Scottish and Southern Electricity Networks

FANELLAN HUB 400KV SUBSTATION AND CONVERTER STATION

Volume 4, Appendix 12.2: Transport Assessment

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Introduction

WSP UK Limited has been appointed by Scottish and Southern Electricity Network to provide consultancy advice in support of the Proposed Development, Fanellan Hub 400kV Switching Station and HVDC Converter Station, located approximately 4.5 kilometres (km) south-east of Beauly.

The Proposed Development is supported by Associated Works which are necessary to enable construction traffic routing to Site, and which have resulted in a phased approach to construction traffic routing for the Proposed Development.

The Highland Council (THC) identified a requirement for an updated Transport Assessment (TA) to consider the impact of construction traffic on the operation of the local transport network, and this TA has been prepared to formally respond to the THC Transport Planning Team consultation response, in support of a planning application submitted in March 2025.

Background To Black Bridge

The Site will be accessed using a new permanent access road connecting with the C1106 Fanellan Road via a new junction located approximately 120 meters (m) west of the U1604. It is noted that the most suitable and preferred route to access the Site uses the Black Bridge over the River Beauly close to the A831. Currently, the Black Bridge has limited structural capacity, and replacement is required to facilitate the heavy loads needed to travel to Site.

The applicant is currently working with The Highland Council to understand timescales for completion. The works are currently programmed to be completed in late 2028.

The Black Bridge necessary works are discussed further within the 'Black Bridge Options Report', [Report Ref: FNLN4-LT459-SEBAM-ZZ-ZZ-RPT-S-0001].

Therefore, assessment of the Proposed Development has been divided into two sections to assess the effects due to phasing of the construction of Black Bridge. The assessment therefore has the following structure:

- Phase 1: Before construction of Black Bridge (2027 Future Year); and
- Phase 2: After construction of Black Bridge (2029 Future Year).

Anticipated Trip Generation

The level of vehicle trips anticipated to be generated by construction activities has been provided by the Principal Contractor, with the trips assigned to the local road network following a review of the local road network's suitability to accommodate construction traffic. As identified above, the trip generation for the indicative programme has been broken down into two phases for assessment. Therefore, the Site access is anticipated to accommodate:

- a maximum of 9 two-way total vehicles an hour and 6 two-way HGVs an hour prior to the completion of the Black Bridge works (Phase 1); and
- a maximum of 24 two-way total vehicles an hour and 18 two-way HGVs an hour after the completion of the Black Bridge works (Phase 2).

During Phase 1, the largest vehicles associated with construction activities are infrequent deliveries of plant equipment such as excavators, which will be transported to the Site via a low loader. These movements are

considered to be Abnormal Indivisible Loads (AILs). The largest vehicle type making the most frequent trips to site will be a 16.5 m artic HGV and supported by sprinter vans and cars / LGV where appropriate.

During Phase 2, the largest vehicles associated with construction activities are the infrequent deliveries of the transformers, which will be transported to the Site via a Girder Frame Trailer (GFT). These movements are considered to be AILs. The largest vehicle type making the most frequent trips to site will be a 16.5 m artic HGV and supported by sprinter vans and cars / LGV where appropriate.

Local Road Network

The area is predominantly rural in nature, and the transport network reflects this. A proportion of the roads which it is intended to use to support access to the Site, are agreed timber haulage routes and therefore considered to be appropriate to accommodate the temporary increase in traffic generated by construction activities. Some routes considered are consultation routes and this TA proves that these roads are suitable for construction traffic requirements.

Required Mitigation

A detailed review of the proposed access routes has been undertaken, and it is considered that the unclassified road network can accommodate the temporary increase in traffic generated by construction activities, with the main impact anticipated for a period of no more than one month on any of the unclassified road network. Where possible, HGV arrivals and departures will be managed to reduce the potential for two larger vehicles to meet on the unclassified roads which are to be used to support access to the Site.

However, there may be a requirement to alter the alignment of short sections of the road network or kerblines at existing junctions to accommodate HGV movements associated with construction activities. While the requirement for these will require to be confirmed by a topographical survey of the potential constrained areas, the potential mitigation is summarised in **Table 1.**

The full list of proposed PRI's is included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

Table 1 - Potential Public Road Improvements

Phase	Section	Road	Potential Physical Mitigation Measure
Phase 1	**Section 1 Yellow Route**	A832	No physical mitigation identified.
		B9169	No physical mitigation identified.
		A862	No physical mitigation identified.
	Section 2 Blue Route	A862	No physical mitigation identified.
	Section 3 Orange Route	A862	No physical mitigation identified.
	Section 4 Purple Route	A833	The Contractor has designed public road improvements (PRIs) deemed necessary for the routing of construction traffic on this section of the C1106 and the U1604. The full list of proposed PRI's is included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.
		C1108	
		U1604	
	Section 4 Purple Route (Potential Mitigation Measure)	A833	At present, design details for the alternative construction traffic routing option through Beaufort Estate are not readily available. However, it is considered that two accesses will be required in total, with one on the A833 and another on the U1604. The location and form of these accesses
		U1604	

			would be agreed with THC in advance of any construction start.
	Section 6 Red Route	C1106	The Contractor has designed PRIs deemed necessary for the routing of construction traffic on this section of the C1106. The full list of proposed PRI's is included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.
Phase 2	**Section 1 Yellow Route**	A832	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
		B9169	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
		A862	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 2 Blue Route	A862	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 3 Orange Route	A862	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 5 Green Route	A831	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 6 Red Route	C1106	The Contractor has designed PRIs deemed necessary for the routing of construction traffic on this section of the C1106. The full list of proposed PRI's is included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

Potential Beaufort Route

In response to the original TA, THC raised concerns regarding routing construction traffic through Kiltarlity along the C1108. The route through Kiltarlity is still regarded as a viable route option, however in direct response to the consultation responses from THC, this updated TA has introduced a potential mitigation route through the nearby Beaufort Estate (the Beaufort Route) which could allow Kiltarlity to be avoided for the vast majority of construction traffic.

Conclusions

It is considered that Site will be constructed in a phased manner prior to and following the completion of the Black Bridge works, and to support the availability of materials / components and the workforce, with this approach minimising the impact on the local road network.

Potential measures have been identified to manage construction traffic movements, and it is intended that this TA can be used to support the application, and that the Principal Contractor will subsequently have further detailed dialogue with THC as plans are refined, to ensure that a suitable and management strategy and set of measures may be secured via condition. It is envisaged that the management strategy and measures are implemented in advance of the commencement of construction activities to mitigate the temporary increase in traffic on the operation of the local road network.

In response to concerns raised by THC through the consultation process, specifically regarding the volume of construction traffic through Kiltarlity, a potential mitigation route through Beaufort Estate (the Beaufort Route) has been identified which could vastly reduce the amount of construction traffic on the C1108 through Kiltarlity.

1 INTRODUCTION

1.1 OVERVIEW

1.1.1. WSP UK Limited has been appointed by Scottish and Southern Electricity Network (SSEN) to provide consultancy advice in support of the Proposed Development, Fanellan Hub 400kV Switching Station and HVDC Converter Station, located approximately 4.5 kilometres (km) south-east of Beauly. The Proposed Development is supported by Associated Works which are necessary to enable construction traffic routing to Site, and which have resulted in a phased approach to construction traffic routing for the Proposed Development.

1.1.2. In an EIA Scoping Request (Reference: 24/02655/SCOP) in July 2024 The Highland Council (THC) identified a requirement to prepare a Transport Assessment to consider the impact of construction traffic related to the Associated Works on the operation of the local transport network. A TA (the original TA) was initially prepared to support on the formal submission of the planning application (Reference: 25/00826/FUL[1]) in February of 2025.

1.1.3. In light of concerns raised by THC Transport Planning Team on July 4th 2025[1] regarding the suitability of directing HGV and AIL traffic through Kiltarlity, this updated Transport Assessment (TA) report has been produced to address the issues raised, and provides a potential mitigation-led alternative construction traffic routing option (known as the Beaufort Route) for consideration. It is understood that while the routing of construction traffic through Kiltarlity is possible, as identified within the original TA, this alternative construction traffic routing option may provide the opportunity for further mitigation to alleviate the concerns surrounding the use of Kiltarlity.

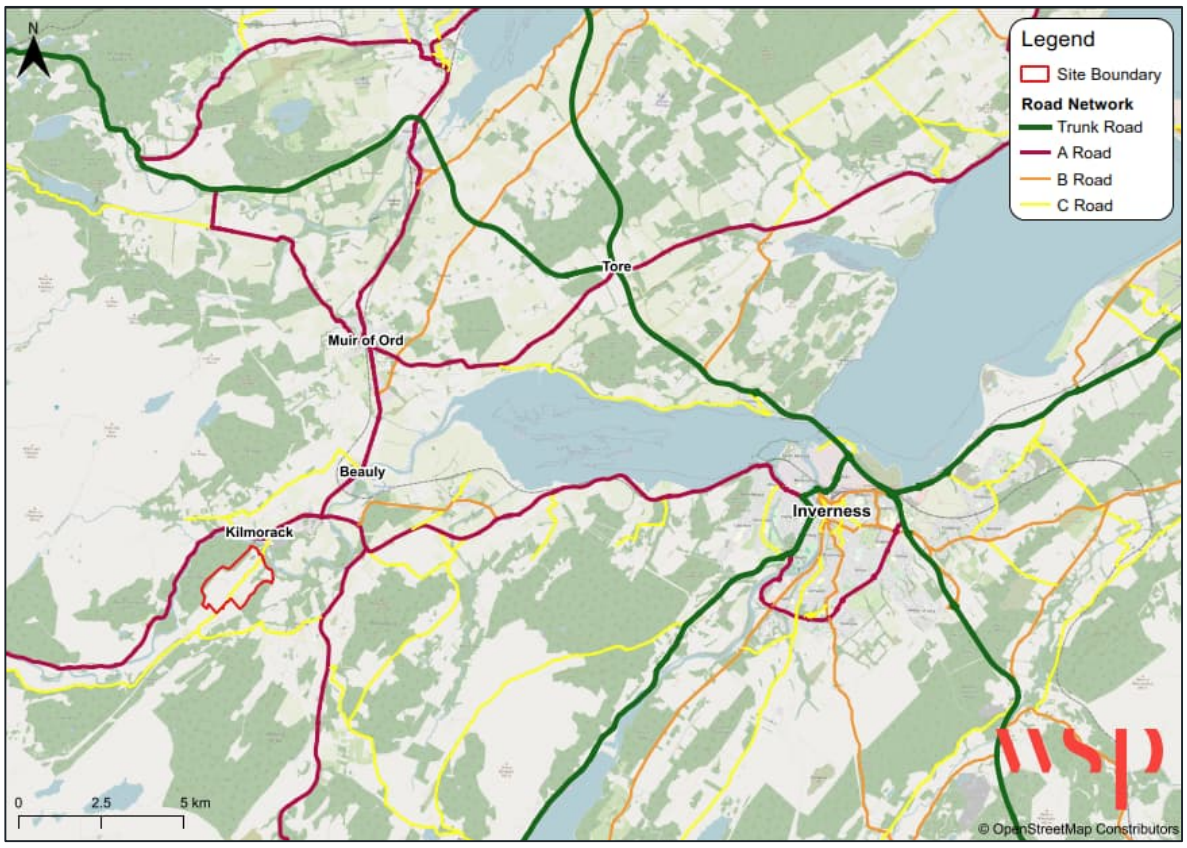
1.1.4. All figures that are drawings within this report are included in **Appendix A** at a larger scale.

SITE LOCATION

1.1.5. The Proposed Development is located south west of Beauly within the local authority of THC. The proposed Red Line Boundary (RLB) is shown on **Figure 1-1** relative to the local road network.

1 The Highland Council, (2025). Planning – Application Summary 25/00826/FUL | Fanellan Substation - construction and operation of a 400 kV substation and converter station and associated infrastructure, site access, landscaping and demolition works [this and all subsequent links accessed September 2025].

Figure 1-1 - Site Location



1.2 BACKGROUND TO BLACK BRIDGE

1.2.1. The Site will be accessed using a new permanent access road connecting with the C1106 Fanellan Road via a new junction located approximately 120 meters (m) west of the U1604. It is noted that the most suitable and preferred route to access the Site uses the Black Bridge over the River Beauly close to the A831. Currently, the Black Bridge has limited structural capacity, and replacement is required to facilitate the heavy loads needed to travel to Site.

1.2.2. The applicant is currently working with The Highland Council to understand timescales for completion. The works are currently programmed to be completed late 2028.

1.2.3. The Black Bridge necessary works are discussed further within the 'Black Bridge Options Report', [Report Ref: FNLN4-LT459-SEBAM-ZZ-ZZ-RPT-S-0001].

1.2.4. Therefore, assessment of the Proposed Development has been divided into two sections to assess the effects due to phasing of the construction of Black Bridge. The assessment therefore has the following structure:

- Phase 1: Before construction of Black Bridge (2027 Future Year); and
- Phase 2: After construction of Black Bridge (2028 Future Year).

1.3 PURPOSE OF THE TRANSPORT ASSESSMENT

1.3.1. This TA aims to address the key transport and access issues associated with the Proposed Development and Associated Works. This report identifies the anticipated key access routes and

potential measures to accommodate the predicted temporary increase in traffic and abnormal loads due to the construction of the Proposed Development.

1.3.2. This TA sets out the scope of the future Transport Assessment and the objectives of this report are to:

- review the relevant policy, legislation and guidance that will be adhered to;
- determine the potential origin of construction traffic;
- identify the level of trips generated by construction activities;
- review the existing transport network;
- identify the most suitable roads for vehicular traffic, including Heavy Goods Vehicles (HGVs);
- review the potential impact of construction traffic on the operation of the local transport network; and,
- identify potential measures to mitigate the potential impact.

SCOPING DISCUSSIONS

1.3.3. In November 2023 and August 2024, THC provided comments in relation to a pre-application submission (23/04003/PREMAJ), and in response to an EIA Scoping Opinion Consultation Request for the project, (Ref: 24/02655SCOP[2]).

1.3.4. Consultation responses which are relevant to this section, such as those provided by The Highland Council's Roads Officer (HCRO) in response to the EIA Scoping Request, are included in **Table 1-1,** with the full scoping response included in **Appendix B**. These requirements have been taken into consideration when preparing this report.

Table 1-1 - Consultation responses of relevance to this Transport Assessment

Body / Organisation	Type of Consultation and Date	Response outlining a requirement to discuss	How response has been considered
The Highland Council - Roads Officer (THCRO)	EIA Scoping Request - Memorandum- July 2024	**Scope of Black Bridge Assessment:** "*We note the intention to scope out the improvements required to the Black Bridge crossing of the River Beauly from the proposed assessment. Given that this is the only viable means of accessing this development for its construction and ongoing operation (see comments below), it should be noted that, if the subsequent permissions required for changes to Black Bridge are not accepted and delivered prior to any approval being sought for the new Substation and Converter Station, The Council would need to seek a suitably worded Condition requiring the Black Bridge changes needing to be agreed, permitted and implemented prior to the main works commencing to construct the new substation and converter station facility*."	Noted. Currently, the Black Bridge has limited structural capacity, and replacement is required to facilitate the heavy loads needed to travel to Site. The applicant is currently working with The Highland Council to understand timescales for completion. The works are currently programmed to be completed late 2028. This TA looks at the period before completion of Black Bridge works to identify a suitable alternative access route to the Site for this temporary route to allow construction to start on Site.

[2]The Highland Council, (2024). *Planning Portal -24/02655/SCOP*. (Online). Available at: https://wam.highland.gov.uk/wam/applicationDetails.do?activeTab=documents&keyVal=SFDNRGIH0FM00 [This and all subsequent links were Accessed in September 2025].

		Alternative Route to Site: "We also note comments in Chapter 8 of the submitted scoping document suggesting that, due to the existing issues with the Black Bridge, it may be necessary for HGV's accessing this development to route from the A833 through Kiltarlity. The local public roads through Kiltarlity between the A833 and the development site are not suitable for such construction traffic and we will oppose any intention to make use of such routing for this development. We would also challenge the appropriateness of routing through the existing community at Kiltarlity when there is a more appropriate route from the A831 via the C1106. The promoters efforts should be focussed on establishing appropriate improvements to the Black Bridge that will support their construction and ongoing operational access requirements"	Noted. This TA recognises that the most appropriate route is via Black Bride on the C1106 from the A831. However, as works will be necessary on Black Bridge to enable construction traffic routing this TA proposes a two phased approach to construction traffic routing, as follows: ▪ Phase 1 - southern route (via A862 - A833 - C1108 - U1604 and C1106 to Site), and ▪ Phase 2 - Black Bridge route (via the A862 - A831 and C1106). This TA also proposes an alternative to then Phase 1 route through Kiltarlity through Beaufort Estate, avoiding the Village. As discussions are at an early stage, this alternative routing is discussed in high level detail in the EIAR within **Volume 4**, **Appendix 3.2 Review of Black Bridge Works**.
		Requirement for a TA: *"We note that the assessment of environmental impacts from the predicted traffic will follow the principles set out in the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Traffic and Movement. However, this approach does not include any 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. This will be for all construction and operational traffic, not just abnormal loads (AILs). This reinforces our pre-application feedback highlighting that an additional Transport Assessment (TA) will be required to do that assessment and clarify what physical road improvements and traffic management measures will be required."*	Noted. This TA assesses the condition and capability to physically and safely accommodate the predicted traffic impacts, whilst remaining safe for other road users. This will consider all construction Traffic and in particular the largest loads to site. This TA will also look at the specific public road improvements (PRIs) and traffic management measures deemed necessary.
		Requirement for Public Road Improvements: *"We specifically mention both physical changes to the road network and traffic management measures, as the submitted scoping report only makes reference to traffic management measures. The likely scale of impacts and the nature of local public roads in that area will require physical road improvements alongside traffic management measures. The scale and nature of such improvements will need to be determined when the proposed means of access and predicted impacts from the proposed development have been established. To be clear, we will not support any construction or ongoing operational access along the single-track section of the C1106 Fanellan Road without appropriate physical improvements to it."*	Noted. This TA assesses the condition and capability to physically and safely accommodate the predicted increase in construction traffic, whilst remaining safe for other road users. In doing so, this TA considers the specific public road improvements (PRIs) and traffic management measures deemed necessary to accommodate all construction traffic including the largest loads. PRI works include widening works on the C1106 (Fanellan Road) to a width of 7 meters to accommodate to way traffic movements.
		Baseline Traffic Flow Data Comparison: *"We note the intention to gather Annual Average Daily Flows (AADF) for existing routes and use that in the environmental assessment to compare changes as a result of the proposed development. Given that the proposed construction working hours for this development will, in most parts, be between 07:00 and 19:00, AADF information should*	As stated in the CTMP, the construction traffic HGV movement hours are expected to be: ▪ Monday to Friday: 08:00 – 19:00; and ▪ Saturday: 08:00 – 13:00. However, it is expected that movement of smaller vehicles (Car / LGVs would be outwith this time frame).

		not be used and 12-hour average flows utilised for the period 07:00 – 19:00. Using AADF will simply lessen the scale of change that the development will be generating during the working day."	To align with the worst case Site working hours, it is assumed that Car / LGV movements (including workforce movements) are expected to be between Monday to Sunday: 07:00 – 19:00. Therefore, the baseline traffic flows have had factors (derived from DfT's TRA0308) applied to convert the 24-hour AADF to comparable 11-hour flows for HGV traffic and for 12-hour flows to compare the car /LGV traffic
		Abnormal Load Routing: *As stated in our preapplication feedback, no abnormal load movements will be accepted across the Lovat Bridge carrying the A862 over the River Beauly without detailed inspections and assessments being undertaken and the findings accepted by our Structures Team. It's our understanding that such inspections will need to include diving surveys of the existing bridge piers and foundations within the river.*	Within the EIAR, the abnormal loads for the proposed development are considered in **Volume 4, Appendix 12.3: Abnormal Load and Construction Traffic Assessment Report** details the proposed AIL routing plan. There will be no routing of abnormal loads over Lovat bridge without detailed inspections and assessments being undertaken and the findings accepted by THC Structures Team.
		Operational Traffic: *"We note the comments that operational traffic levels are predicted to be low and as such, no assessment of those likely impacts is deemed necessary. We will expect any submission to clarify the likely quantum and profile of operational traffic levels due to be generated by the finished development. That should include likely demands from the proposed offices and training facilities (see comments below). This information, along with the proposed lasting operational capability of the local public road network, after being improved by this development, should be used to determine if the TA will need to include a formal assessment of the road networks capability to physically and safely accommodate such operational traffic levels."*	It is no longer intended to include substantial training facilities as part of the Proposed Development, with the offices proposed ancillary to the Proposed Development. It is expected that the Proposed Development will not require permanent staff, Therefore, the amount of traffic generated will be minimal and generally related to monitoring and maintenance activities. Vehicles used are likely to be a small number of private cars and/or utility vehicles (typically 4x4s or light goods vehicles).
		Active Travel and Travel Plan: *"We note the intention for this new development to include new offices and training facilities. The required TA will need to set out the likely travel and parking demands of such facilities and justify the adequacy of the developments ability to accommodate such demands. Also, current national policy looks for such facilities to be accessible by all and by sustainable means of travel. The TA will need to have assessed the accessibility of such facilities by non-car modes, including justifying the adequacy of any improvements deemed necessary. It will also need to ensure sufficient provision is made within the development site for cycle and disabled car parking facilities."*	As noted above, it is expected that the amount of traffic generated will be minimal and generally related to monitoring and maintenance activities. Vehicles used are likely to be a small number of private cars and/or utility vehicles (typically 4x4s or light goods vehicles). As detailed within the CTMP there has been parking provision allocated for the ancillary offices. Parking will be provided in accordance with THC standards. Segregated pedestrian routes for site operatives shall be provided.
The Highland Council - Roads Officer (HCRO)	EIA Scoping Request - August 2024	**Transport Assessment:** It is noted that the Institute of Environmental Management and Assessment (IEMA) Guidelines *"approach does 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. This will be for all construction traffic, not just any abnormal loads (AILs).*	The IEMA Guidelines will be followed to inform assessment of the environmental effects which will be submitted as part of the Environmental Impact Assessment Report (EIAR). This TA report constitutes analysis of the impact of construction traffic on the operation of the local transport network in relation to network condition and road safety. Assessment and identification of indicative physical road improvements and traffic

		An additional Transport Assessment (TA) will be required to do that assessment and clarify what physical road improvements and traffic management measures will be required." "*the additional TA required in support of any application will need to justify the adequacy of any temporary or permanent points of construction and ongoing operational access proposed from the local public road network. This will include:* *justifying the adequacy of visibility splays, which may require traffic speed data for those sections of public road impacted.* *The layout and construction form of all accesses will also need to be clarified and their suitability justified.* *We would also expect any submission to justify why each individual new permanent accesses needs to be retained and if so, in what form.*	management measures are outlined in **Section 7**. It is not anticipated that there will be any AILs supporting the construction of the Proposed Development. Details of the indicative form and location of the proposed upgrades, and temporary and permanent junctions is discussed in **Section 3**, and further detail will be included within from the Construction Traffic Management Plan (CTMP) which is being prepared by the Principal Contractor.
		Road Improvements: **"***the submitted scoping report only makes reference to traffic management measures. Depending on which local public roads will be impacted and the nature and scale of such impacts, it is probable that physical improvements to some roads may be required."*	Assessment and identification of indicative physical road improvements and traffic management measures are outlined in **Section 7**.
		High Sensitivity Locations: "*Regarding quantifying the scale of traffic impacts and the intention in the EIA to use 30% increases in all or HGV traffic and 10% increases in all or HGV traffic at high sensitivity locations from the IEMA Guidelines, we will require any single-track roads with passing places to be identified as high sensitivity locations."*	**Section 7** of this TA report provides the analysis of the impact of construction traffic on the operation of the local transport network and identifies indicative road widening and passing places deemed necessary to enable construction to take place. It is noted that the IEMA Guidelines should be followed to inform assessment of the environmental effects, and that single track roads with passing places will be classified as 'sensitive'. A separate EIA will be submitted to support the S37 application.
		Construction Traffic Calculations: *"When calculating the predicted quantum and profile of construction traffic likely to be generated by the proposed development, this should include the likely traffic generated by the felling and removal of any trees along the route.* *It should also include the likely traffic required to create the proposed compound areas and the movement of the workforce to and from the development."*	Timber Extraction traffic movements are discussed in **Section 6**. Workforce movements are also considered in **Section 6**.
		Importing Materials to Site: *"we would expect the TA and EIA work to have reviewed the worst case scenario of all materials needing to be imported to site. Also, the predicted profile of traffic movements needs to reflect that the material from temporary access tracks, plus permanent tracks being reduced in scale after the main works are complete, will need to be exported from site."* *"We note the reference that "Materials required for the construction of any new stone access tracks are likely to be obtained from on-site borrow-pits, or imported from local quarries". If suitable GI work has not been undertaken to identify sources of such gravel material along the route and the*	Trip Generation and Distribution is discussed in **Section 6**. It is assumed that all materials will be imported to Site.

		separate permissions required for such borrow pits have not been secured, we would expect the TA and EIA work to have reviewed the worst case scenario of all materials needing to be imported to site."	
		Cumulative Impacts: "*Whilst the submitted scoping document says that projects "of a similar type" will be considered in terms of cumulative impacts, from a traffic impacts perspective, all traffic generating new development should be recognised in such assessment work. Highland Council Planning Service will need to clarify what those potential developments could be, when the impacted routes for access to this development have been determined."*	Cumulative Developments will be assessed as part of the EIA which will be submitted separately.
The Highland Council - Public Access Officer (HPAO)	EIA Scoping Request - August 2024	**Outdoor Access**: *"The potential impact on and mitigation for public access should be assessed incorporating core paths, public rights of way, long distance routes, other paths, and wider access rights across the site. While the Scoping Report and an eventual EIA may include impacts on elements of outdoor access assessed under other headings, THC's Access Officer considers that all the impacts on outdoor access should be brought together here in a comprehensive assessment of the proposals visual and physical impacts on outdoor access during the preparatory, construction, operational and post-operational phases."* *"Please be aware that formal processes may be required for diversions of Long Distance Routes (the Great Glen Way and Great Glen Canoe Trail), core paths and recorded public rights of way. Policies 77 and 78 of the Highland wide Local Development Plan will apply as will the access related elements of NPF4."*	In advance of the EIA which will consider outdoor access, **Section 4** of this report identifies the existing outdoor access network in relation to the Study Area and Site in relation to Traffic and Transport. **Section 7** addresses this impact and proposes indicative mitigation measures to address the impact on outdoor access where necessary.
Scottish Canals	EIA Scoping Request - August 2024	**Waterborne Canal Traffic:** *"We request that waterborne canal traffic is considered within section 12 of the report, in order to maintain safe navigation along the full length of the Caledonian Canal."*	The Canal and the Great Glen Canoe Trail are noted in the **Section 4** of this report which identifies the OHL in relation to this navigable waterway. **Section 7** addresses this impact and proposes indicative mitigation measures to address impact on outdoor access.
Kirkhill & Bunchrew Community Council	EIA Scoping Request - August 2024	**No comments at this time regarding Transport:** "further comment will be made when the scoping opinion and statutory consultee comments are Available".	Noted.
The Highland Council – Transport Planning Team	Transport Assessment Response – July 2025	**Submitted Construction Traffic Management Plan trip generation:** *"The submitted Outline Construction Traffic Management Plan (CTMP) dated February 2025 suggests that the proposed development will generate in the region of 84,000 vehicle movements through Kiltarlity during the period when the Black Bridge is being replaced. The same document suggests that, at its peak during this period (July 27), this will equate to approximately 600 vehicle trips a day. However, Table 6.3 from the submitted Transport Assessment (TA) dated February 2025 (Appendix 12.2) suggests that the predicted peak trips via this route will be 112 daily two-way trips*	A WSP response to this was uploaded on 26 September 2025 to the planning portal clarifying assumptions made to reach peak trip generation. This is further explained in **Section 6**.

		comprising of 68 HGV movements and 44 non-HGV movements. These are vastly different figures and require further clarification. There seems to be the same issue for the predicted Phase 2 trips (TA Table 6.4) after The Black Bridge has been replaced."	
		Timber Felling Movements: *"The submitted Transport Assessment (Appendix 12.2) says that 120 total timber HGV movements will be needed for the required removal of trees to be felled. Whilst the document says that these have been included within the estimated peak daily trip generations, it is not clear which aspect of the trip breakdown they are contained within, or whether they would be impacting the local road network before or after the Black Bridge has been replaced. Again, more clarity on this is required."*	As stated in WSP response, Contractor has advised that timber movements would occur in advance of peak construction periods and are therefore not included in the peak of Phase 1 or Phase 2. Appropriate amendments have been made in **Section 6.2**.
		Black Bridge Cumulative Impact: *"Also, it is not clear if the predicted trips do or do not include the trips that will be needed to replace the existing Black Bridge. Again, more clarity on this should be sought as, according to the documents submitted, these trips would be happening at the same time as the new substation was being built."*	As stated in WSP response, the cumulative impact cannot be accurately assessed at this stage.
		Convoy Impacts: *"fundamentally object to this as the convoying of large heavy commercial vehicles leads to accelerated deterioration of the road pavement, which has no time to recover between axle loadings. This approach also demonstrates that the routes through Kiltarlity are not suitable for such types and quantities of construction-related traffic associated with this development".*	As stated in WSP response, further clarification to the word convoy added to report in **Section 7**.
		Black Bridge Condition: *"If The Council was minded to Approval(sic) the application, we recommend that any such permission includes a suitably worded Condition preventing works commencing on the new substation until the Black Bridge has been replaced and is available for use by construction traffic associated with the substation."*	Noted. As stated in WSP response, any work on the Black Bridge is currently outwith the direct control of the Applicant.
		Construction Traffic Management Plan: *"any permission issued includes a suitably worded Condition requiring the detailed Construction Traffic Management Plan (CTMP) be submitted to and accepted by the Planning Authority and subsequently implemented prior to any works commencing on site" and that this should contain details of "predicted traffic types, numbers and profile of movements... (with) Page 4 justification…intended routing… management measures (including) rerouting of bus and school transport services"*	Noted. This is a standard condition for developments of this type.
		Traffic Management Coordinator And Wear & Tear Agreement: *"the Promoter will be required to enter into a formal 'Wear & Tear' Agreement with The Highland Council acting as the Local Roads Authority. Such an agreement should be established in accordance with Section 96 of the Roads (Scotland) Act 1984 and will*	Noted. This is a standard condition for developments of this type.

		require a suitable Road Bond or other form of financial guarantee."	
		Abnormal Indivisible Load Movements: *"The information submitted for AIL routing appears to suggest that such loads will not use the proposed new permanent site access but will travel past that access along the C1106 Fanellan Road to a new temporary access."*	As stated in WSP response, the Applicants Project Engineering team have since confirmed that construction traffic will be using the proposed new bellmouth and access track as per the planning submission and not going along Fanellan Road.
		Site Accesses and localised Road Improvements: *"The submission states that the development will be accessed via a single point on the C1106 Fanellan Road located approximately 120m west of the junction with the U1604 Kiltarlity Road. There is also an intention to deliver localised road widening to the C1106 Fanellan Road and other public road improvements at specific locations of recognised potential vehicular conflicts. We recommend that any permission issued requires the design details for all road accesses and improvements to the local public road network be submitted to and accepted by the Planning Authority and then subsequently implemented prior to any works commencing at the new substation site."*	It is duly noted that this is a standard requirement for developments of this type.

2 TRANSPORT POLICY REVIEW

2.1.1. This section will discuss the relevant transport policy in relation to the Proposed Development and **Table 2-1** outlines the policy that have been compiled for application within the Transport Assessment.

Table 2-1 - Policy Review

Type of Document	National	Context
Policy	National Planning Framework 4 (2024)[3]	The National Planning Framework (NPF4, 2024), which supersedes Scottish Planning Policy (SPP) 2014, and sets out the Government's planning policies for Scotland and how these should be applied. The NPF must be taken into account in the preparation of local and neighbourhood plans and is a material consideration in planning decisions. The NPF4 identifies the need to favour sustainable transport modes to enhance travel choice and to allocate developments that generate significant movement to an area where the need to travel will be minimised and the use of sustainable transport modes can be maximised. The following key policy is identified in favour of development: **Energy: Policy 11A** states development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported including enabling works, such as grid transmission and distribution infrastructure; **Energy: Policy 11E** states that development project design and mitigation will demonstrate how the impacts such as those for public access, road traffic, and cumulative impacts are addressed; **Sustainable Transport: Policy 13C** states that development proposals that generate significant increases in the number of person trips, a transport assessment will be required to be undertaken in accordance with the relevant guidance; and **Sustainable Transport: Policy 13G** states that where proposals have the potential to affect the operation and safety of the Strategic Transport Network, that they will be fully assessed to determine their impact and mitigation measures required should be met by the developer.
	Draft Energy Strategy and Just Transition Plan 2023[4]	The Draft Energy Strategy and Just Transition Plan outlines Scotland's vision for a net-zero energy system by 2045, focusing on affordable, resilient, and clean energy for all. The strategy emphasizes the need to transform energy generation, transportation, and usage to meet climate goals while maximizing economic and social benefits. The draft affirms ambitions to reduce car kilometres by 20% and sets out a significant investment in sector decarbonisation including ensuring the equivalent of at least 50% of energy across heat, transport and electricity demand come from renewable sources. The draft plan affirms a commitment to "*support for all forms of renewable, low-carbon and zero emission technologies, including transmission and distribution infrastructure*".

[3]The Scottish Government, (2023). *National Planning Framework 4*. (Online). Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf

4 The Scottish Government, (2023). '*Draft Energy Strategy and Just Transition Plan 2023*' (Online). Available at: https://www.gov.scot/publications/draft-energy-strategy-transition-plan/

	Building Standards Division Non-domestic Technical Handbook (April 2024)[5]	In the Non-Domestic Building Standards, the Scottish Government sets out the Electric Vehicle (EV) standards for Scotland. **EV Infrastructure Requirements**: Where more than 10 car parking spaces are provided within the curtilage of a non-domestic building, the following requirements are to be met by developers: 1 in every 2 non-residential parking spaces to have ducting (enabling infrastructure) installed; and, 1 in every 10 non-residential parking spaces to provide an EV charge point socket with minimum 7kW output power rating. Additionally, any accessible parking spaces not already provided with access to an electric vehicle charge point socket with a minimum output rating of 7 kW should be provided with such a facility to the same extent as standard parking spaces. These standards must be met unless the parking is within a covered carpark.
Standards	National Roads Development Guide (2015)[6]	The National Roads Development Guide (NRDG), published by the Scottish Collaboration of Transportation Specialists (SCOTS), offers comprehensive guidance on road and parking standards, consents, design, and infrastructure, for design and construction within Scotland, as well as guidance on transport assessment, Quality Audits and Structures checks necessary for approval. The NRDG provides national standards for rural and urban settings and The Highland Council's local guidance aligns with this guidance aside from few local variations. Some aspects from the national guide that THC have made departures from include: ▪ Minimum dwellings per adopted road; ▪ Road and Lane Widths; ▪ Design of Street Details; ▪ Design and Adoption of Parking Areas; ▪ Application for Consent Details; ▪ Construction Consent Forms; ▪ Junction Visibility Splays; ▪ Passing Place provision; ▪ Transport Assessment guidance; ▪ Carriageway, Footway Construction; ▪ Street Lighting design; ▪ Parking Standards and Structures Approval.
	National Roads Development Guide (2015), SCOTS	The National Roads Development Guide (NRDG), published by the Scottish Collaboration of Transportation Specialists (SCOTS), offers comprehensive guidance on parking standards, as follows: **Class 4:Business** Business (Use Class 4) 2500m2 and above - up to 1 space per 30m2. **Parking for Disabled People - Minimum Provision Standards for New Development** Employers have a duty under employment law to consider the disabilities of their employees and visitors to their premises. The minimum number of car parking spaces for disabled people at places of employment should be: ▪ 1 space per disabled employee plus 2 spaces or 5% (whichever is greater) in car parks with up to 200 spaces; or ▪ 6 spaces plus 2% in car parks with more than 200 spaces.

[5] The Scottish Government. (2021). *Building Standards Division Non-domestic Technical Handbook April 2024* (online). Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2023/12/building-standards-technical-handbook-april-2024-non-domestic/documents/building-standards-technical-handbook-april-2024-domestic/building-standards-technical-handbook-april-2024-domestic/govscot%3Adocument/2024%2B04%2BNon-domestic%2BTechnical%2BHandbook%2B-%2BComplete.pdf

[6] Scottish Collaboration of Transportation Specialists, (2014). *National Roads Development Guide*. (Online). Available at: https://www.scotsnet.org.uk/__data/assets/pdf_file/0035/45998/National-Roads-Development-Guide.pdf

	Designing Streets: A Policy Statement for Scotland (2010)[7]	Designing Streets: A Policy Statement for Scotland published by the Scottish Government provides guidance on urban street design and place making for Scottish streets. This statement promotes a design-led approach to creating distinctive, safe & pleasant, welcoming, adaptable, resource efficient and easy to move around places through the design of streets. This national guidance recognises that some local councils (such as THC) have place-specific guidance and welcomes this, so long as the principles, layout and geometry of the design guidance corresponds.
Guidance	Planning Advice Note (PAN) 75 (2005)[8]	Planning Advice Note (PAN) 75, titled 'Planning for Transport', provides guidance on effectively integrating land use planning with transportation to promote sustainable development in Scotland. PAN75 emphasises the importance of collaboration among planning authorities, developers, and transport professionals to ensure that proposals are accessible and offer travel choices that are complementary of policy. The following sections are of interest: Annex B of PAN75 provides details of Accessibility Analysis which may be used to assess development for its promotion of regular, reliable and affordable travel. Annex D of PAN75 highlights the requirements for a Transport Assessment (TA), specifically stating the need to include: an assessment of travel characteristics, a description of the measures which are being adopted to influence travel impacts of the proposal, and a description of the transport impacts of the development in a broader context and how these will be addressed.
	Transport Assessment Guidance (2012)[9]	The Transport Assessment Guidance (June 2012) by Transport Scotland provides a comprehensive framework for evaluating the transport implications of development proposals in Scotland. The Guidance emphasises early identification and management of potential transport impacts within the planning process. Specific criteria for assessment is included in this document, where: 100 or more vehicle movements per day; 10 freight movements per day; when the planning authority has significant concerns about the possible transport impact of the proposed development. encouraging environmental sustainability and managing the existing transport network; and if the development has a Gross Floor Area (GFA) of > 5,000m^2; The TA guidance also sets out the contents of Transport Assessment for inclusion within the scope in Table 3.2 of the document which is included below:

[7]The Scottish Government, (2010). *Designing Streets: A Policy Statement for Scotland*. (Online). Available at: https://www.gov.scot/publications/designing-streets-policy-statement-scotland/
[8]The Scottish Government, (2005). *Planning Advice Note: Pan 75 - Planning For Transport*. (Online). Available at: https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/
[9]Transport Scotland, (2012). *Transport Assessment Guidance*. (Online). Available at: https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf

		Table 3.2 Contents of Transport Assessment Scoping Report **Development** Details of proposed development Development location Current planning status of proposed development Existing/historical site uses Committed development/ infrastructure Details of phased development (if applicable) **Traffic** Surveys undertaken/ required and methods Details of network/ development peaks Predicted growth Proposed assessment periods Assessment years Proposed vehicle trip rates/ generation Proposed service vehicle trip rates/ generation Proposed trip distribution Road Network Impacts Parking Provision **People** Proposed percentage modal split Proposed person trip rates/ generation Impacts on other public sector organisations/ third parties Sustainable Transport Provisions (existing/proposed) Public Transport Impacts Details of Travel Plan to be provided Other relevant information
	Environmental Impact Assessment Handbook (2018)[10]	The Environmental Impact Assessment (EIA) Handbook Version 5 (2018), published by Historic Environment Scotland (HES) and Scottish Natural Heritage (now NatureScot), provides comprehensive guidance on the EIA process in Scotland. It serves as a resource for detailing procedures to assess the environmental effects of proposed developments. In terms of transport the document provides guidance for assessing public access for any proposal on land with access rights covered by the Land Reform Scotland Act, such as core paths, public rights of way, long distance routes, other paths, and wider access rights. Any proposal which may lead to the disruption of public access should refer to 'Appendix 6: Outdoor Access Impact Assessment' of this document where the process for assessment is outlined.
	Local Transport Note 1/20 (LTN 1/20)[11],	Includes suggested minimum cycle parking capacity for different types of land use in Table 11-1.
Type of Document	**Local**	**Context**
Policy	HITRANS Regional Transport Strategy (2018 & Draft 2024)[12]	The HITRANS Regional Transport Strategy (RTS) outlines a comprehensive plan to enhance transportation across the Highlands and Islands of Scotland. The strategy emphasizes the development of a sustainable, integrated, and accessible transport network to support economic growth, social inclusion, and environmental sustainability. In terms of development proposals Strategy Theme 1 support transforming communities and reducing the impact of transport upon them. This theme is supported by policy such as: Policy ST1c: traffic calming and speed limit reductions; Policy ST1d: measures to reduce road-based severance; Policy ST1e: coordinated approach to be taken to abnormal load movments, to ensure that appropriate planning and mitigation is put in place as part of the planning process for new developments that will generate such movements;

[10] Nature Scot (2018). *Environmental Impact Assessment Handbook*. (Online). Available at: https://web.archive.org/web/20220901050635/https://www.nature.scot/sites/default/files/2018-05/Publication%202018%20-%20Environmental%20Impact%20Assessment%20Handbook%20V5.pdf

[11] DFT, (2020) *Local Transport Note 1/20 – Cycle Infrastructure Design* - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951074/cycle-infrastructure-design-ltn-1-20.pdf

[12] HITRANS, (2024). *HITRANS Regional Transport Strategy*. (Online). Available at: https://storymaps.arcgis.com/stories/644012c58f61412687ae683e4cb072d8

		Policy ST1g: management and enforcement of traffic and parking around schools, including School Streets which supports the temporary restriction on motorised traffic at school drop-off and pick-up times); Policy ST1j: the integration of active travel, public transport and shared mobility into the planning of all new developments. New development proposals should be required to outline how they will connect into the local active travel and public transport networks; and Policy ST1k: The concept of 'infrastructure first' in relation to major developments across our region.
	Highland Local Transport Strategy (2025 – 2035 Draft)[13]	The Highland Local Transport Strategy (LTS) 2025–2035 outlines the future direction for transport policy in the Highland region, focusing on sustainability, accessibility, and resilience. The guidance highlights the need to make freight specific transport as sustainable as possible. It also provides draft policies, one of which supports existing and future access needs from different demands/ sectors including renewables.
	Highland-wide Local Development Plan (2012)[14]	The Highland-wide Local Development Plan (HwLDP) provides the overarching land-use planning framework for the Highland Council area, guiding development and infrastructure decisions. The LWLDP corresponds to The Highland Renewable Energy Strategy & Planning Guidelines (2006) which states that once of its outcomes is to support 'Grid Maintenance and Expansion' through transmission (Z2).
	Active Travel Masterplans and Active Travel Strategy (2024-2030[15])	The Highland Council's Active Travel Strategy (2024–2030) aims to active travel more 'accessible', 'attractive', and 'realistic' for everyday journeys across the Highlands. Recognising that transport is essential for accessing key services and opportunities, the strategy prioritises active and sustainable travel to reduce inequalities, improve health, support economic growth, and address climate change. It also supports funding applications and aligns with wider transport initiatives to create a more connected and sustainable travel network.
Standards	Roads and Transport Guidelines for New Developments (2013)[16]	The Highland Council Roads and Transport Guidelines for New Developments (2013) provide standards and procedures for transport infrastructure in new developments within the Highland region. The guidelines ensure that new developments contribute to a safe, efficient, and sustainable transport network, aligning with planning policies such as the NRDG, and the Highland Local Transport Strategy. The parking standards that differentiate from the NRDG are as follows: **Maximum Car Parking Standard:** 1 space per 30m^2 Gross Floor Area (GFA); and **Minimum Cycle Parking Standard:** 2 spaces plus 1 space per 250m^2 GFA.
Guidance	Guidance On The Preparation Of Transport Assessments (2014)[17]	Guidance on the Preparation of Transport Assessments (2014) prepared by the Highland Council provides additional direction to supplement guidance provided through the Scottish Planning Policy (paragraph 286) and the Transport Assessment Guidance produced by Transport Scotland. This guidance emphasises the key components of a TA for submission to THC.

[13] The Highland Council, (2024). *Highland Local Transport Strategy (2025 – 2035 Draft)*. (Online). Available at https://www.highland.gov.uk/downloads/file/29476/highland_lts_-_draft_themes_and_policies
[14] The Highland Council (2012). *Local Development Plan.* (Online). Available at: https://www.highland.gov.uk/info/178/development_plans/199/highland-wide_local_development_plan
[15] The Highland Council, (2024). *Active Travel Masterplans and Active Travel Strategy.* (Online). Available at: https://www.highland.gov.uk/downloads/file/28781/active_travel_strategy
[16] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments.* (Online). Available at: https://www.highland.gov.uk/downloads/file/527/road_guidelines_for_new_developments
[17] The Highland Council, (2014).'*Guidance On The Preparation Of Transport Assessments'* (Online). Available at: https://www.highland.gov.uk/downloads/file/12194/guidelines_for_transport_assessments

3 PROPOSED DEVELOPMENT

3.1 INTRODUCTION

3.1.1. The Proposed Development is located approximately 5 km south west of Beauly within The Highland Council (THC) local authority. The Site will include a new 400 kilovolt (kV) substation and converter station along with associated access roads, drainage and landscaping proposals.

3.2 PROPOSED DEVELOPMENT DESCRIPTION

3.2.1. The indicative temporary Site layout for the construction works is shown in **Figure 3-1** and **Figure 3-2**, and shows the temporary laydown area, vehicle holding locations and car park for the duration of the works for construction personnel.

3.2.2. The layout also shows the temporary site access design for use by construction traffic, and which does not include the single track portion of the C1106 Fanellan Road.

Figure 3-1 - Indicative Temporary Site Layout (Frame 1)

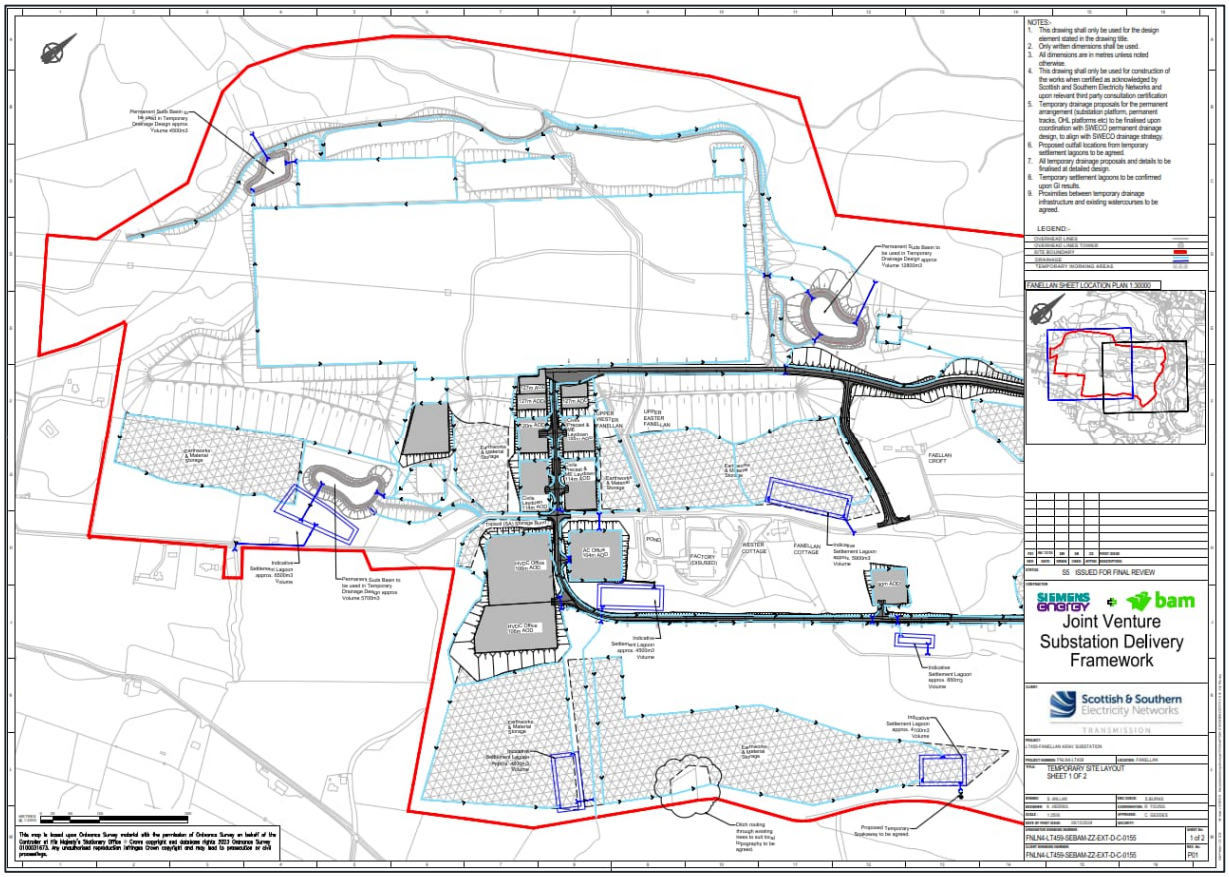
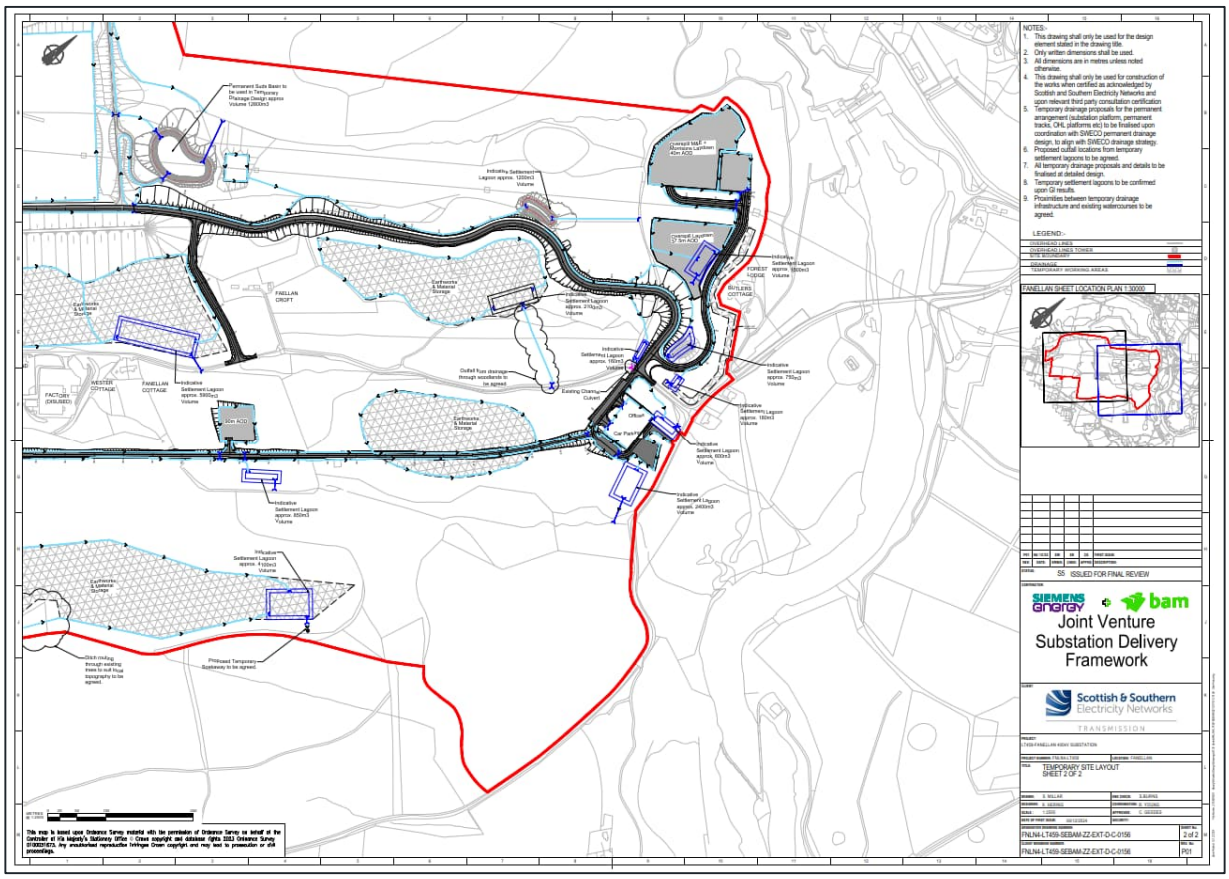


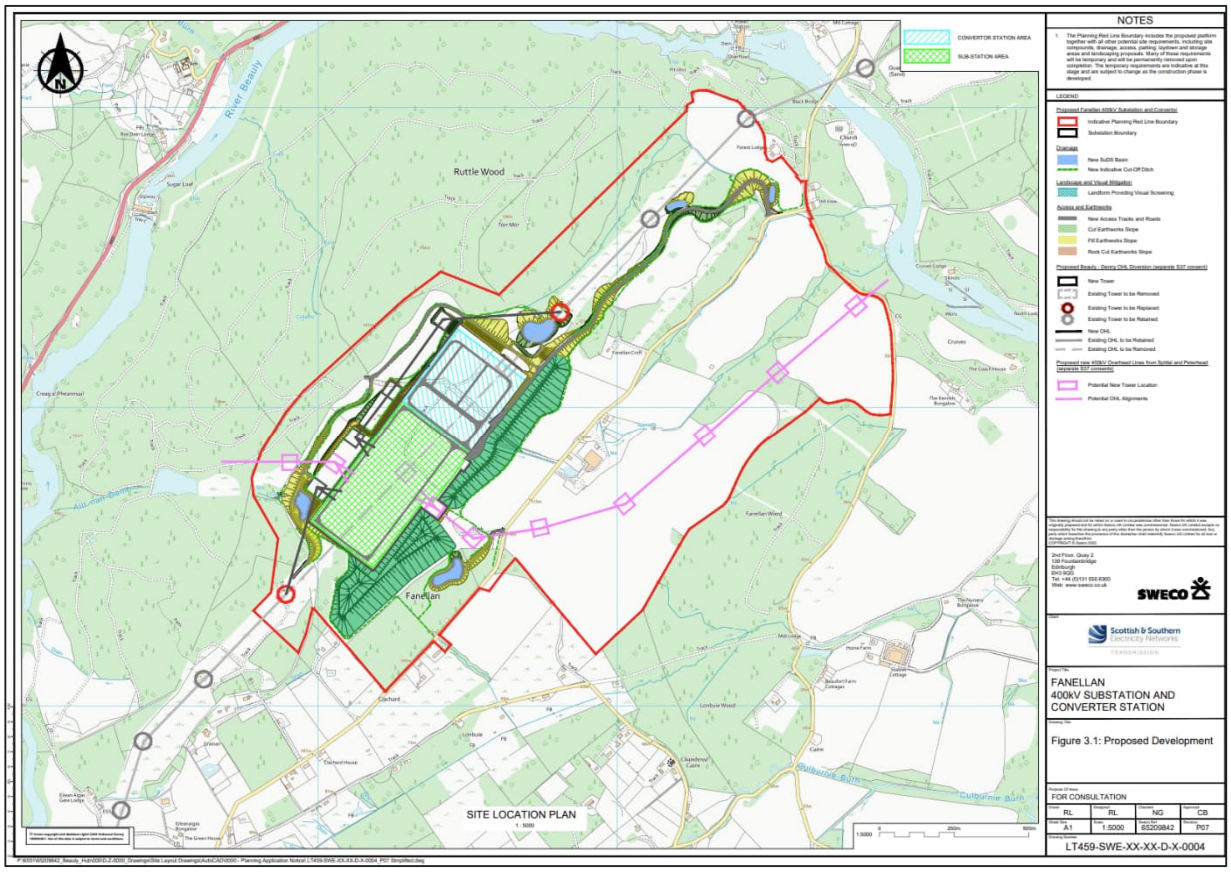
Figure 3-2 - Indicative Temporary Site Layout (Frame 2)



3.2.3. **Figure 3-3** shows the indicative permanent Site layout for the Site following completion of construction works which includes detail of the permanent site access junction location (located 120m to the west of the U1604).

3.2.4. This layout also shows the Control Building (shown in Brown), and the Operations Deport and Store (shown as the southern portion of the Green building) including the car parking provision identified for each building.

Figure 3-3 - Indicative Permanent Site Layout



3.2.5. The elements for each respective structure described below are to be included as part of the Proposed Development.

Fanellan 400 kV Substation

3.2.6. The substation will comprise of the following:

- a new substation platform, indicatively 305 m x 525 m x in size, which includes a 4.2 m security fence;
- installation of Air Insulated Switchgear (AIS) and busbar with a max height of 15 m, in order to connect incoming OHL circuits as well as the HVDC converter station;
- installation of Step-Down Transformers in order to provide the site with Low Voltage Alternating Current (LVAC) supply;
- a new control building- indicatively 50 x 26 m, with a maximum height of approx. 7 m.
- landscape forms at the front and sides of the platform to help screen the development- size and location are still in refinement.

Fanellan Converter Station

3.2.7. The HVDC at Fanellan will include the following requirements:

- a co-located converter station platform, approximately 305 x 285 m, which includes a 4.2 m security fence;

- main HVDC converter station Buildings comprising Valve Hall, Direct Current Hall, Reactor Hall, Transformer Hall with adjacent Service and Control Rooms (with the largest building around 160 m x 80 m, 27.5 m high);
- smaller ancillary and support buildings adjacent to the main converter station building;
- a connection to the AC site via overhead busbar:
- Connection for the UGC (that will run approximately 80 km from Dundonnell to Fanellan, that forms part of the Western Isles HVDC Link); and
- as the site is adjacent to the Fanellan 400 kV substation, both sites will share common access, security arrangements, site drainage infrastructure, landscaping etc.

Ancillary Construction Development

- In addition to the main infrastructure, the following ancillary development is required:
  - earthworks – a cut-fill exercise will be undertaken to achieve a level area to construct infrastructure;
  - a new access track including a bellmouth from the Fanellan Road to be created for construction activities and retained for operational use;
- temporary access tracks for construction activities;
- temporary construction compounds –as per Drawing FNLN4-LT459-SEBAM-ZZ-EXT-D-C-0155 and FNLN4-LT459-SEBAM-ZZ-EXT-D-C-0156;
- temporary storage and laydown areas for topsoil and materials as per Drawing FNLN4-LT459-SEBAM-ZZ-EXT-D-C-0155 and FNLN4-LT459-SEBAM-ZZ-EXT-D-C-0156 –;
- temporary construction drainage arrangements; and
- site clearance activities including some tree felling. The Proposed Development would require 6.68 ha of forestry clearance.

Operational Infrastructure

3.2.8. Given the scale of the developments, a need for permanent facilities have been identified to support operational requirements.

- operations depot and store – this would consist of buildings for offices, training facilities, car parking and storage facilities for strategic spares. (Approx. 124 m x 60 m, 24 m high);
- storage and desk space will be allocated within the control building, and car parking will be allocated for visiting maintenance staff.
- external lighting;
- permanent access – it is anticipated that a new bellmouth and access road to the Proposed Development from the public road (C1106 Fanellan Road) will be constructed which will remain in place permanently following construction for operational use;
- security fencing;
- earthworks – a cut-fill exercise will be undertaken to achieve a level area to construct infrastructure;
- site drainage and water management;
- underground connectors to the buildings for Low Voltage (LV) and communication cabling. The connection with the HVDC site will likely be overground via busbar rather than cabled.

- proposed demolition of existing agricultural and residential buildings within the immediate proximity to the site; and
- landscaping mitigation and biodiversity enhancement.

3.2.9. Although it is not shown on the above Figures, Pedestrian access for the public within the site will be prohibited during construction and Segregated pedestrian routes for site operatives shall be provided.

3.3 PROJECT TIMESCALES

3.3.1. It is anticipated that construction of the project would take approximately three years, starting in 2026 (with a further two years to commission and reach full energisation). The main tasks that are included in the key project stages are as follows:

- enabling works, Site clearance, tree clearing and demolitions;
- platform earthworks and creation of a level platforms;
- bund/screening earthworks;
- construction of perimeter and Site drainage, including SuDS;
- construction and installation of the buildings;
- installation of electrical plant;
- erection of a palisade security fence up to approximately 3 m in height around platforms;
- commissioning; and
- reinstatement and planting.

3.4 CONSTRUCTION WORKING HOURS

3.4.1. Construction activities would in general be undertaken during daytime periods. Working hours are currently anticipated between approximately 07.00 and 19.00 (Shorthand Reference: 12/7). Staff and Workforce movements are expected to be prior to and after these times and are therefore outside the assessment window.

3.4.2. It is, however, expected that Site activities will generate HGV movements, which will take place Monday to Friday 08:00 – 19:00 and Saturday 08:00 – 13:00. To provide a robust estimate of the impact of construction traffic for the purposes of this traffic and transport assessment, it has been assumed that an 11-hour working day will be adopted, with construction activities only undertaken over a 5 day period (Shorthand Reference: 11/5).

3.4.3. As indicated within the CTMP, in **Volume 4, Appendix 12.1: Outline Construction Traffic Management Plan** of the EIAR, the movement of Car / LGV construction traffic is anticipated to be outwith HGV movement times. For the purposes of the EIA assessment, WSP has assumed that to align with the worst-case Site working hours, that Car / LGV movements (including workforce movements) are expected to take place 07.00 and 19.00, 7 day per week, (Shorthand Reference: 12/7).

3.4.4. During the commissioning phase of the Proposed Development, there may be a requirement for 24 hours a day, seven days a week working (Shorthand Reference: 24/7). If required, this would be discussed and agreed in advance with THC. Any out of hours working would also be discussed and agreed in advance with THC.

3.5 PARKING PROVISION

SITE CAR PARKING - CONSTRUCTION

3.5.1. Car parking will be available at appropriate locations within the site as per the contractor's requirements and the number of spaces available will accommodate the required usage. **Figure 3-1** and **Figure 3-2** [Drawing Refs: FNLN4-LT459-SEBAM-ZZ-EXT-D-C-0155 and FNLN4-LT459-SEBAM-ZZ-EXT-D-C-0156] details the temporary laydown and stockpiling areas during the construction phase. Car parking shall be included in the indicative compound areas. These areas will be updated as the works phasing dictates.

SITE CAR PARKING - OPERATION

3.5.2. Both the sub-station and convertor station compounds include adequate parking provision and inclusions for laydown and unloading.

3.5.3. The indicative number of car parking spaces for the following elements are noted below:

- Operations depot and store – 10 (including 1 Blue Badge Space); and
- Control Building – 9 (including 1 Blue Badge Space).

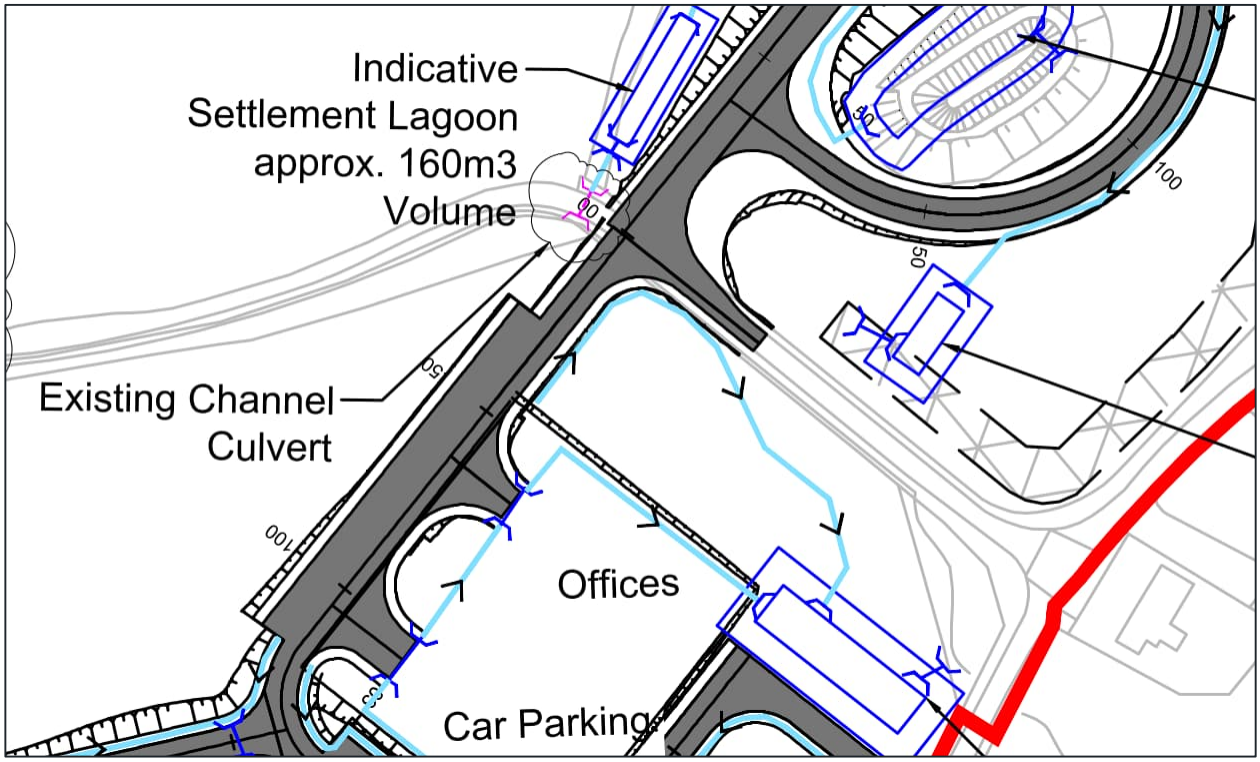
3.5.4. The parking numbers are reflective of the applicant's current expected trip generation. Therefore, the Car Parking provided is indicative at this stage and may be confirmed via condition. Upon completion of the development, both the sub-station and convertor station will be accessed periodically on an ongoing basis for maintenance and training purposes.

3.6 SITE ACCESS

TEMPORARY ACCESS JUNCTION

3.6.1. During construction the Site will be accessed with the formation of a new junction on the adopted road network. The indicative form of this proposed junction is shown in **Figure 3-4**.

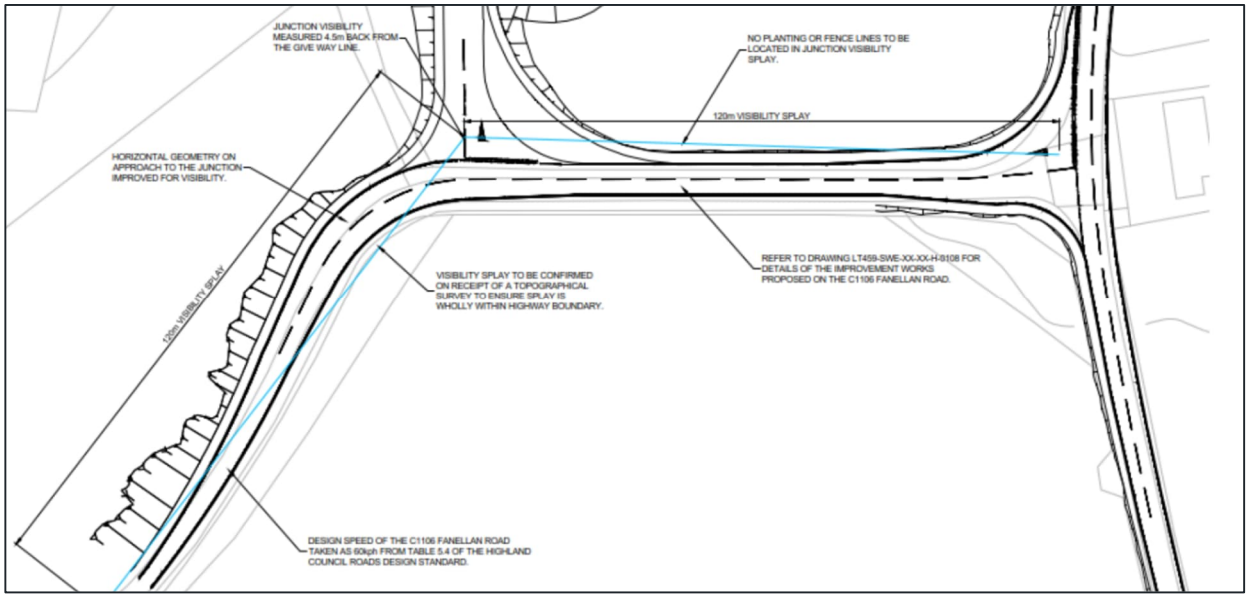
Figure 3-4 - Indicative Form of the Proposed Temporary Construction Access Junction



PERMANENT ACCESS JUNCTION

3.6.2. The Site will be accessed with the formation of a new junction on the adopted road network. The indicative form of this proposed junction is shown in **Figure 3-5**.

Figure 3-5 - Indicative Form of the Proposed Permanent Access Junction



3.6.3. The site will be accessed via a single point on the C1106 (Fanellan Road) located approximately 120 m west of the U1604 junction with Fanellan Road. The formation of this junction will be

supported by public road improvements (PRIs) and traffic management measures to support the provision of an appropriate level of visibility at the access location.

3.6.4. The full list of proposed PRI's are included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

3.7 PROPOSED ORIGIN OF DELIVERIES

3.7.1. As shown in **Figure 1-1**, the nearest locations with which the local road network connects to the trunk road network are at the following locations:

- 1) To the north, at the Tore Roundabout where the A832 meets the A9; and
- 2) To the East, at the A82 where the A862 reaches Inverness.

3.7.2. These locations are where the majority of construction traffic is expected to originate from. It has been determined by the Principal Contractor that the construction materials would be delivered to the site via the northern route via the A832, however it is considered that some traffic may route from Inverness via the A862 and therefore this has been considered within traffic routing.

Aggregate Traffic Origins

3.7.3. It is acknowledged that construction activities would also be supported by aggregate movements including that of surplus soil and rock which will be generated throughout the construction programme. It is not currently known where this material will be transported, and it has therefore been assumed that aggregates would be transported to the nearest end-user / disposal site within a 45 minute radius via the trunk road network to the Site via the identified routes.

3.8 POTENTIAL ACCESS ROUTES

3.8.1. Access to the site is to be achieved through the upgrading of existing road network and by installing a new stone access track into the site.

3.8.2. As previously stated, the most suitable and preferred route to access the Site uses the Black Bridge over the River Beauly close to the A831. However, due to the requirement to replace Black Bridge alternative routing is considered to allow construction to start on Site prior to the completion of the Black Bridge works, currently programmed to be completed late 2028.

3.8.3. The following section identifies the approach that will be taken to assess the most appropriate route to Site which is carried out in **Section 4**.

First Principles Approach

3.8.4. The primary considerations to account for when delivering a route strategy are:

- Use of the shortest route available from the location of the access points to the Trunk Road Network (TRN);
- Use of a sliding scale approach with regards to route assignment and road classification, utilising the 'A' classified road network as far as practicable, before resorting to lower classifications of road;
- Avoid single carriageway roads where alternatives are available; and
- Avoid settlements and sensitive receptors where possible.

3.9 VEHICLE CLASSIFICATION

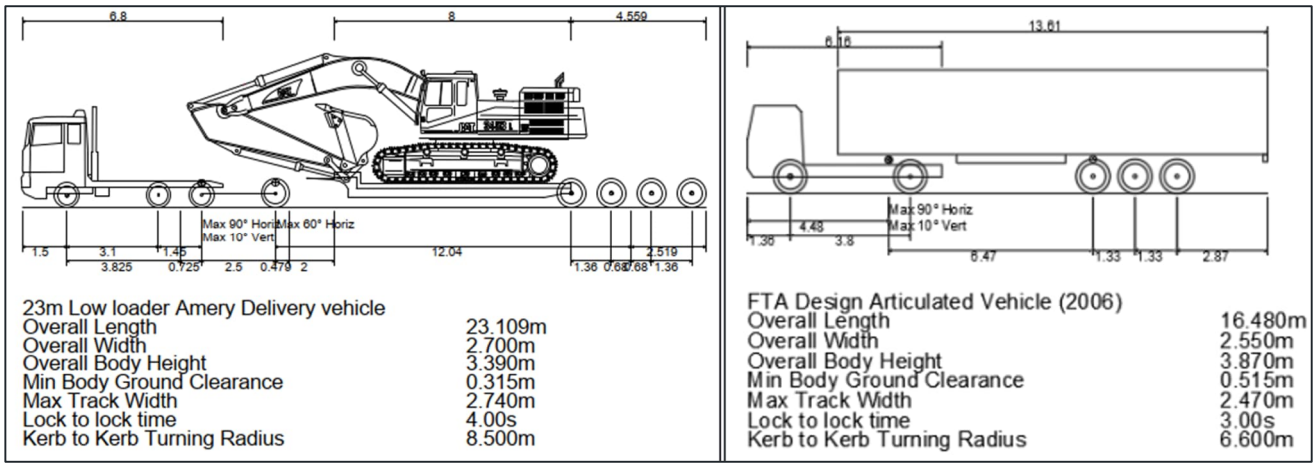
3.9.1. This report has been prepared using information supplied by the Principal Contractor who have estimated the likely vehicle types to transport construction materials to Site per phase.

3.9.2. The Principal Contractor confirms that construction activities will be supported by the following key vehicle types and key plant during Phase 1 of construction traffic routing:

- Rock Crushers;
- Large e.g. 91.85 tonne (t) transported to Site on Low Loaders;
- Large bull dozers;
- Heavy Goods Vehicles (HGVs) transporting construction materials, plant and equipment to / from Site;
- Tipper Trucks (e.g. for transporting aggregates to Site);
- Low Loaders (e.g. for transporting cranes) to Site;
- Light Goods Vehicles (LGVs) delivering materials to Site; and
- Cars and vans transporting staff to and from the Site.

3.9.3. It is considered that the following vehicles shown in **Figure 3-6** are the largest of the vehicles expected during Phase 1 of construction traffic routing.

Figure 3-6 - Phase 1 Largest Vehicle specifications



3.9.4. It is anticipated that **Figure 3-6** shows the largest plant equipment that will be transported as an AIL to Site during Phase 1. It is anticipated that the following plant identified in **Table 3-1** will also require to route during Phase 1.

Table 3-1 – Indicative Plant Equipment - Transport Technical Information

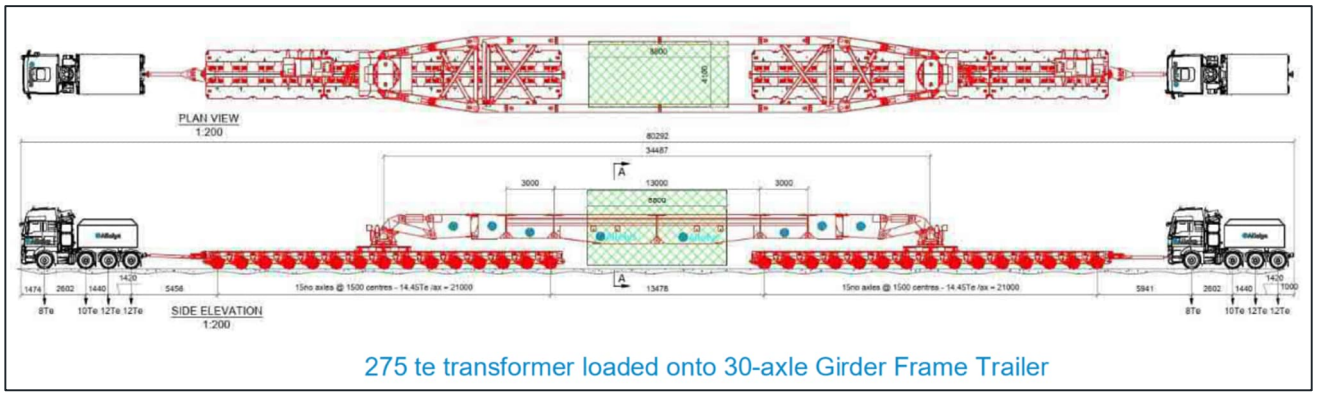
Plant Type	Plant Make & Model	Total Load Weight	Total Load Weight per axle	Plant Width	Total Trips to Site
Excavator	CAT 374	91.85	11.48	3.5	2
Excavator	CAT 352	86.4	10.80	3.18	1
Bull Dozer	CAT D8T	73.795	9.22	3.377	1
Articulated Dumptruck	CAT 745	67.363	8.42	3.5	1
Mobile Crusher	Kleeman MC110	83	10.38	3	1
3 Way Screener	Sandvik QE441	71.1	8.89	3.2	1
37tn Loading Shovel	Volvo L220 H	67.2	8.40	3.23	1
Total					**8**

3.9.5. The Principal Contractor confirms that construction activities will be supported by the following key vehicle types and key plant during Phase 2 of construction traffic routing:

- Heavy Goods Vehicles (HGVs) transporting construction materials, plant and equipment to / from Site;
- Tipper Trucks (e.g. for transporting aggregates to Site);
- Low Loaders (e.g. for transporting cranes) to Site;
- Abnormal Indivisible loads (AILs) for transporting transformers;
- Light Goods Vehicles (LGVs) delivering materials to Site;
- Cars and vans transporting staff to and from the Site; and
- Girder Trame Trailer (GFT) for the delivery of Transformers.

3.9.6. It is considered that the following vehicle shown in **Figure 3-7** is the largest of the vehicles expected during Phase 2 of construction traffic routing.

Figure 3-7 - Phase 2 Largest Vehicle Specification



3.9.7. It is not the intention of this report to assess the swept path analysis of the largest load of Phase 2 as this has previously been assessed as part of the **Abnormal Load and Construction Traffic Assessment Report** which can be found within **Volume 4, Appendix 12.3** of the EIA Report, [Document Ref: LT459-SWE-XX-XX-T-H-1001]. However, the Construction Traffic Impact Assessment is identified within **Section 7**.

4 ACCESS ROUTE REVIEW

4.1 ACCESS ROUTE REVIEW

4.1.1. This section summarises the results of a review of the potential routes from the trunk road network which can be used to access the Site prior to identifying what is considered to be the most appropriate construction traffic access route following a first principles approach outlined in **Section 3.8**.

PROPOSED DEVELOPMENT CONTEXT

4.1.2. Due to known existing structural issues with the Black Bridge on the C1106 between the U1604 and the A831, it will be necessary for HGV's and plant equipment accessing this development to route from the A833 through Kiltarlity. As a result, it is now proposed that the construction traffic routing take a phased approach (separate to the construction phasing), until such a time as the Black Bridge works are complete. Therefore, a Phased approach to construction traffic routing is proposed, as follows:

- Phase 1: Prior to construction on Black Bridge – Estimated to be between 2026 and 2028; and
- Phase 2: After construction on Black Bridge – Currently programmed to be completed late 2028.

VEHICLE CLASSIFICATION

4.1.3. This report has been prepared using information supplied the Principal Contractor who have estimated the likely vehicle types to transport construction materials to Site per phase.

4.1.4. The Principal Contractor confirms that construction activities will be supported by the key vehicle types and key plant identified in **Section 3.9**.

Agreed Route Map for Timber Transport Forum Classification

4.1.5. The Agreed Route Map for Timber Transport Forum[18] has been developed by timber transport groups at local authority level, and it categorises roads supporting access to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles. The routes are categorised into four groups, namely; 'Agreed Routes', 'Consultation Routes', 'Severely Restricted Routes' and 'Excluded Routes'.

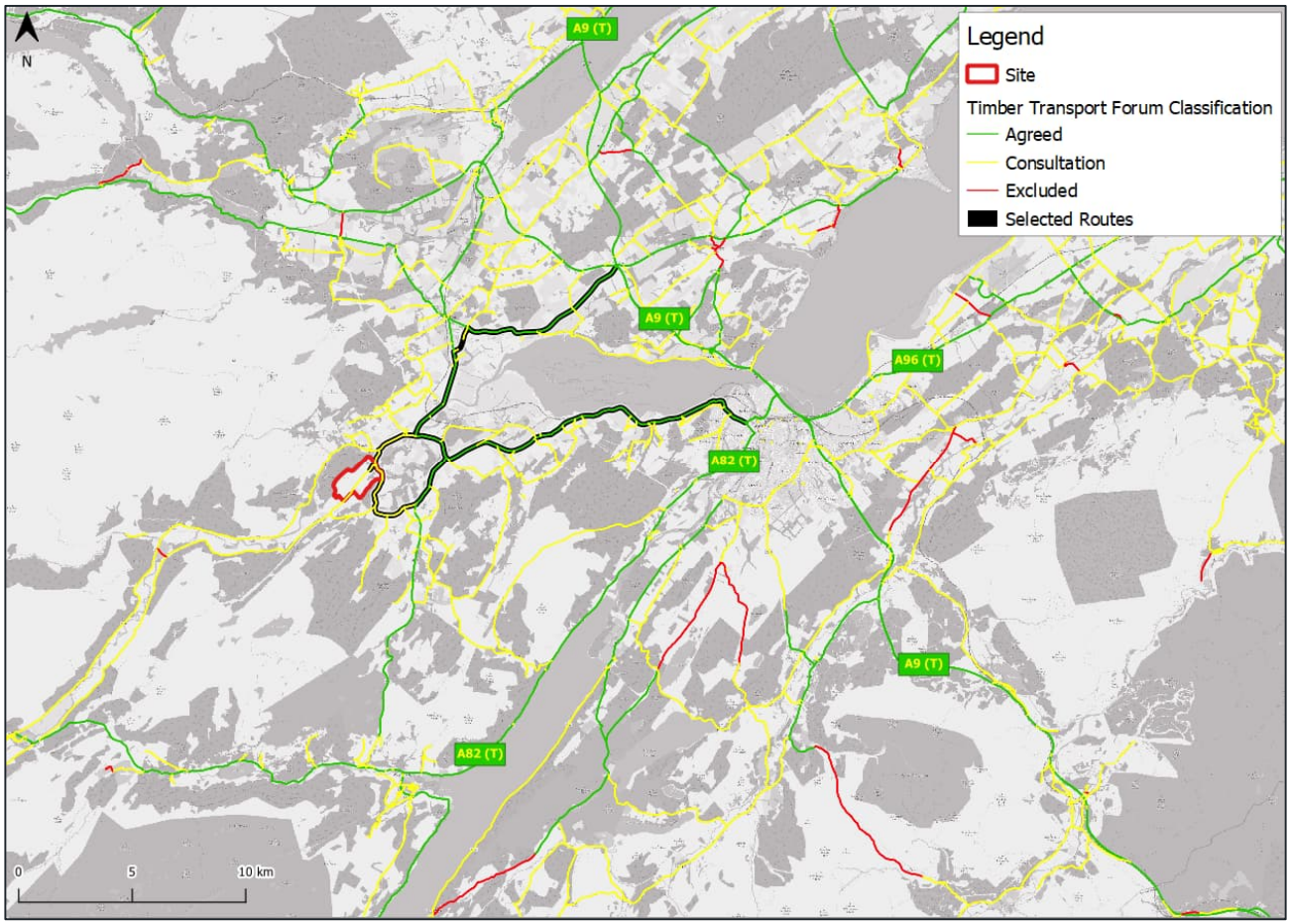
4.1.6. 'Agreed Routes' are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. 'A' classification roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Agreed Routes are categorised as a route which is key to timber extraction. Those routes classed as 'Consultation, but which are not up to 'Agreed Route' standard. The Timber Transport Forum (TTF) confirms that consultation with the Local Authority is required, and it may be necessary to agree limits of timing, allowable tonnage, etc., before 'Consultation Routes' can be used.

[18] Timber Transport Forum, (2025). Agreed Route Map for Timber Transport Forum (Online). Available at: https://timbertf.maps.arcgis.com/apps/webappviewer/index.html?id=4a23d4910e604b71872956441113c83c

4.1.7. Due consideration has been given to the agreed routes from the trunk road network to the site when identifying a preferred routing arrangement to support access to the Site, and our detailed appraisal of the form of the local road network has therefore focused on roads which are not 'Agreed Routes'.

4.1.8. Data from the Agreed Route Map for the local road network is shown in **Figure 4-1**, and the most direct, and routes to the trunk road network have been highlighted as the selected routes.

Figure 4-1 - Timber Transport Forum – Selected Routes

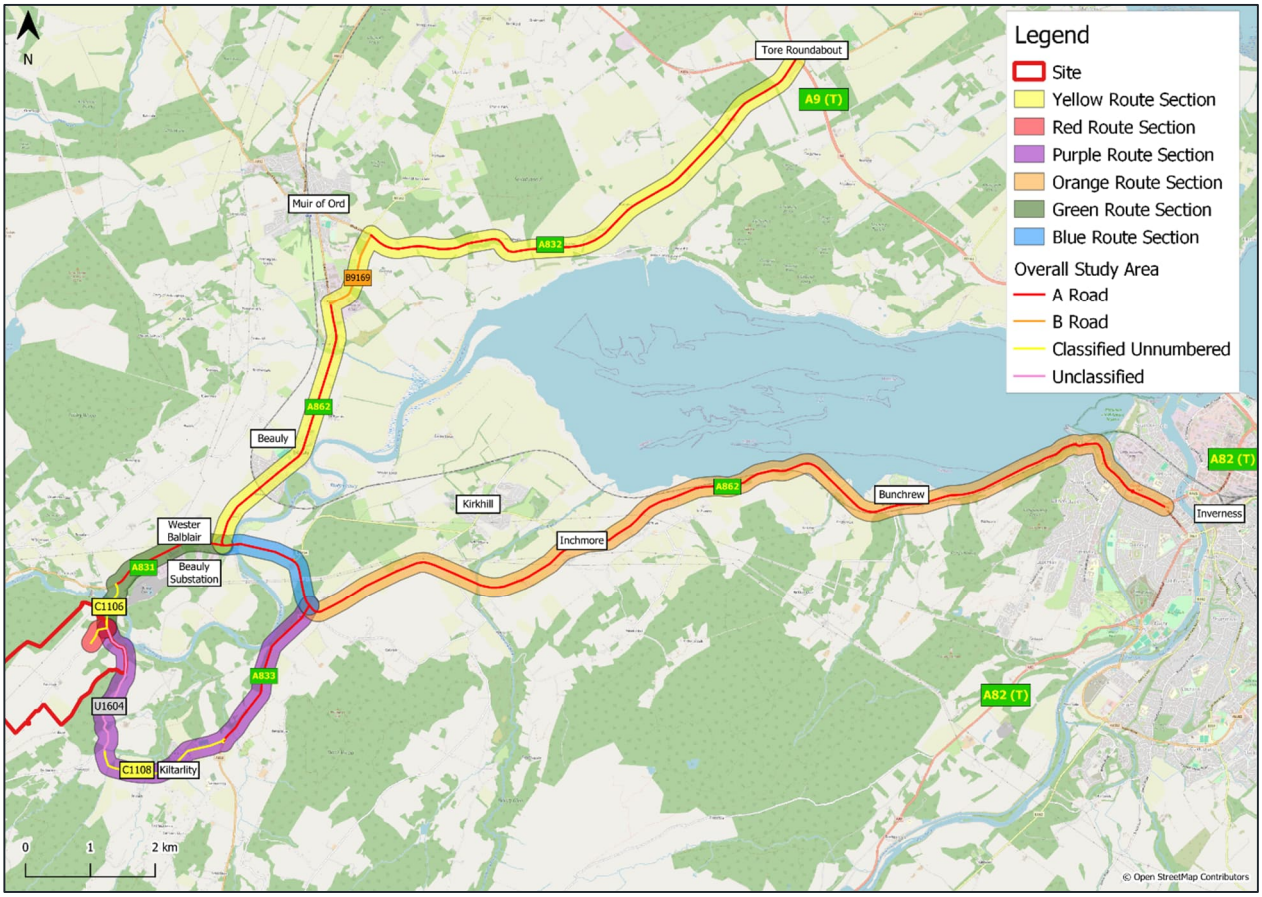


4.2 IDENTIFICATION AND APPRAISAL OF POTENTIAL ACCESS ROUTE OPTIONS

4.2.1. The proposed access routes from the trunk road network to the Site has been informed by a desktop review. While all route options to Site present constraints, the selected access routes are considered to be the most suitable of the available access options for construction vehicles. Any constraints on the proposed construction access routes have been highlighted, with a swept-path analysis undertaken (SPA) using AutoTrack, to ensure the route is able to accommodate HGVs and to assess the level of mitigation that is required. The summary of the analysis and any proposed mitigation for each of the routes will be contained within **Section 7** of this TA.

4.2.2. Below is a summary of the sections of the proposed construction access routes from the trunk road network to the site. **Figure 4-2** shows an overview of these route sections that selected construction vehicles will be using to access the Site.

Figure 4-2 - Study Area



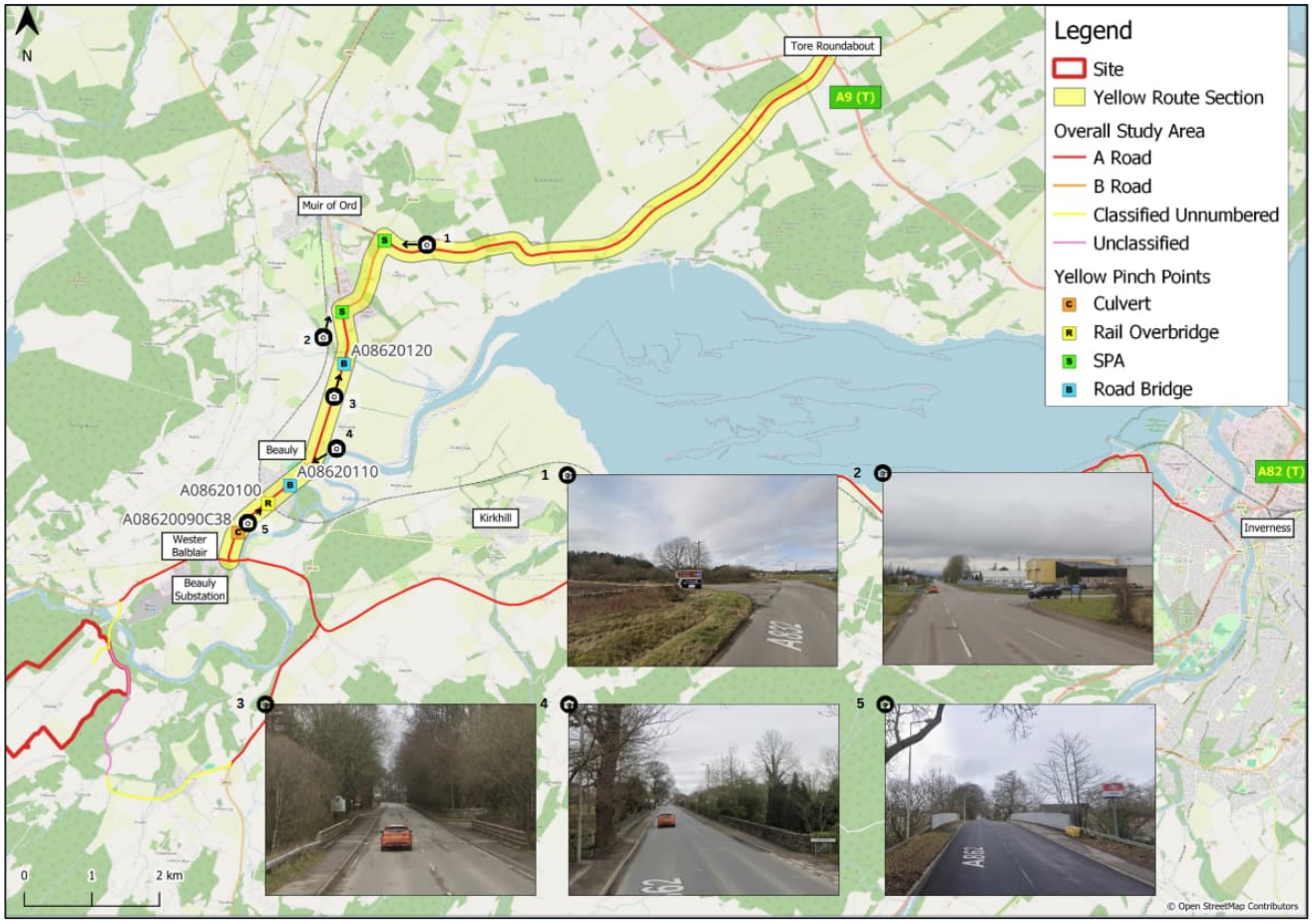
4.2.3. As shown in **Figure 4-2**, there are six route sections which have been geographically defined in order to assess the construction traffic links. The following roads make up each route section:

- Section 1: Yellow Route: A832, B9169 A862;
- Section 2: Blue Route: A862;
- Section 3: Orange Route: A862;
- Section 4: Purple Route: A833, C1108, U1604;
- Section 5: Green Route: A831, C1106; and
- Section 6: Red Route: C1106 at the Site Access.

SECTION 1 – YELLOW PROPOSED ACCESS ROADS

Section 1 of the Proposed Access Route is located to the north west of Inverness and routes between the Tore Roundabout at the A9 and on the A862, until it's junction with the A831. The majority of this section of route is an 'Agreed Route' apart from the B9169 at the Muir of Ord Industrial Estate. The route and it's identified pinch points are shown in Figure 4-3.

Figure 4-3 - Section 1 Yellow Route Section Pinch Points



4.2.4. Within the study area, the A832 is a rural two-way single carriageway road between the A9 at Tore Roundabout (part of the trunk road network) and the B9169 at the Muir of Ord Industrial Estate. This road is subject to the national speed limit throughout and passes a few hamlets. The A832 is designated as an 'Agreed Route' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs.

4.2.5. The B9169 is a two-way single carriageway road which is subject to the national speed limit throughout and runs through the Muir of Ord Industrial Estate. The B9169 is designated as a 'Consultation Route' by the Timber Transport Forum at the northern and southern portions of the carriageway. However, as this route is signed as an HGV route, as shown in Photograph 1 of **Figure 4-3**, it is therefore considered to be suitable for use by HGVs. This route will be considered within subsequent analysis.

4.2.6. Within the study area, the A862 is a two-way single carriageway road which is subject to the national speed limit, that reduces when passing through Beauly village. The A862 is designated as an 'Agreed Route' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs.

4.2.7. Through a review of the ESDAL portal and Google Streetview, it is confirmed that throughout the route there are two bridge structures, one rail overbridge and one culvert. There are no signed restrictions and no indication of weight restrictions on the ESDAL portal.

4.2.8. The following structures are identified:

- A08620120, Blackburn (Tomich), Road Underbridge, ESRN: S-NH531478-1, No signed constraints;
- A08620110, Bridgend, Road Underbridge, ESRN: S-NH523460-1, No signed constraints;
- A08620100, A9 Beauly Road (OP), Road Underbridge on Inverness – Wick line, ESRN: S-NH519458-1, No signed constraints; and
- A08620090C38, Teawig, Culvert Underbridge ESRN: S-NH515451-1, No signed constraints.

4.2.9. It is noted however that although the ESDAL portal states there are no signed restrictions, a previous route feasibility study for the project by Allelys, found that the Beauly Rail Overbridge (A08620100) and a Culvert at Teawig (A08620090C38) both had a max vehicle axle load of 14.6 t on previously assessed vehicles. Depending on what transformer is used these structures may require further assessment. However, it is considered that for the majority of construction traffic (HGV and LGV / Car) movements, that these structures pose no constraints to routing.

4.2.10. The following points have been identified as pinch points where SPA will be undertaken throughout this assessment:

- SPA Point 1: Junction of the A832 with the B9169; and
- SPA Point 2: Junction of the B9169 with the A862.

SECTION 2 – BLUE ROUTE SECTION

Section 2 of the Proposed Access Route is located to the north west of the Site, south of Beauly and routes between the A831 at Wester Balblair to the A833 at Meikle Phoineas on the A862. The route and it's identified pinch points are illustrated in **Figure 4-4**.

Figure 4-4 - Section 2 Blue Route Section Pinch Points

4.2.11. Within the study area, the A862 is a two-way single carriageway road which is subject to the national speed limit. The A862 crosses over the Beauly River via Lovat Bridge and where the carriageway reduces to a signal controlled single carriageway. The A862 is designated as an 'Agreed Route' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs.

4.2.12. Through a review of the ESDAL portal and Google Streetview, it is confirmed that throughout the route as mentioned, there is one bridge structure, and also one culvert. There are no signed restrictions and no indication of weight restrictions on the ESDAL portal.

4.2.13. The following structures are identified:

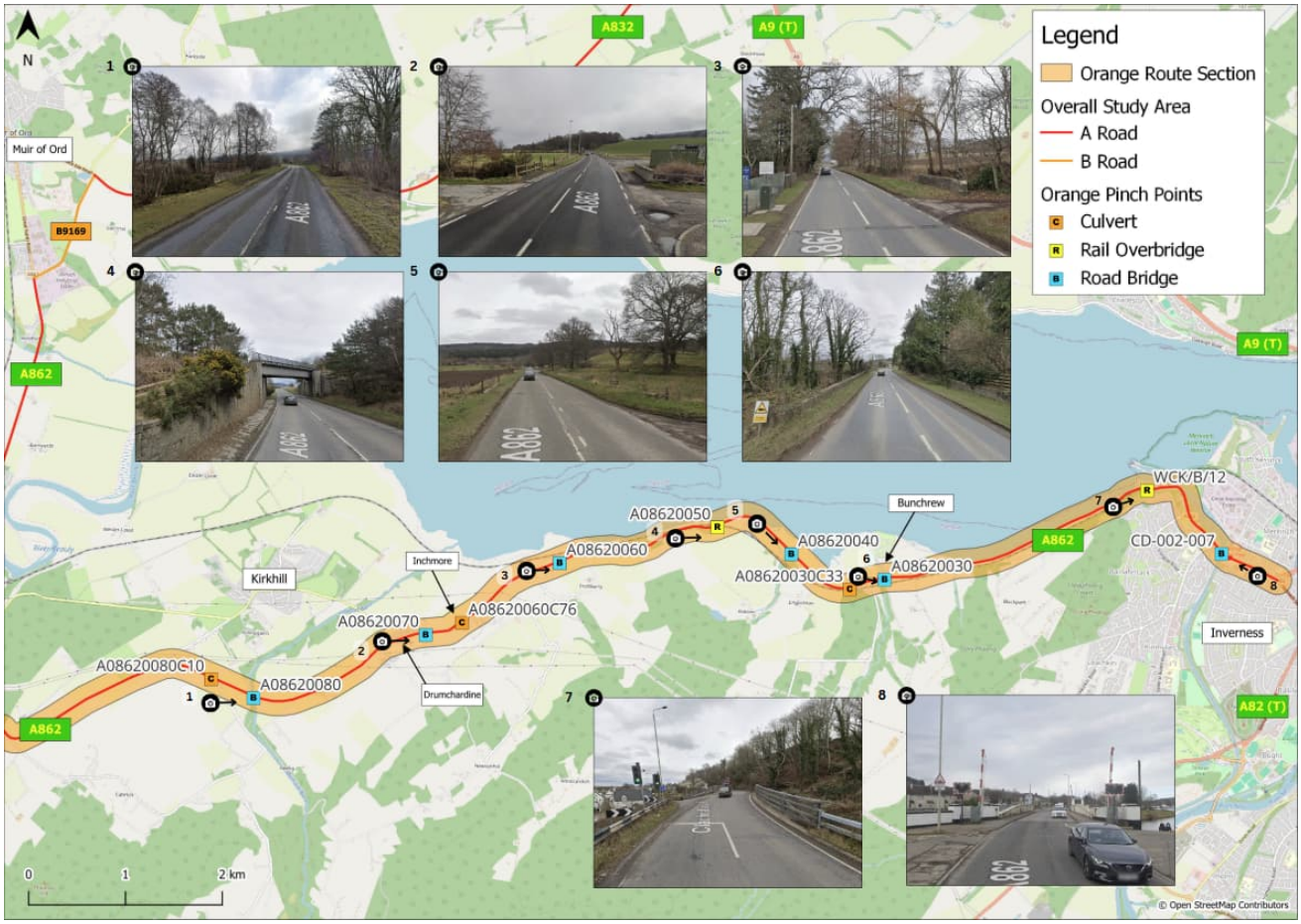
- A08620090, Lovat, Road Underbridge, ESRN: S-NH516449-1, No signed constraints – Further assessment necessary; and
- A08620080C82, Unnamed, Culvert Underbridge ESRN: S-NH523447-1, No signed constraints.

4.2.14. It is noted however that although the ESDAL portal states there are no signed restrictions, the Principal Contractor has advised that THC have specified no abnormal loads are to cross Lovat Bridge without inspection and approval from the structures team.

SECTION 3 – ORANGE ROUTE SECTION

4.2.15. Section 3 of the Proposed Access Route is comprised of the A862 which is located north east of the Site located between the A82 at Inverness and the A833 at Meikle Phoineas. The route and it's identified pinch points are illustrated in **Figure 4-5**.

Figure 4-5 - Section 3 Orange Route Section Pinch Points



4.2.16. Within the study area, the A862 is a two-way single carriageway road which is subject to the national speed limit. The A862 crosses over the following burns: Moniak, Inchberry, Kirkton, Kinlea, Bunchrew, and Anthil, as well as the Caledonia Canal at Inverness. The A862 is designated as an 'Agreed Route' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs.

4.2.17. Through a review of the ESDAL portal and Google Streetview, it is confirmed that throughout the route as mentioned, there are six bridge structures, two railway crossings, and also three culverts. There is one signed restriction for height limit, and no indication of weight restrictions on the ESDAL portal.

4.2.18. The following structures are identified:

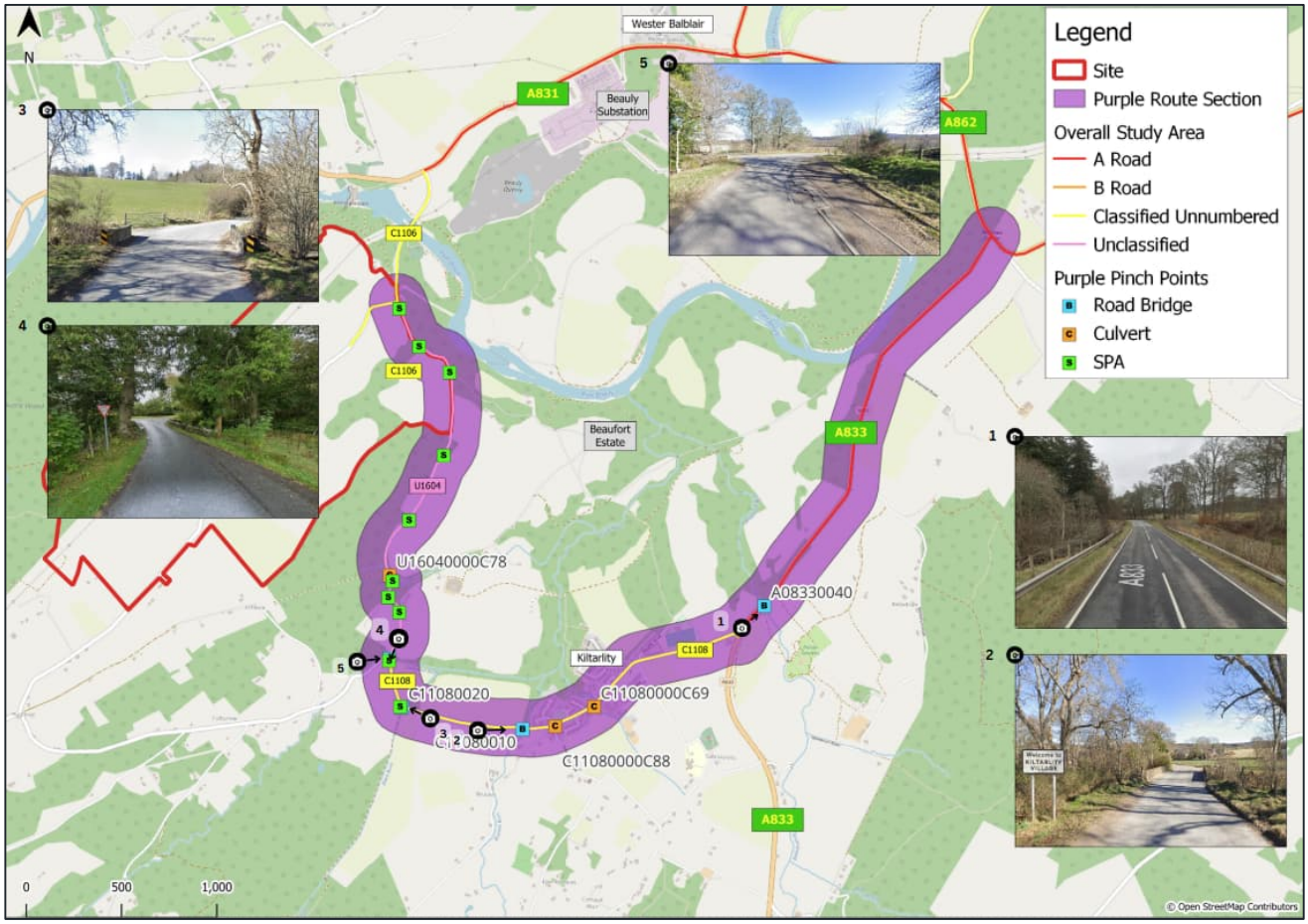
- A08620080C10, Unnamed, Culvert Underbridge, ESRN: S-NH549445-1, No signed constraints;
- A08620080, Moniack II, Road Underbridge, ESRN: S-NH553443-1, No signed constraints;
- A08620070, Bogroy Smithy, Road Underbridge, ESRN: S-NH571450-1, No signed constraints;
- A08620060C76, Unnamed, Culvert Underbridge, ESRN: S-NH574451-1, No signed constraints;
- A08620060, Lethran, Road Underbridge, ESRN: S-NH585457-1, No signed constraints;
- A08620050, Phopachy, Rail Overbridge on Inverness – Wick line, ESRN: S-NH601461-1, Signed Height: 5.05 m / 16.5';
- A08620040, Kirkton, Road Underbridge, ESRN: S-NH609458-1, No signed constraints;
- A08620030C33, Unnamed, Culvert Underbridge, ESRN: S-NH615451-1, No signed constraints;

- A08620030, Bunchrew, Road Underbridge, ESRN: S-NH618455-1, No signed constraints;
- WCK/B/12, WCK/B/12 Clachnaharry Road, Road Underbridge on Inverness – Wick line, ESRN: S-NH645461-1, No signed constraints; and
- CD-002-007, Bridge 2, Muirtown Swing Bridge, Road Underbridge, ESRN: S-NH653458-1, No signed constraints.

SECTION 4 – PURPLE ROUTE SECTION

4.2.19. Section 4 of the Proposed Access Route is made up of the A833, and the unclassified roads, the C1108, and the U1604. This route section is located east and south east of the Site. This route provides an alternative route to Site (than the A831) and routes through the village of Kiltarlity on the C1108 and up the U1604 on the western boundary of Beaufort Estate to reach the C1106, Fanellan Road. The route and it's identified pinch points are illustrated in **Figure 4-6**.

Figure 4-6 - Section 4 Purple Route Section Pinch Points



4.2.20. Within the study area, the A833 is a two-way single carriageway road which is subject to the national speed limit. The A833 crosses over Dounie Burn/ Belladrum Burn north of Brodies Corner junction with the C1108 Kiltarlity Road. The A833 is designated as an 'Agreed Route' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs.

4.2.21. Within the Study Area, the C1108 runs through Kiltarlity from the A833 at Brodie's Corner to the U1604 at Culburnie Burn, crossing over Bruiach Burn and Black Burn through the village. The road

is a two-lane single carriageway and is subject to a 30 mph speed limit from Allarburn Drive to Post Office Brae, where the speed limit increases to 60 mph. The C1108 is designated as a 'Consultation Route' by the Timber Transport Forum and it is therefore considered necessary to carry our further assessment to ascertain this routes suitability for use by HGVs.

4.2.22. The U1604 routes from the C1108 at Culburnie Burn to the C1106 Fanellan Road. The road is a single lane carriageway with passing place provision throughout and is subject to a 60 mph speed limit. The U1604 is designated as a 'Consultation Route' by the Timber Transport Forum and it is therefore considered necessary to carry our further assessment to ascertain this routes suitability for use by HGVs.

4.2.23. Through a review of the ESDAL portal and Google Streetview, it is confirmed that throughout the route as mentioned, there are four Bridge structures, and also three culverts. There are no signed restrictions and no indication of weight restrictions on the ESDAL portal.

4.2.24. The following structures are identified:

- A08330040, Dalnamein, Road Underbridge, ESRN: S-NH515420-1, No signed constraints;
- C11080000C69, Allarburn, Culvert Underbridge, ESRN: S-NH506415-1, No signed constraints;
- C11080000C88, Unnamed, Culvert Underbridge, ESRN: S-NH504411-1, No signed constraints;
- C11080010, Bruiach, Road Underbridge, ESRN: S-NH502411-1, No signed constraints;
- C11080020, Allt Coiche, Road Underbridge, ESRN: S-NH496415-1, No signed constraints;
- U16040010, Culburnie Burn, Road Underbridge, ESRN: S-NH495418-1, No signed constraints; and,
- U16040000C78, Lonbui Burn, Culvert Underbridge, ESRN: S-NH495422-1, No signed constraints.

4.2.25. The following points have been identified as pinch points where SPA will be undertaken throughout this assessment:

- SPA Point 3 - 13: the length of the U1604.

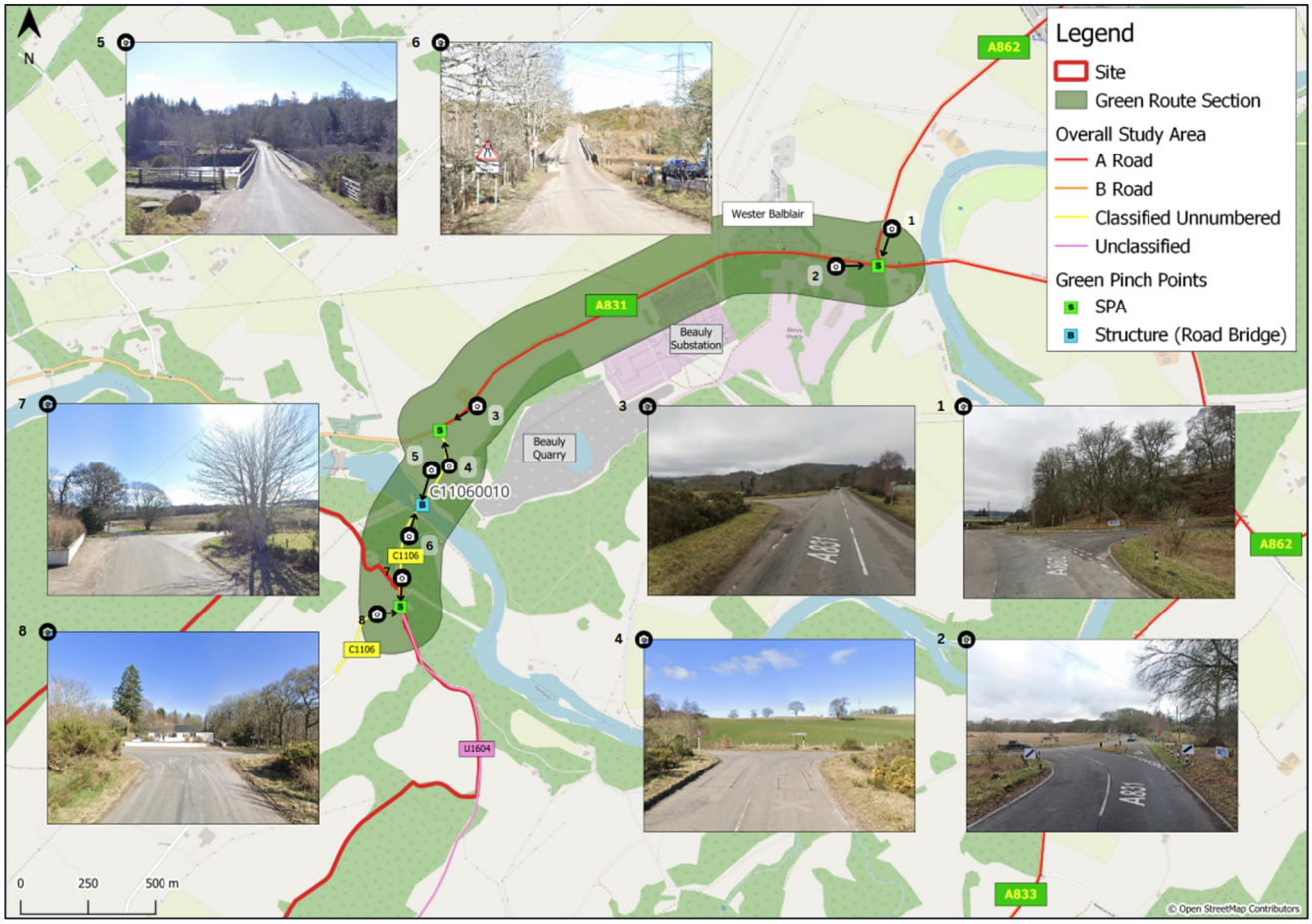
Potential Beaufort Route

4.2.26. In response to concerns raised by THC as part of the consultation process, specifically in regards to routing of construction traffic through Kiltarlity, an alternative route has been developed through Beaufort Estate, expected to minimise impact on Kiltarlity. This route, which is not part of the adopted public road network, could be upgraded to accommodate construction activities during Phase 1, prior to the completion of Black Bridge works, removing the vast majority of construction traffic going through Kiltarlity. This option is further discussed within **Section 7**.

SECTION 5 – GREEN ROUTE SECTION

4.2.27. Section 5 of the Proposed Access Route is located north east of the Site and comprises of the A831, and the C1106 between the U1604 and the A831. A831 is a two-way single carriageway road that is subject to the national speed limit. The route and its identified pinch points are illustrated in **Figure 4-7**.

Figure 4-7 - Section 4 Green Route Section Pinch Points



4.2.28. Within the study area, the A831 is a rural two-lane single carriageway road which is subject to a national speed limit which reduces between Wester Balblair and the A862.

4.2.29. Within the study area, the C1106 Fanellan Road is a rural two lane single carriageway which is subject to a national speed limit.

4.2.30. The green route (A831, and the C1106) is designated as a 'Consultation Route' by the Timber Transport Forum and it is therefore considered necessary to carry our further assessment to ascertain this routes suitability for use by HGVs.

4.2.31. Through a review of the ESDAL portal and Google Streetview, it is confirmed that throughout the route as mentioned, there is one Bridge structures. There are no signed restrictions and no indication of weight restrictions on the ESDAL portal.

4.2.32. The following structure was identified:

- C11060010, Black Bridge Kilmorack, Road Underbridge, ESRN: S-NH497440-1, No signed constraints, Assessment Undertaken.

4.2.33. It is noted however that although the ESDAL portal states there are no signed restrictions, the Principal Contractor has advised that through assessment of Black Bridge, there are weight restrictions that would not permit HGV access on this structure due to weight.

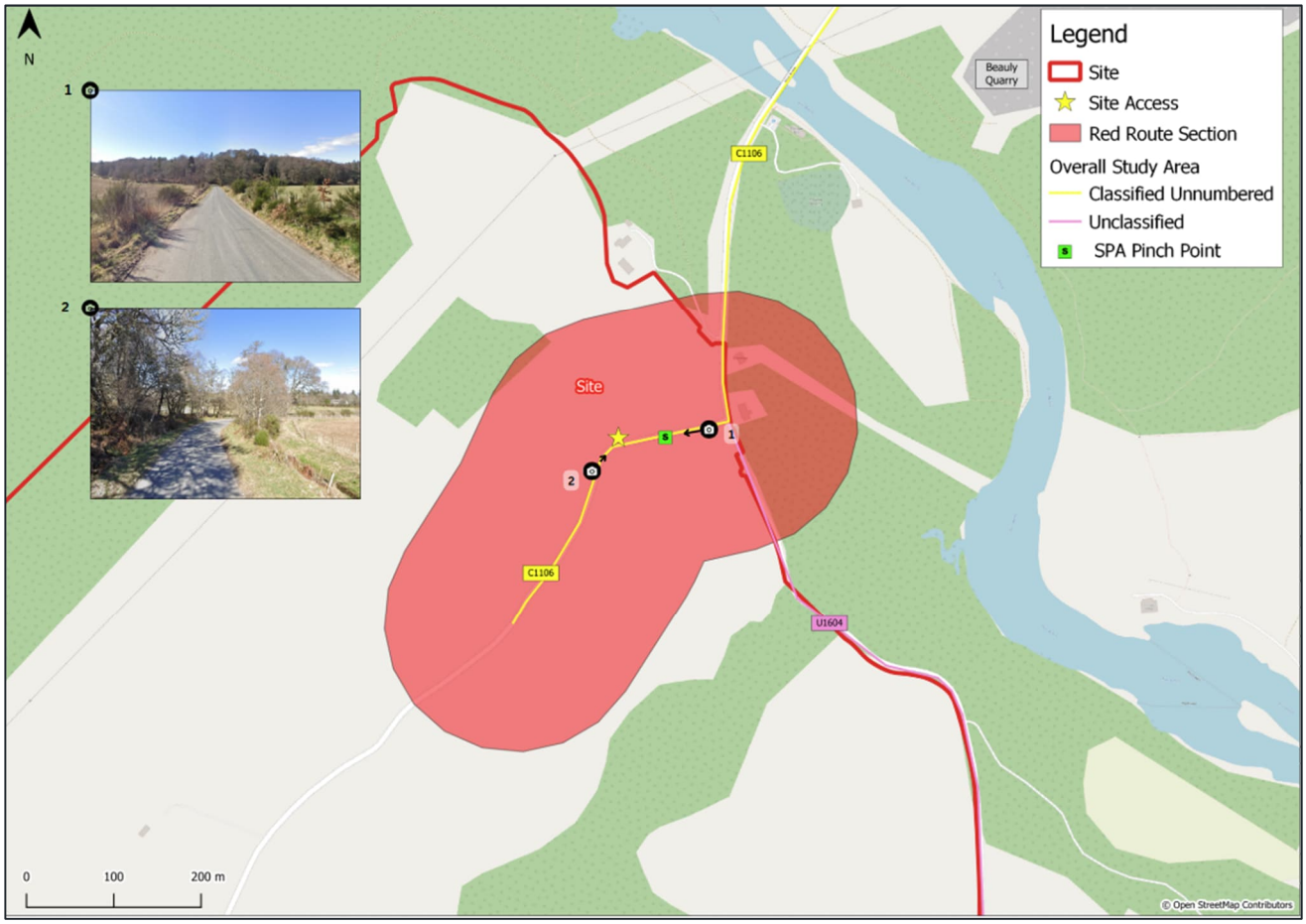
4.2.34. The following points have been identified as pinch points where SPA will be undertaken during assessment:

- SPA Point 14: junction of the A831 and the A862;
- SPA Point 15: junction of the A831 and the C1106; and
- SPA Point 16: junction of the C1106 with the U1604.

SECTION 6 – RED ROUTE SECTION

4.2.35. Section 6 of the Proposed Access Route is where Site access will be taken and is located within the red line boundary from the East of the site on the C1106 / U1604 junction, approximately 120 m west to the proposed new access junction. The route and it's identified pinch points are illustrated in **Figure 4-8**.

Figure 4-8 - Section 6 Red Route Section Pinch Points



4.2.36. It is noted that the ESDAL portal states there are no structures or restrictions on this route.

4.2.37. The following point has been identified as a pinch point where SPA will be undertaken throughout this assessment:

- SPA Point 17: the C1106 between the U1604 and the Site Access.

4.3 DESKTOP ACCESS ROUTE REVIEW SUMMARY

4.3.1. The above review has informed an initial route options appraisal to identify the most suitable routes from the yard to each of the access points.

4.3.2. At identified above the following roads are designated as ‘Agreed Routes’:

- A831 between the A9 and the B9169;
- A833 between the A862 and the C1108; and
- A862 between the B9169 and the A82.

4.3.3. The following roads have been identified as ‘Consultation Routes’:

- B9169 between the A832 and the A862;
- A831 between the A862 and the C1106;
- C1106 between the A831 and the Site Access;
- C1108 between the A833 and the U1604; and
- U1604 between the C1108 and the C1106.

4.3.4. The following structures were identified that have signed or known constraints:

- A08620090, Lovat, Road Underbridge, ESRN: S-NH516449-1, Further assessment required;
- A08620050, Phopachy, Rail Overbridge on Inverness – Wick line, ESRN: S-NH601461-1, Signed Height: 5.05 m / 16.5'; and
- C11060010, Black Bridge Kilmorack, Road Underbridge, ESRN: S-NH497440-1, No signed constraints, Assessment Undertaken.

4.3.5. The following points have been identified as pinch points where SPA will be undertaken during assessment:

- SPA Point 1: Junction of the A832 with the B9169;
- SPA Point 2: Junction of the B9169 with the A862;
- SPA Points 3 to 13: The length of the U1604;
- SPA Point 14: Junction of the A831 and the A862;
- SPA Point 15: Junction of the A831 and the C1106;
- SPA Point 16: Junction of the C1106 with the U1604; and
- SPA Point 17: The C1106 between the U1604 and the Site Access.

Consultation Undertaken on Structures and Assessment

4.3.6. In 2023, at an earlier stage of the project, and as part of a feasibility survey for the transport of transformers for the project to the site, a haulage specialist undertook consultation on some of the structures along a potential abnormal load route to site. The specification of the transport vehicle which was considered is detailed in **Table 4-1**.

Table 4-1 – Previous AIL Study Vehicle Specification

Specifications	Vehicle Detail
Vehicle Type	F5.5 HGB 30 Axle Trailer
Applied Load Weight (t)	275
Length (m)	8.8
Width (m)	4.5

Height (m)	4.75
Axles on Trailer (no.)	30
Wheels per axel (no.)	8
Axle Line Load (t)	14.45
Trailer Gross Weight (t)	433.45

4.3.7. The study found that structures within the study area such as Beauly Rail Overbridge (A08620100) and a Culvert at Teawig (A08620090C38) had a max axle load of 14.6 t, and this was a limiting factor. In addition to this, Black Bridge (C11060010) failed this structural assessment.

4.3.8. Through consultation with the THC Structures Officer (THCSO), the option to access the Site from the south from the A833 > C1108 > U1604 > C1106 was considered, and the potential for upgrades to Black Bridge to enable routing for the North via the A831 > C1106.

4.3.9. The THCSO identified that routing over Lovat Bridge (A08620090) would depend on the specifications of the abnormal load vehicle over it and would require assessment of the foundations for scouring and around the caisson before crossing. Additionally, the THCSO confirmed that there are 5 - 6 bridges around the 'Kiltarlity loop' that would require further assessment.

Planned Assessment of Structures

4.3.10. The Principal Contractor has consulted The Highland Council to advise on the current structural capacity of the route. At the time of writing this report THC are yet to comment on the structural capacity of their assets, however, the Principal Contractor has started to undertake structural assessment of the structures on the route. The results of which are estimated to be available after the submission of this TA.

4.3.11. It is considered that all of the THC structures on the route are short span and suitable for alternative engineering solutions, should they fail further structural assessment, if any are to require this.

Black Bridge Assessment

4.3.12. In November 2023, Sweco undertook analysis of Black Bridge to determine the capacity of the Bridge. The study found that the bridge had previous been assessed in 1992 by Halcrow which found the bridge to have a capacity of 7.5 t, and the subsequently in 2003, 2015, 2015, and in 2019 further assessments were undertaken on the condition of the bridge. The 2023 report assessed various vehicle types and concluded that the central spans of the bridge (2 & 3) fail once loaded with Special Vehicle (SV) Loads. The report recommends repair and strengthening works or replacement of the bridge, stating that "*if sufficient repairs are carried out …the structure will have a load rating of 18t*". THC have provided comment on Black Bridge (Structure Number C1160010) and it has been determined that any new structure should be constructed such to be able to accommodate the 30-axle GFT.

4.3.13. In September 2025, at present, SSEN propose replacement of Black Bridge works, which is currently programmed to be completed late 2028.

PHASED APPROACH TO CONSTRUCTION TRAFFIC ACCESS ROUTES

4.3.14. As it was identified above, Black Bridge (on the Green Route, Section 5) does not currently have sufficient capacity to accommodate heavy loads. The Black Bridge requires full replacement, (which, where required, will be subject to a separate planning application) and therefore, is not to be used by any HGV construction traffic over the period of the replacement works. A phased approach to the

construction traffic access routes is proposed to maintain the construction programme (this is separate from the construction phasing proposed for the duration of the project). The routes to the site for each access phase are summarised below in **Figure 4-9** and **Figure 4-10**.

Figure 4-9 - Phase 1 Route Pinch Points

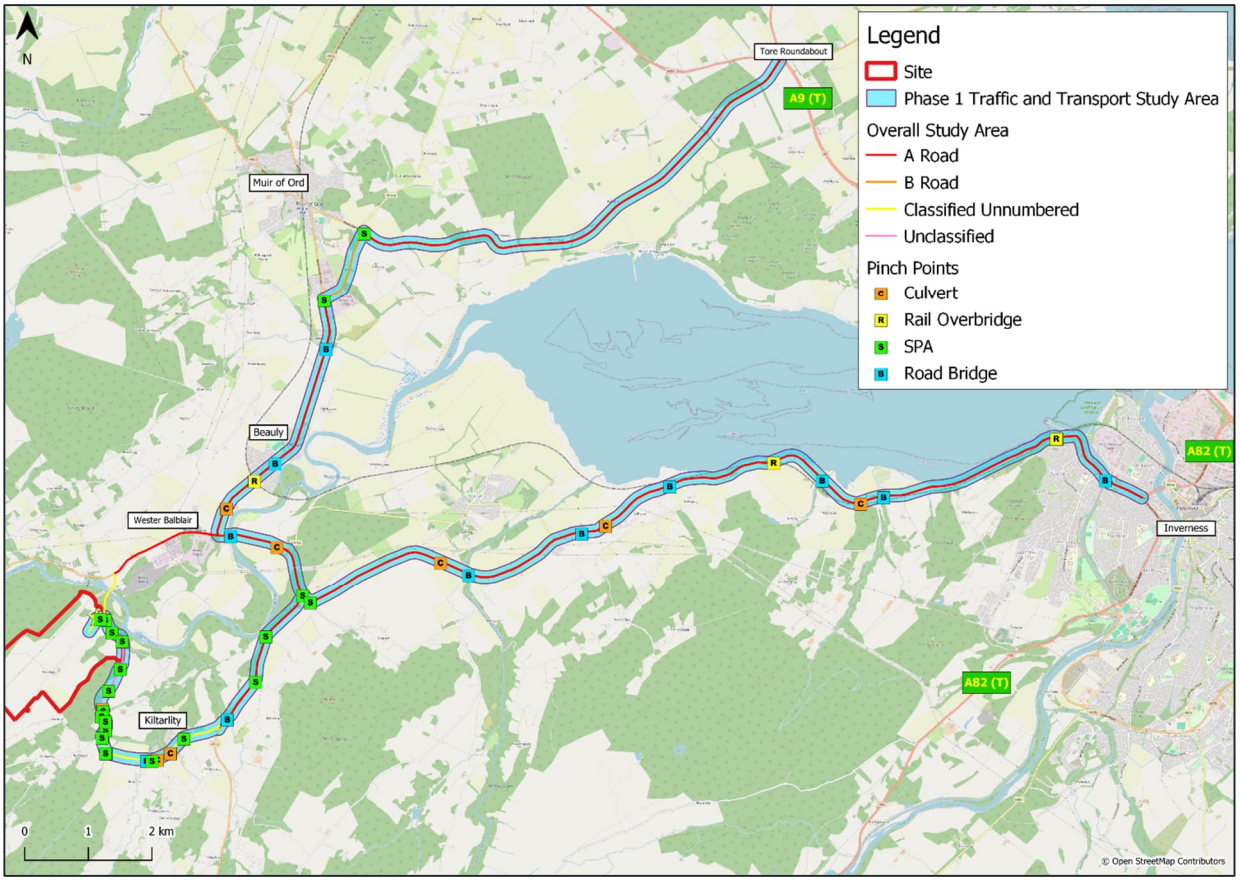
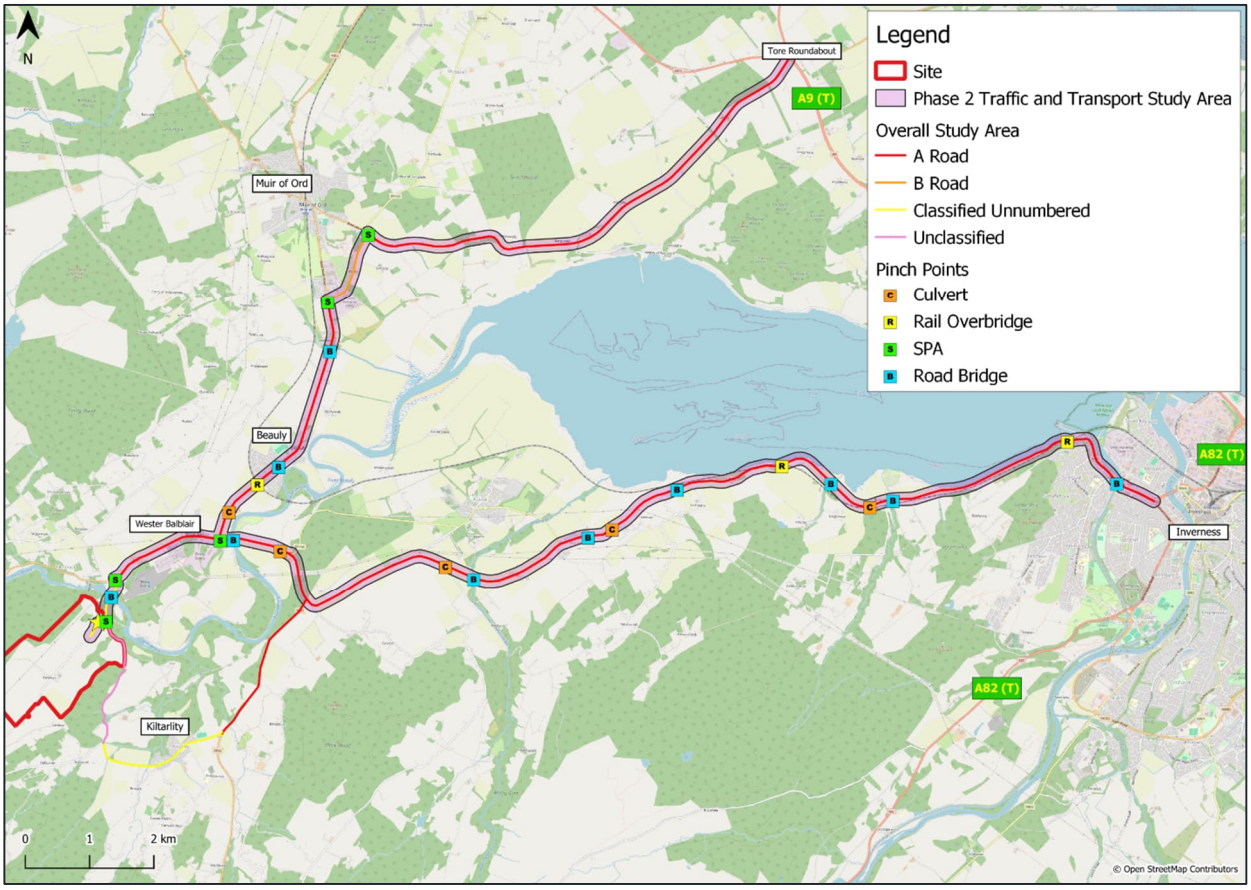


Figure 4-10 - Phase 2 Route Pinch Points



4.3.15. **Table 4-2** summarises the assumed roads that construction traffic would use when accessing the site from the trunk road network for each Phase.

Table 4-2 – Roads and Route Sections used per Phase of Proposed Development

Phase	Roads Utilised from the adopted road network	Road Cross Section	Route Section
Phase 1	A832	single carriageway road	Section 1
	B9169	single carriageway road	Section 1
	A862 (between B9169 and A381)	single carriageway road	Section 1
	A862 (between A831 and A833)	single carriageway road	Section 2
	A862 (between A82 and A831)	single carriageway road	Section 3
	A833	single carriageway road	Section 4
	C1108 (Kiltarlity Road)	Single carriageway road which locally narrows at some locations	Section 4
	Beaufort Route*	Private single carriageway road.	Section 4
	U1604	Single track road with passing places	Section 4
	C1106 (Fanellan Road)	Mixture of single track road with passing places and single carriageway road	Section 4
Phase 2	A832	single carriageway road	Section 1
	B9169	single carriageway road	Section 1
	A862 (between B9169 and A381)	single carriageway road	Section 1
	A862 (between A831 and A833)	single carriageway road	Section 2
	A862 (between A83 and A831)	single carriageway road	Section 3
	A831	single carriageway road	Section 5
	C1106 (At Black Bridge)	single carriageway road	Section 5
	C1106 (Fanellan Road)	Mixture of single track road with passing places and single carriageway road	Section 6

***Not part of adopted road network*

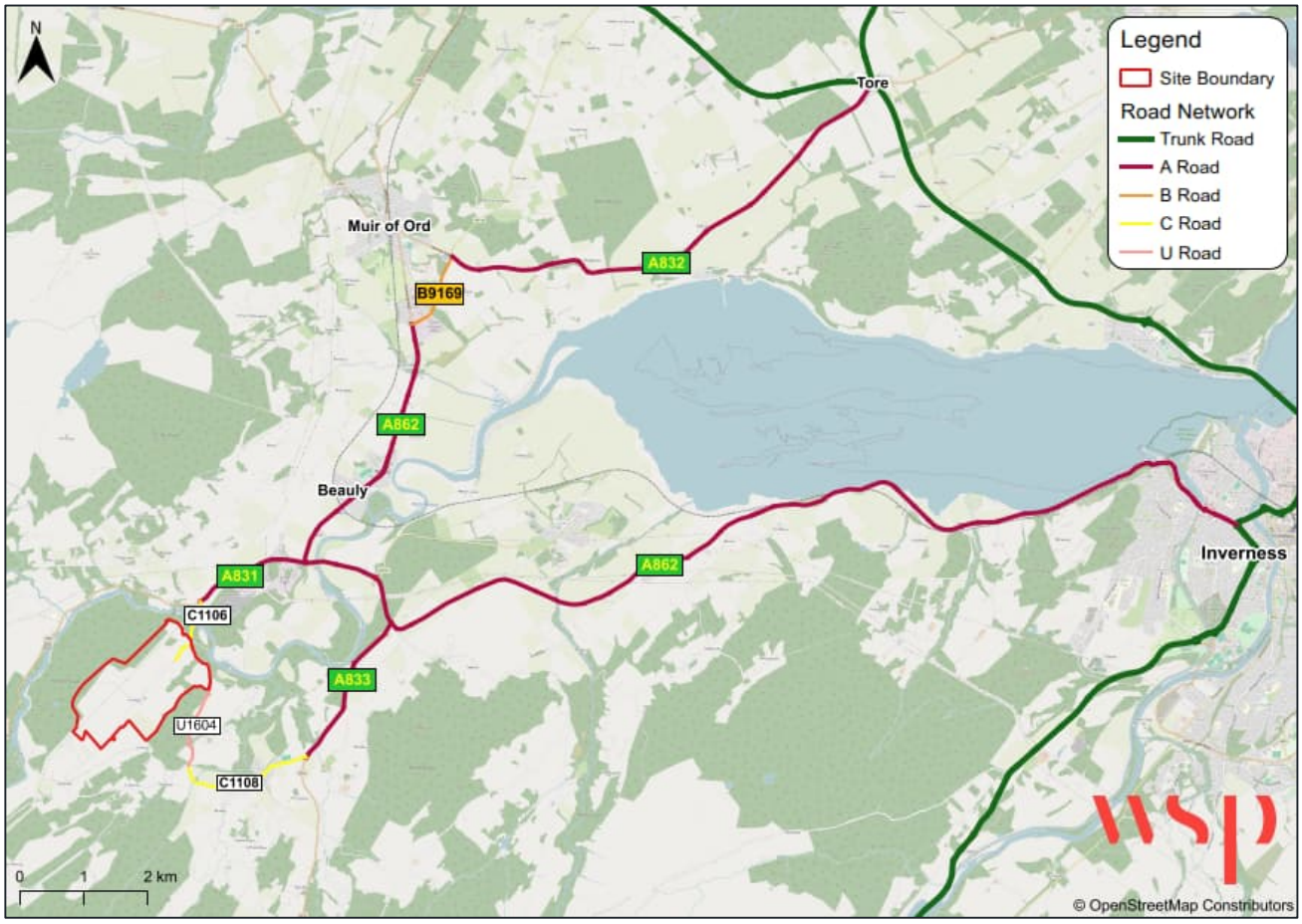
5 EXISTING CONDITIONS

5.1.1. This section builds on **Section 4: Access Route Review** and considers the local road network proposed to be used throughout the duration of the construction of the Proposed Development. **Figure 5-1** shows the Proposed Development and the proposed construction traffic access routes it is assumed will be used. The majority of the road network is rural in nature, and its standard reflects this.

5.2 SITE CONTEXT

5.2.1. The Site is located close to the unclassified C1106 which connects with the A831 approximately 300 m to the north of Black Bridge which supports the road's crossing of the River Beauly. While not supported by a centre line for the majority of its length, the road is approximately 5 meters in width between the A831 and its junction with the U1604 which supports access to the C1108 through Kiltarlity. While Black Bridge currently has no signed restrictions on its usage, its width has been reduced as a result of its current structural condition, with the implementation of an existing priority working arrangement controlled by give way signage.

Figure 5-1 - Local Road Network



5.3 LOCAL ROAD NETWORK

A832

5.3.1. The A832, links the A9 (T) at Tore with the A862 at Ord to Marybank. It is a two-lane single carriageway subject to the national speed limit for the majority of its length as it passes through an area which is generally rural in nature. The road is approximately 6.5 m in width and is unlit throughout. The A832 surface condition is of varying condition appearing to be a tarmac material, with central road markings and with no structures throughout and no weight restrictions.

B9169

5.3.2. The B9169 routes between the A832 to the A862 providing an alternative route to avoid the village of Muir of Ord. The carriageway is approximately 6.5 m in width and is subject to a 60 mph speed limit. Surrounding land use is largely agricultural at its junction with the A832 and at the A862 junction land use is industrial with this area including the Muir of Ord Industrial Estate.

5.3.3. The surface quality of the B9169 is mixed with tarmac used throughout and where updates are required, particularly through the Muir of Ord Industrial Estate. Through the Industrial Estate, the carriageway features faded central road markings, no distinct carriageway edges, no footways and there are several potholes. There are no structures along this route and no known weight restrictions.

A862

5.3.4. The A862 is a single carriageway road which provides a connection between Inverness and Dingwall. The A862 is generally subject to the national speed limit, which reduces when passing through villages. Within the Study Area between Inverness and the B9169 at the Muir of Ord, the A862 reduces to 20 mph though Beauly, where the general carriageway width is 6.5 m, and features speed cushions to the north and south of the Beauly. However, over Lovat Bridge the carriageway narrows to 5.5 m and where signalised control operates.

5.3.5. The A862 surface quality is mixed, consisting mainly of tarmac with maintenance repairs having been made throughout. The surface features central road markings and on Lovat Bridge features pedestrian markings for foot traffic. There are 4 structures on the route with generally no weight restrictions apart from the Beauly Rail Overbridge (A08620100) and a Culvert at Teawig (A08620090C38) which both have an assumed max vehicle axle load of 14.6 t.

A831

5.3.6. The A831 connects the A862 with the C1106 and is a rural two-lane single carriageway road varying in width between approximately 6 and 7.5 m in width and which is subject to a national speed limit between the two roads.

5.3.7. The A831 surface condition varies, consisting of tarmac with central road markings and with no known weight restrictions or structures throughout. The junction of the A831 with the A862 has a small radius but provides good visibility for traffic entering from the A862.

A833

5.3.8. The A833 forms a junction with the A862 at Phoineas towards Milton via the C1108 as a two-lane single carriageway approximately 6 to 6.5 m in width and subject to the national speed limit. Land

use is generally rural agricultural in nature with few residential properties along its length. The road features low stone walls adjacent to the carriageway.

5.3.9. Within the Study Area, the A833 surface condition is generally consistent with a tarmac surface, with central and edge of carriageway road markings. There is one structure throughout and no known weight restrictions. The junction of the A833 with the A862 has a small radius but provides good visibility for traffic from the A862 onto the A862. The junction of the A833 with the C1108 provides a wide turning radius for traffic to and from the north of the A833.

C1108

5.3.10. The C1108 runs through Kiltarlity from the A833 at Brodie's Corner, located approximately 2.5 km east of the Proposed Site Access. The road is a two-lane single carriageway, varying between approximately 4.5 and 6.5 m in width and is subject to a 30 mph speed limit from Allarburn Drive to Post Office Brae where the speed limit increases to 60 mph. Between these locations there are residential houses either side of the carriageway and beyond is agricultural land. At Kiltarlity Hall there is a zebra crossing which connects the northern side of the carriageway to a track that leads to Tomnacross Primary School, approximately 600 m south of the C1108.

5.3.11. The surface of the C1108 is mixed with tarmac on Allerburn that requires upgrading and from Kiltarlity Hall to Bruiach Burn Bridge, there appears to be a recently upgraded Asphalt surface, and thereafter the road is tarmac. There are no central road markings although the carriageway appears to support two way movements.

U1604

5.3.12. The U1604 runs between the C1108 at Culburnie Burn to the C1106 at Hill View. The road is approximately 4.5 m in width, subject to a 60 mph speed limit, and either side of the carriageway there is mostly agricultural land use with few holiday cottages.

5.3.13. The surface of the U1604 is generally consistent with tarmac single carriageway throughout, and with passing places at periodic intervals. There are no central road markings although the carriageway appears to support two way movements with use of the passing places.

LOCAL EVENTS

5.3.14. The following local events have been identified where the local road network may experience an increase in traffic flows during these identified periods:

- **Belladrum Music Festival**: east of Kiltarlity on the A833, during July – August, occurring Annually; and
- **Black Isle Show**: at Muir of Ord on the B9169, during August, occurring Annually.

5.4 PUBLIC TRANSPORT

5.4.1. The existing public transport facilities within the vicinity of the Proposed Development are shown within **Figure 5-2**.

Figure 5-2 - Existing Public Transport Facilities

BUS SERVICES

5.4.2. The closest bus stops to the Site are located north of its boundary on the A831, and to the south on the C1108. The form of each of these stops are shown in **Figure 5-2**. The frequency of the services is included in **Table 5-1**.

Table 5-1 - Local Bus Service Summary - Average Frequency

Service No.	Operator	Route	Bus Stop	Approximate Frequency		
				Mon-Fri	Sat	Sun
44	Highland Council	Tomich - Marybank	A862 / A831	1 per day (Tuesday, Wednesday)	1 per day	No service
44B	Highland Council	Kilmorack - Dingwall	A862 / A831	1 per day (Wednesday)	No service	No service
48A	Highland Council	Asda - Church	A831 / C1108	1 per day (Friday)	No service	No service
307	D & E Coaches	Inverness - Beauly	A862 / A831 / C1108	8 per day	6 per day	6 per day

Service No.	Operator	Route	Bus Stop	Approximate Frequency		
				Mon-Fri	Sat	Sun
307A	D & E Coaches	Inverness – Beauly (First and Last of the Day)	A831 / C1108	2 per day	2 per day	2 per day
311	Highland Council	Cabrich - Foxhole - Kiltarlity- Dingwall	C1108	No service	1 per day	No service
28	Stagecoach North Scotland	Inverness Bus Station - Dingwall	A862	14 per day	14 per day	3 per day
46	Highland Council	Beauly SQ – Marybank PO	A862	1 per day (Mondays)	No service	No service

5.4.3. As shown in **Table 5-1**, the most frequent bus service is the 28 between Inverness Bus Station and Dingwall. This service runs approximately 14 times per day during the weekdays and Saturdays beginning at 7:20 am and recurring every hour until 22:50. This service also runs 3 times per day on Sundays between 9:25 and 15:25. This provides plenty of opportunity to those using the substation to get into Inverness.

5.4.4. Bus services 44B between Kilmorack and Dingwall, 48A between ASDA and Church, 311 between Cabrich, Foxhole, Kiltarlity, and Dingwall, and 46 between Beauly Square and Marybank PO are the least frequent services. These only run once per week each Wednesdays, Fridays, Saturdays, and Mondays respectively.

Refuse and Commercial Vehicles

5.4.5. Refuse is collected within the surrounding area on the following schedule:

- Non-recyclable waste – fortnightly on a Tuesday;
- Paper, card and cardboard recycling – bi-monthly on a Tuesday; and
- Plastics, metals and cartons recycling – bi-monthly on a Tuesday.

RAIL SERVICES

5.4.6. As shown in **Figure 5-2,** the nearest rail stations to the site are located in Beauly approximately 5 km to the north east of the Site. These stations are located on the Inverness to Wick line (via Muir of Ord) and support access to moderately frequent services providing access into the centre of all locations.

5.4.7. Beauly Rail Station provides 21 car parking spaces, with one dedicated Blue Badge Space, and covered cycle parking to accommodate 20 bicycles, as shown in **Figure 5-3**. While the station is expected to provide an option for future staff and visitors accessing employment opportunities provided in the Site, there are currently no bus services providing a direct connection between the Site and the station.

5.4.8. From the nearest bus stop within Beauly, the station is around a 26 minute journey by bus and walking from the Site, providing some opportunity for future staff and visit to use public transport when commuting from Inverness to the Site.

5.4.9. The frequency of rail services from both stations is shown in **Table 5-2** and a picture of the facilities is shown in **Figure 5-3**.

Table 5-2 – Rail Service Frequency

Station	Destination	Approximate Frequency		
		Mon-Fri	Sat	Sun
Beauly	Inverness	4 services per day	4 services per day	1 services per day
	Wick	4 services per day	4 services per day	1 services per day

Figure 5-3 - Beauly Rail Station Facilities

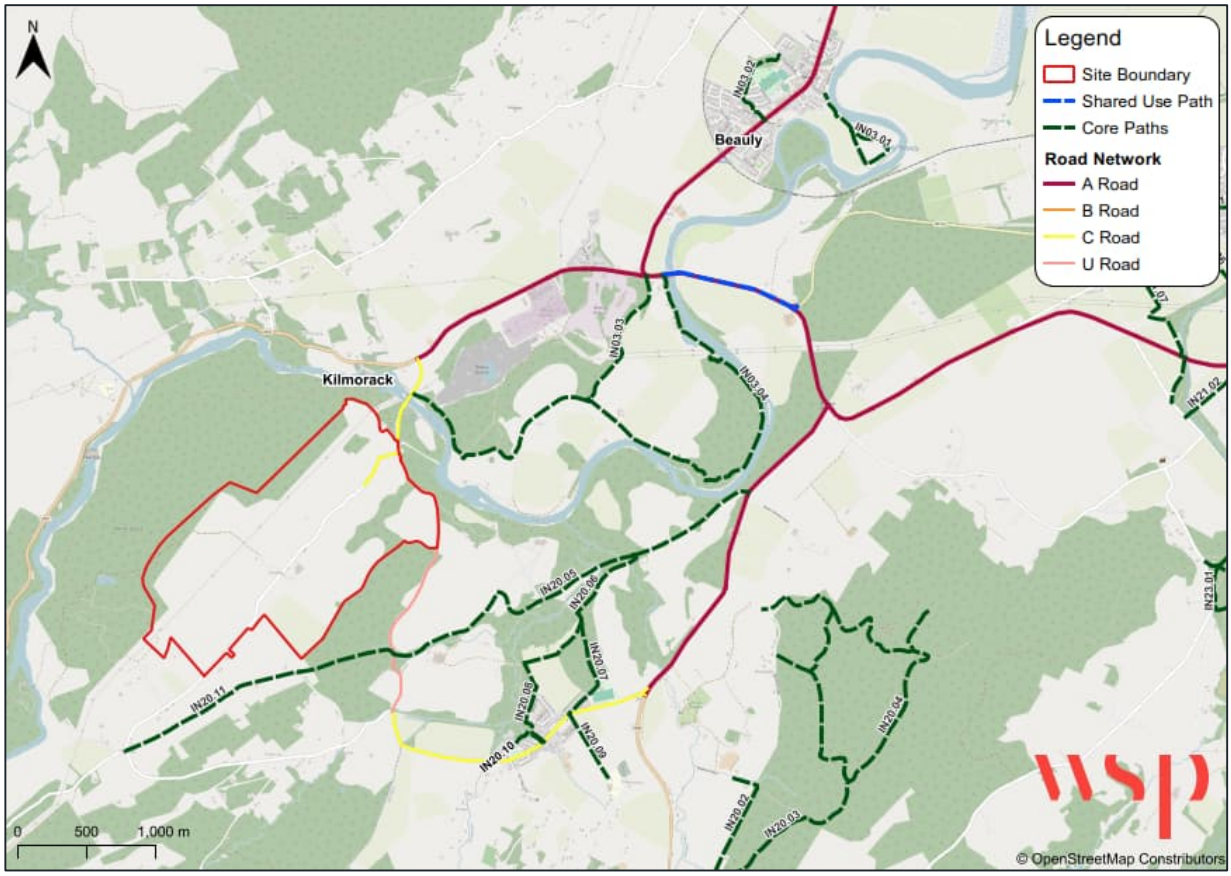
5.5 PEDESTRIAN, CORE PATH AND CYCLIST FACILITIES

Pedestrian Facilities

5.5.1. As shown in **Figure 5-4**, the Site's rural nature results in there being limited pedestrian facilities being provided in its vicinity. The road network which will be used to support construction access, is also generally rural in nature and while there are pedestrian facilities provided adjacent to the proposed access routes, the majority of pedestrian activity is expected to be generated through the villages which the routes pass.

5.5.2. There are pedestrian facilities provided by way of footways adjacent to carriageway on several sections of the access routes, predominantly within the towns and villages of Beauly, Kiltarlity, Wester Balblair, Brunchrew, Easter Moniack and Drumchardine which support local pedestrian access.

Figure 5-4 - Core Path, Pedestrian and Cyclist Network Facilities



Core Paths

5.5.3. A review of the Core Paths within Highland indicates that there are Core Paths are located within the vicinity of the proposed access routes, and these are detailed in **Figure 5-4.**

5.5.4. There are a limited number of Core Paths in close proximity to the Proposed Development. The closest Core Path is located approximately 0.5 km to the north east of the proposed Site Access, identified as Core Path IN03.03, and is a path known locally as ‘Lovat Bridge to Black Bridge’. It is 5 km in length and routes adjacent east of Black Bridge on the northern bank of the River Beauly. Another core path can be found at Hughton, 2.9 km west of the proposed Site access, named Core Path IN20.11, which is a 2 km length path known locally as ’Home Farm to Hughton by Lonbuie’.

5.5.5. Through Kiltarlity on the C1108, Core Path IN20.07 crosses the carriageway from Beaufort Estate to connect with IN20.09 via zebra crossing at Kiltarlity Hall. Within Kiltarlity where the carriageway crosses Auldearn Burn Core Paths IN20.08 and IN20.10 are found adjacent to the carriageway.

5.5.6. There is one core path crossing on the U1604 at West Lodge where the Beaufort Estate Access meets the carriageway. The route is Core Path IN20.05 which connects to IN20.11 from East lodge to West Lodge and then from Home Farm to Haughton by Lonbuie.

Cycle Facilities

5.5.7. The Site's rural location results in there being no formal cycle facilities provided in its immediate vicinity. As shown in **Figure 5-4**, there is one shared pedestrian cycle way on the A862 between the A831 and the A333 as mentioned above.

5.6 SSEN SCHEMES AND STRATEGY

5.6.1. SSEN operate the following schemes to reduce the footprint of their workforce.

Electric Vehicle Strategy (March 2020[19])

5.6.2. SSEN commits to investing in network infrastructure to support 10 million EVs on UK roads by 2030, aiming to establish an extensive EV charging network by 2025. The strategy supports collaboration with stakeholders to ensure customer-centric solutions for the public and includes plans to decarbonise SSEN's own fleet of 3,500 vehicles by 2030.

Cycle To Work Scheme

5.6.3. Scottish and Southern Energy (SSE) promote the UK wide Cycle to Work scheme in which employees hire a bike and safety equipment worth £100–£5,000 through salary sacrifice, reducing tax and national insurance. After a one- or two-year hire period, employees can extend the hire for free until the bike's market value is negligible, allowing for ownership. Bikes are available from Halfords, independent bike shops, and Tredz online.

SSEN Car Plus Scheme

5.6.4. SSE's CarPlus scheme allows employees to lease a new car through salary sacrifice, reducing tax and national insurance. Low-emission cars offer the most savings, and at the end of the lease, employees can replace, return, or purchase the car at the supplier's valuation.

SSEN EV Home Charging Unit Loan

5.6.5. To support employees purchasing electric or hybrid vehicles, SSE offers an interest-free loan of up to £1,000 for the costs of buying and installing an EV home charging unit, with repayment options of 6 or 12 months.

EV Home Charging Unit Discounts

5.6.6. SSE supports sustainability and Net Zero by 2050 by encouraging the use of EVs and offering employees discounts on home charging units. Following smart charging legislation in June 2022, two discounted options are available now, with more upcoming.

Public Transport Season Ticket Loans

5.6.7. Employees with at least six months of continuous service can apply for an interest-free salary advance to purchase a public transport season ticket, with repayment over 6 or 12 months.

[19] SSEN, (2020). *Electric Vehicle Strategy March 2020.* (Online). Available at: https://www.ssen.co.uk/globalassets/electric-vehicle/ev-media/ssen-ev-strategy-september-2020.pdf

5.7 PERSONAL INJURY ACCIDENT REVIEW

5.7.1. Injury accident data for the most recently available five-year period, covering 2019 to 2023, was obtained for the Study Area links. The locations and severity of the accidents reported in the Study Area are shown in **Figure 5-5** and are summarised below.

Figure 5-5 - Personal Injury Accident Data 2019-2023

5.7.2. **Table 5-3** identifies the accident rates associated with each of the local roads with the highest number of accidents, comparing these rates with the national averages as identified by the DfT for the road type.

Table 5-3 - Personal Injury Accident Summary (2019-2023)

PIA Study Area	Road Type	Slight	Serious	Fatal	Total	PIA Rate (per Million Veh Km)	National Average (per Million Veh Km)*	Above or Below National Average
A832 between the A9 and Muir of Ord	Rural A road	4	3	0	7	0.114	0.12	Below
B9169 between A832 and A862	Urban other road	0	0	0	0	0.000	0.40	Below
A862 between the B9169 and A831	Urban A road	3	1	0	4	0.078	0.43	Below
A831 between the A862 and the C1106	Urban A road	0	0	0	0	0.000	0.43	Below
C1106 between the A831 and the U1604	Rural other road	0	0	0	0	0.000	0.20	Below
C1106 at the Site Access	Rural other road	0	0	0	0	0.000	0.20	Below
A862 between A833 and A831	Rural A road	0	0	0	0	0.000	0.12	Below
A862 between A833 and Drumchardine	Rural A road	2	0	0	2	0.057	0.12	Below
A862 between Drumchardine and the A82	Urban A road	2	0	1	3	0.032	0.43	Below
A833 between C1108 and A862	Rural other road	0	0	0	0	0.000	0.20	Below
C1108 between U1604 and A833	Urban other road	0	0	0	0	0.000	0.40	Below
U1604 between C1106 and C1109	Urban other road	0	0	0	0	0.000	0.40	Below
Total	**-**	**11**	**4**	**1**	**16**	**-**	**-**	**-**

*The DfT reported road casualties for Great Britain 2021 as presented in RAS0302[20]: national accident rate per million vehicle kms by road classification.

5.7.3. Overall, there are 16 accidents throughout the 39 km Study Area, averaging 3.2 accidents per year. There were 11 Slight, 4 Serious and 1 Fatal. The fatal incidents occurred on the A862 between Drumchardine and can be attributed to driver error.

[20] Department for Transport (2023). *Reported road collisions, vehicles and casualties tables for Great Britain - RAS0302 - Urban and rural roads*. (online). Available at: https://www.gov.uk/government/statistical-data-sets/reported-road-accidents-vehicles-and-casualties-tables-for-great-britain.

5.7.4. The results show that no PIAs were recorded on the C1106, C1108, U1604, B6169, A831, and the A833 over the five-year assessment period. It is observed that seven collisions occurred on the A832 over the five-year period averaging to 1.4 collisions per annum.

5.7.5. As shown in **Table 5-3** while this road section had a PIA rate per annum over 1, this section and the all of the rest of the roads have annual accident rates that are below the respective national average for each of the road's characteristics, indicating that there are no existing safety concerns on the local road network.

5.7.6. Looking closer at the B9169 there are two accidents in total on this link and both individual accidents occurred at the B9169/A832 junction, and which can be attributed to driver error. Therefore, is it considered that regardless of what the national average is for the respective category or road, that there are no specific safety concerns within the Study Area.

5.8 EXISTING TRAFFIC FLOWS

5.8.1. To establish baseline traffic flows, Automatic Traffic Counters (ATCs) were installed in April and May 2024 at the following locations:

- ATC 1: C1106 between Fanellan Site Access and the U1604;
- ATC 2: C1106 between Fanellan Site Access and the C1108;
- ATC 3: U1604 between the C1106 and the C1108;
- ATC 4: C1108 between the A833 and the U1604;
- ATC 5: C1108 between the U1604 and the C1106;
- ATC 6: C1106 between the U1604 and the A831;
- ATC 7: A831 between the a862 and the C1106; and
- ATC 8: A833 between the A862 and the C1108.

5.8.2. Following the surveys, it was determined that ATC sites 2 and 5 would not be required as these locations would not be included within constriction traffic routing. Therefore, this baseline data is not included within this TA.

5.8.3. To supplement the ATC surveys, traffic survey data has been obtained from the following Transport Scotland (TS) and Department for Transport (DfT) traffic count sites for the remaining road network contained within the Study Area:

- DfT Traffic Count ID – 50941, Estimated Count: A832 between the A9 and Muir of Ord;
- TS Traffic Count ID – ATC01257, Estimated Count: B9169 between A832 and A862;
- DfT Traffic Count ID – 10950, Estimated Count: A862 between the B9169 and A831;
- DfT Traffic Count ID – 01040, Estimated Count: A82 Drumnadrochit to Inverness;
- DfT Traffic Count ID – 30950, Estimated Count: A862 between A833 and A831;
- DfT Traffic Count ID – 80011, Estimated Count: A862 between A833 and Drumchardine; and
- DfT Traffic Count ID – 80331, Estimated Count: A862 between Drumchardine and the A82.

5.8.4. The most recent count data available on the DfT website has been used and extrapolated to 2024 where necessary to align with the ATC data. A summary of the 2024 two-way flows on the road links contained in the Study Area is provided in **Table 4-2**, with the locations of the traffic count sites shown in **Figure 5-6**.

Figure 5-6 - Traffic Count Site Locations

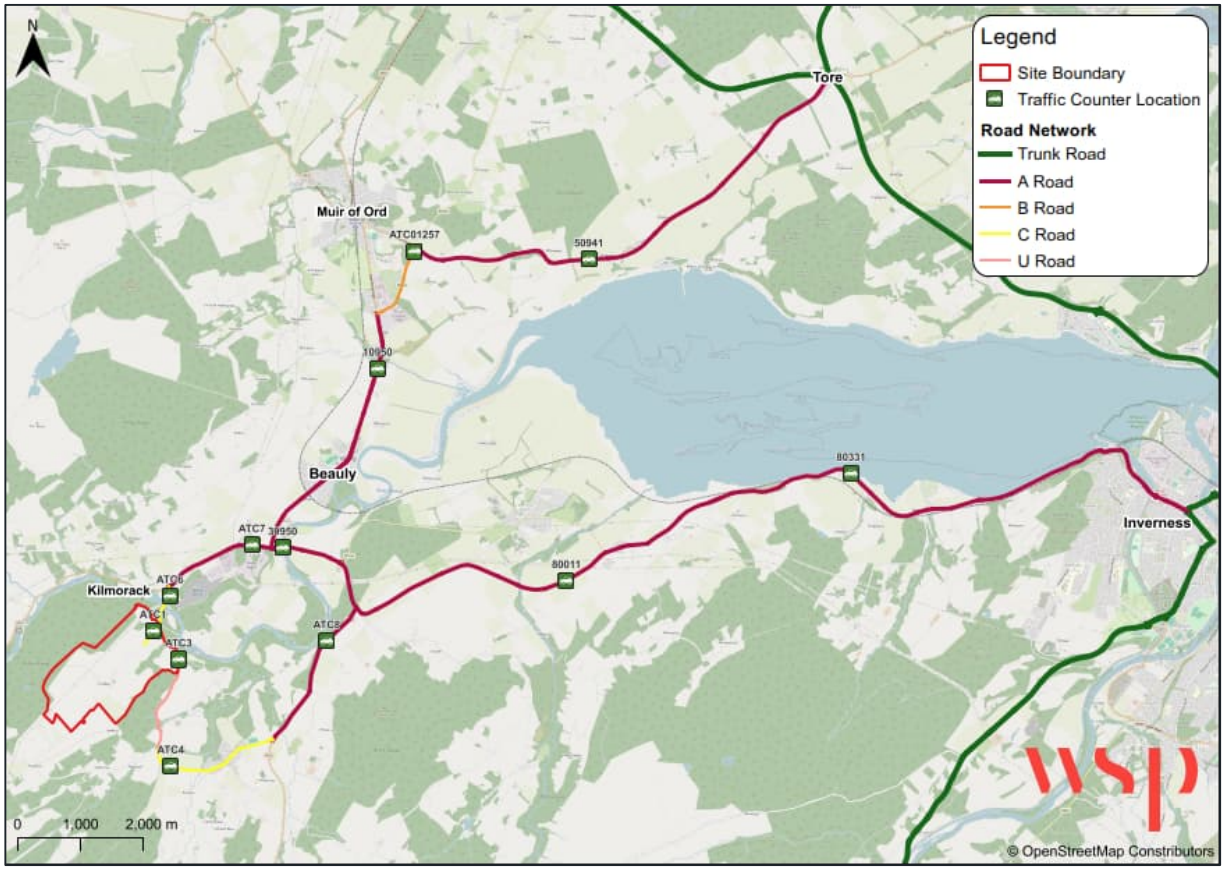


Table 5-4 - 2024 Annual Average Daily Two-Way Traffic Flows (24-hour)

Count Site	Location	2024 Two-Way Flows		HGV Proportion (%)
		HGV (24 / 7)	Total (24 / 7)	
50941	Link 1: A832 between the A9 and Muir of Ord	251	4203	6%
ATC01257	Link 2: B9169 between A832 and A862	43	720	6%
10950	Link 3: A862 between the B9169 and A831	319	6510	5%
ATC 7	Link 4: A831 between the A862 and the C1106	2446	2239	109%
ATC 6	Link 5 (North): C1106 between the A831 and the U1604	691	643	108%
ATC 1	Link 5 (Site Access): C1106 at the Site Access	264	239	111%
30950	Link 6: A862 between A833 and A831	132	5229	3%
80011	Link 7: A862 between A833 and Drumchardine	91	4245	2%
80331	Link 8: A862 between Drumchardine and the A82	75	5345	1%
ATC 8	Link 9: A833 between C1108 and A862	3263	3067	106%
ATC 4	Link 10: C1108 between U1604 and A833	470	441	106%
ATC 3	Link 11: U1604 between C1106 and C1109	318	299	106%

5.8.5. Construction activity working hours are estimated to be between 07:00 to 19:00 Monday to Sunday however it is anticipated that construction vehicle access to Site will be restricted. The following working hours are estimated per vehicle type:

- HGV Movements: between 08:00-19:00 Monday to Friday and Saturday between 08:00-13:00 (Shorthand Reference: 11/5); and
- Non-HGV movements (including personnel): between 07:00 to 19:00 Monday to Sunday (Shorthand Reference: 12/7).

5.8.6. Conversion factors have been derived from DfT Road Traffic Statistics – Table TRA0308: 'Traffic distribution on all roads by time of day and day of the week, for selected vehicle types in Great Britain' for the latest data available, 2023[21], to convert the DfT and ATC AADT flows to 11 and 12-hour, 5 day and 7 day comparable flows.

[21] Department for Transport, (2024). Road Traffic Estimates (TRA). (Online). Available at: https://www.gov.uk/government/statistical-data-sets/road-traffistatistics-tra

5.8.7. The following factors were applied according to vehicle type to convert the AADF to the 11-12 hour data:

- HGVs – 0.7124, and
- Total Vehicles - 0.7937

5.8.8. **Table 5-5** shows the resulting 11-12 hour flows following application of the derived factors.

Table 5-5 - 2024 Annual Average Daily Two-Way Traffic Flows (11-12 hour)

Count Site	Location	2024 Two-Way Flows		HGV Proportion (%)
		HGV (11 / 5)	Total (12 / 7)	
50941	A832 between the A9 and Muir of Ord	179	3336	5%
ATC01257	B9169 between A832 and A862	31	571	5%
10950	A862 between the B9169 and A831	227	5167	4%
ATC 7	A831 between the A862 and the C1106	26	1955	1%
ATC 6	C1106 between the A831 and the U1604	8	559	1%
ATC 1	C1106 at the Site Access	1	207	<1%
30950	A862 between A833 and A831	94	4150	2%
80011	A862 between A833 and Drumchardine	65	3369	2%
80331	A862 between Drumchardine and the A82	53	4242	1%
ATC 8	A833 between C1108 and A862	47	2615	2%
ATC 4	C1108 between U1604 and A833	7	377	2%
ATC 3	U1604 between C1106 and C1109	8	259	3%

5.9 FUTURE TRAFFIC FLOWS

5.9.1. As previously stated, due to the requirement to replace Black Bridge, a phased approach to construction traffic routing is proposed (separate to construction phasing). Construction of the Proposed Development could commence during 2026 if consent is granted, with construction activities likely to take around 3 years, and commissioning to take another 2 years.

5.9.2. As previously stated, the Phase 1 assessment constitutes the ‘before construction of Black Bridge’ scenario, which is anticipated to be completed late 2028. Phase 2 constitutes the ‘after construction of Black Bridge’ and which has been assumed to take place after late 2028.

5.9.3. To assess the likely effects during the Phase 1 and 2 of construction traffic routing, 2027 and the 2029 base year traffic flows were determined by applying a National Road Traffic Forecast 1997 (NRTF97) low growth factor (1.0156 - 2027 and 1.0256 – 2029) to the 2024 traffic flows. The resulting 2027 and 2029 Base traffic flows representing the Phase 1 and Phase 2 Baselines are presented in **Table 5-6** to **Table 5-7**.

Table 5-6 – Phase 1 2027 Annual Average Daily Two-Way Traffic Flows (11-12 hour)

Count Site	Location	2027 Two-Way Flows		HGV Proportion (%)
		HGV (11 / 5)	Total (12 / 7)	
50941	A832 between the A9 and Muir of Ord	182	3388	5%
ATC01257	B9169 between A832 and A862	31	580	5%
10950	A862 between the B9169 and A831	231	5248	4%
ATC 7	A831 between the A862 and the C1106	27	1985	1%
ATC 6	C1106 between the A831 and the U1604	8	568	1%
ATC 1	C1106 at the Site Access	1	210	1%
30950	A862 between A833 and A831	96	4215	2%
80011	A862 between A833 and Drumchardine	66	3422	2%
80331	A862 between Drumchardine and the A82	54	4308	1%
ATC 8	A833 between C1108 and A862	48	2656	2%
ATC 4	C1108 between U1604 and A833	7	383	2%
ATC 3	U1604 between C1106 and C1109	8	263	3%

Table 5-7 – Phase 2 2029 Annual Average Daily Two-Way Traffic Flows (11-12 hour)

Count Site	Location	2028 Two-Way Flows		HGV Proportion (%)
		HGV (11 / 5)	Total (12 / 7)	
50941	A832 between the A9 and Muir of Ord	183	3421	5%
ATC01257	B9169 between A832 and A862	31	586	5%
10950	A862 between the B9169 and A831	233	5299	4%
ATC 7	A831 between the A862 and the C1106	27	2005	1%
ATC 6	C1106 between the A831 and the U1604	8	574	1%
ATC 1	C1106 at the Site Access	1	212	1%
30950	A862 between A833 and A831	96	4256	2%
80011	A862 between A833 and Drumchardine	66	3455	2%
80331	A862 between Drumchardine and the A82	55	4351	1%
ATC 8	A833 between C1108 and A862	48	2682	2%
ATC 4	C1108 between U1604 and A833	7	387	2%
ATC 3	U1604 between C1106 and C1109	8	265	3%

5.10 SUMMARY OF EXISTING CONDITIONS

5.10.1. While the Site's location will provide opportunity for future residents and employees to travel to and from the Proposed Development on foot, bicycle or bus, it is considered that as the Site is rural in nature, most employees will travel by car to the Site.

5.10.2. While there are bus services operating north of the Site boundary on the A831 and south on the C1108, the scale of the development results in the majority of the Site being located outwith a 400 m walk of the nearest bus stops. It is considered that some staff may use the bus service that provides connection the Beauly Rail Station and to further destinations.

5.10.3. The road network is generally of a good standard in the vicinity of the Site and supports viable access to and from the wider road network.

5.10.4. As anticipated, the unclassified road network has the lowest traffic flows in the Study Area, and the carriageway conditions are reflective of the rural nature of the Site.

5.10.5. The Core Path network within the Study Area allows access for users from the C1108, the A862, the U1604 and the C1108. The paths mainly allow for recreational use and where users are required to cross the road, traffic volumes are generally low.

5.10.6. A review of accident data has determined that the local road network is currently operating in a safe manner, with no issues identified which would require to be addressed to support the Site's development.

6 TRIP GENERATION AND DISTRIBUTION

6.1 INTRODUCTION

6.1.1. This section identifies the indicative level of trips generated by construction activities prior to assigning the trips to the anticipated routes that traffic will use to access the site.

6.2 CONSTRUCTION PHASE TRIP GENERATION

6.2.1. The CTMP which is included in **Volume 4, Appendix 12.1: Outline Construction Traffic Management Plan**, presents an estimate of the total level of traffic associated with each key element of the Proposed Development's construction, and this is summarised in **Table 6-1**.

6.2.2. The indicative duration period has been updated, since original submission of the TA, to reflect/acknowledge the time passed since original planning application.

Table 6-1 – Construction Phase Activities

Haulage Expected Vehicle	Type	Indicative Duration Two-way	Peak Two-way Trips per Day/Week	Total Two-way Trips
Staff	Cars / Vans	Jan 2026 - June 2031	110 / day	54,500
Workforce and subcontractor	Cars / Vans	Jan 2026 - June 2031	300 / day	143,000
Site accommodation and maintenance	Vans	Jan 2026 - June 2031	7 / week	670
Skips	HGVs / Skips	Jan 2026 - June 2031	12 / week	930
HGV	Flatbed lorry	Jan 2026 - June 2031	31 / week	1,800
Septic Tank waste removal	HGV	Jan 2026 - June 2031	3 / week	250
Aggregates	Flatbed lorry	Jan 2026 - June 2028	40 / day	9,130
Disposal of excess material	Tipper lorry	Jan 2028 - Mar 2029	150 / day	9,150
Ready-Mix concrete	Tipper lorry / Mixer	Mar 2026 - June 2028	30 / day	6,900
Pre-cast foundations	Flatbed lorry	Nov 2026 - May 2028	15 / day	3,300
Delivery of materials	Various	Jan 2026 – Oct 2029	60 / day	21,900
Substation road construction	Tipper lorry	Sep 2027 - Apr 2028	10 / day	130
Light Goods Vehicles	Rigid body up 7.5 tonnes	Oct 2027 – Oct 2029	32 / week	1,700
Cable Drums	HGV / Flatbed lorry	May 2028 – May 2030	4 / day	365
Plant Delivery	HGV / Flatbed lorry	Nov 2027 – Aug 2030	15 / day	4,300
Miscellaneous	Various	Nov 2027 – Sep 2029	15 / day	5,500

Construction Trip Generation

6.2.3. Indicative construction traffic estimates, were provided by the Applicant's Contractor and interpreted by environmental consultants WSP, in discussion with the Applicant. In light of this, the following assumptions were made to generate peak construction vehicle movements:

- The 200 ‘Workforce and subcontractor’ movements and the 23 ‘Staff’ movements would be reduced through the implementation of car-sharing, and the potential for minibus movements to transport workforce staff to Site. Additionally, these movements would take place outside of the assessment period, prior to deliveries and prior to work commencing, and are therefore not included within the 11-hour assessment window;
- It was assumed, as a worst-case, that weekly movements could potentially all occur on the same day and are therefore all included within the daily peak assessment period; and
- Clarified by the Contractor, larger ‘various vehicle type’ movements identified within the indicative programme were estimated to have a vehicle split of 80% Car / LGV traffic and 20% HGV traffic.

Timber Extraction

6.2.4. In addition to the identified movements above, the Principal Contractor has advised that there is estimated to be 120 total timber / brash / stump loads from Site. According to the Contractor, these would occur in advance of peak construction periods and are therefore not included within Phase 1 or Phase 2 peaks.

TEMPORAL ANALYSIS

6.2.5. As previously stated, the applicant is currently working with The Highland Council to understand timescales for completion of Black Bridge. The replacement works are currently programmed to be finished late 2028.

6.2.6. The peak daily trip generation estimate has been provided by the Principal Contractor and has been used to inform the Phase 1 and 2 assessments by extracting the peak daily trip generation prior to and post late 2028, when works on Black Bridge are currently programmed to be completed enabling HGV and AIL traffic to route over it.

CONSTRUCTION TRAFFIC ROUTING DISTRIBUTION

6.2.7. All construction vehicles will access and leave the Site by one new access junction which is to be formed on the C1106 to the east of the Site, and approximately 120 m west of the U1604.

6.2.8. Larger vehicles will be routed to the Site via the trunk road network to minimise the impact on urban rural areas and sensitive receptors as far as possible. While the assignment of these trips cannot be determined until The Highland Council agrees a routing approach with the Principal Contractor, it has been assumed, to align with the CTMP, that 75 % of HGVs will access the Site from the A9 to the north and 25 % will access the Site from the A82 to the east of the Site.

6.2.9. As confirmed within the CTMP, it is more challenging to anticipate the location where smaller construction vehicles are likely to originate from, at this stage, and 50% / 50% distribution has been applied for the non-HGV construction traffic to the North at the A9 and to the East at the A82.

6.2.10. A summary of the assumed trip distribution and assignment is provided in **Table 6-2**.

Table 6-2 - Phase 1 and 2 Construction Traffic Distribution & Assignment

Study Network Route Section	Phase 1 Assignment (%)		Phase 2 Assignment (%)	
	HGV	Non-HGV	HGV	Non-HGV
Link 1: A832 between the A9 and Muir of Ord	75%	50%	75%	50%
Link 2: B9169 between A832 and A862	75%	50%	75%	50%

Link 3: A862 between the B9169 and A831	75%	50%	75%	50%
Link 4: A831 between the A862 and the C1106	0%	0%	100%	100%
Link 5 (North): C1106 between the A831 and the U1604	0%	0%	100%	100%
Link 5 (Site Access): C1106 at the Site Access	100%	100%	100%	100%
Link 6: A862 between A833 and A831	75%	50%	25%	50%
Link 7: A862 between A833 and Drumchardine	25%	50%	25%	50%
Link 8: A862 between Drumchardine and the A82	25%	50%	25%	50%
Link 9: A833 between C1108 and A862	100%	100%	0%	0%
Link 10: C1108 between U1604 and A833	100%	100%	0%	0%
Link 11: U1604 between C1106 and C1109	100%	100%	0%	0%

6.2.11. Furthermore, it has been estimated by the Principal Contractor that with the introduction of the Beaufort Route, around 95% of construction traffic along the C1108 can be diverted through Beaufort estate from the A833 to the U1604, significantly reducing the impact on the C1108 through Kiltarlity.

6.2.12. Based on the above assignment of traffic, and the peak daily trip generation identified by the Contractor the following trip generation in **Table 6-3** and

6.2.13. **Table 6-3** and **Table 6-4** have been modelled on each link of the Study Area for Phase 1 and Phase 2.

Table 6-3 – Predicted Peak Total Traffic Generation Associated with Phase 1

Traffic Count Location / Link ID	Phase 1 - Development Traffic (Per Day)		Phase 1 - Development Traffic (Per Hour)	
	Total	HGV	Total	HGV
1 - A832 between the A9 and Muir of Ord, DfT Point ID: 50941	73	51	6	5
2 - B9169 between A832 and A862, TS Data Point ID: ATC01257	73	51	6	5
3 - A862 between the B9169 and A831, DfT Point ID: 10950	73	51	6	5
4 - A831 between the A862 and the C1106, Survey Ref: ATC 7	0	0	0	0
5 - C1106 between the A831 and the U1604, Survey Ref: ATC 6	0	0	0	0
5 - C1106 at the Site Access, Survey Ref: ATC 1	112	68	9	6
6 - A862 between A833 and A831, DfT Point ID: 30950	73	51	6	5
7 - A862 between A833 and Drumchardine, DfT Point ID: 80011	39	17	3	2

8 - A862 between Drumchardine and the A82, DfT Point ID: 80331	39	17	3	2
9 - A833 between C1108 and A862, Survey Ref: ATC 8	112	68	9	6
10 - C1108 between U1604 and A833, Survey Ref: ATC 4	112	68	9	6
11 - U1604 between C1106 and C1109, Survey Ref: ATC 3	112	68	9	6

Table 6-4 - Predicted Peak Total Traffic Generation Associated with Phase 2

Traffic Count Location / Link ID	Phase 2 - Development Traffic (Per Day)		Phase 2 - Development Traffic (Per Hour)	
	Total	HGV	Total	HGV
1 - A832 between the A9 and Muir of Ord, DfT Point ID: 50941	191	149	16	14
2 - B9169 between A832 and A862, TS Data Point ID: ATC01257	191	149	16	14
3 - A862 between the B9169 and A831, DfT Point ID: 10950	191	149	16	14
4 - A831 between the A862 and the C1106, Survey Ref: ATC 7	282	199	24	18
5 - C1106 between the A831 and the U1604, Survey Ref: ATC 6	282	199	24	18
5 - C1106 at the Site Access, Survey Ref: ATC 1	282	199	24	18
6 - A862 between A833 and A831, DfT Point ID: 30950	91	50	8	5
7 - A862 between A833 and Drumchardine, DfT Point ID: 80011	91	50	8	5
8 - A862 between Drumchardine and the A82, DfT Point ID: 80331	91	50	8	5
9 - A833 between C1108 and A862, Survey Ref: ATC 8	0	0	0	0
10 - C1108 between U1604 and A833, Survey Ref: ATC 4	0	0	0	0
11 - U1604 between C1106 and C1109, Survey Ref: ATC 3	0	0	0	0

7 DEVELOPMENT IMPACT ASSESSMENT

7.1 INTRODUCTION

7.1.1. This section summarises the impact of construction traffic on the local road network which will be used to support the delivery of each construction traffic routing phase. It identifies the estimated increase in traffic along each road link on the access route and reviews this in relation to the potential constraints on the route, prior to identifying the proposed and potential measures to mitigate the impact.

7.1.2. As previously stated, it is not the intention of this report to assess the swept path analysis of the largest load of Phase 2 as this has previously been assessed as part of the Abnormal Load and Construction Traffic Assessment Report which can be found within **Volume 4, Appendix 12.3 of the EIA Report**, [Document Ref: LT459-SWE-XX-XX-T-H-1001]. However, the Construction Traffic Impact Assessment is identified within this section.

7.2 PHASE 1 - TRAFFIC IMPACT ASSESSMENT

CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

7.2.1. **Table 7-1** quantifies the impact which construction traffic is forecast to have on the operation of each of the links on each of the 6 sections of the local road network supporting access to the Site.

Table 7-1 – Phase 1 - Construction Traffic Impact Assessment Summary

Traffic Count Location / Link ID	Total Vehicle Movements			HGV Movements Only		
	2027 Baseline	Baseline + Development	Increase (%)	2027 Baseline	Baseline + Development	Increase (%)
1 - A832 between the A9 and Muir of Ord , DfT Point ID: 50941	3388	3461	2.2%	182	233	28%
2 - B9169 between A832 and A862, TS Data Point ID: ATC01257	580	653	12.6%	31	82	164%
3 - A862 between the B9169 and A831, DfT Point ID: 10950	5248	5321	1.4%	231	282	22%
4 - A831 between the A862 and the C1106, Survey Ref: ATC 7	1985	1985	0.0%	27	27	0%
5 - C1106 between the A831 and the U1604, Survey Ref: ATC 6	568	568	0.0%	8	8	0%
5 - C1106 at the Site Access, Survey Ref: ATC 1	210	322	53.4%	1	69	5580%
6 - A862 between A833 and A831, DfT Point ID: 30950	4215	4288	1.7%	96	147	53%
7 - A862 between A833 and Drumchardine, DfT Point ID: 80011	3422	3461	1.1%	66	83	26%

8 - A862 between Drumchardine and the A82, DfT Point ID: 80331	4308	4347	0.9%	54	71	31%
9 - A833 between C1108 and A862, Survey Ref: ATC 8	2656	2768	4.2%	48	116	142%
10 - C1108 between U1604 and A833, Survey Ref: ATC 4	383	493	29%	7	75	935%
11 - U1604 between C1106 and C1109, Survey Ref: ATC 3	263	375	42.6%	8	76	858%

7.2.2. As can be seen from the above summary and from **Table 6-3**, during Phase 1, construction activities are generally forecast to generate between 3 and 9 total two-way traffic flows per hour on any study area link, with the majority of these movements (6 per hour) generated by HGVs on route to the construction site.

7.2.3. Where possible these movements will be managed to spread arrivals and departures to/from the Site throughout each hour, and it is therefore expected that construction activities will generate an increase of 1 inbound or outbound HGV movement every 10 minutes.

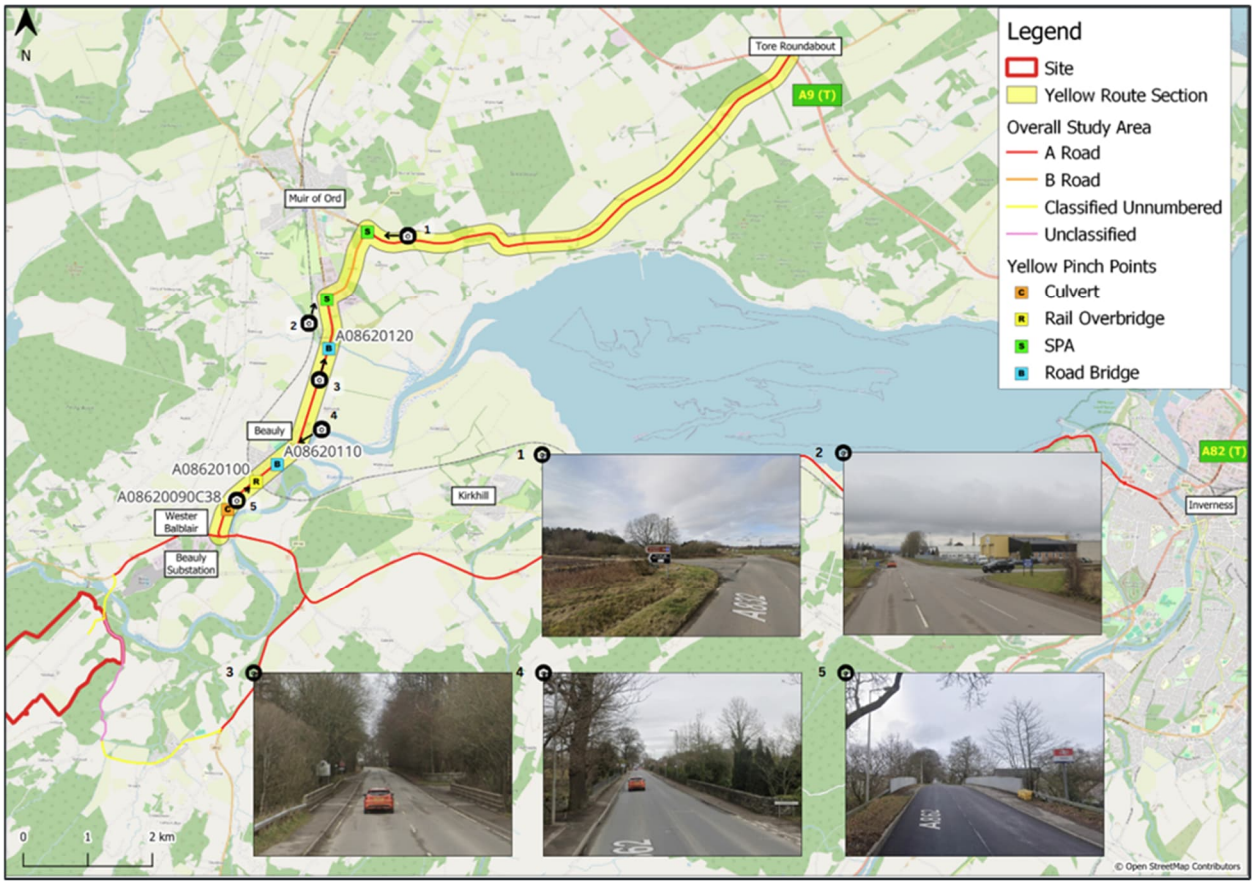
Potential Beaufort Route

7.2.4. As stated before, a potential mitigation route through Beaufort Estate is being considered to reduce the impact from construction traffic on Link 10, C1108 through Kiltarlity, as shown in **Figure 7.19.** This route connects the A833 to the east with the U1604 to the west through Beaufort Estate, providing an alternative road connection avoiding Kiltarlity. The resulting impact from the use of the mitigation route on Link 10 is further assessed in **Section 4 – Purple Route Section** below.

SECTION 1 – YELLOW PROPOSED ACCESS ROADS

7.2.5. **Figure 7-1** shows Section 1 of the route that construction traffic would use to access the Proposed Development.

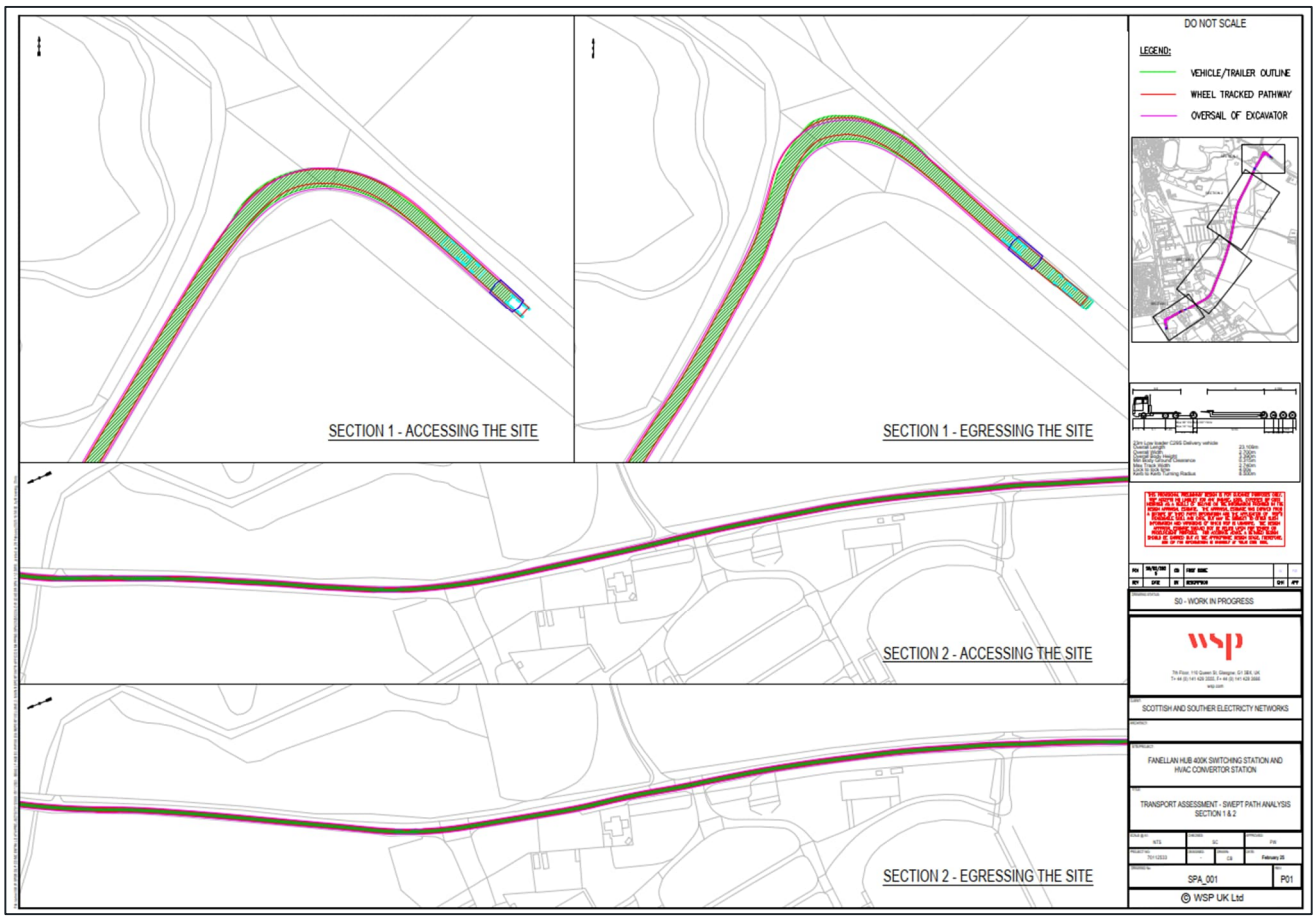
Figure 7-1 - Section 1 Yellow Route Section Pinch Points



Phase 1 - AIL Construction Traffic Pinch Point Analysis

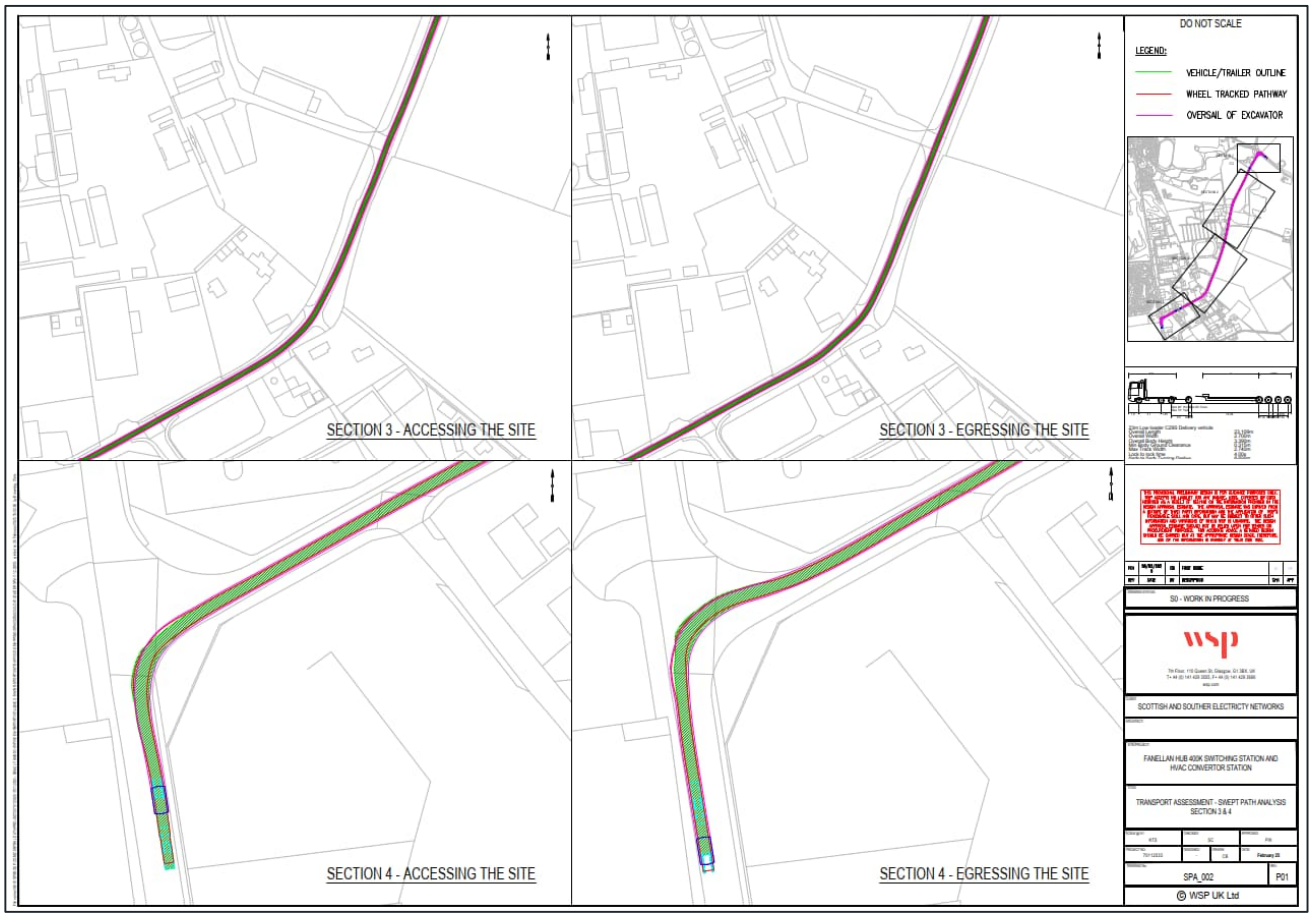
7.2.6. A review of the potential access route has identified potential constraints at the A832 junction with the B9169 and B9169 junction with the A862. Swept Path Analysis (SPA) of AIL plant equipment was undertaken using OS mapping was undertaken at these locations to assess whether the construction vehicles can be accommodated using the existing road and junction layouts. The SPA was undertaken for the length of the B9169 using AutoTrack and the result of the assessment is shown in **Figure 7-2** and **Figure 7-3**.

Figure 7-2 – Phase 1 AIL Potential Constraint on B9169 – Frame 1 and 2



7.2.7. As shown by **Figure 7-2**, the analysis suggests that the B9169 junction will be able to accommodate AIL plant equipment movements without a requirement for third party land by using both sides of the carriageway to navigate the route.

Figure 7-3 – Phase 1 AIL Potential Constraint on B9169 – Frame 3 and 4



7.2.8. As shown in **Figure 7-3**, the analysis suggests that the A862 / B9169 junction will be able to accommodate the largest movements to Site without the requirement for third party land by using both sides of the carriageway to navigate the route.

7.2.9. The B9169 is approximately 6.5 m in width between the A832 and its junction with the A862. Construction vehicles are anticipated to route on the B9169 to Site, to avoid sensitive receptors within Muir of Ord.

AIL Proposed Mitigation

7.2.10. As identified in **Table 3-1**, there are 8 total deliveries of plant equipment to Site via this route and **Figure 7-3** presents the largest vehicle swept path analysis. While the vehicle will require the full carriageway, the movements will be timed following a public awareness campaign, and that they will be undertaken outwith major events and the morning and evening peaks of the local road network's operation. It is therefore considered that any construction traffic impact will have temporary impact on local road users.

7.2.11. It is noted that the majority of this route the A832 and the A862 are listed as 'Agreed Routes' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs and therefore SPA has not been undertaken for the A862 and the A832.

7.2.12. It is noted that a sections of this route is listed as a ‘Consultation Routes’ and that as general HGV is also anticipated to use this road, SPA was undertaken for the junctions on the B9169 using AutoTrack and the result of the assessment is shown in **Figure 7-4** and **Figure 7-5**.

Figure 7-4 - Phase 1 HGV Potential Constraint on B9169 / A832

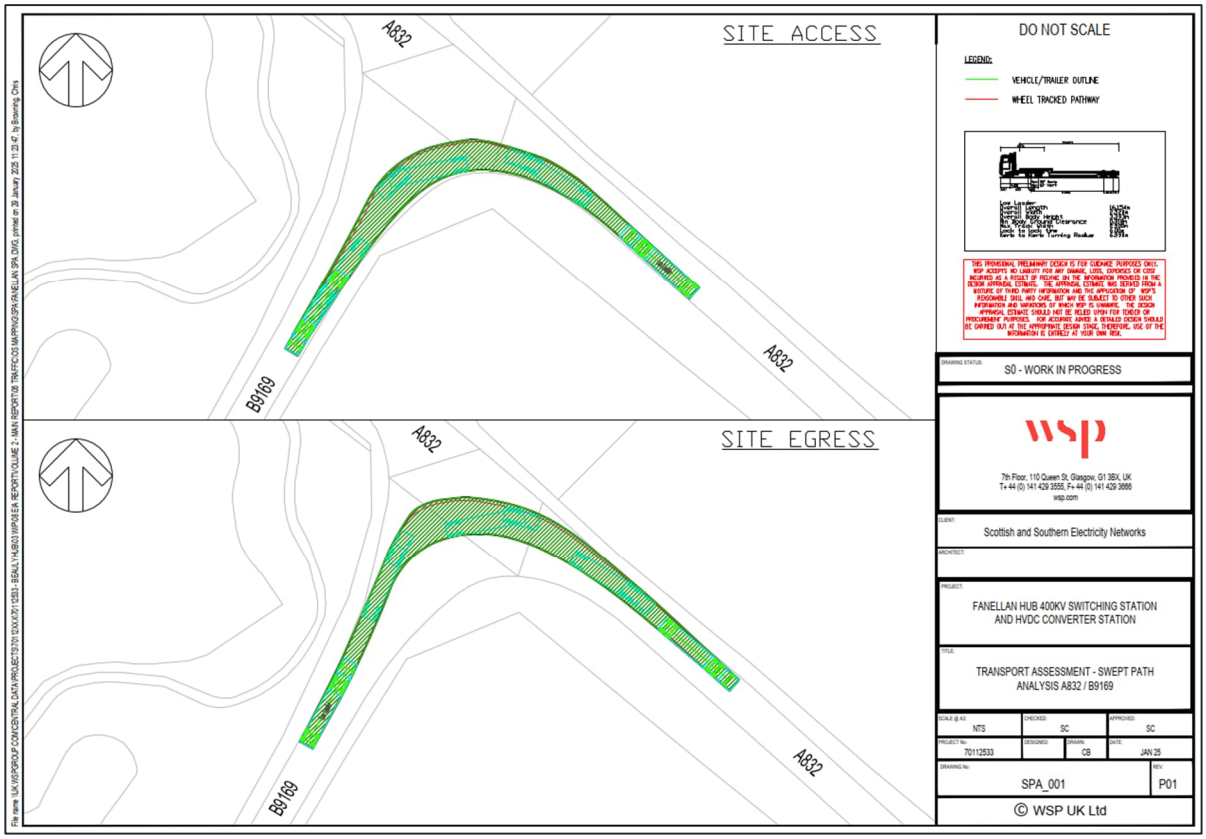
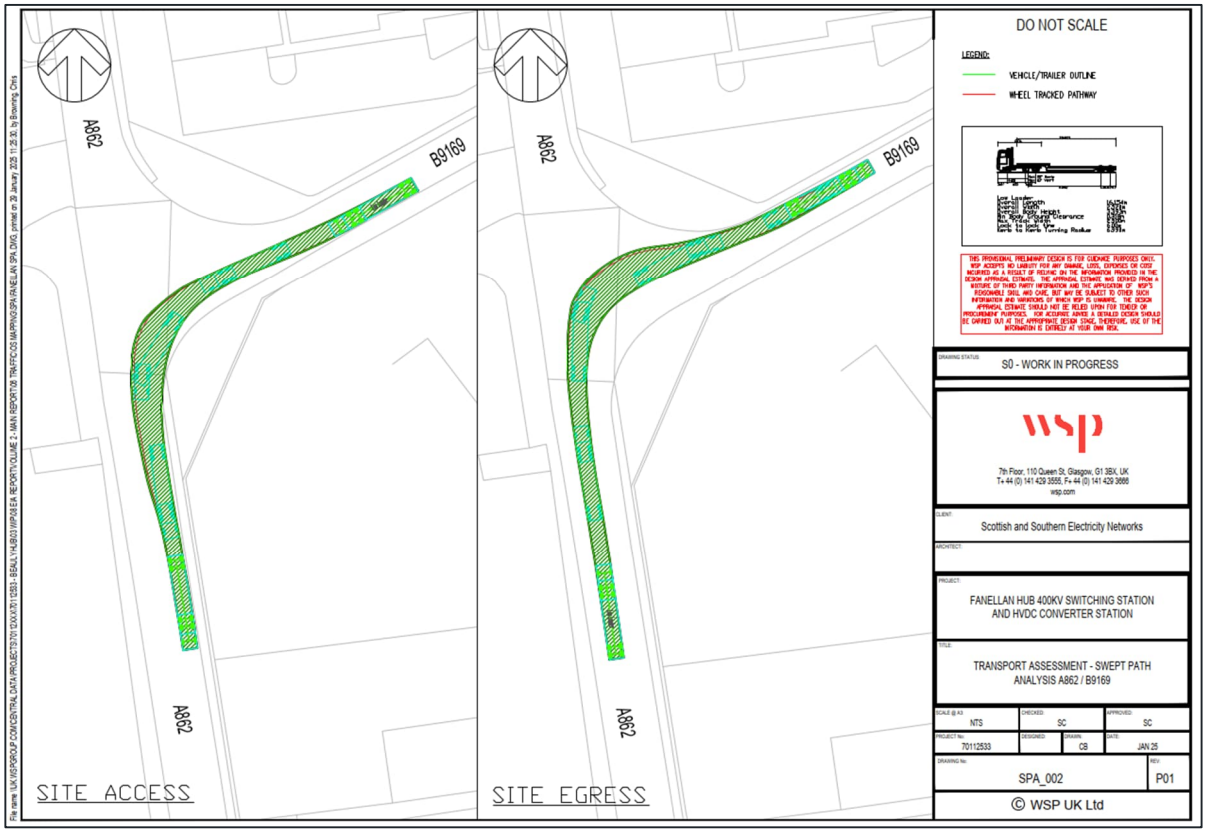


Figure 7-5 - Phase 1 HGV Potential Constraint on B9169 / A862



7.2.13. As shown in **Figure 7-4** and **Figure 7-5**, the analysis suggests that the A832 and the A862 junctions with the B9169 will be able to accommodate the largest HGV movements to Site without the requirement for third party land.

HGV Proposed Mitigation

7.2.14. As highlighted in **Table 6-3**, it is estimated that construction activities could generate up to 9 total and 6 HGV individual traffic movements within an hour during construction traffic movement hours of 08:00 and 19:00 Monday to Friday and 08:00 and 13:00 on Saturday. It is considered that as the general HGV construction traffic vehicle allows for two-way movements and with the inclusion of suitable traffic management measures to ensure minimal disruption, that the B9169 may be used as a through road to avoid Muir of Ord to accommodate the proposed construction traffic movements.

SECTION 2 – BLUE ROUTE SECTION

7.2.15. **Figure 7-6** shows Section 2 of the route that construction traffic would use to access the Proposed Development.

Figure 7-6 - Section 2 Blue Route Section Pinch Points

Phase 1 - AIL Construction Traffic Pinch Point Analysis

7.2.16. A review of the potential access route has identified potential constraints on the A862 in the vicinity of the bridge crossing Beauly River (Lovat Bridge - A08620090), the A862 bend in the road at the A831 junction and the junction of the A862 with the A833. The potential constraints were reviewed using AutoTrack and the result of the assessment is shown in **Figure 7-7** and **Figure 7-8**.

Figure 7-7 – Phase 1 AIL Potential Constraint on A862 – Frame 5 and 6

7.2.17. As shown by **Figure 7-7**, the analysis suggests that the low loaders transporting the plant equipment will be able to accommodate the largest movements to Site without the requirement for third party land by using both sides of the carriageway to navigate the route.

Figure 7-8 – Phase 1 AIL Potential Constraint on A862 – Frame 7 and 8

7.2.18. The analysis presented in **Figure 7-8** the analysis suggests that the low loaders transporting the plant equipment will be able to accommodate the largest movements to Site without the requirement for third party land by using both sides of the carriageway to navigate the route.

AIL Proposed Mitigation

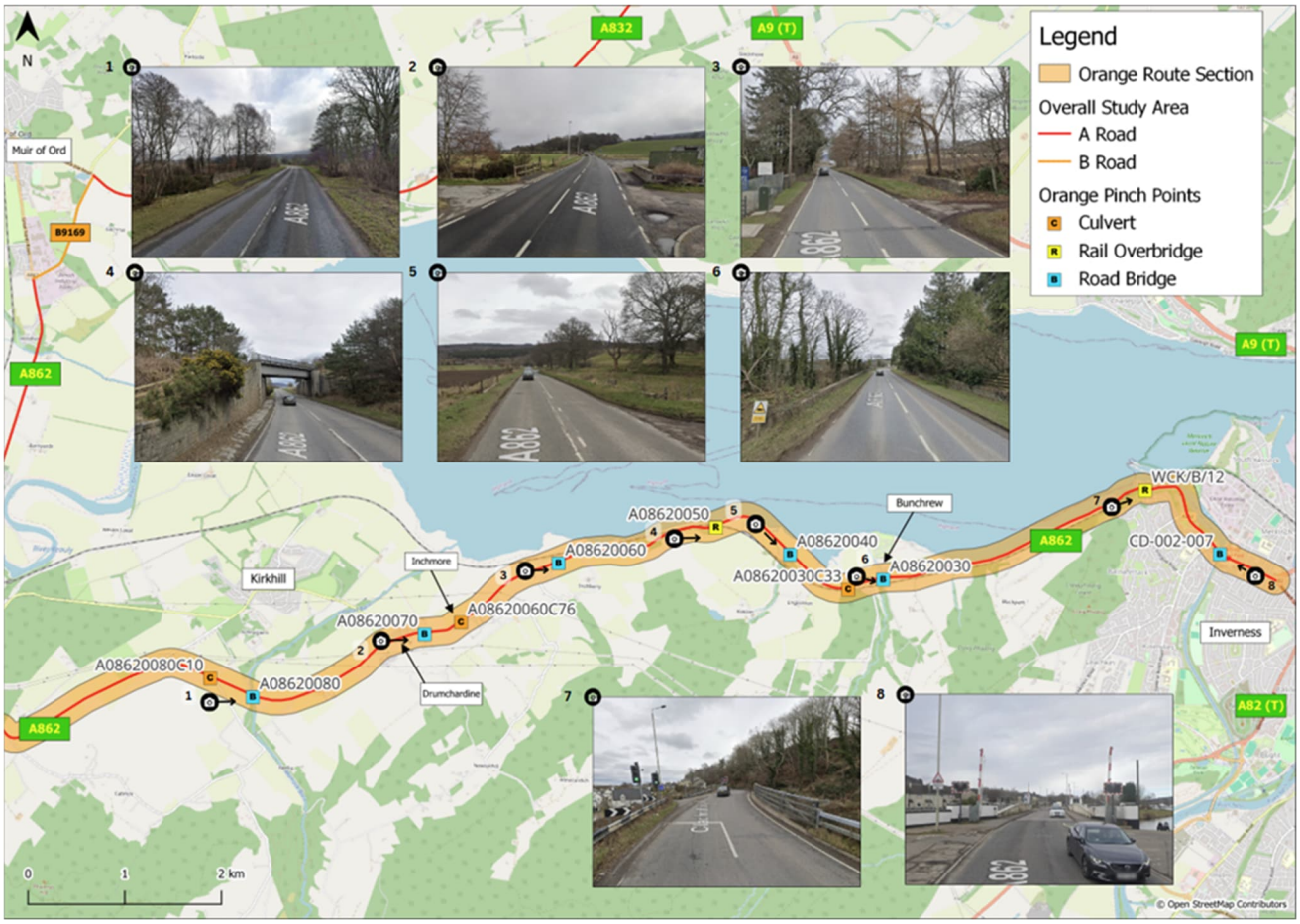
7.2.19. As identified in **Table 3-1**, there are 8 total deliveries of plant equipment to Site via this route and **Figure 7-7** and **Figure 7-8** presents the largest vehicle swept path analysis. While the vehicle will require the full carriageway, the movements will be timed following a public awareness campaign, and that they will be undertaken outwith major events and the morning and evening peaks of the local road network's operation. It is therefore considered that any construction traffic impact will have temporary impact on local road users.

7.2.20. It is noted that this route is listed as 'Agreed Route' by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs and therefore SPA has not been undertaken for the A862.

SECTION 3 – ORANGE ROUTE SECTION

7.2.21. **Figure 7-9** shows Section 3 of the route that construction traffic would use to access the Proposed Development.

Figure 7-9 - Section 3 Orange Route Section Pinch Points



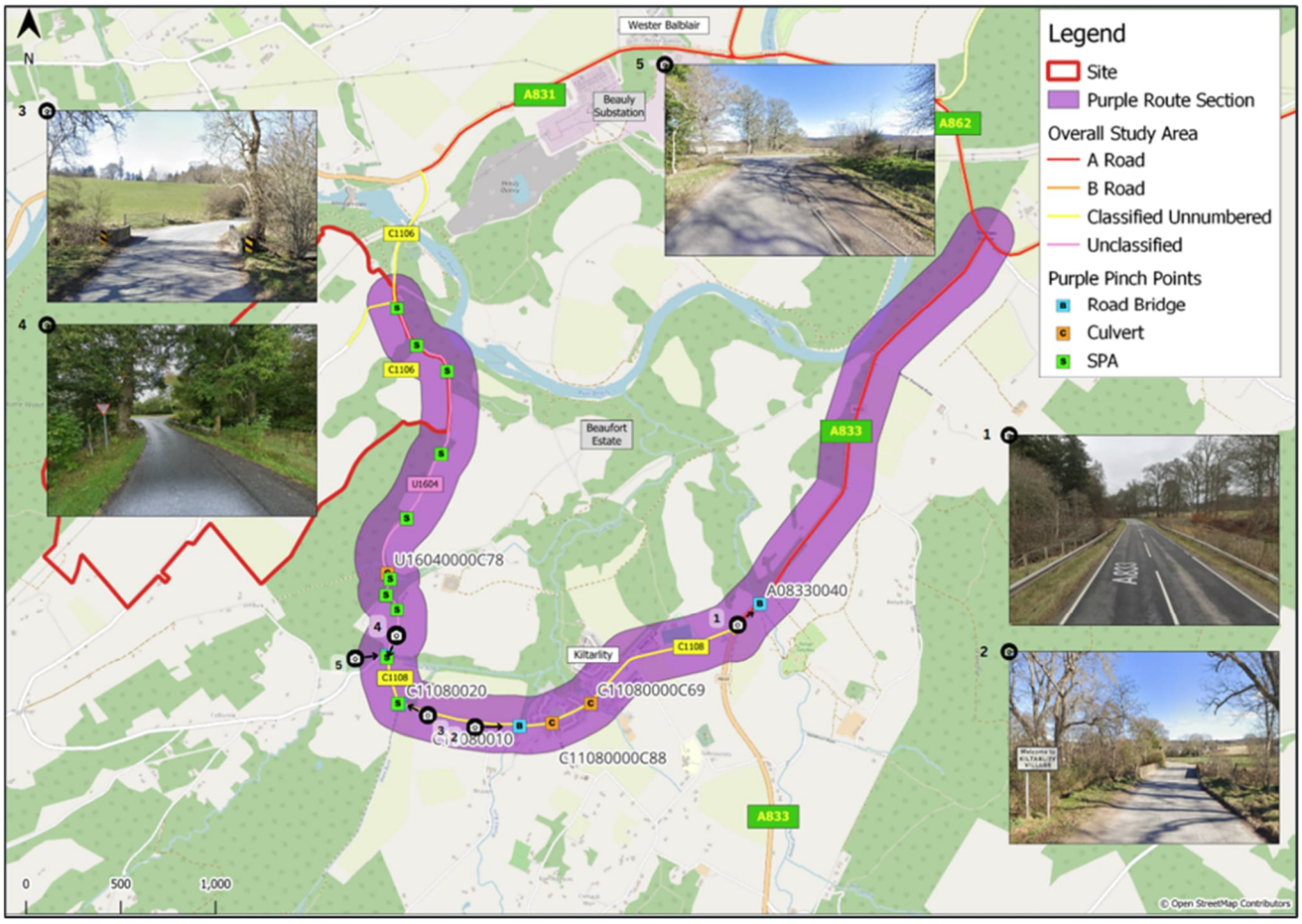
Phase 1 - Construction Traffic Pinch Point Analysis

7.2.22. The A862 is designated as an ‘Agreed Route’ by the Timber Transport Forum and is therefore considered to be suitable for use by HGVs. This route is not intended to be used for AIL plant equipment movements and therefore SPA has not been undertaken for the A862.

SECTION 4 – PURPLE ROUTE SECTION

7.2.23. **Figure 7-10** shows Section 4 of the route that construction traffic would use to access the Proposed Development.

Figure 7-10 - Section 4 Purple Route Section Pinch Points



Phase 1 - AIL Construction Traffic Pinch Point Analysis

7.2.24. A review of the potential access route has identified potential constraints on a large portion of the unclassified road network. Swept Path Analysis (SPA) of AIL plant equipment was undertaken using OS mapping was undertaken throughout the entirety of this route section to determine whether the construction vehicles can be accommodated using the existing road and junction layouts. The results of the assessment is shown in **Figure 7-11** to **Figure 7-17**.

7.2.25. Please note that from **Figure 7-14** to **Figure 7-17**, the SPA was carried out by the Contractor for inclusion within this report. For this reason, the sequence of the insert frames (Sections) within the drawings restarts at 1 following the completion of the SPA completed by WSP for inclusion within this report.

Figure 7-11 - Phase 1 AIL Potential Constraint on A833 – Frame 9 and 10

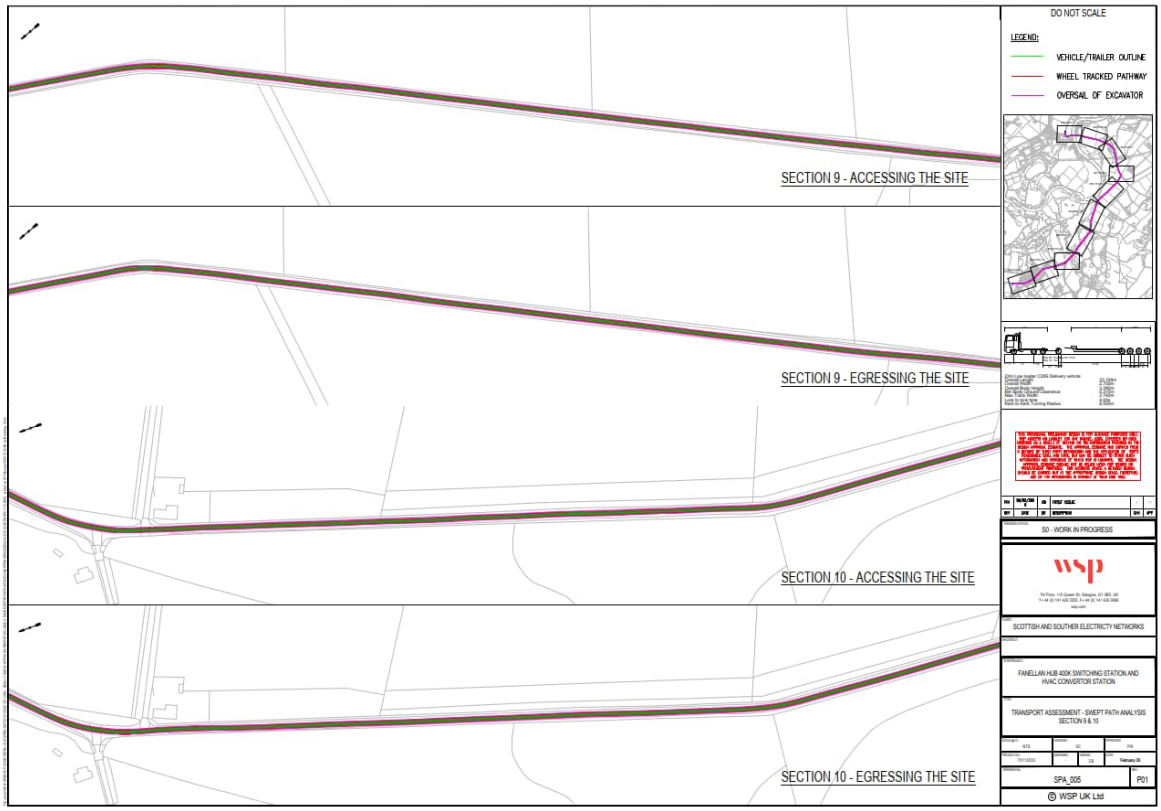


Figure 7-12 - Phase 1 AIL Potential Constraint on A833 and C1108– Frame 11 and 12

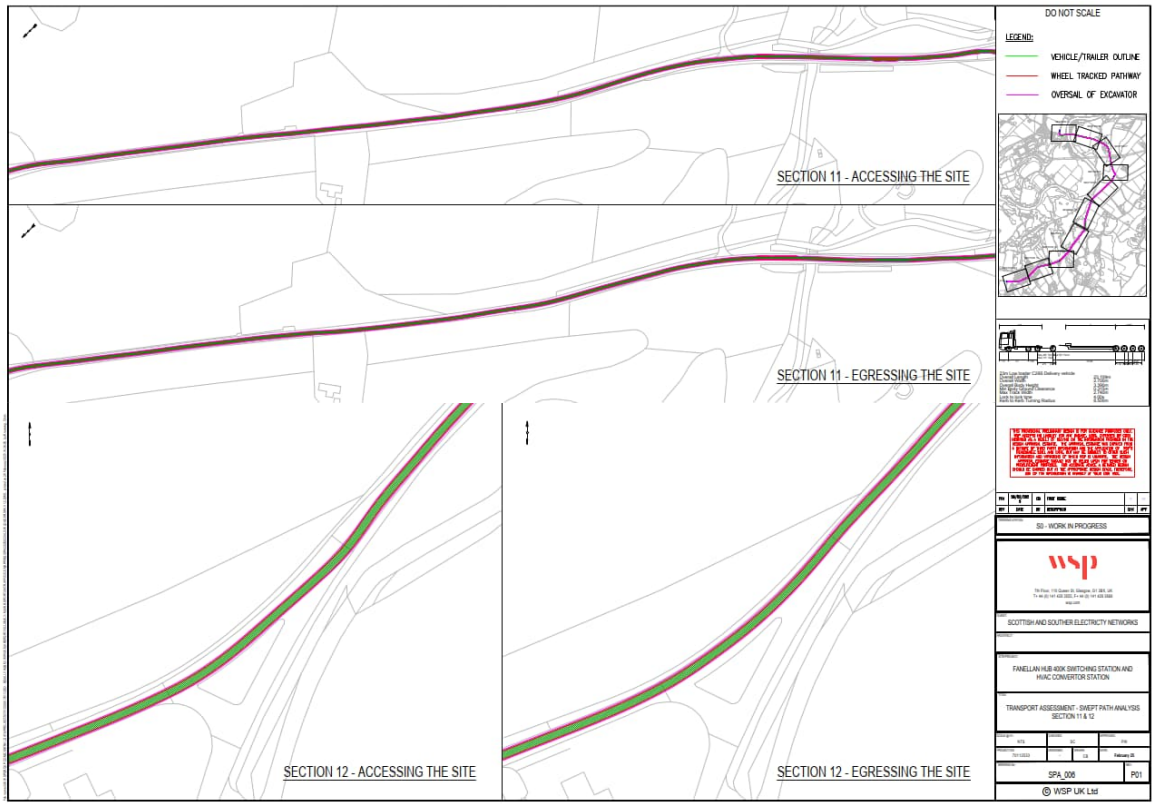


Figure 7-13 - Phase 1 AIL Potential Constraint on C1108 – Frame 13 and 14

Figure 7-14 - Phase 1 AIL Potential Constraint on C1108 and U1604 – Frame 1 to 4 – Inbound

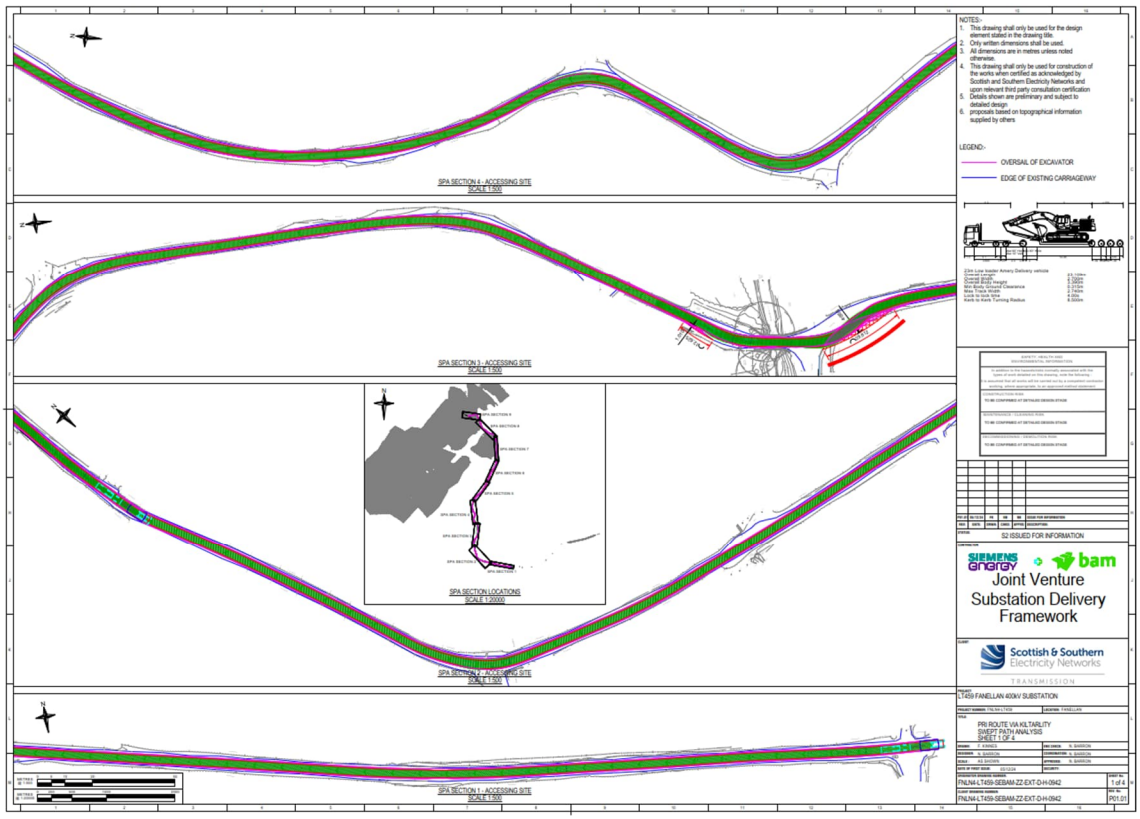


Figure 7-15 - Phase 1 AIL Potential Constraint on C1108 and U1604– Frame 1 to 4 - Outbound

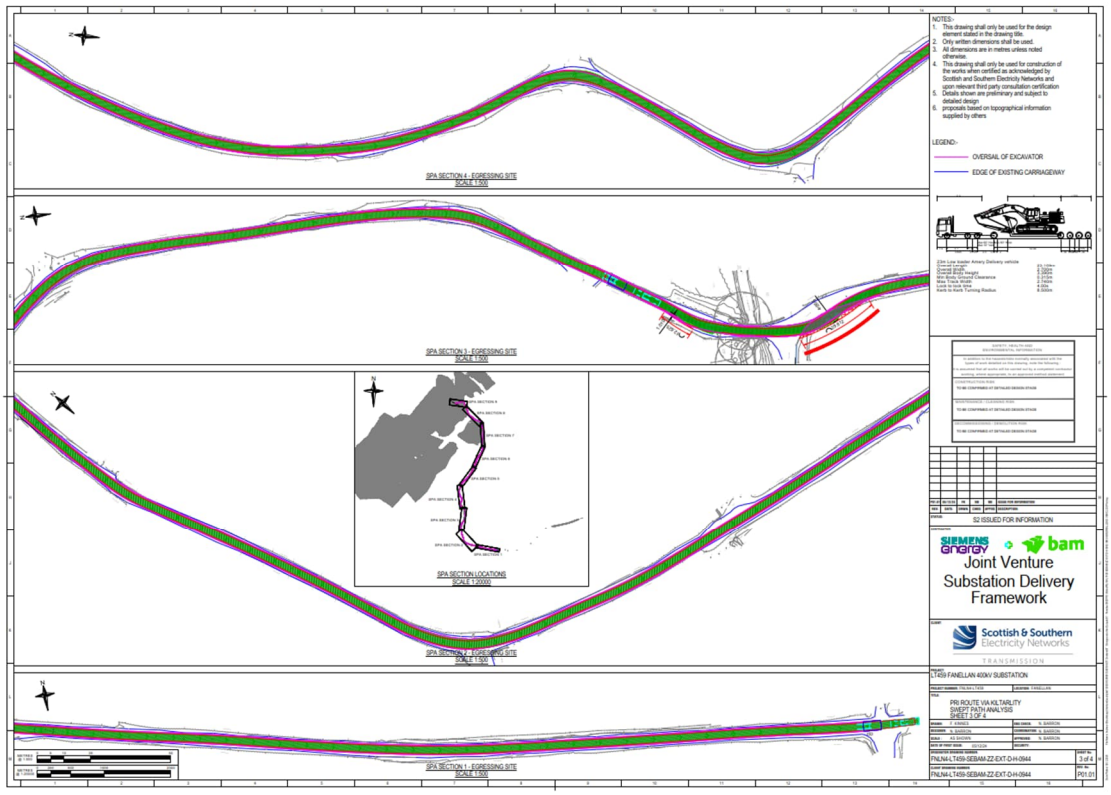


Figure 7-16 - Phase 1 AIL Potential Constraint on U1604 and C1106– Frame 5 to 9 – Inbound

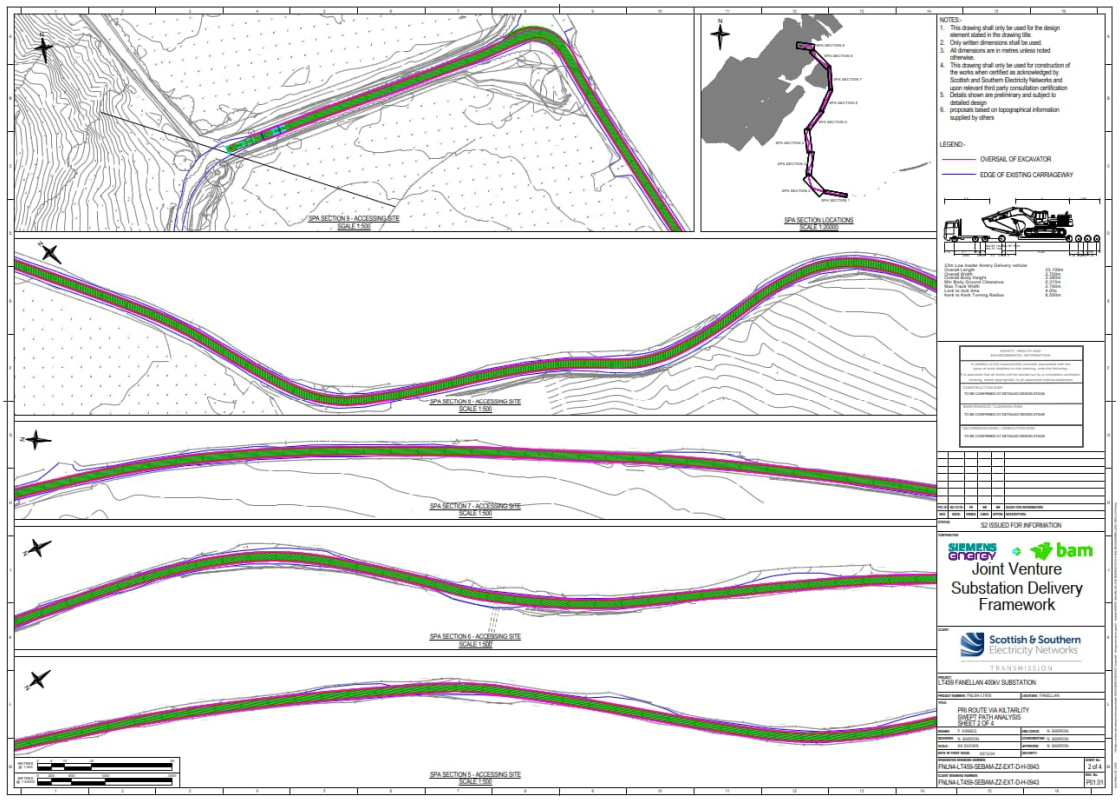
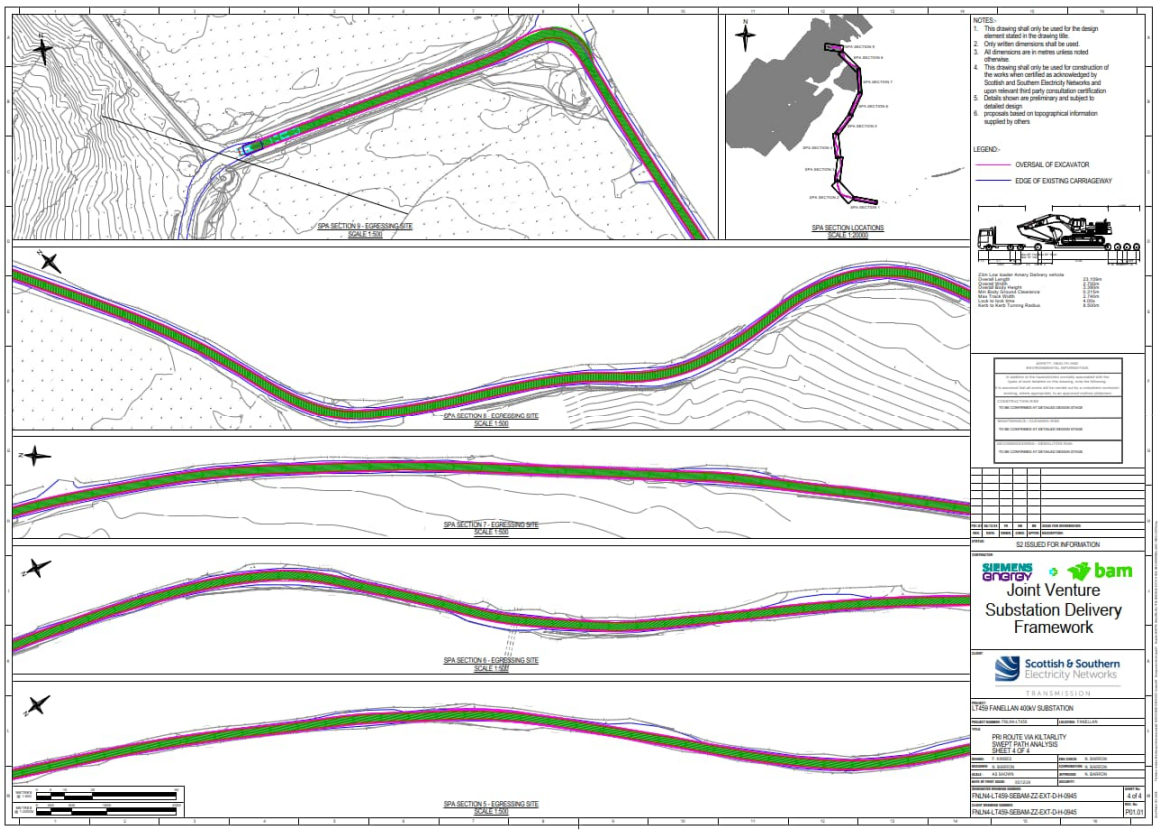


Figure 7-17 - Phase 1 AIL Potential Constraint on U1604 and C1106– Frame 5 to 9 – Outbound



7.2.26. As shown by **Figure 7-11** to **Figure 7-13**, the analysis indicates that the A833 will be able to accommodate AIL plant equipment movements without a requirement for third party land by using both sides of the carriageway to navigate the route.

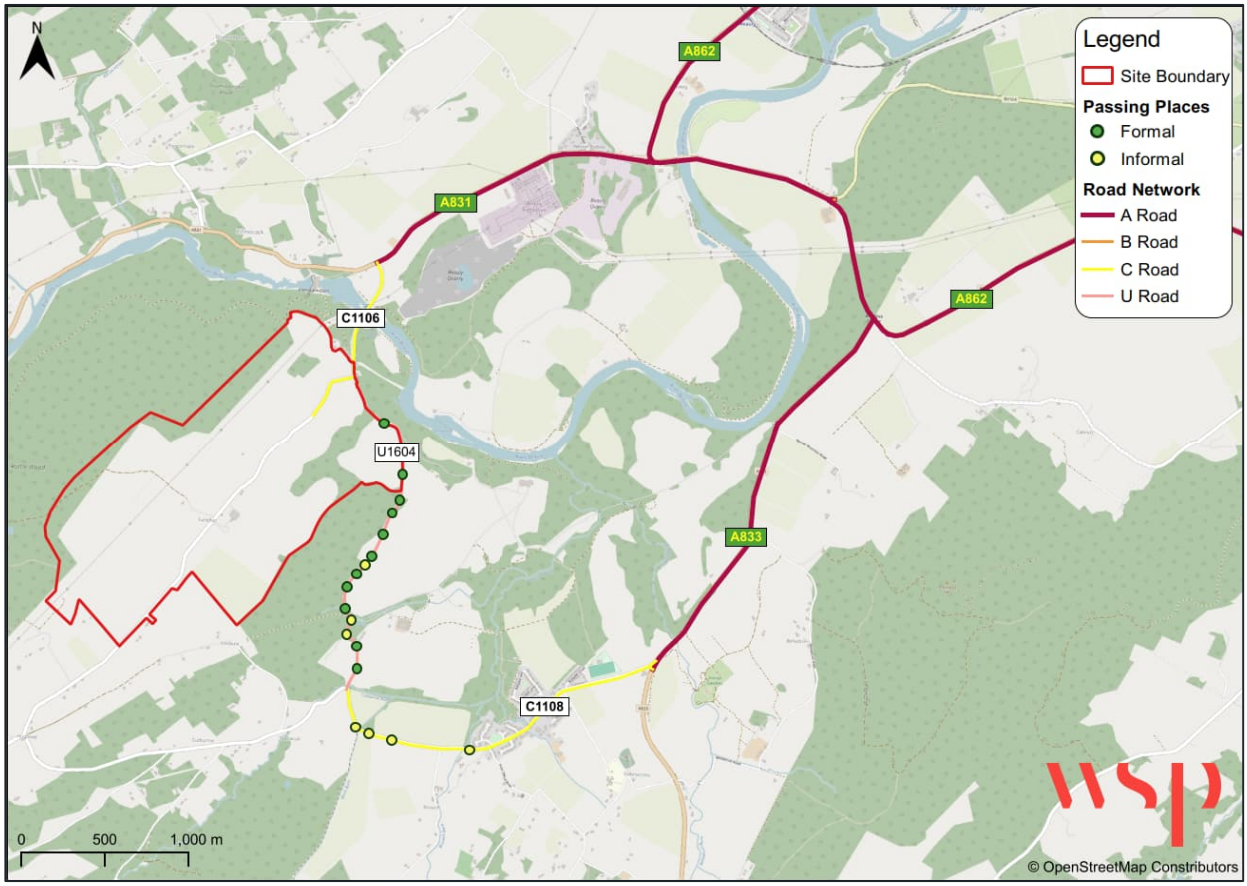
7.2.27. As shown in **Figure 7-14** to **Figure 7-17** the analysis undertaken by the Principal Contractor suggests that the C1108 and the U1604 will mostly be able to accommodate AIL plant equipment movements with few adjustments required for the AIL plant to navigate the route.

7.2.28. As shown by **Figure 7-14** and **Figure 7-15**, there appears to be the likely requirement to slightly widen the carriageway temporarily and provide a load-bearing over-run area over two short sections at the C1108/ U1604 junction in the vicinity of Culburnie Bridge (Ref: U16040010), to accommodate its use by the AILs, although the need for this will require to be confirmed by a topographical survey.

Passing Place Provision

7.2.29. The U1604 is a single-track road approximately 4.5 m in width. Construction vehicles will use the entirety of the U1604 from its junction with the C1108 at Culburnie Burn, to the C1106 near the Site access. As shown in **Figure 7-18**, there are currently 10 formal passing places and 1 driveway which could be used as a passing place on the U1604 between the C1108 and the C1106 Fanellan Road which is to be served by the road.

Figure 7-18 - Section 4 - Purple Route - C1108 U1604 Passing Place Provision



AIL Proposed Mitigation

7.2.30. As identified in **Table 3-1**, there are 8 total deliveries of plant equipment to Site via this route and **Figure 7-11** to **Figure 7-13** presents the largest vehicle swept path analysis. While the vehicle will require the full carriageway, the movements will be timed following a public awareness campaign, and that they will be undertaken outwith major events and the morning and evening peaks of the local road network's operation. It is therefore considered that any construction traffic impact will have temporary impact on local road users.

7.2.31. The Contractor has designed public road improvements (PRIs) deemed necessary for the routing of construction traffic on several unclassified roads including the U1604, and the C1106. The full list of proposed PRI's is included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

HGV Proposed Mitigation

7.2.32. It is noted that the A833 section of this route are listed as an 'Agreed Route' and is therefore considered to be suitable for use by HGVs and therefore SPA has not been undertaken for the A833.

7.2.33. It is noted that the unclassified road sections (C1108 and U1604) of this route are listed as an 'Consultation Routes' and are therefore SPA of these routes would be prudent. However, as the SPA of the AIL plant equipment has shown, the U1604 carriageway requires adjustments to allow for turning movements. It is considered that (with adjustments) it is suitable for use by AILs and for

general HGVs and therefore HGV SPA has not been undertaken for this route in addition to the AIL plant equipment SPA above in **Figure 7-11** to **Figure 7-13**.

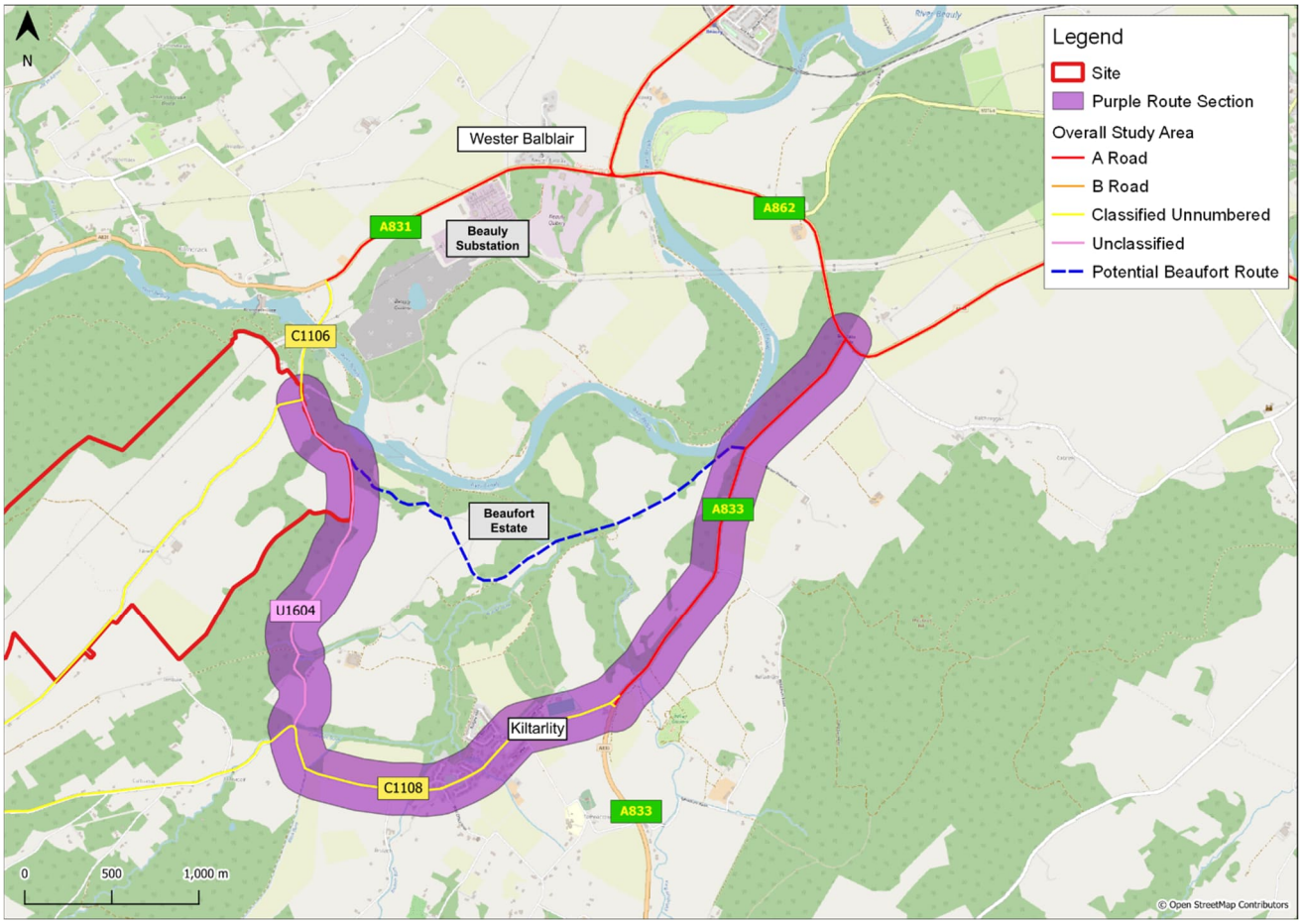
7.2.34. As identified in **Table 6-3**, it is estimated that construction activities could generate up to 9 total and 6 HGV individual traffic movements within an hour during construction traffic movement hours of 08:00 and 19:00 Monday to Friday and 08:00 and 13:00 on Saturday. It is considered that as the Temporary Site Layout shown in **Figure 3-1** shows provision for a holding area for construction traffic, that suitable traffic management measures could be determined and used to control the flow of construction traffic vehicles to be released in convoy from the Site.

7.2.35. The intention of convoying HGV movements is to ensure the average daily HGV movements during a typical construction day are grouped to reduce the potential for two larger vehicles to meet on the unclassified roads which are to be used to support access to the Site. Vehicles within a convoy are instructed to travel a minimum of a full stopping sight distance between them. The Principal Contractor could use these measures to ensure minimal disruption to the local community of Kiltarlity.

Potential Beaufort Route

7.2.36. Further to the above, a potential mitigation route through the Beaufort Estate has also been identified as shown in **Figure 7-19**. This route will allow the vast majority of construction traffic to avoid the C1108 through Kiltarlity.

Figure 7-19 - Purple Route Section - Potential Mitigation Route



7.2.37. On advice from the Contractor, up to 97% of the estimated 112 daily construction traffic movements, plus 100% of the staff movements proposed to route along the C1108 through Kiltarlity, can be routed through Beaufort Estate as shown in **Figure 7-19**. The resultant construction traffic impact on Kiltarlity following the redistribution of construction traffic through Beaufort Estate is shown in **Table 7-2**.

Table 7-2 – Beaufort Route – Daily Construction Traffic Impact Assessment

Traffic Count Location / Link ID	Total Vehicle Movements			HGV Movements Only		
	2027 Baseline	Baseline + Development	Increase (%)	2027 Baseline	Baseline + Development	Increase (%)
Original Construction Traffic Impact						
10 - C1108 between U1604 and A833, Survey Ref: ATC 4	383	493	29%	7	75	935%
Beaufort Route Construction Traffic Impact						
10 - C1108 between U1604 and A833, Survey Ref: ATC 4	383	387	0.9%	7	9	28%
Beaufort Route (up to 97% of construction traffic)	-	109	-	-	66	-

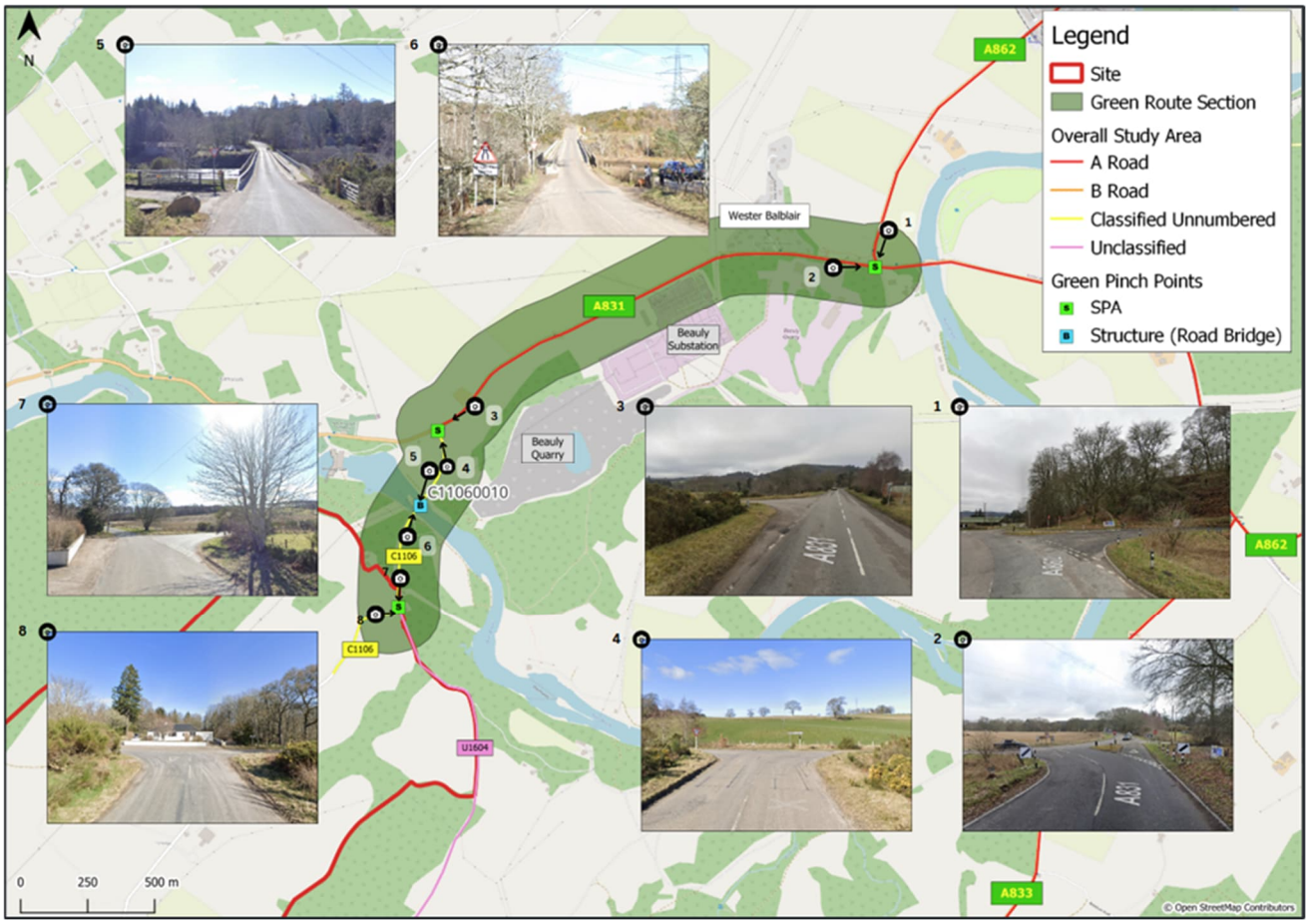
7.2.38. As can be seen, by utilising the Beaufort Route, construction traffic impact can be significantly reduced from 29% to less than 1% for all construction vehicles. For HGVs, impact is reduced from 935% to 28%, equating to 68 HGVs reduced to 2 HGVs daily.

7.2.39. As previously stated, all staff movements outwith the assessment peak will also be accommodated by the Beaufort route.

SECTION 5 – GREEN ROUTE SECTION

7.2.40. **Figure 7-20** shows Section 5 of the route that construction traffic would use to access the Proposed Development.

Figure 7-20 - Section 5 Green Route Section Pinch Points



Phase 1 - General Construction Traffic Pinch Point Analysis

7.2.41. The A831 is designated as an 'Consultation Route by the Timber Transport Forum and is considered to be suitable for use by HGVs. This route is not intended to be used for AIL plant equipment movements and therefore SPA has not been undertaken in this report for the A831.

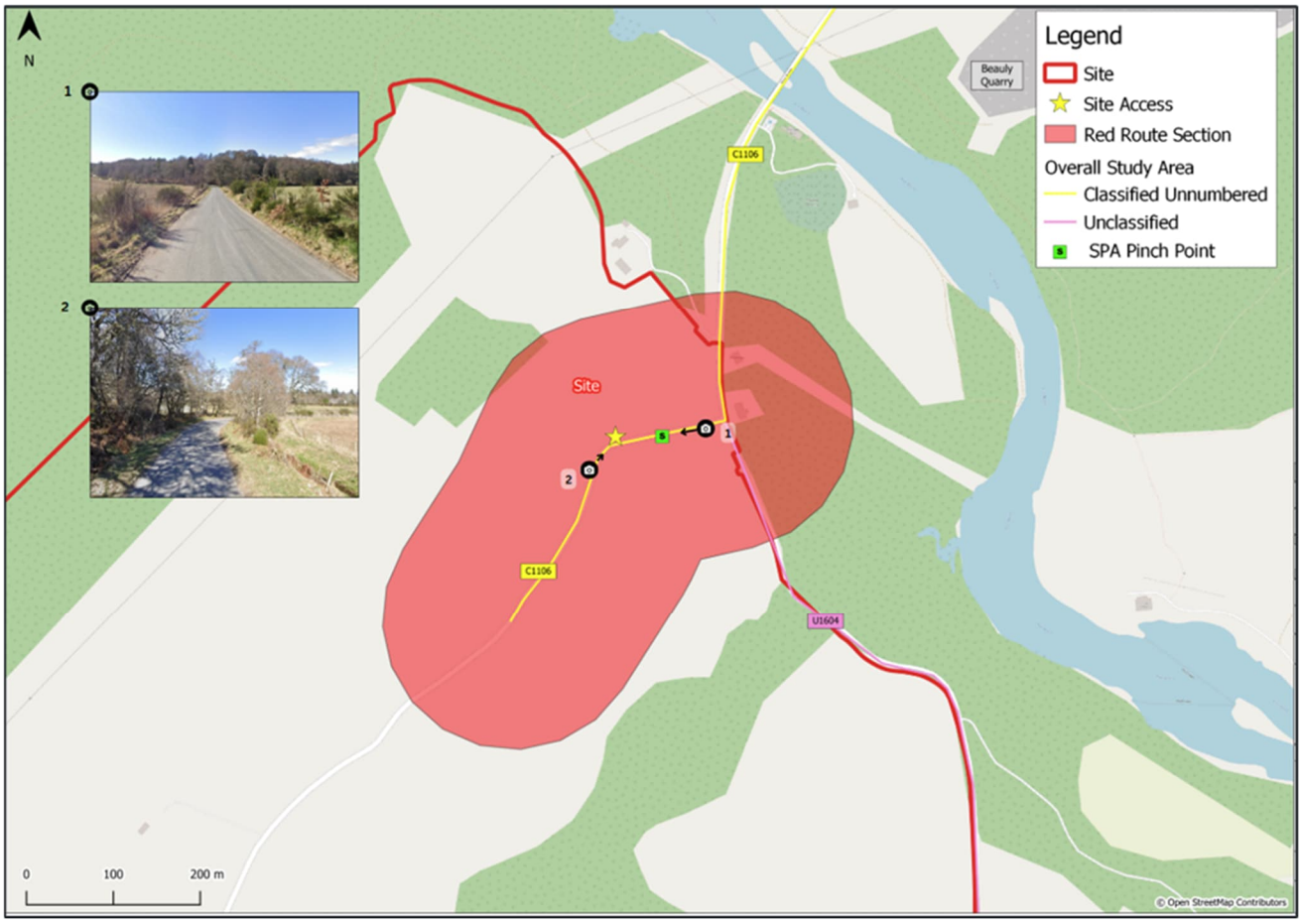
7.2.42. However, as this route is anticipated to be used for Phase 2 of construction traffic routing, the Abnormal Load and Construction Traffic Assessment Report (which is found within **Volume 4, Appendix 12.3** of the EIA Report) [Document Ref: LT459-SWE-XX-XX-T-H-1001], contains the SPA for the movement of the transformers from the potential ports to Site.

7.2.43. The Abnormal Load and Construction Traffic Assessment Report includes SPA of the A831 junction with the A862, and the A831 junction with the C1106 Fanellan Road.

SECTION 6 – RED ROUTE SECTION

7.2.44. **Figure 7-21** shows Section 6 of the route that construction traffic would use to access the Proposed Development.

Figure 7-21 - Section 6 Access Routes



Phase 1 - General Construction Traffic Pinch Point Analysis

7.2.45. A potential constraint was highlighted on the left turn on the U1604 junction with the C1106 through which AIL plant equipment and HGVs would pass when accessing the Site.

7.2.46. The potential constraint was reviewed using AutoTrack by the Contractor and the results of the assessment are shown previously in **Figure 7-16** and **Figure 7-17**.

7.2.47. Additionally, the bend in the C1106 which forms a junction with the U1604 is also anticipated to accommodate HGV and AIL transformer movements from the north.

7.2.48. The potential constraint was reviewed using AutoTrack by Sweco as part of the Abnormal Load and Construction Traffic Assessment Report (which is found within Volume 4, Appendix 12.3 of the EIA Report) [Document Ref: LT459-SWE-XX-XX-T-H-1001], and the results of the assessment is shown within this document.

AIL Proposed Mitigation

7.2.49. During Phase 1, as identified in **Table 3-1**, there are 8 total deliveries of plant equipment to Site via this route and **Figure 7-16** and **Figure 7-17** presents the largest vehicle swept path analysis during this time. While the vehicle will require the full carriageway, the movements will be timed following a public awareness campaign, and that they will be undertaken outwith major events and the morning and evening peaks of the local road network's operation. It is therefore considered that any construction traffic impact will have temporary impact on local road users.

HGV Proposed Mitigation

7.2.50. It is noted that the C1106 section of this route is listed as a 'Consultation Route', and in the absence of SPA for the length of this route, the Contractor has designed PRIs deemed necessary for the routing of construction traffic on this section of the C1106.

7.2.51. The full list of proposed PRI's are included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

7.2.52. As indicated in it is proposed that the C1106 carriageway is widened to a width of 7 m between the U1604 junction and the Site access (approximately 120 m) [Drawing Ref: LT459-SWE-XX-XX-D-H-0108].

7.2.53. Additionally, it is proposed that the C1106 between Black Bridge and the U1604 be widened to a width of 6.5 m [Drawing Ref: LT459-SWE-XX-XX-D-H-0108].

7.3 PHASE 2 - TRAFFIC IMPACT ASSESSMENT

CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

7.3.1. **Table 7-3** quantifies the impact which construction traffic is forecast to have on the operation of each of the links on each of the 6 sections of the local road network supporting access to the Site.

Table 7-3 – Phase 2 - Construction Traffic Impact Assessment Summary

Traffic Count Location / Link ID	Total Vehicle Movements			HGV Movements Only		
	2029 Baseline	Baseline + Development	Increase (%)	2029 Baseline	Baseline + Development	Increase (%)
1 - A832 between the A9 and Muir of Ord , DfT Point ID: 50941	3421	3612	6%	183	333	81%
2 - B9169 between A832 and A862, TS Data Point ID: ATC01257	586	777	33%	31	181	475%
3 - A862 between the B9169 and A831, DfT Point ID: 10950	5299	5490	4%	233	382	64%
4 - A831 between the A862 and the C1106, Survey Ref: ATC 7	2005	2287	14%	27	226	735%
5 - C1106 between the A831 and the U1604, Survey Ref: ATC 6	574	856	49%	8	207	2426%

5 - C1106 at the Site Access, Survey Ref: ATC 1	212	494	133%	1	200	16170%
6 - A862 between A833 and A831, DfT Point ID: 30950	4256	4348	2%	96	146	52%
7 - A862 between A833 and Drumchardine, DfT Point ID: 80011	3455	3547	3%	66	116	75%
8 - A862 between Drumchardine and the A82, DfT Point ID: 80331	4351	4442	2%	55	105	91%
9 - A833 between C1108 and A862, Survey Ref: ATC 8	2682	2682	0%	48	48	0%
10 - C1108 between U1604 and A833, Survey Ref: ATC 4	387	387	0%	7	7	0%
11 - U1604 between C1106 and C1109, Survey Ref: ATC 3	265	265	0%	8	8	0%

7.3.2. As can be seen from the above summary and from Table 6-4, during Phase 2 construction activities are generally forecast to generate between 8 and 24 total two-way traffic flows per hour on any study area link, with the majority of these movements (18 per hour) generated by HGVs on route to the construction site.

7.3.3. Where possible these movements will be managed to spread arrivals and departures to/from the Site throughout each hour, and it is therefore expected that construction activities will generate an increase of 1 inbound or outbound HGV movement every 2 minutes.

AIL Proposed Mitigation

7.3.4. During Phase 2 of construction traffic routing, as identified in the Abnormal Load and Construction Traffic Assessment Report, the transformers are expected to use the following Study Area sections to route to Site:

- Section 1: Yellow Route: A832, B9169 A862;
- Section 5: Green Route: A831, C1106; and
- Section 6: Red Route: C1106 at the Site Access.

7.3.5. The SPA presented in the Abnormal Load and Construction Traffic Assessment Report demonstrates the largest vehicle swept path analysis. The full results of this SPA can be found in **Volume 4, Appendix 12.3 of the EIA Report**, [Document Ref: LT459-SWE-XX-XX-T-H-1001].

7.3.6. In addition to the physical mitigation measures outlined by Sweco, AIL movements will also be timed following a public awareness campaign, and that they will be undertaken outwith major events and the morning and evening peaks of the local road network's operation. It is therefore considered that any construction traffic impact will have temporary impact on local road users.

HGV Proposed Mitigation

7.3.7. It is noted that the A832 and A862 sections of this route are listed as 'Agreed Route' and are therefore considered to be suitable for use by HGVs and therefore SPA has not been undertaken for the these routes.

7.3.8. It is noted that the A831, the B9169 and the unclassified road section C1106 Fanellan Road of this Phase 2 route are listed as 'Consultation Routes' and therefore SPA of these routes would be prudent. However, as the SPA of HGVs and of both the AIL plant equipment (anticipated during Phase 1) and of the transformers (anticipated during Phase 2) has already been undertaken, in **Section 7.2**, and within the Abnormal Load and Construction Traffic Assessment Report respectively, it is considered this is not necessary.

7.3.9. As identified in paragraph 7.3.2, it is estimated that construction activities could generate up to 24 total and 18 HGV individual traffic movements within an hour during construction traffic movement hours of 08:00 and 19:00 Monday to Friday and 08:00 and 13:00 on Saturday. It is considered that as the Temporary Site Layout shown in **Figure 3-1** shows provision for a holding area for construction traffic, that suitable traffic management measures could be determined and used to control the flow of construction traffic vehicles to be released in convoy from the Site to reduce the potential for two larger vehicles to meet on the unclassified roads which are to be used to support access to the Site. The Principal Contractor could use these measures to ensure minimal disruption to the local communities along the Phase 2 route.

7.4 PROPOSED MITIGATION SUMMARY

7.4.1. It is considered that the unclassified road network can accommodate the temporary increase in traffic generated by construction activities, in combination with suitable traffic management measures. The main impact of traffic is anticipated for a period of no more than 1 month on any of the links identified within the Study Area. Where possible, HGV arrivals and departures will be managed to reduce the potential for two larger vehicles to meet on the unclassified roads which are to be used to support access to the Site.

7.4.2. However, there is likely to be a requirement to alter the alignment of the road network or kerblines at existing junctions to accommodate AIL plant equipment and transformer movements associated with construction activities. While the requirement for these will require to be confirmed by a topographical survey of the potential constrained areas, the potential mitigation identified within this report is summarised in **Table 7-4**. Any conclusions regarding mitigation drawn from the movement of transformers is identified specifically within the Abnormal Load and Construction Traffic Assessment Report, found within **Volume 4, Appendix 12.3 of the EIA Report**, [Document Ref: LT459-SWE-XX-XX-T-H-1001] and reference to this should be made for the construction traffic Phase 2 movements.

7.4.3. The full list of proposed PRI's proposed by the Contractor are included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

Table 7-4 – Potential Public Road Improvements

Phase	Section	Road	Potential Physical Mitigation Measure
Phase 1	**Section 1 Yellow Route**	A832	No physical mitigation identified.
		B9169	No physical mitigation identified.
		A862	No physical mitigation identified.
	Section 2 Blue Route	A862	No physical mitigation identified.

	Section 3 Orange Route	A862	No physical mitigation identified.
	Section 4 Purple Route	C1108	The Contractor has designed public road improvements (PRIs) deemed necessary for the routing of construction traffic on this section of the C1106 and the U1604. The full list of proposed PRI's are included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.
		U1604	
	Section 4 Purple Route (Potential Mitigation Measure)	Beaufort Estate Route	At present, design details for the alternative construction traffic routing option through Beaufort Estate are not readily available. However, it is considered that two accesses will be required in total, with one on the A833 and another on the U1604. The location and form of these accesses would be agreed with THC in advance of any construction start.
	Section 6 Red Route	C1106	The Contractor has designed PRIs deemed necessary for the routing of construction traffic on this section of the C1106. The full list of proposed PRI's are included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.
Phase 2	**Section 1 Yellow Route**	A832	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
		B9169	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
		A862	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 2 Blue Route	A862	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 3 Orange Route	A862	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 5 Green Route	A831	Mitigation identified within LT459-SWE-XX-XX-T-H-1001.
	Section 6 Red Route	C1106	The Contractor has designed PRIs deemed necessary for the routing of construction traffic on this section of the C1106. The full list of proposed PRI's are included within **Volume 2, Chapter 3: Description of the Proposed Development** within the EIA report.

7.5 POTENTIAL MITIGATION MEASURES

7.5.1. In addition to the road improvements identified within **Table 7-4,**

7.5.2. **Table** 7-5 summarises general measures which could be promoted as part of the implementation of the final CTMP to mitigate the impact of construction traffic on the operation of the local transport network.

7.5.3. Any Mitigation measures will be subject to Principal Contractor and THC approval.

Table 7-5 –General Mitigation Measures

Mitigation Measure	Proposed General Measure
Route Signage	Temporary signage will be erected on the roads in the vicinity of the proposed Site accesses, and at other locations as considered necessary, to warn drivers of construction activities and the potential to encounter construction vehicles. The exact nature and location of the signage would be agreed with Highland Council prior to the commencement of construction activities at each Site.
Contractor Speed Limits	It is proposed to impose a reduced speed limit for all construction traffic on sections of the proposed access route deemed sensitive to the effects of construction traffic. As such, it is proposed to implement signage located at appropriate locations advising construction traffic of the reduced speed limit:
Timing Restrictions	The TA has identified that Tomnacross Primary School is located south of the C1108 in Kiltarlity and that Belladrum Music Festival and the Black Isle Show occur annually during the planned construction programme. Therefore, to mitigate against these sensitive receptors: ▪ HGV Deliveries to the Site will look to be made out with peak hours for school drop offs and any other local events.
Route Enforcement	The routes and time restrictions identified in the CTMP will be strictly enforced. The Principal Contractor and all subcontracting companies involved in the construction of the Proposed Development, will be required to ensure they follow the correct routes. The routes will be clearly defined in all contracts and clearly signposted for all drivers to see. This will be reinforced by inclusion within the Principal Contractor's site induction and regular toolbox talks for site operatives. The requirement to stay on the road surface, and avoid tracking off onto verges, will also be reinforced via these means.
Management of Core Path Users	Appropraite signage will be installed where access routes follow the alignment of a Core Path to minimise the potential for conflict between users of the path and construction traffic.
Banksman	Qualified personnel (banksmen) with appropriate street works licences will be in place at key access points to assist deliveries entering or vehicles exiting the working areas where required. In addition to the above, banksmen may also be required to perform traffic management duties to minimise potential conflict with other road users. ▪ Such management measures could be determined and used to control the flow of construction traffic vehicles to be released in convoy from the Site to reduce the potential for two larger vehicles to meet on the unclassified roads which are to be used to support access to the Site.
Information Pack and Communications	Driver information packs will be provided to all contractors which will form part of the contractual agreement between contractors and the principal constructor. The information pack is likely to include details of the following CTMP requirements: ▪ Purpose and safety rules. ▪ Construction routes. ▪ Pre-booking sheet and TMP site contacts. ▪ Vehicle compliance guidance. ▪ Driver training help. ▪ PPE requirements. ▪ Driver Flashcards. Finalised information packs and communication details will be shared with Highland Council prior to the commencement of works.
Travel Plan	The Principal Contractor will develop and implement a Travel Plan, which will seek to reduce the effects of construction staff travelling to the sites on the local road network, in particular where they would be required to pass through local settlements. All on site construction staff using private vehicles to access each Site will be required to park their vehicles in designated construction site car parks. No parking will be permitted on the public road network in the vicinity of the Proposed Development.

8 OPERATIONAL CAR PARK ACCUMULATION ANALYSIS

8.1 INTRODUCTION

8.1.1. As previously stated, upon completion of the Development, both the sub-station and convertor station will be accessed on an ongoing basis for maintenance and training purposes. This section sets out the operational parking strategy for the Proposed Development based on THC parking standards and the requirements for the operation and use of the Site.

8.2 PROPOSED DEVELOPMENT BACKGROUND

8.2.1. As previously described, the Fanellan Hub 400kV Switching Station and HVDC Converter Station Development is located approximately 4.5 km south-east of Beauly, and given the scale of the developments, a need for the following permanent operational facilities has been identified to support operational requirements. These components are identified in **Table 8-1**.

Table 8-1 - Proposed Development Operational Components

Component	Description	Gross Floor Area (GFA m^2)
Operations depot and store	This would consist of buildings for offices, training facilities, car parking and storage facilities for strategic spares. (Approx. 124 m x 60 m, 24 m high).	7,440 m^2
Control Building	Storage and desk space will be allocated within the control building, and car parking will be allocated.	1,375 m^2
		8,815 m^2

ACCESS

8.2.2. It is anticipated that a new bellmouth and access road to the Proposed Development from the public road (C1106 Fanellan Road) will be constructed which will remain in place permanently following construction for operational use.

PARKING PROVISION

8.2.3. A car park for staff and visitors will be provided, which will include service vehicle space and emergency services access as appropriate.

PARKING STANDARDS

8.2.4. Reference has been given to the following:

- Roads and Transport Guidelines for New Developments (2013[16]);
- National Roads Development Guide (2015) includes the maximum car parking and minimum blue badge parking, and suggested minimum cycle parking capacity for different types of land use in; and
- Building Standards Division Non-domestic Technical Handbook (April 2024);

8.2.5. **Table** 8-2 summarises the parking standards identified from the above documents. This is based on the residential accommodation as the proposed café and office land uses would be ancillary to the scheme.

Table 8-2 - Parking Standards for Fanellan Development

Type	Guidance	Parking Standard
Car Parking	National Roads Development Guise (2015), SCOTS	▪ Maximum Car Parking Standard for Office is 1 space per 30m2 Gross Floor Area (GFA).
		▪ Maximum Car Parking Standard for business (Use Class 4) 2500 m^2 and above up to 1 space per 30m2.
Blue Badge Parking	National Roads Development Guise (2015), SCOTS	▪ 1 space per disabled employee plus 2 spaces or 5% (whichever is greater) in car parks with up to 200 spaces; or ▪ 6 spaces plus 2% in car parks with more than 200 spaces.
Cycle Parking	National Roads Development Guise (2015), SCOTS	▪ Minimum Cycle Parking Standard is 1 space per 100m^2 GFA for staff, plus 1 space per 200m^2 GFA for visitors.
		For Industrial (B2) use: ▪ 1 per 250m^2 for staff (secure and ideally covered); plus ▪ 1 per 500m^2 for visitors (secure and ideally covered).
EV Charging Point Parking	Building Standards Division Non-domestic Technical Handbook (April 2024)	▪ Where more than 10 car parking spaces are provided within the curtilage of a non-domestic building, the following requirements are to be met by developers: • 1 in every 2 non-residential parking spaces to have ducting (enabling infrastructure) installed; and, • 1 in every 10 non-residential parking spaces to provide an EV charge point socket with minimum 7kW output power rating.

8.2.6. Based on the standards shown in **Table** 8-2**,** and the GFAs of the operational development requirements, 248 car parking spaces would need to be provided for the Operations depot and store and 46 for the Control Building. It is noted that this is the maximum parking provision for the facility and there is no requirement to include this level of parking.

8.2.7. **Table 8-3** indicates the level of parking provision that the Applicant suggests will be required for the purposes of operation.

Table 8-3 – Parking Provision within Site Layout

Component	Gross Floor Area (GFA m^2)	Car Parking Space Provision	Blue Badge Parking Space Provision	EV Car Parking Space Provision	Cycle Parking Space Provision
Operations depot and store	7,440 m^2	10	1	Not currently known	Not currently known
Control Building	1,375 m^2	9	1	Not currently known	Not currently known
Total	**8,815 m^2**	**19**	**2**		

8.2.8. Additionally, based on the standards the Development would prompt a cycle parking requirement of 72 spaces according to THC parking standards, 210 spaces according to National Roads Development Guide (2015). There is considerable discrepancy between the two, and this will need to be discussed with roads officers from THC to identify a reasonable level of provision.

8.3 REVIEW OF CAR PARKING PROVISION

8.3.1. It is understood that THC Roads Officer has suggested that parking spaces for the Substation should be made clear. This is considered to be unnecessary for the following reasons:

- As identified previously, the Substation would serve staff operations and visitors for training purposes. It is unlikely to attract other visitors from further afield given its location.
- Trips to the local community would be by active travel as it is within easy walking distance of the Substation. Excessive parking provision would encourage travel by car and should not be supported.

8.3.2. Further consideration has been given to the adequacy of the proposed parking provision based on a review of the indicative operational staff numbers, potential parking accumulation based on trip rates from the TRICS database and consideration for the parking need for the ancillary uses

8.4 TRIP RATE AND PARKING ACCUMULATION ANALYSIS

8.4.1. An assessment has been undertaken on the adequacy of the parking provision based on parking accumulation analysis derived from expected level of trips each day and shift times.

8.4.2. **Table 8-4** outlines the generated total vehicle trip generation for the Development in hourly periods. It includes traffic generation based on operational requirements and parking accumulation based on an assumption that some number of the spaces would be occupied at the start of the day (before 07:00).

8.4.3. To estimate this, consideration has been given to the number of staff who would be on Site during the day and overnight and the take-up of parking spaces by visitors for training purposes.

- It has been assumed that there would be 4 members of staff each requiring a car park space at night between 20:00 and 08:00;
- It has been assumed that there would be 6 members of staff each requiring a car park space during the day between 08:00 and 20:00;
- It has been assumed that there would be 7 admin members of staff each requiring a car park space during the day between 09:00 and 17:00; and

- It is assumed that up to 4 vehicles could be required for training purposes from the beginning of the work day until just before the end of the work day (09:30-16:30).

8.4.4. On this basis, it is assumed that 4 spaces would be occupied at the start of the day.

Table 8-4 - Hourly Trip Generation for Operational and Training Use

Time	Trips		Parking space demand	
	In	Out	Total	Occupancy
Pre 07:00			**4**	21%
07:00-08:00	8	0	12	63%
08:00-09:00	7	4	15	79%
09:00-10:00	4	0	19	100%
10:00-11:00	0	0	19	100%
11:00-12:00	0	0	19	100%
12:00-13:00	0	0	19	100%
13:00-14:00	0	0	19	100%
14:00-15:00	0	0	19	100%
15:00-16:00	0	0	19	100%
16:00-17:00	0	4	15	79%
17:00-18:00	0	7	8	42%
18:00-19:00	0	0	8	42%

Training Facilities

8.4.5. The training facilities within the offices adjacent to the depot are integral to the development and therefore would be factored into the THC maximum parking standards for the land use and therefore should not require additional provision.

CONCLUSIONS OF CAR PARK ACCUMULATION ANALYSIS

8.4.6. This section sets out an assessment of the parking need for the Proposed Development off the C1106 Fanellan Road for a Substation and for the training facilities integral to the development, the proposed number of parking spaces is 19 including 2 Blue Badge Spaces. It is not yet known what provision there is for cycle and EV parking however it is often the case that this detail can be secured via a suitably worded planning condition.

8.4.7. Conclusions from the standard are set out below.

- **Car Parking** - The THC parking standards contained within **Table** 8-2 of the 'Roads and Transport Guidelines for New Developments' Guidance specify **maximum** parking standards. For the land use type of 'Office' 258 car parking spaces could be provided. However, it is the applicant's view that the indicative number of 19 car parking spaces will be sufficient for the operation and training purposes of the Site. Therefore, regarding the indicative car parking provision for the depot and office, it is reasonable to assume that this facility would have been allowed for within the THC maximum parking standards;
- **Blue Badge Parking** – The national standards contained in the National Roads Development Guide (2015) indicates that 1 space must be created per disabled employee, or 5% in car parks

with up to 200 spaces. Regarding the fact that there will be 19 total spaces provided, and 2 Blue Badge spaces have been provided overall, the indicative parking requirement exceeds the THC standards;

- **EV Parking** - Based on 'Building Standards Division Non-domestic Technical Handbook', where more than 10 car parking spaces are provided within the curtilage of a non-domestic building, there are requirements are to be met by developers. However, as there is no more than 10 in the vicinity of each building on the Site, it is considered that no infrastructure is required. SSEN will continue to promote their EV employee schemes where appropriate.
- **Cycle Parking** - As identified above, the cycle parking requirement will need to be discussed with THC Roads Officer. For the type and size of development, the cycle parking suggestion within LTN 1/20 appears to be the appropriate guidance to use. This results in 9 spaces, however, should demand exceed supply, space could be set aside for expansion.
- **Servicing and emergency Vehicles** - Space within the car park area should be provided for servicing vehicles. This would be based on operational need. In addition, allowance should be made for space for emergency vehicles.

9 FRAMEWORK TRAVEL PLAN

9.1 TRAVEL PLAN AIM

9.1.1. The overall aim of the Travel Plan (TP) is to develop a culture of sustainable travel choice by staff and visitors to the Site. The emphasis is on reducing single occupancy vehicles (SOV) as this is one of the main sources of congestion and one of the least sustainable forms of transport.

The objectives and targets associated with this TP are designed to influence the travel behaviour of those who reside elsewhere and travel to the Site at Fanellan for employment and training.

9.2 TRAVEL PLAN OBJECTIVES

9.2.1. The FTP is focused upon achieving three key objectives, which are identified as follows:

- to promote and achieve sustainable travel choice for journeys to and from the Site;
- To minimise travel to/from the Site by SOVs; and
- To contribute to the sustainability of the Site.

9.3 TARGETS

9.3.1. The term ‘target’ is used in the sense of a statement that contains a measurement of the Travel Plan objectives and is a measure of outcomes achieved by the Travel Plan. Targets should be SMART – Specific, Measurable, Achievable, Realistic and Timed and be related to each of the numbered objectives set out in **Section 9.2**.

9.3.2. The targets which have been identified will help achieve the three objectives of the Travel Plan for the Site.

- To appoint a Travel Plan Co-ordinator (TPC) as soon as the development becomes operational;
- To complete sustainable travel information material prior to site occupation; and
- To collaborate on the Site design to identify opportunities for maximising sustainable travel choice.

9.4 TRAVEL PLAN MEASURES

9.4.1. Measures are tasks required to achieve the Travel Plan targets. For the purposes of this FTP, the measures have been split into:

- ‘physical’ measures, which provide the infrastructure to enable sustainable transport choice; and,
- ‘influencing travel behaviour’ measures, which facilitate, promote, and encourage sustainable transport choice.

9.4.2. An implementation plan for the measures and marking and promotional efforts has been provided at the end of this section, **Section 9.7**.

9.5 PHYSICAL MEASURES

9.5.1. Physical Travel Plan measures constitute the transport infrastructure that will facilitate travel choice and are an integral part of the design of the development. There is a commitment on behalf of the applicants that all on-Site transport infrastructure will be designed to the latest guidance, ensuring suitable provision for pedestrians, cycling, and public transport access. The following sections set out the measures by user type and relate to the information provided in **Section 6**.

PEDESTRIAN AND CYCLE INFRASTRUCTURE

9.5.2. Provision for pedestrians and cyclists will be integral to the design of the Proposed Development. This will include:

- Footways within the Site and connection to the external footway network;
- Sheltered cycle parking facility will be in accordance with THC standards and provided at key local points, such as near the office / training centre entrance.

CAR SHARE INFRASTRUCTURE

9.5.3. It is accepted that the private car will remain the only viable form of transport for many journeys, however, this does not need to be by SOV. Car Share will be encouraged amongst staff and visitors and the SSEN 'Car Plus' scheme will be promoted.

Electric Vehicle Charging Points

9.5.4. The provision of electric vehicle (EV) charging points will be provided in accordance with the Building Regulations and THC parking standards.

9.6 INFLUENCING TRAVEL BEHAVIOUR MEASURES

TRAVEL INFORMATION PACKS

9.6.1. The provision of information on services and facilities and the travel options available - bus services, walking and cycling routes, the car share scheme can help influence the choice of travel mode.

9.6.2. A Travel Information Pack containing information on sustainable travel options will be provided to all residents and staff members and also made available to visitors. The pack will include local transport bus services and stops information, cycle routes, taxi information, walking maps and journey planning assistance, as well as information on bus passes for the local bus service and information regarding other relevant local services and facilities and their access by sustainable transport modes.

9.6.3. This will be in compliance with THC guidance.

PERSONALISED TRAVEL PLANNING

9.6.4. A personalised travel planning (PTP) service is a way to help people understand travel options and will be provided by the TPC.

9.6.5. SSEN has a number internal schemes and incentives, as outlined in Section 5.6.

9.7 MARKETING AND PROMOTION

9.7.1. The TPC will regularly market the Travel Plan to residents, staff and visitors and promote local events and initiatives that support sustainable travel initiatives. This could include the following:

- SSEN travel schemes and incentives (see **Section 5.6**); and
- National and local calendar events that encourage active travel, physical activity, sustainable travel, clean air, and other similar measures.

9.8 IMPLEMENTATION PROGRAMME

9.8.1. **Table 9-1** summarises the proposed implementation of the Travel Plan, in relation to timescale and liability, in two main sections, Design and Construction, and Occupation. Further travel influencing

measures are discussed in the next Section Monitoring and Review (within **Section 9.9**) and fulfil the medium to long term measures of the Travel Plan.

Table 9-1 – Implementation Programme

Development Programme	Measure	Detail	Responsibility
Design and Construction	On-Site pedestrian provision	As detailed above.	Applicant - integral to development design
	On-Site cycle provision	As detailed above.	Applicant - integral to development design
	Electric Vehicle Charging Points	At suitable locations, as detailed above.	Applicant - integral to development design
	Provision of full travel plan	For submission and approval by THC	Applicant
Pre Occupancy	Appointment of TPC	TPC to implement measures in approved travel plan	Applicant
	Sustainable Travel Information Pack	Site specific maps and information, as detailed above.	Applicant / TPC to produce and print leaflets.
Post Occupancy	Sustainable Travel Information Pack updates	Site specific maps and information, as detailed above.	Applicant / TPC to produce and print leaflets.
	Personalised Travel Planning	As detailed above	TPC
	Car Share Scheme	Car Share scheme for residents and employees based on Site to encourage more sustainable car usage.	TPC
	Marketing and Promotion	As detailed above.	TPC

9.9 MONITORING AND REVIEW

9.9.1. Monitoring is a means of measuring the impact and success of the Travel Plan and whether the objectives and targets are being met. This section sets out the timescales for implementation and monitoring of the measures, including the type of monitoring to be undertaken and proposed timescales.

TYPE OF MONITORING

Annual Monitoring Regular Monitoring

Travel Questionnaire Surveys

9.9.2. Annual questionnaire surveys of staff and visitors will be undertaken by the TPC. The results of the surveys will be used to assess sustainable travel choice and help to identify areas for improvement and measures to address this, for example increased promotion of the car share scheme, or improvements to the personalised travel planning approach.

9.9.3. It is proposed that the first of the annual travel questionnaire surveys will need to be undertaken at a date agreed with THC after first occupation.

Regular Monitoring

9.9.4. In addition to the formal monitoring, the TPC will monitor the various travel plan measures, such as:

- the take up of the car sharing scheme; and
- levels of participation in TPC led promotional events.

MONITORING REPORT

9.9.5. The results of the monitoring will be written up in an annual monitoring and review report to be submitted to THC at a date agreed with THC after completion of the surveys.

10 SUMMARY AND CONCLUSIONS

10.1 SUMMARY

10.1.1. WSP UK Limited has been appointed by Scottish and Southern Electricity Network (SSEN) to provide consultancy advice in support of the Proposed Development, Fanellan Hub 400kV Switching Station and HVDC Converter Station, located approximately 4.5 km south-east of Beauly.

10.1.2. There will be a need to replace the Black Bridge to enable construction traffic routing to Site for the Proposed Development. This has resulted in a phased approach to construction traffic routing for the Proposed Development.

10.1.3. In light of concerns raised by THC Transport Planning Team on July 4th 2025[1] regarding the suitability of directing HGV and AIL traffic through Kiltarlity, this updated Transport Assessment (TA) report has been produced to address the issues raised, and provides a potential mitigation-led alternative construction traffic routing option (known as the Beaufort Route) for consideration. It is understood that while the routing of construction traffic through Kiltarlity is possible, as identified within the original TA, this alternative construction traffic routing option may provide the opportunity for further mitigation to alleviate the concerns surrounding the use of Kiltarlity.

10.1.4. The level of vehicle trips anticipated to be generated by construction activities has been derived from an estimate and an initial programme provided by the Principal Contractor, with the trips assigned to the local road network on the basis of the more direct routes to the trunk road network.

10.1.5. The largest vehicles associated with construction activities are excavators which will be transported to Site via a low loader. The largest general construction vehicle type making the most frequent trips to site will be a 16.5 m artic HGV. The excavators are anticipated to be transported as Abnormal Loads as well as the transformers, but which are expected to route to the Site in two alternative routes, Phase 1 route and Phase 2 route respectively.

10.1.6. The area is predominantly rural in nature and the transport network reflects this. A proportion of the roads which it is intended to use to support access to Site, are agreed timber haulage routes and therefore considered to be appropriate to accommodate the temporary increase in traffic generated by construction activities.

10.1.7. In response to concerns from THC regarding the routing of construction traffic through Kiltarlity, a potential mitigation route through Beaufort Estate has been which is anticipated to significantly reduce construction traffic impact on the unclassified road C1108 through Kiltarlity.

10.1.8. A detailed review of the proposed access routes has been undertaken, including measures identified to mitigate the impact of construction traffic on each of the unclassified roads which form the access routes.

10.2 CONCLUSION

10.2.1. The construction traffic routing to the Site will be carried out in a phased manner to support the necessary replacement of Black Bridge, with this approach minimising the impact on the local road network and neighbouring village of Kiltarlity.

10.2.2. Potential measures have been identified to manage construction traffic movements including a potential new route through Beaufort Castle, which could remove the vast majority of construction

traffic from Kiltarlity, which are considered suitable to address THC's concerns on this matter, and to support the forthcoming planning application in late 2025.

10.2.3. The Principal Contractor will subsequently have further detailed dialogue with THC as plans are refined, to ensure that a suitable management strategy and set of measures may be secured via condition. It is envisaged that the management strategy and measures are implemented in advance of the commencement of construction activities to mitigate the temporary increase in traffic on the operation of the local road network.

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