tolerant of change without detriment to its character, is low environmental value, or local importance.
Negligible	The receptor is resistant to change and is of little environmental value.

4.2.2 For the purposes of this assessment, the IEMA Guidelines identify receptors which are:

- People at home;
- People at work;
- Sensitive and / or vulnerable groups (including young age; older age; income; health status; social disadvantage; and access and geographic factors);
- Locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools);
- Retail areas;
- Recreational areas;
- Tourist attractions;
- Collision clusters and routes with road safety concerns; and
- Junctions and road links at, or over, capacity.

4.2.3 Each road link within the study area has been assessed against the criteria above. Professional engineering judgement has been used to assign a rating of Negligible, Low, Medium, High or Very High for each road link against each of the categories above. The overall sensitivity of receptors of the road link has then been determined by taking the most sensitive rating (e.g. if “People at home” is considered of ‘Very High’ sensitivity, this will be the overall rating for the link).

4.3 Results

4.3.1 The full assessment result of the assessment is shown in **Table 4-2** overleaf.

Table 4-2 Sensitivity of Receptors

Link	People at Home	People at Work	Sensitive and / or vulnerable Groups	Locations with concentrations of vulnerable users	Retail Areas	Recreational Areas	Tourist Attractions	Collision Clusters and routes with road safety concerns	Junctions and road links at, or over, capacity	Overall Rating
A831 Site Drumnadrochit to Site Access	Medium	Negligible	Medium	Medium	Medium	Medium	Medium	Negligible	Negligible	**Medium**
A831 Site Access - Cannich	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	**Negligible**
A831 Cannich Village	Medium	Medium	Low	Medium	Low	Medium	Medium	Negligible	Negligible	**Medium**
A831 North of Cannich	Low	Negligible	Negligible	Negligible	Negligible	Low	Negligible	Negligible	Negligible	**Low**
Main Street Cannich to Fasnakyle Power Station	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Negligible	Negligible	**Medium**

5. Proposed Development

5.1 Introduction

5.1.1 This section presents further detail of the proposed developments including proposed access arrangements and car parking facilities.

5.2 Proposed Developments

5.2.1 The proposed developments are two separate elements:

- Proposed Bingally Substation; and
- Proposed Bingally OHL tie-in.

5.2.2 SSEN Transmission is proposing to upgrade the existing Beauly-Denny 275 kV circuit to 400 kV to mirror the ratings of the existing 400 kV circuit which runs along the route.

5.2.3 The proposed Bingally Substation will comprise of a new 400 / 132 kV outdoor Air Insulated Switchgear (AIS) substation. It will also comprise of the following elements:

- Substation platform of approximately 376 m (length) x 271 m (width) with associated earthworks;
- Two 400 / 132 kV Super Grid Transformers (SGTs), two 400 kV future bays, four 132 kV future bays, a new 400 / 132 kV double busbar and ancillary equipment;
- A new control building with dimensions 48 m (width) x 24 m (length) x 7 m (height);
- Establishment of approximately 9.5 km of access track, comprising upgrade of approximately 6.1 km of existing track and approximately 3.4 km of new track; and,
- Permanent drainage systems.

5.2.4 The proposed Bingally OHL tie in development consists of:

- Two new permanent towers (Tower 79R and Tower 78R) up to a maximum height above ground level of approximately 64 m located along the existing Beauly-Denny OHL to make the connection into and out of the proposed Bingally Substation, along the north / northwestern boundary;
- Tower 78R will be the terminal tower with downleads connecting to two overhead line gantries within the proposed Bingally Substation. These gantries will sit at 337 m above ordnance datum (AOD), each between 12 and 14 m in height above the finished proposed Bingally Substation level;
- Short term temporary OHL diversions during construction comprising two temporary towers (Tower 79T and Tower 78T) up to a maximum height above ground level of approximately 61 m;
- Temporary works areas including an 80 x 80 m tower laydown for tension towers and 60 x 60 m tower laydown for suspension towers at permanent and temporary tower positions;
- Temporary and permanent access track spurs (branching off the proposed Bingally Substation access track) to facilitate the construction and maintenance of the OHL; and
- Following connection to the proposed Bingally Substation, dismantling of the two redundant temporary towers (Tower 79T and Tower 78T).

5.3 Site Access Arrangements

5.3.1 The proposed Bingally Substation access track, from the A831 would be constructed to provide access to the proposed substation site. The proposed Bingally Substation access track would be permanent. This access track would utilise existing access track installed during the construction of the Beauly-Denny OHL (approximately 9.5 km), with the addition of an off-line section where the original Beauly-Denny OHL track was previously reinstated. The existing access track would require necessary earthworks to allow for the transports of abnormal loads and construction vehicle access.

5.3.2 Temporary access tracks would be established around the proposed Bingally Substation to allow for the movement of construction workers, plant, equipment and materials between the proposed substation site and the temporary construction compounds.

5.4 Car Parking

5.4.1 Car parking at each of the proposed developments will be provided within the proposed Temporary Compound 5 which will contain 188 car parking spaces. Temporary Compound 5 will be constructed during the first 6 months of the construction programme allowing staff to park there for the duration of construction.

5.5 Operational Hours

5.5.1 Once operational, the sites will be in use 24 hours per day, however due to it being an unmanned site, it will not require regular staff attendance. Occasional vehicular traffic will be generated to perform regular maintenance, however this is not anticipated to have a material impact on the local road network.

6. Forecast Travel Demand and Traffic Impacts

6.1 Introduction

6.1.1 This section provides an overview of the anticipated travel demands to and from the proposed developments during construction. Given that operational traffic to and from the sites is anticipated to be negligible this section focuses on expected travel demand during the construction phase.

6.2 Construction Programme

6.2.1 The construction period is expected to last approximately 54 months, beginning in September 2025. The construction of the proposed Bingally Substation is expected to last 56 months between September 2025 and April 2030 while the proposed Bingally OHL construction is expected to last 34 months between September 2026 and June 2029. The peak month for construction is predicted to be September 2027 from the construction programme provided by SSEN Transmission. Details of the construction programme and the anticipated generation of construction vehicles throughout the construction period is included in **Appendix C Construction Traffic Programme.**

6.3 Construction Traffic

6.3.1 SSEN Transmission has provided details of the level of construction traffic that would be anticipated for the proposed developments. The vehicular generation to complete construction of the proposed developments is given in **Table 6-1** below. Data for the peak month of construction has been provided to highlight the worst-case period during construction.

Table 6-1 Proposed developments average daily two-way trip generation during peak month of construction

Construction Traffic	Proposed Substation		OHL Tie-ins	
	Cars / LGV	HGV	Cars/ LGV	HGV
Total daily two-way traffic (arrivals plus departures)	604	226	47	4

6.3.2 As shown in **Table 6-1** above, the proposed developments are expected to generate a maximum 1,128 daily two-way vehicle trips during the peak construction month of the proposed Bingally Substation. Of these trips, 604 are expected to be cars and LGVs with the remaining 226 trips coming from HGVs.

6.3.3 There may be a requirement for abnormal loads to be used for the delivery of plant and equipment to the proposed development sites. This is likely to be in the region of two deliveries through the whole construction period. Measures on how these will be delivered, will be set out in the Construction Traffic Management Plan (CTMP) by the contractor once appointed and agreed with the road authorities in advance.

6.4 Traffic Impacts

6.4.1 The construction period is anticipated to last approximately 56 months. The peak period of traffic generation for the proposed developments is predicted to be September 2027 during the construction of the proposed Bingally Substation with **Table 6-1** above presenting the anticipated daily traffic generation during this month.

6.4.2 The proposed construction traffic route uses the A831 between the A82 at Drumnadrochit and the proposed Bingally Substation access track. The proposed Bingally Substation access track would consist of an 8 km track to be used exclusively for construction traffic for the proposed developments. It will connect to the A831 via an existing junction. It is proposed that HGV construction traffic will arrive at site from the east and leave to the east. It will therefore bypass the villages of Cannich and Tomich. However, it is possible that car and LGV traffic may use the A831 west of the proposed Bingally Substation access track and it has therefore been assumed to be present on all study area roads.

6.4.3 **Table 6-2** below represents an assessment on the traffic impacts on each road link surveyed during the peak construction phase of the proposed developments. The table below considers the proposed Bingally Substation as this has higher construction traffic forecast compared to the proposed Bingally OHL tie-in as demonstrated in **Table 6-1**. This therefore represents a worst-case scenario.

Table 6-2 Traffic impact during the peak construction period of the Proposed development

Location	2027 Baseline		proposed Bingally Substation		% Total Traffic Increase	% HGV Traffic Increase
	Total	HGV	Total	HGV		
A831 Site Drumnadrochit to Site Access	654	2	604	226	92%	10,987%
A831 Site Access - Cannich	665	2	378	0	57%	0%
A831 Cannich Village	672	6	378	0	56%	0%
A831 North of Cannich	430	5	378	0	88%	0%
Main Street Cannich to Fasnakyle Power Station	719	4	378	0	53%	0%

Source: SSEN

6.4.4 As shown in **Table 6-2** above, the period of estimated peak construction traffic would result in increases in total traffic of between 53% and 92% on the local road network.

7. Fear and Intimidation

7.1 Introduction

1.1 This section sets out the process by which the Fear and Intimidation on and by Road Users assessment was undertaken for the proposed Bingally Substation and proposed Bingally OHL tie-in. This assessment has been undertaken in line with guidance set out in IEMA Guidelines 2023.

7.2 Methodology

7.2.1 IEMA Guidelines 2023 states that fear and intimidation on a given road link is dependent on:

- The total volume of traffic;
- The heavy vehicle composition;
- The speed of vehicles; and
- The proximity of traffic to people.

7.2.2 A weighting system is set out in IEMA Guidelines 2023 to allow assessors to determine the likelihood of fear and intimidation given the characteristics set out above. This is achieved by determining a 'degree of hazard' which allows a score to be provided for each road link within the study area and a resulting 'magnitude of impact' to be determined.

7.2.3 A degree of hazard score for each of total volume of traffic, heavy vehicle flow and average vehicle speed is determined using Table 3.1 in the IEMA Guidelines 2023, replicated below as **Table 7-1**.

Table 7-1 Fear and Intimidation Degree of Hazard Scoring

Average Traffic Flow over 18-hour day – all vehicles/hour 2-way (a)	Total 18-hour heavy vehicle flow (b)	Average vehicle speed (c)	Degree of hazard score
+1,800	+3,000	>40	30
1,200–1,800	2,000–3,000	30-40	20
600–1,200	1,000-2,000	20-30	10
<600	<1,000	<20	0

Source: Table 3.1 IEMA Guidelines 2023

7.2.4 The total degree of hazard score from all three elements (total volume of traffic, heavy vehicle flow and average vehicle speed) is combined to provide a level of fear and intimidation. Table 3.2 in IEMA Guidelines 2023 provides the thresholds that should be used to determine this and this is replicated as **Table 7-2** below.

Table 7-2 Levels of Fear and Intimidation

Level of Fear and Intimidation	Total Degree of Hazard Score (a)+(b)+(c)
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

Source: Table 3.2 IEMA Guidelines 2023

7.2.5 The magnitude of change for fear and intimidation for a proposed development is then approximated with reference to the changes in the level of fear and intimidation from baseline conditions. Table 3.3 from the IEMA Guidelines is used to determine the magnitude of change from a given change in level of fear and intimidation. This table is replicated below as **Table 7-3**.

Table 7-3 Fear and Intimidation - Magnitude of Change

Magnitude of Change	Change in Fear and Intimidation Level from Baseline Conditions
High	Two step changes in Fear and Intimidation Level
Medium	One step change in Fear and Intimidation Level, but with: • >400 vehicle increase in average 18hr AV two-way all vehicle flow; and / or • >500 HV increase in total 18hr HV flow
Low	One step change in Fear and Intimidation Level, but with: • <400 vehicle increase in average 18hr AV two-way all vehicle flow; and / or • <500 HV increase in total 18hr HV flow
Negligible	No step change in Fear and Intimidation Level

Source: Table 3.3 IEMA Guidelines 2023

7.3 Results

7.3.1 The results of the fear and intimidation assessment for the proposed development are included in **Appendix D Fear and Intimidation** and are summarised in **Table 7-4** below.

Table 7-4 Fear and Intimidation Magnitude of Change Assessment Summary

Road Link	Magnitude of Change	
	Proposed developments	Cumulative Development
A831 Site Drumnadrochit to Site Access	Negligible	Negligible
A831 Site Access - Cannich	Negligible	Negligible
A831 Cannich Village	Negligible	Negligible
A831 North of Cannich	Negligible	Negligible
Main Street Cannich to Fasnakyle Power Station	Negligible	Negligible

8. Draft Construction Traffic Management Plan

8.1 Purpose

8.1.1 The purpose of this Draft CTMP is to provide a framework from which a finalised CTMP can be developed post-consent. This framework outlines the measures which could be used during the construction of the proposed developments to mitigate transport-related impacts. Access to the proposed developments by HGVs and construction plant vehicles would be planned, managed and executed by the Principal Contractor to ensure the safety and reliability of deliveries to site, reduce congestion on the local road network and minimise the environmental impact.

8.2 CTMP Development

8.2.1 The opportunity to develop, amend and enhance the finalised CTMP in response to comments received on this framework document and through the planning and consultation process should be recognised.

8.2.2 The CTMP will consider feedback from residents and community groups and be developed in consultation with THC to establish appropriate methods in which the impact of traffic related to the proposed developments construction can be minimised.

8.2.3 This document would be updated as necessary with input from THC following feedback from their consultation and planning process.

8.3 Hours of Work

8.3.1 Working hours for construction activities related to the proposed developments would be agreed with THC, but are anticipated to be:

- 07:00 to 19:00 Monday to Friday;
- Saturday 07:00 to 13:00;
- No construction should be carried out on Sundays or bank holidays unless in exceptional circumstances; and
- Any work which is required or intended to take place outside of these hours, except for emergency situations, would be subject to prior agreement or reasonable notice to THC.

8.4 Site Access

8.4.1 The site access would be secured by hoarded gates and during working hours would remain under control of an appointed person who would physically control entry to the sites. Traffic entering or exiting the sites would give way to road traffic on the public road network. Vehicles would leave and access the sites via the existing site access junction and site traffic would be managed so that no vehicles would be required to stop on the public road itself when accessing the sites.

8.4.2 Construction traffic warning signs will be located and maintained throughout the duration of construction works. These would be situated at agreed locations to warn road users of construction route access junctions, and to warn of construction traffic turning to and from public roads. Away from public roads appropriate warning signs would be located along access tracks used by construction vehicles to identify construction routes to persons exercising their access rights in accordance with the Land Reform (Scotland) Act 2003. The Scottish Outdoor Access Code 2005 stipulates that access rights do not apply to building, civil engineering or demolition sites, and so measures can be put in place to restrict access to the construction site. Temporary diversion of core paths and signage warning the public that construction traffic will be present on these routes will be implemented. Particularly at locations where members of the public exercising their access rights may be more likely to appear, such as core paths or routes that join or cross the construction traffic route. Toolbox talks will ensure construction vehicle drivers behave appropriately should they encounter members of the public exercising access rights. Driving behaviours will be mandated that provide and maintain road safety for all traffic, including the safety of pedestrian and cycle traffic in the environs of construction traffic routes.

8.5 Construction Traffic Routing

8.5.1 It will be a key responsibility of the Principal Contractor to ensure that each sub-contractor is aware of the route restrictions prior to any works taking place and to enforce the restrictions stated in the proposed developments' CTMP.

8.5.2 The site access gates will be manned and controlled during normal site working hours and any vehicle arriving on site will be guided to the required location for loading or unloading.

8.5.3 The Principal Contractor would also be responsible for mitigating, where possible, the cumulative impacts of other construction projects in the area through careful consideration of routing and access timings.

8.5.4 Likely routes that HGV construction traffic will follow will be:

- A82; and
- A831.

8.5.5 It is considered that each of these routes can accommodate the additional construction traffic required for the proposed developments. Staff will make their own way via a variety of routes depending on their home location but the impact of staff journeys on the local road network is expected to be negligible.

8.6 Deliveries

8.6.1 Disruption imposed on other road users would be minimised due to the scheduling of deliveries and material removal. Where possible, HGV deliveries will be scheduled outside of peak hours on public roads to minimise potential delay on local roads.

8.6.2 Construction materials that are delivered will be stored on-site.

8.7 Enforcement

8.7.1 All contractors would be required to adhere to the CTMP. Compliance will be monitored by the SSEN Transmission/Principle Contractor's site representative via spot checks to ensure that vehicles follow the measures set out in the CTMP.

8.8 Speed Limit

8.8.1 The applicant would ensure that all site traffic abides by local speed limits to maintain the safety of other road users and pedestrians. A site speed limit of 5 mph would be established and enforced throughout the duration of construction works to provide a safe environment for site workers and any pedestrians which pass the proposed developments.

8.8.2 Signage would be in place prior to any works taking place which will advise of any permanent speed limits which are in force and all site workers or haulage sub-contractors would be made aware of the speed requirements as part of their site induction and via regular toolbox talks.

8.9 Summary

8.9.1 This section discusses the potential traffic management arrangements during construction at the sites and provides an assessment of the impacts on the sites during this period.

8.9.2 The hours of work at the site are expected to be 07:00 – 19:00 from Monday to Friday and 07:00 – 13:00 on Saturdays with no work taking place on Sundays and bank holidays.

8.9.3 The site access would be secured by hoarded gates and during working hours would remain under control of an appointed person who would physically control entry to site. Traffic entering or exiting the site would give way to road traffic on the public road network. No construction vehicles would be required to stop on the public road.

8.9.4 It is anticipated that the likely routes of construction traffic would be via the A82, A831 and proposed Bingally Substation access track. It shall be the responsibility of the Principal Contractor to assess these routes for restrictions and mitigate any cumulative impacts of construction traffic.

8.9.5 All construction materials to be stored and secured on site.

8.9.6 All traffic will abide by local speed limits with a 5 mph speed limit enforced within the sites.

9. Cumulative Development

9.1 Introduction

9.1.1 This section sets out the process by which cumulative development traffic was incorporated into the Traffic and Transport assessment in the Bingally 400 / 132 kV Substation Voluntary EA (AECOM, 2025) and Bingally 400 kV Overhead Line Tie-In EA (AECOM, 2025).

9.2 Cumulative Effects

9.2.1 The effects of the proposed developments have been assessed in combination with other projects that have been identified in the vicinity. Three developments have been identified, located adjacent to the substation.

9.2.2 **Table 9-1** lists the details of the developments included in the cumulative assessment.

Table 9-1 Cumulative Developments

Reference	Description	Details
24/01648/SCRE	Proposed Bingally 400/132kV substation	400 kV Substation Comprising New Buildings, Platform, Plant And Machinery, Access, Laydown/Work Compound Area(S), Drainage, Landscaping, And Other Ancillary Works (National Development)
ECU00005145 Bingally OHL	Proposed Bingally 400kv OHL	The installation of two new towers (including a temporary diversion requiring two temporary towers) to facilitate the tie-in of the existing Beauly-Denny overhead line into the proposed Bingally 400/132 kV substation
ECU00001969	Fiodhag Wind Farm	Construction of wind farm comprising of 46 turbines (height to blade tip 149.9 m).
23/04100/FUL	Fasnakyle Energy Storage	Erection and operation of a BESS and associated infrastructure
23/01025/SCRE	Kerrow Farm BESS	Erection and operation of a BESS, multiple containerised storage units, associated infrastructure, control building, switch room, lights and associated works
No Ref	Bingally to Fasnakyle UGC / OHL connection	The installation of an UGC / OHL to connect the proposed Bingally substation to the existing Fasnakyle Substation.
No Ref	Tomchrasky Wind Farm OHL connection	The installation of an OHL connection from Tomchrasky Wind Farm to the proposed Bingally substation.
ECU00004704	Chrathaich Wind Farm	Erection and operation of a wind farm for a period of 30 years, comprising of 14 wind turbines with a maximum blade tip height of 149.9m, access tracks, borrow pits, substation, control building, and ancillary infrastructure
ECU00004569	Erection of OHL	Erection of small two span spur and free standing pole for communications mast on the 33 kVA OHL by Benevean Dam, Tomich
ECU00005214	Cnoc Farasd Wind Farm	A wind farm consisting of 9 turbines up to 220m tip height, battery storage and associated infrastructure.

9.3 Assumptions

9.3.1 The cumulative assessment considers the proposed Bingally Substation, proposed Bingally OHL tie-in and the other cumulative development identified above. The Bingally Substation and OHL tie-in developments will use the same proposed Bingally access track from the A831 and the same study area road network.

9.3.2 Forecast construction data has been obtained from the applicant for both the proposed Bingally Substation and proposed Bingally OHL tie-in. The peak period for traffic from the proposed developments is September 2027.

9.3.3 A cumulative assessment including the developments listed in the Bingally 400 /132 kV Substation Voluntary EA (AECOM, 2025) and Bingally 400 kV Overhead Line Tie-In EA (AECOM, 2025) has been undertaken. A review of these applications shows that many are at Scoping / Screening stage and do not have construction traffic forecasts available. Knowledge of similar projects has been used to make a forecast of construction traffic for each cumulative development site. For the purposes of the cumulative assessment, cumulative development site traffic is also assumed to occur in September 2027.

9.4 Construction Traffic Data

9.4.1 **Table 9-2** shows the cumulative development construction traffic forecasts used for each development and how they have been applied to study area roads.

9.4.2 **Table 9-2** shows that two cumulative developments are forecast to generate no traffic on study area roads: the proposed Bingally OHL development and Tomchrasky Wind Farm OHL Development.

9.4.3 September 2027 was selected as the period of peak construction traffic generation by combining the construction traffic forecasts for the proposed Bingally Substation and proposed Bingally OHL. However, the construction traffic forecast provided by the applicant shows that the proposed Bingally OHL development is not generating any construction traffic during September 2027. September 2027 remains the period of cumulative assessment due to the weight of Bingally Substation traffic during this month.

9.4.4 The Tomchrasky Wind Farm OHL development is located south of the Proposed Development sites. It has been judged that the roads likely to be used by construction traffic for the Tomchrasky Wind Farm OHL would be the A87 and A887 rather than the A831 and therefore is not anticipated to use the same study area roads as the Proposed Development. No construction traffic associated with the Tomchrasky Wind Farm therefore appears on study area roads.

Table 9-2 Distribution of Cumulative Development Traffic

	Daily Construction Traffic Forecast	Study Area Roads				
Development	**HGV Total**	**A831 Drumnadrochit to Site Access**	**A831 Site Access to Cannich**	**A831 Cannich Village**	**A831 North of Cannich**	**Main Street Cannich to Fasnakyle Power Station**
Bingally OHL	HGV	0	0	0	0	0
	Car / LGV	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**
Proposed Development BESS (23/01025/SCRE)	HGV	226	0	0	0	0
	Car / LGV	378	378	378	378	378
	Total	**604**	**378**	**378**	**378**	**378**
Bingally to Fasnakyle UGC / OHL connection	HGV	4	4	4	0	4
	Car / LGV	47	47	47	47	47
	Total	**51**	**51**	**51**	**47**	**51**
Tomchrasky Wind Farm OHL Connection	HGV	0	0	0	0	0
	Car / LGV	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**
Fiodhag Wind Farm	HGV	162	0	0	0	0
	Car / LGV	60	60	60	60	60
	Total	**222**	**60**	**60**	**60**	**60**
Fasnakyle Energy Storage (23/04100/FUL)	HGV	18	18	18	0	18
	Car / LGV	30	30	30	30	30
	Total	**48**	**48**	**48**	**30**	**48**
	HGV	18	18	18	0	18

Development	Daily Construction Traffic Forecast	Study Area Roads				
	HGV Total	A831 Drumnadrochit to Site Access	A831 Site Access to Cannich	A831 Cannich Village	A831 North of Cannich	Main Street Cannich to Fasnakyle Power Station
Kerrow Farm BESS (23/01025/SCRE)	Car / LGV	30	30	30	30	30
	Total	**48**	**48**	**48**	**30**	**48**
Chrathaich Wind Farm	HGV	70	0	0	0	0
	Car / LGV	24	24	24	24	24
	Total	**94**	**24**	**24**	**24**	**24**
Erection of OHL	HGV	2	2	2	0	2
	Car / LGV	23	23	23	23	23
	Total	**25**	**25**	**25**	**23**	**25**
Cnoc Farasd Wind Farm	HGV	70	0	0	0	0
	Car / LGV	24	24	24	24	24
	Total	**94**	**24**	**24**	**24**	**24**
Total	**HGV**	**574**	**42**	**42**	**0**	**42**
	Car / LGV	**663**	**663**	**663**	**663**	**663**
	Total	**1237**	**705**	**705**	**663**	**705**

9.5 Results

9.5.1 **Table 9-3** below shows the anticipated impact that cumulative development would have on study area roads.

Table 9-3 Traffic Impact of cumulative development

Location	2027 Baseline		Cumulative Development		% Total Traffic Increase	% HGV Traffic Increase
	Total	HGV	Total	HGV		
A831 Site Drumnadrochit to Site Access	654	2	1,237	574	181%	27,710%
A831 Site Access - Cannich	665	2	705	42	99%	2,042%
A831 Cannich Village	672	6	705	42	98%	681%
A831 North of Cannich	430	5	663	0	143%	0%
Main Street Cannich to Fasnakyle Power Station	719	4	705	42	92%	1,021%

10. Summary

10.1.1 AECOM has been commissioned by SSEN Transmission, to assist with the development of the proposed Bingally Substation and proposed Bingally OHL tie-in. These proposed developments form one of the elements of the projects required to be delivered as part of the ASTI project for the upgrade of the existing Beauly-Denny 275 kV circuit to 400 kV.

10.1.2 This technical appendix accompanies the Bingally 400 / 132 kV Substation Voluntary EA (AECOM, 2025) and Bingally 400 kV Overhead Line Tie-In EA (AECOM, 2025).

10.1.3 The proposed developments will comprise of the following:

- Proposed Bingally Substation; and
- Proposed Bingally OHL tie-in.

10.1.4 Access to the proposed developments will be via the proposed Bingally Substation access track. The construction traffic route is proposed to be A82, A831 and upgraded access track.

10.1.5 Baseline conditions on the local transport network have been assessed in terms of the existing infrastructure and the sensitivity of receptors.

10.1.6 The period of estimated peak construction traffic would result in anticipated increases in total traffic of between 122% and 203%.

10.1.7 A cumulative assessment was undertaken, considering three other developments in close proximity of the proposed Bingally Substation and proposed Bingally OHL tie-in. The worst-case anticipated impact is between 150% and 242% increases in total traffic on the local road network.

Appendix A Survey Locations

Appendix B Traffic Survey Data

Appendix C Construction Traffic Programme

Appendix D Fear and Intimidation