

**Spittal to Loch Buidhe to Beaully 400 kV
OHL Connection
Environmental Impact Assessment
Volume 5 | Technical Appendix**

**Appendix 14.6 | Transport
Assessment**

July 2025



VOLUME 5: APPENDIX 14.6 – TRANSPORT ASSESSMENT

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1. INTRODUCTION

1.1 Background

- 1.1.1 This Transport Assessment (TA) has been prepared by Environmental Resources Management (ERM) Limited on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission) (the Applicant) to accompany the application in relation to the proposed Spittal to Loch Buidhe to Beauly 400 kV Overhead Line (OHL) Connection (hereafter referred to as 'the Proposed Development') on land which extends for approximately 173 km to connect into new substation sites at Banniskirk, Carnaig and Fanellan (hereafter referred to as the 'Site').
- 1.1.2 ERM has prepared a Traffic and Transport Chapter as part of this Environmental Impact Assessment (EIA) Report (**Volume 2, Chapter 14: Traffic and Transport**) for the Proposed Development in accordance with the Guidelines for the Environmental Assessment of Traffic and Movement (Institute of Environmental Management and Assessment (IEMA), 2023)¹. The Highland Council (THC) notes that these guidelines do not cover the requirement to assess the existing local public road networks condition and capability to physically and safely accommodate the predicted traffic impacts, whilst remaining safe for other road users. Therefore, THC has requested the submission of a separate TA to identify all of THC's maintained roads that will likely be affected and provide a more technical evaluation than that presented in this EIA.
- 1.1.3 It should be noted that in some areas, public road improvement (PRI) works would be required to facilitate construction traffic. These are largely expected to be undertaken under permitted development rights but an initial environment appraisal has been completed in **Volume 5, Appendix 3.7: PRI Environmental Appraisal**.
- 1.1.4 During the operational phase, transport movements associated with the Proposed Development will be minimal and largely limited to periodic maintenance of the OHL infrastructure. As such, this assessment focuses solely on the potential impacts of construction traffic on the local transport network and, where appropriate, identifies mitigation measures required to accommodate the anticipated traffic volumes. It should be noted however that the final access routes, which includes unclassified roads, are yet to be finalised at the time of drafting this report. Therefore, this TA will be updated post consent to include the final access routes and will also include further detailed design of proposed mitigation measures.
- 1.1.5 This TA should be read in conjunction with the following documents:
- **Volume 2, Chapter 14: Traffic and Transport;** and
 - **Volume 5, Appendix 14.5: Outline Construction Traffic Management Plan.**
- 1.1.6 This TA has also considered the feedback received as part of the EIA Scoping Opinion received from the Energy Consents Unit (ECU) in January 2025, full details of which are set out in **Volume 2, Chapter 14: Traffic and Transport**.

1.2 Report Structure

- 1.2.1 Following this introductory section, the TA is structured as follows:
- Section 2 reviews the relevant transport and planning policies used to inform the TA;
 - Section 3 contains a review of the existing Site and baseline transport conditions;
 - Section 4 sets out the trip generation and the distribution of traffic in the Study Area;

¹ Institute of Environmental Assessment – Guidelines for the Environmental Assessment of Traffic and Movement (2023)

- Section 5 considers the traffic impact assessment of the Proposed Development;
- Section 6 contains measures to minimise the impact the Proposed Development; and
- Section 7 summarises the findings of the TA and outlines the key conclusions.

2. LEGISLATION, POLICY AND GUIDANCE

2.1.1 A summary of the legislation, policy and guidance considered during preparation of this TA is provided in **Table 2.1**.

Table 2.1: Legislation, Policy and Guidance

Policy or Author	Title	Policy Description	Notes
The Scottish Government	National Planning Framework 4 (NPF4) (2023) ²	<p>This provides a statement of the Scottish Government's policy on nationally important land use planning matters. In relation to Energy, Policy 11 notes that <i>"Development proposals for all forms of renewable, low carbon and zero emission technologies will be supported"</i>. In addition, the NPF4 highlights that project design and mitigation should demonstrate how impacts on road traffic and trunk roads during construction will be addressed as well as cumulative impacts.</p> <p>In terms of new developments, the NPF4 highlights the importance of considering the impact on the surrounding transport network, such as within Policy 13: <i>"Where a development proposal will generate a significant increase in the number of person trips, a transport assessment/statement will be required to be undertaken in accordance with the relevant guidance"</i>.</p>	This report has considered the impact of traffic on the surrounding road network and proposed mitigation measures to minimise any adverse impact of the surround road network.
Transport Scotland	Transport Assessment Guidance (2012) ³	Sets out the methodology for preparation of a Transport Assessment.	Transport Assessments are normally associated with developments which are expected to cause a long term, or permanent, change in traffic flow or composition. It is therefore of limited relevance for this Proposed Development, where the principal traffic effects will be short term and associated with construction.

² The Scottish Government (2023) National Planning Framework 4 [Online] Available at: National Planning Framework 4 (www.gov.scot) (Accessed 11/04/2025)

³ Transport Scotland (2012), Transport Assessment Guidance [Online] Available at: https://www.transport.gov.scot/media/4591/planning_reform_-_dpmtag_-_development_management_dpmtag_ref_17_-_transport_assessment_guidance_final_-_june_2012_1.pdf [Accessed:29/05/2025]

Policy or Author	Title	Policy Description	Notes
THC	Guidelines for Transport Assessments (2014) ⁴	<p>Outlines the process and requirements for conducting Transport Assessments for developments that may significantly impact the local transport infrastructure. The guidance is designed to ensure that the new development is compatible with the existing transport system and addresses the potential challenges (i.e. increased traffic and safety concerns).</p> <p>The guidance notes that while a TA is normally concerned with the transport impacts of development during the operational phase, in the case of renewable energy projects the major impacts are during construction and full consideration should be given to the impact of construction traffic.</p>	This report has considered the impact of traffic on the surrounding road network and proposed mitigation measures to minimise any adverse impact of the surround road network.
THC	Roads and Transport Guidelines for New Developments (2013) ⁵	<p>Sets out the guidance and standards for the provision of transport infrastructure, including the design and construction of all new roads, associated with development proposals, within The Highland Council region.</p> <p>In relation to renewables projects where impacts arising from construction traffic can be significant, it is noted that development construction traffic and the movement of associated abnormal loads can lead to potential damage to existing public roads. As a result, planning consent for a new development that is likely to generate significant volumes of construction traffic and/or abnormal loads, such as wind farms or very large developments, will usually require the developer to enter into a "Wear and Tear" Agreement with the Council to cover costs of any damage caused by the</p>	<p>This report in conjunction with Volume 2, Chapter 14: Traffic and Transport has set out the study area, current traffic conditions, trip generation, impacts, cumulative effects, and mitigation measures.</p> <p>In terms of details of structural assessment of carriageway, passing places assessment, bridges culverts etc, the Applicant will seek to engage separately with THC to address this post consent.</p>

⁴ The Highland Council (2014), Guidelines for Transport Assessments [Online] Available at: https://www.highland.gov.uk/downloads/file/12194/guidelines_for_transport_assessments

⁵ The Highland Council (2013), Road Guidelines for New Developments [Online] Available at: https://www.highland.gov.uk/downloads/file/527/road_guidelines_for_new_developments [Accessed: 29/05/2025]

Policy or Author	Title	Policy Description	Notes
		<p>development to the local road network.</p> <p>As part of the “Wear and Tear” Agreement, the developer will be required to undertake a Road Assessment Condition Survey of existing road conditions of agreed delivery routes, together with the Council, in order to agree the survey results and also serve as the benchmark to determine the extent of any necessary reinstatement work that can be reasonably attributed to the new development.</p>	
IEMA	Guidelines for the Environmental Assessment of Traffic and Movement (2023) ⁶	<p>Sets out guidelines for determining the appropriate and significance of traffic effects because of a proposed development. The following criteria should be applied for determining where further assessment is required:</p> <ul style="list-style-type: none"> • Routes where traffic is predicted to increase by 30% or more; and • On highly sensitive routes where traffic is predicted to increase by 10% or more. 	This guidance is primarily intended to apply to EIAs rather than Environmental Appraisals; however, the quoted thresholds are useful for determining where traffic increase may be significant.

⁶ Institute of Environmental Assessment – Guidelines for the Environmental Assessment of Traffic and Movement (2023)

3. BASELINE CONDITIONS

3.1 Overview

- 3.1.1 This TA discusses the local road network to be used during the construction of the Proposed Development. This section of the TA describes the existing conditions on and around the Site and discusses the local road network likely to be used, including its accident record.

3.2 Study Area

- 3.2.1 The Study Area includes all aspects of the Proposed Development as described in **Volume 2, Chapter 3: Description of the Proposed Development**. The Proposed Development extends for approximately 173 km between the proposed Banniskirk, Carnaig and Fanellan Substations.
- 3.2.2 The Study Area has been defined based on the public road network in the vicinity of the Proposed Development that are expected to experience increased traffic flows associated with the construction of the Proposed Development. This takes into account the potential origin locations of construction staff and supply locations of construction materials including stone and concrete from local quarries.
- 3.2.3 Given the length of route of the Proposed Development, the traffic and transport assessment has been split into eight 'Sections' (see **Volume 3, Figure 14.1: Study Area**) as outlined below:
- Section 1: Banniskirk to Latheron (Crofts of Benachielt) (N1 to N63);
 - Section 2: Latheron (Crofts of Benachielt) to Helmsdale (N64 to N147);
 - Section 3: Helmsdale to Brora (N148 to N223);
 - Section 4: Brora to Evelix (N224 to N297; S1 to S18);
 - Section 5: Evelix to Tain (S19 to S68);
 - Section 6: Tain to Evanton (S69 to S112);
 - Section 7: Evanton to Tore Roundabout (S113 to S179); and
 - Section 8: Tore Roundabout to North Kessock (S180 to S232).
- 3.2.4 These sections differ from the geographical Sections A to E defined in **Volume 2, Chapter 3: Description of the Proposed Development**. This is because the eight sections align with how the split of construction vehicle numbers was generated. It is acknowledged that the Study Area has not been broken down into smaller sections with reference to the Operational Structure of the Council as requested by THC because some of the sections in the Study Areas are located in more than one of the operational areas.

3.3 Baseline Survey Methodology

- 3.3.1 Characteristics of the existing environment were informed by the following sources:
- Automatic Traffic Counter (ATCs) surveys ;
 - Traffic Data – Department of Transport Traffic Counts Website (Road traffic statistics ([dft.gov.uk](https://roadtraffic.dft.gov.uk)))⁷;
 - Accident Data – Crashmap Website (CrashMap – UK Road Safety Map)⁸;
 - Sensitive Locations – Google Earth (Google Maps);

⁷ Department for Transport. Road Traffic Statistics: Interactive Map of Road Traffic Data in Great Britain. Available at: <https://roadtraffic.dft.gov.uk>

⁸ Crashmap: Interactive Map of Reported Road Traffic Collision in Great Britain. Available at: <https://www.crashmap.co.uk>

- National Road Traffic Forecasts (1997);
- Design Manual for Roads and Bridges (Standards for Highways (2013) Volume 15, Economic Assessment of Road Schemes in Scotland, DMRB)⁹; and
- Other traffic sensitive receptors including Core Paths – Highland Council Public Rights of Way Map (Highland Council Core Paths Map)¹⁰.

3.4 Non-motorised User Network

- 3.4.1 Details of the baseline sustainable travel infrastructure are set out in **Volume 2, Chapter 14: Traffic and Transport** of this EIA Report. In summary, the route of the Proposed Development means pedestrian infrastructure is generally limited outside established towns and villages.
- 3.4.2 Footways alongside the carriageway are present along parts of the proposed access routes, including Helmsdale, Brora, Golspie and Ardgay. These towns have relatively good standard pedestrian footways with formal pedestrian crossing points including signalized crossings to support safe and convenient pedestrian movement.
- 3.4.3 In addition, areas such as Contin, Marybank, Muir of Ord, Beauly, Wester Balblair, and Strathpeffer also have pedestrian facilities in place, supporting local access and connectivity for those on foot.
- 3.4.4 A review of Sustrans' National Cycle Network (NCN) map¹¹ indicates that a section of the NCN Route 1 (Inverness to John O'Groats) route is located along the B817 through Evanton, Alness and along the A836 through Ardgay northbound to towards John O'Groats although the section of this route from the A836 has now been declassified a 'local' route.
- 3.4.5 There a number of local cycle paths (off-road and sections of on road facilities) near Contin and Garve for cyclists doing the North Coast 500. Additional local cycle facilities are also provided within the areas of Wester Balblair, Beauly and Strathpeffer.
- 3.4.6 THC's Core Path maps indicates that there are a number of core path networks located within the vicinity of the Proposed Development.

3.5 Local Highway Network

- 3.5.1 Details of the baseline conditions including details of the local and strategic highway network providing access to the Site are set out in **Volume 2, Chapter 14: Traffic and Transport** of this EIA Report. **Table 3.1** summarises the public road network from the main roads which will be used to provide immediate access to the tower installation sites prior to identifying what is considered to be the most appropriate construction traffic access route. The roads have been provided by the Applicant's OHL Contractors.

Table 3.1: Proposed Access Routes

Ref	Road
Section 1	A9, B870, C1053

⁹ Standards for Highways (2013) Volume 15, Economic Assessment of Road Schemes in Scotland, DMRB. Available at:

<http://www.standardsforhighways.co.uk/ha/standards/dmr/vol15/index.htm>

¹⁰ Highland Council. Highland Council Interactive Mapping Application. Available at: <https://highland.maps.arcgis.com/apps/webappviewer/index.html>

¹¹ Sustrans, National Cycle Network [Online] Available at: <https://www.sustrans.org.uk/find-a-route-on-the-national-cycle-network/?location=Scotland&distance=null&routetype=null&p=1>

Ref	Road
Section 2	A9, C1065, 1043, Achorn Road, A897
Section 3	A9, A897, Clynelish Road
Section 4	A9, A839, A836, Migdale Road (U3521)
Section 5	A9, A836, C1136 Church Street, C1136 Inveroykel Culrain, C1138 Cadh' an Tartair
Section 6	A9, B9176, U1990
Section 7	A9, B9176, B817 (North of Evanton), B817 (South of Evanton, Drumond), U1999, U1991, A834
Section 8	A9, A835, A832, A862, A831, Torgomack (1104), Achonochie Road

3.6 Road Traffic Collision Assessment

- 3.6.1 To understand whether the Proposed Development will have a significant road safety impact, it is necessary to establish a road safety baseline and identify any inherent road safety issues. A Road Traffic Collision (RTC) Assessment has been undertaken and is set out in **Volume 2, Chapter 14: Traffic and Transport**, including a description of the associated causation factors. **Volume 3, Figure 14.2: Road Traffic Collision Assessment** shows the locations of the collisions along key routes the routes within the Study Area. Approximately 140 RTCs were noted within the Study Area during the 5 year study period and a summary of the RTCs is provided in **Table 3.2** below.

Table 3.2: Road Traffic Collision Summary

Severity	Severity			Total
	Slight	Serious	Fatal	
Section 1	5	1	1	7
Section 2	9	7	0	16
Section 3	1	10	1	12
Section 4	6	7	1	14
Section 5	6	3	2	11
Section 6	16	14	4	34
Section 7	22	19	1	42
Section 8	3	1	0	4
Total	68	62	10	140

3.7 Baseline Traffic Flows

- 3.7.1 In order to assess the impact of the Proposed Development traffic on the Study Area, baseline traffic flow information was obtained from the UK Department for Transport (DfT) traffic database, which contains both surveyed data and estimated data (based on historic growth). To supplement the DfT traffic data, an independent ATC survey was undertaken at additional locations of the road network within the Study Area. The locations of the traffic count sites are shown on **Volume 3, Figure 14.3: Traffic Count Location Plan** and a summary of the baseline flows are included in **Volume 5, Appendix 14.1: Traffic Data**.
- 3.7.2 Background traffic growth will occur on the surrounding highway network irrespective of whether the Proposed Development is constructed or not. Traffic growth factors were applied to the measured baseline traffic flow to

give the estimated traffic flow during the earliest year that construction could commence; 2026. These factors were calculated from the National Road Traffic Forecasts (NRTF) 'central growth' rate for non-trunk road network and 'high growth' rate for trunk road network as detailed in **Volume 5, Appendix 14.2: Baseline Traffic Data**. **Table 3.3** below summarises the projected 2026 baseline traffic flows.

Table 3.3: Proposed Development Baseline Traffic Flow (2026)

Road/Location	Total (ADT)	HGV (ADT)	%HGVs
1: A9 Banniskirk, DfT ID: 40960	1,530	100	7%
2: B870	197	86	44%
3: A9 Achavanich, DfT ID: 10959	1,375	252	18%
4: A9 North of Helmsdale, DfT ID: 50719	2,587	276	11%
5: A9 South of Helmsdale, DfT ID: 30721	2,991	238	8%
6: A897, DfT ID: 30961	284	28	10%
7: A9 Brora, DfT ID: 40719	4,543	342	8%
8: A9 South of Golspie, DfT ID: 720	5,485	331	6%
9: A839, DfT ID: 20935	858	27	3%
10: A836, near Edderton, DfT ID: 80004	683	129	19%
11: A836, Bonar Bridge, DfT ID: 50937	1,752	103	6%
12: A836, Ardgay, DfT ID: 80005	1,824	126	7%
13: C1136 Church Street	534	148	28%
14: B9176, near Dalnavie, DfT Point ID: 979064	1,876	138	7%
15: A9, North of Tain, DfT ID: 80001	8,274	536	6%
16: A9, Drummond, DfT ID: 50813	15,640	1,028	7%
17: B817, North of Evanton	1,566	318	20%
18: B817 South of Evanton (Drummond)	1,483	286	19%
19: A9, North Kessock, DfT ID: 80013	32,350	1,234	4%
20: A835, Wester Moy, DfT ID: 80017	5,360	261	5%
21: A834 North of Strathpeffer, DfT ID: 20799	2,873	40	1%
22: A832 East of Marybank, DfT ID: 20931	1,394	37	3%
23: A832 Muir of Ord, DfT ID: 40950	6,485	298	5%
24: A862 North of Beaulay, DfT ID: 10950	6,690	328	5%
25: A862 East of Wester Balblair, DfT ID: 30950	5,374	136	3%
26: C1104 Torgormack	233	68	29%

4. TRIP GENERATION AND DISTRIBUTION

4.1 Construction Traffic Composition

- 4.1.1 Development construction traffic will primarily be associated with the import of construction materials. It is expected that the majority of these materials will be transported to the Site by Heavy Goods Vehicles (HGVs) or HGV low-loaders. There will be no requirement to transport any components to the installation sites as abnormal loads. If such need arises, it is anticipated that these can be divided into constituent components and reassembled on site to avoid the need for abnormal load vehicles. In the event this cannot be achieved, further routing studies and swept path analysis will be undertaken.
- 4.1.2 Aggregates would be transported to the Site using rigid tipper HGVs. Fuel will be delivered by an HGV fuel tanker; it is anticipated that this would be a small rigid type tanker due to the small amount of plant required on site.
- 4.1.3 Other vehicles associated with construction of the Proposed Development can be expected from construction workers and other personnel accessing the Site. Construction personnel are expected to primarily use cars or vans to access the Site.

4.2 Trip Generation

- 4.2.1 The traffic generation have been estimated from the monthly works programme provided by the Applicant's OHL Contractors. This shows the volume of trips generated by the construction of each section of the Proposed Development, as well as the movement of the estimated workforce. These estimates have been converted to two-way traffic flows for each section and shown in **Table 4.1** below.

Table 4.1: Estimated Daily Total Traffic for each Section

Sections	Daily Two-way Movement ¹²		
	LGV	HGV	Total
Section 1	117	256	373
Section 2	380	816	1,197
Section 3	271	996	1,267
Section 4	450	592	1,042
Section 5	101	142	244
Section 6	109	137	246
Section 7	86	122	208
Section 8	127	127	254

¹² A two-way movement refers to a vehicle trip that includes both the outbound and return journeys. For e.g. 20 two-way movements (10 inbound + 10 outbound = 20 total movements).

5. TRAFFIC IMPACT ASSESSMENT

5.1 Overview

5.1.1 The following section details the various impacts the construction traffic is expected to have on the existing daily traffic.

5.2 Predicted Traffic Increase

5.2.1 **Table 5.1** indicates the predicted increase in traffic on links within the Study Area.

Table 5.1: Predicted Increase in Traffic – Average Daily Traffic

Traffic Count Location/Link ID	Total Vehicle Movements			HGV Movements Only		
	2026 Baseline	Baseline + Development	Increase (%)	2026 Baseline	Baseline + Development	Increase (%)
1: A9 Banniskirk, DfT ID: 40960	1,530	2,627	72 %	100	852	756 %
2: B870	197	332	69 %	86	177	106 %
3: A9 Achavanich, DfT ID: 10959	1,375	2,472	80 %	252	1,004	299 %
4: A9 North of Helmsdale, DfT ID: 50719	2,587	3,684	42 %	276	1,028	273 %
5: A9 South of Helmsdale, DfT ID: 30721	2,991	4,517	51 %	238	1,274	434 %
6: A897, DfT ID: 30961	284	509	79 %	28	178	541 %
7: A9 Brora, DfT ID: 40719	4,543	6,069	34 %	342	1,378	303 %
8: A9 South of Golspie, DfT ID: 720	5,485	7,012	28 %	331	1,367	313 %
9: A839, DfT ID: 20935	858	1,135	32 %	27	186	595 %
10: A836, near Edderton, DfT ID: 80004	683	1,126	65 %	129	385	198 %
11: A836, Bonar Bridge, DfT ID: 50937	1,752	2,032	16 %	103	267	160 %
12: A836, Ardgay, DfT ID: 80005	1,824	2,267	24 %	126	382	203 %
13: C1136 Church Street	534	697	31 %	148	240	62 %
14: B9176, near Dalnavie, DfT Point ID: 979064	1,876	2,237	19 %	138	342	148 %
15: A9, North of Tain, DfT ID: 80001	8,274	10,755	30 %	536	2,102	292 %
16: A9, Drummond, DfT ID: 50813	15,640	18,121	16 %	1,028	2,594	152 %
17: B817, North of Evanton	1,566	1,840	17 %	318	476	50 %

Traffic Count Location/Link ID	Total Vehicle Movements			HGV Movements Only		
	2026 Baseline	Baseline + Development	Increase (%)	2026 Baseline	Baseline + Development	Increase (%)
18: B817 South of Evanton (Drummond)	1,483	1,598	8%	286	353	23 %
19: A9, North Kessock, DfT ID: 80013	32,350	34,831	8%	1,234	2,800	127 %
20: A835, Wester Moy, DfT ID: 80017	5,360	5,518	3%	261	366	40 %
21: A834 North of Strathpeffer, DfT ID: 20799	2,873	2,967	3%	40	95	137 %
22: A832 East of Marybank, DfT ID: 20931	1,394	1,458	5%	37	87	135 %
23: A832 Muir of Ord, DfT ID: 40950	6,485	6,538	1%	298	340	14 %
24: A862 North of Beaulay, DfT ID: 10950	6,690	6,880	3%	328	406	24 %
25: A862 East of Wester Balblair, DfT ID: 30950	5,374	5,511	3 %	136	172	27 %
26: C1104 Torgormack	233	370	59 %	68	104	53 %

5.2.2 The lowest threshold of impact for traffic generation at sensitive receptors is typically 10% (30% for non-sensitive receptors). AAs indicated in **Table 5.1** above, the temporary daily increase in construction traffic will have a varying impact on the local highway network, with a higher impact recorded on links with low baseline flows. The results further shows that the temporary increase in HGV traffic along these routes is also in exceedance of the IEMA thresholds, with significant increases recorded on road links with low baseline HGV flows.

5.3 Capacity Assessment

5.3.1 A review of existing road capacity has been undertaken using typical capacity values from the DMRB - Volume 15. 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 5.2**.

Table 5.2: Capacity Assessment

Traffic Count Location/Link ID	2026 Baseline	2026 Baseline + Development	Theoretical Road Capacity (12 hr)	Spare Capacity (%)
1: A9 Banniskirk, DfT ID: 40960	1,530	2,627	28,800	90.9%
2: B870	197	332	19,200	98.3%
3: A9 Achavanich, DfT ID: 10959	1,375	2,472	28,800	91.4%
4: A9 North of Helmsdale, DfT ID: 50719	2,587	3,684	28,800	87.2%
5: A9 South of Helmsdale, DfT ID: 30721	2,991	4,517	28,800	84.3%
6: A897 (Helmsdale), DfT ID: 30961	284	509	21,600	97.6%

Traffic Count Location/Link ID	2026 Baseline	2026 Baseline + Development	Theoretical Road Capacity (12 hr)	Spare Capacity (%)
6: A897 (Outside Helmsdale), DfT ID: 30961	284	509	3,360	84.9%
7: A9 Brora, DfT ID: 40719	4,543	6,069	28,800	78.9%
8: A9 South of Golspie, DfT ID: 720	5,485	7,012	28,800	75.7%
9: A839, DfT ID: 20935	858	1,135	21,600	94.7%
10: A836, near Edderton, DfT ID: 80004	683	1,126	21,600	94.8%
11: A836, Bonar Bridge, DfT ID: 50937	1,752	2,032	21,600	90.6%
12: A836, Ardgay, DfT ID: 80005	1,824	2,267	21,600	89.5%
13: C1136 Church Street	534	697	21,600	96.8%
14: B9176, near Dalnavie, DfT Point ID: 979064	1,876	2,237	21,600	89.6%
15: A9, North of Tain, DfT ID: 80001	8,274	10,755	28,800	62.7%
16: A9, Drummond, DfT ID: 50813	15,640	18,121	28,800	37.1%
17: B817, North of Evanton	1,566	1,840	21,600	91.5%
18: B817 South of Evanton (Drummond)	1,483	1,598	21,600	92.6%
19: A9, North Kessock, DfT ID: 80013	32,350	34,831	81,600	57.3%
20: A835, Wester Moy, DfT ID: 80017	5,360	5,518	28,800	80.8%
21: A834 North of Strathpeffer, DfT ID: 20799	2,873	2,967	21,600	86.3%
22: A832 East of Marybank, DfT ID: 20931	1,394	1,458	21,600	93.2%
23: A832 Muir of Ord, DfT ID: 40950	6,485	6,538	21,600	69.7%
24: A862 North of Beaully, DfT ID: 10950	6,690	6,880	21,600	68.2%
25: A862 East of Wester Balblair, DfT ID: 30950	5,374	5,511	21,600	74.5%
26: C1104 Torgormack	233	370	3,360	89.0%

5.3.2 For the roads without baseline traffic flows, a comparison of the estimated daily traffic against the theoretical capacity was undertaken. **Table 5.3** below indicates the percentage of the theoretical capacity which would be used by the predicted construction traffic. For the below table, it has been assumed that construction traffic will be distributed over a 10-hour period.

Table 5.3: Capacity Assessment - Other Unclassified Roads

Road	Capacity (veh/hour/direction)	Two-way Hourly Capacity	Two-way 10-hour Capacity	Estimated Daily Traffic	% of 10 hour Capacity
C1053	140	280	2,800	238	8.5 %

Road	Capacity (veh/hour/direction)	Two-way Hourly Capacity	Two-way 10- hour Capacity	Estimated Daily Traffic	% of 10 hour Capacity
C1065	140	280	2,800	128	4.6 %
U1043	140	280	2,800	113	4.0 %
Achorn Road	800	1600	16,000	149	0.9 %
Clynish Road	800	1600	16,000	167	1.0 %
U3521 Migdale Road (Bonar Bridge)	140	280	2,800	280	10 %
Inveroykel Culrain	140	280	2,800	72	2.6 %
Cadh' an Tartair	140	280	2,800	72	2.6 %
U1907	140	280	2,800	87	3.1 %
U1990	140	280	2,800	274	9.8 %
U1999	140	280	2,800	115	4.1 %
U1991	140	280	2,800	115	4.1 %
Achonochie Road	140	280	2,800	64	2.1 %

5.3.3 The results in **Table 5.2** and **Table 5.3** above 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.

5.4 Route Appraisal

5.4.1 While no specific capacity issues have been identified, it is acknowledged that THC has highlighted that much of the rural road network comprises routes that have evolved over time, rather than being constructed to modern engineering standards. As such, many of these roads, including some A-class routes, are not designed to accommodate additional traffic, particularly from HGVs.

5.4.2 To address this, a detailed road condition survey will be undertaken prior to the commencement of construction works. This survey will provide an accurate assessment of the existing road condition and identify any recent deterioration. Where significant defects are identified, appropriate remedial works will be carried out by the Applicant prior to construction, in consultation with THC transport officers. Additionally, a commitment to address "wear and tear" during the construction phase will be formalised through a Section 96 Agreement with THC.

5.4.3 It is not considered feasible to undertake a detailed road condition review at the pre-determination stage. Given that construction is scheduled to begin in 2026, and a number of access routes is yet to be finalised, other factors such as planned resurfacing, the impact of other developments, and potential weather-related damage may significantly alter road conditions in the interim.

6. PROPOSED TRAFFIC MITIGATION MEASURES

6.1.1 Overview

6.1.2 This section of the TA covers the mitigation measures required to be complied with to minimise the impact of construction traffic during the construction of the Proposed Development. The temporary effects of construction activities (whether assessed as significant or not) will be managed and mitigated through the implementation of the Construction Traffic Management Plan (CTMP) to be finalised post consent.

6.1.3 The Applicant will agree all temporary traffic management measures with the relevant authorities and will implement, monitor, and maintain an appropriate working approach in consultation with THC, Transport Scotland and/or their agents, and Police Scotland, as appropriate. All construction-related vehicles will be required to use pre-defined access routes to and from the site to minimise disruption to the existing local traffic network. A summary of the approach to mitigating potential construction traffic impacts is outlined below (and not limited) to the following:

- As far as is reasonably possible, deliveries shall be scheduled outside of school opening and closing times; drivers of all delivery vehicles will be made aware during induction of the presence of schools within settlements along the proposed access routes;
- Temporary construction site signage will be erected along the identified construction traffic routes to warn people of construction activities and associated construction vehicles. All road user safety (including non-motorised users) will be enhanced via the installation of signage and the maintenance of sight lines;
- Construction traffic speed limits (for example, 20 mph in 30 mph zones) will be considered through the sensitive areas along the routes (i.e. within settlements along the routes) and on approach to the main access points;
- Road condition survey (including assessment of existing structures as appropriate) of the affected public road network and addressing existing significant road defects prior to the commencement of construction;
- Consideration will be given to the potential use of on-site borrow pits to source aggregate material, thereby minimising or potentially eliminating the need to import aggregate from off-site quarries. This approach would significantly reduce HGV traffic accessing the Site, contributing to the overall reduction in construction-related transport impacts on the local road network;
- A review of passing places along the affected public road network will be undertaken (where applicable) in collaboration with THC Transport Officers and the THC Roads Manager. This review will assess the adequacy of existing passing places and identify any requirements for upgrades or the provision of new passing places, to be implemented prior to the commencement of construction works;
- The Applicant will ensure that a baseline road condition survey is carried out prior to the commencement of construction works for each agreed phase of the Proposed Development. This baseline survey will document the condition of road infrastructure, including bridges, culverts, road surfaces, and verges. A final survey will be undertaken following completion of construction to identify any deterioration in infrastructure condition that may have occurred during the construction period. Any damage to the road infrastructure that is reasonably attributable to construction traffic associated with the Proposed Development will be repaired by, or at the expense of, the Applicant. All such repairs will be carried out in consultation with THC;
- An interim inspection regime will be agreed with THC, with periodic meetings (at a frequency to be agreed) held between the Applicant and THC to review the condition of the relevant road sections. The Applicant will monitor construction vehicle activity to minimise the risk of damage to road infrastructure, including road edges, verges, bridges, and similar assets. Any damage caused by traffic associated with the Proposed Development that presents a hazard to public traffic during the construction period will be promptly repaired; and

- To prevent the deposition of mud on the public highway, the appointed Principal Contractors will install and operate wheel washing facilities as appropriate. These facilities will remain in place for the duration of the construction phase of the Proposed Development. Steps would be taken to prevent the deposition of mud and debris on the public road, through regular road sweeping.

7. FURTHER DETAILS TO BE CONFIRMED

7.1.1 In summary the following (not limited to) will be undertaken post consent in consultation with THC and Transport Scotland where applicable:

- Confirmation of access points to the tower installation sites including the required visibility splays and access specifications;
- Confirmation of final access routes to the tower installation site and Swept Path Assessments for the proposed access arrangements;
- Confirmation of construction traffic accessing tower locations site (where applicable);
- Detailed assessment of mitigatory measures such as new passing places, road widening and edge strengthening; and
- Agree scope and approach of the Road Conditioning Survey.

8. CONCLUSION

- 8.1.1 This TA has considered the potential impact of traffic generated by the Proposed Development on the local transport network. The volume of traffic anticipated to be generated by construction activities has been derived from an estimate and an initial programme provided the OHL Contractors, with the trips assigned to the local road network based on initial routes advised by the OHL Contractors.
- 8.1.2 The construction traffic associated with the Proposed Development would result in a temporary increase in traffic flows on the surrounding road network. No capacity issues are expected on any of the roads assessed due to the short-term increase in traffic associated with the Proposed Development.
- 8.1.3 A number of mitigation measures including management have been proposed within this report which is aimed at minimising the impact of the traffic generated during the construction of the Proposed Development. A detailed review of the proposed access routes will be undertaken post consent regarding the suitability of the unclassified road network to accommodate the temporary increase in traffic associated with the construction of the Proposed Development, and additional mitigation measures will be proposed where appropriate.
- 8.1.4 The Applicant will seek to engage separately with THC post consent to confirm details of structural assessment of carriageway, passing places assessment, bridges culverts etc.