

9. TRAFFIC AND TRANSPORT

9.1 Introduction

This Chapter provides an appraisal of the potential effects of the Project on traffic and transport receptors.

9.2 Appraisal Methodology

The specific methodology for the assessment of transport and traffic is based upon the likely impacts of the Project evaluated in accordance with the Institute of Environmental Assessment (now Institute of Environmental Management and Assessment, IEMA) Guidelines¹.

The objective of the assessment is to identify impacts on traffic and transport receptors resulting from the construction and operation of the Project. The traffic impacts of the project have been appraised in regard to existing road users, pedestrians, cyclists and other sensitive receptors. The following types of impacts have been assessed:

- Changes in traffic conditions and the potential for delays and congestion;
- Changes to conditions for pedestrians and cyclists;
- Severance, fear and intimidation; and
- Accidents and safety.

IEMA Guidance provides information on how the magnitude of changes in traffic flow should be determined, as shown in **Table 9.1**. This is used to assess the impacts, particularly of construction traffic, on the local highway network.

Table 9.1 Magnitude of Change

Magnitude	Change In Total Traffic	Description
Negligible	<30%	No discernible change in conditions
Minor/low	30 – 60 %	Perceptible change in condition
Moderate/medium	60 – 90 %	Apparent and noticeable changes to the local conditions.
Major/high	>90 %	Considerable change in conditions

The IEMA Guidelines advise that detailed assessment should be undertaken on:

- Highway links where traffic flows will increase by more than 30% (or the number of HGV's will increase by more than 30%); and
- Any specifically sensitive areas where the traffic flows have increased by 10% or more.

Where the predicted increase in traffic flows is lower than the thresholds, the IEMA guidelines suggest significance of effects can be stated to be low or not significant and further detailed assessments are not warranted. Peak traffic flows will be identified to assess a worst-case scenario.

9.3 Access

During the construction phase, there will be a requirement for access to, and egress from, the Project site by heavy goods vehicles (HGVs) and light traffic.

The majority of construction vehicles will access the Project site via the A816 and turn onto an existing forestry road at NGR 184324, 690975 before reaching the Proposed Development and the Associated Development (see

¹ Institute of Environmental Assessment, Guidelines for the environmental assessment of Road Traffic (Guidance Note 1), 1993.

Figure 1.1). A small proportion of vehicles may access the Project site via the A83 from the south. The length of forestry track between the bellmouth and substation is approximately 4.7 km. A new 209 m permanent access track will then be formed off the forestry access track to enable access for vehicles during construction and operation. The forestry road leading to the new permanent access track may require upgrading to ensure suitability for transformer delivery. This will be considered as part of a separate detailed assessment report once the transformer supplier and haulier are selected by SSEN Transmission. An initial routeing report has been commissioned by SSEN Transmission and can be seen in **Annex P** of this EA. A Construction Traffic Management Plan (CTMP) will be submitted post-consent as part of the discharge of planning conditions. Similarly, if required, junctions will be upgraded accordingly in consultation with Argyll and Bute Council as part of the discharge of planning conditions.

9.4 Baseline

Baseline traffic flow conditions on the construction traffic route were established using publicly available information published by the Department for Transport (DfT). The baseline traffic flows have informed the analysis to determine the impact of the Project on the road network.

The principal measurement considered in this study is the Average Annual Daily Flow (AADF)². DfT data for the year 2019 has been used as the most representative case, given these are higher than the count estimate provided for the year 2020 during the Covid-19 pandemic.

Traffic count point data is available along the Project construction traffic route; the nearest being on the A816 (site ref. 80392, NGR 184900, 690000). The AADF of vehicles at this point is shown in **Table 9.2** below.

Table 9.2 Average Annual Daily Flow

Site	Year	Count Method	Pedal Cycles	Two wheeled motor vehicles	Cars and Taxis	Buses and Coaches	Light Goods Vehicles	Heavy Good Vehicles	All motor vehicles
A816	2019	Automatic Counter	12	21	3404	55	990	284	4753

For the purpose of the assessment, impacts are presented for HGVs and light good vehicles (LGVs). Table 9.2 presents one-way movements. The following number of two-way baseline traffic movements are assumed i.e. half the number of one way movements:

- HGVs: 142 two-way movements, comprising of HGV movements only; and
- LGVs: 2,235 two-way movements, comprising of two wheeled motor vehicles, cars and taxis, buses and coaches and light goods vehicles.

9.5 Construction Traffic

9.5.1 The Proposed Development

The Proposed Development will be constructed over a 30-month period. Forestry felling works are likely to commence several months in advance of substation earthworks / construction and have therefore been included within this assessment.

The estimated number of vehicle movements during construction, including both light and heavy vehicles, is summarised in **Table 9.3**. **Table 9.4** provides an estimate of vehicle movements per month.

² An AADF is the average over a full year of the number of vehicles passing a point in the road network each day.

Table 9.3 Estimate of Construction Vehicle Numbers for the Proposed Development

Construction Task	Vehicle Type	Approximate No. of Loads
HGV		
Forestry Delivery & Operations	100 timber lorries; 8 low loaders; and 20 fuel lorries	128
Earthworks Substation Platform	20T Tipper lorry	2,400
Earthworks Site Compound	20T Tipper lorry	600
Concrete for all work	Concrete wagon (6m ³ carry capacity)	504
Building & External civils deliveries (steelwork, cladding, drainage, fencing etc)	HGV Trailer	135
Electrical equipment deliveries	HGV Trailer	300
Transformer delivery	Abnormal indivisible load	2
Car/ Light Goods Vehicle (LGV)		
Personnel to and from the Proposed Development site	Car/ LGV	31,680
Total No. of HGVs and LGVs (Two-way return movements)		35,621

Table 9.3 Monthly Estimate of Construction Vehicle Numbers for the Proposed Development

Task	Month																		Total			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		Months 19 to 30		
Forestry Operations	64	64																				
Earthworks Platform							800	800	800												2400	
Earthworks Site Compound	300	300																			600	
Concrete										84	84	84	84	84	84						504	
Building/ Civils work										15	15	15	15	15	15	15	15	15			135	
Electrical Equipment													25	25	25	25	25	25		25 per month	425	
Transformer																	1	1			2	
Total HGVs (Two-way return movements)	364	364					800	800	800	99	99	99	124	124	124	40	41	41		25 per month	4,066	
Car/ Light Goods Vehicle	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320 per month	39,600
Total Vehicles (Two-way return movements)	1684	1684	1320	1320	1320	1320	2120	2120	2120	1419	1419	1419	1444	1444	1444	1360	1361	1361		1345 per month	43,691	

The monthly maximum two-way HGV movements during construction is 800 for a period of three months during earthworks. This equates to approximately 36 HGV movements per day (based on 22 working days per month). This represents a 25% increase in the average number of HGVs on the A816 per day for the three months during earthworks. For two months during felling the increase in HGV movements will be 10% and for the remaining 19 months of construction the increase will be 4% or less.

In terms of car and LGV movements construction will result in approximately 1,320 movements each month, assuming an even distribution across the construction period. This would result in approximately 51 two-way movements per day (assuming 26 working days per month), resulting in a 2.3% increase in the number of cars/LGVs on the A816.

Considering HGV and cars/LGVs combined the maximum number of monthly two-way movements is approximately 2,120 during months 7, 8 and 9 which equates to 96 two-way movements per day (assumes 22 working days per month). This represents a 4% daily increase in total vehicle movements on the A819 during months 7, 8 and 9 of construction.

9.5.2 The Associated Development

The Associated Development will be constructed in a single-phase delivery, lasting 3 months in duration between months 13 and 14 of the Project's overall construction programme. The estimated number of vehicle movements during construction, including both light and heavy vehicles, is summarised in **Table 9.4** below.

Table 9.4 Estimate of General Construction Vehicle Numbers for the Associated Development

Construction Task	Vehicle Type	Approximate No. of Loads (over 2 months)
Earthworks Access Tracks and Tower Compounds	20T Tipper lorry	20
Concrete for foundations	Concrete wagon (6m ³ carry capacity)	60
Excavation plant/ tower steelwork/ Cable drums/ equipment	HGV Trailer	60
Personnel to and from site	Car / Light Goods Vehicles	440
Total No. of HGVs and LGVs (Two-way return movements)		580

The works are proposed during months 13 and 14 and there is no change to the maximum number of HGVs assessed in **Section 9.5.1**.

Additional car/LGV two-way movements are 8.5 per day and represent an additional 0.4% increase on baseline traffic.

9.5.3 Cumulative Assessment

The Proposed Development and the Associated Development

As discussed in **Section 9.5.1**, the maximum number of monthly HGV vehicle movements would occur during months 7 to 9, with approximately 800 two-way vehicle movements a month / 40 vehicles a day. Given vehicle movements regarding the Associated Development will occur during months 13 and 14, there is no change to the worst-case scenario assessed. For cars/LGVs there will be a cumulative increase of 2.7% during peak construction.

Other Cumulative Developments

SSEN Transmission are proposing a similar substation and OHL development in Argyll at Crarae (to the north west of Minard), An Suidhe and Crossaig North. The majority of traffic to An Suidhe and Crarae will use the A83 and these other developments are scoped out of this assessment. The majority of traffic for Crossaig North will be contained south of Lochgilphead on the Kintyre peninsula and this is also scoped out of cumulative assessment.

9.6 Mitigation

The Contractor will share a CTMP with ABC and Transport Scotland (where appropriate) identifying appropriate and safe routes for construction traffic which will include the following mitigation measures:

- The Contractor will liaise with ABC to determine appropriate traffic management arrangements for construction vehicle movements;
- The Contractor will agree appropriate and safe routes to and from the Project with ABC. All construction vehicles will be required to use approved access routes;
- Movement of abnormal loads will be restricted to take place outside peak flow hours to minimise disruption to general traffic flows;
- Measures will be implemented to minimise dust and dirt being deposited on the carriageway due to construction operations;
- Appropriate signage warning other motorists and pedestrians of the presence of construction vehicles will be implemented;
- Appropriate signage restricting vehicle speeds will be considered in discussion with ABC;
- Police escort or other escort approved by Police Scotland will accompany abnormal load vehicle movements for the delivery of transformer components or any other loads deemed necessary by the road's authorities; and
- Use of the Construction Environmental Management Plan (CEMP) to monitor and ensure that agreed mitigation measures are being implemented.

It is anticipated that Abnormal Indivisible Load (AIL) deliveries to the Project will be required for the delivery of the transformers. Further consultation and notification will be undertaken with relevant local authorities including ABC and Police Scotland once details have been finalised to make sure that traffic impacts on the road network are minimised and emergency access is provided at all times.

Details will include the selection of delivery times which would avoid peak times and use of police escort vehicles when required to manage the deliveries and facilitate safe interaction with other road users. Road signage will be implemented to provide advanced warning of abnormal load movements. An SSEN Transmission Community Liaison Manager will be appointed to the Project to ensure that the local community and the general public have enough information to plan their journey and avoid use of the road network during abnormal load movements.

The presence of slow-moving abnormal loads on the road network may cause some short-term congestion, this would be temporary and short term.

9.7 Operational Traffic

The Project will be unmanned with regular site inspections undertaken and visits required for switchgear operation. A LGV is expected to visit the Proposed Development once per week during normal operation. In addition, it is likely that maintenance would be completed for about one week during each year. During a maintenance period four or five vehicles per day would attend the Proposed Development. Additional visits to the substation would be required in event of faults. Traffic to the associated development will be infrequent and are considered negligible.

A summary of the appraisal of traffic is provided in **Table 9.5**.

Table 9.5 Appraisal of Traffic

Environmental Feature	Development Interaction	Mitigation Measures	Receptor Sensitivity	Magnitude of effect	Significance of effect
A816. Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	CTMP to be provided to ABC pre-construction.	Medium	Negligible	Negligible
Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	N/A	Medium	Negligible	Negligible
The Associated Development					
A816. Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	CTMP to be provided to ABC pre-construction.	Medium	Negligible	Negligible
Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	N/A	Medium	Negligible	Negligible
The Proposed Development and Associated Development					
A816. Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	CTMP to be provided to ABC pre-construction.	Medium	Negligible	Negligible
Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	N/A	Medium	Negligible	Negligible
Other Cumulative Developments					
A816. Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	CTMP to be provided to ABC pre-construction.	Medium	Low	Minor
Other road users: delays, severance, limited short-term	Operational traffic	N/A	Medium	Negligible	Negligible



impacts, increased risk of accidents					
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9.8 Summary of Effects

This Chapter has assessed the likely effects of the Project on traffic and transport receptors.

The conclusion is that with the implementation of the proposed mitigation the traffic and transport effects arising from the construction and operation of the Project will be minor or less.