# BERWICK BANK WIND FARM
# ONSHORE ENVIRONMENTAL IMPACT ASSESSMENT REPORT

## Chapter 12: Traffic and Transport

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# 12. TRAFFIC AND TRANSPORT

## 12.1. INTRODUCTION

1. This chapter presents the assessment of the likely significant effects (as per the "EIA Regulations, 2017") on the environment of the Berwick Bank Wind Farm onshore transmission works (OnTW) (the Proposed Development) on traffic and transport. Specifically, this chapter considers the potential impact of the Proposed Development landward of Mean Low Water Springs (MLWS) during the construction, operational and maintenance, and decommissioning phases.

2. This chapter summarises information contained within Volume 4, Appendix 12.1: Transport Assessment and Volume 4, 12.2 Abnormal Load Route Assessment Report[1] By Sweco.

3. This chapter is supported by the following figures:

   Figure 12.1: Study Area Road Links;
   Figure 12.2: Automatic Traffic Count Location Plan;
   Figure 12.3: Accident Location Plan; and
   Figure 12.4: Construction Vehicle Delivery Routes.

## 12.2. PURPOSE OF THIS CHAPTER

4. This chapter:

   presents the existing environmental baseline established from desk studies, site-specific surveys and consultation with stakeholders;
   identifies any assumptions and limitations encountered in compiling the environmental information;
   presents the potential environmental impacts on traffic and transport arising from the Proposed Development, and reaches a conclusion on the likely significant effects on traffic and transport based on the information gathered and the analysis and assessments undertaken; and
   highlights any monitoring and/or mitigation measures recommended to prevent, minimise, reduce or offset the likely significant adverse environmental effects of the Proposed Development on Traffic and Transport.

## 12.3. STUDY AREA

5. The traffic and transport study area includes local roads that are likely to experience increased traffic flows resulting from the Proposed Development. The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

6. Access for construction materials for each of the elements of the Proposed Development (onshore substation, cable landfall and onshore cable route) will be via the A1 trunk road (A1(T)) and subsequently by the local road network. The routes are described as follows:

   onshore substation – construction traffic will depart the A1(T) at Innerwick junction and will continue towards the onshore substation site via the unclassified road to the north of Innerwick.

[1] The Abnormal Route Load Assessment Report details the various options associated with the Proposed Development. Please note that the option being taken forward is Substation 8. Please note that the swept path analysis results for this option are presented in the sections referring to Substation Location 8 within The Abnormal Route Load Assessment Report.

cable landfall – construction vehicles will leave the A1(T) at access to Skateraw and will continue towards the cable landfall site via the unclassified road to Skateraw and subsequently via the existing access track beyond the entrance to Skateraw beach car park.
onshore cable route – There will be several anticipated construction vehicle site accesses associated with the onshore cable route sites, which are as follows:

- Cable (1 – 3) Sites – Construction vehicles will leave the A1 (T) at the A1 (T) / Skateraw priority junction and will continue towards the site access via the unclassified road to Skateraw;
- Cable (4) Site – Construction vehicles will leave the A1 (T) and access the site via a newly formed left-in access junction from the A1 (T). Vehicles exiting the site will egress via the road which crosses under the East Coast Main Line and subsequently through Skateraw and the A1 (T) / Skateraw priority junction. Larger vehicles will exit via the newly formed left-in / left-out junction due to the height constraints of the ECML bridge;
- Cable (5) Sites – Construction vehicles will leave the A1 (T) at Innerwick junction and join the local road network. Approximately 70 m after the Innerwick junction, vehicles will turn left towards Crowhill / Oldhamstocks. Approximately 180 m along this road, vehicles will access the Cable (5) site via a newly upgraded access junction. Vehicles will access /egress the site at this location.
- Cable (6 – 8) Sites – Construction vehicles will leave the A1 (T) at Innerwick junction and join the local road network. Approximately 70 m after the Innerwick junction, vehicles will turn left towards Crowhill / Oldhamstocks and will continue along this road until they reach their respective accesses; and
- Cable (9) Site – Construction vehicles will leave the A1 (T) at Innerwick junction and join the local road network. Approximately 70 m after the Innerwick junction, vehicles will turn left towards Crowhill / Oldhamstocks and will continue along this road and across Thornton Bridge towards the site access. Should access for larger vehicles over the Thornton Bridge not be feasible, they are anticipated to access this area of the site via C8 and over the proposed cable bridge crossing.

7. The location of each of the separate access points is presented in Volume 4, Appendix 12.1 and Volume 2, Figure 12.4. The access junctions will be designed in accordance with appropriate standards.

8. The study network includes roads within the following areas which will be impacted by construction traffic delivering materials to each of the elements of the Proposed Development:

   The A1 (T) between Easter Pinkerton and Bilsdean;
   The local road network in Skateraw; and
   The local road network around Innerwick and Thorntonloch, including the U209, the C121, the C122 and the C124.

9. The study area road links are presented in Volume 2, Figure 12.1.

## 12.4. POLICY AND LEGISLATIVE CONTEXT

10. Policy in relation to traffic and transport, is set out in Volume 4, Appendix 12.1 of the Onshore EIA Report. A summary of the policy provisions relevant to traffic and transport is provided in Table 12.1 below.

11. It should be noted that there is no legislation specific to the Traffic and Transport assessment which should be considered as part of this Chapter.

**Table 12.1: Summary of Policies Relevant to Traffic and Transport**

| Summary of Relevant Policy Framework | How and Where Considered in the Onshore EIA Report |
|---|---|
| National Planning Framework 4 (2023) | The Revised Draft National Planning Framework 4 was laid in Parliament on 08 November 2022. The Revised Draft National Planning Framework 4 was approved by Scottish Parliament on 11 January 2023 and was then passed to Scottish Ministers who adopted the National Planning Framework 4 (NPF4) on 13 February 2023.<br><br>With regards to traffic and transport and the Proposed Development, Policy 11: Energy within the NPF4 notes that:<br><br>"*Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:*<br><br>• *wind farms including repowering, extending, expanding and extending the life of existing wind farms;* and<br>• *enabling works, such as grid transmission and distribution infrastructure.*<br><br>*In addition, project design and mitigation will demonstrate how the following impacts are addressed:*<br><br>• *Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*<br>• *Public access, including impact on long distance walking and cycling routes and scenic routes;*<br>• *Impacts on road traffic and on adjacent trunk roads, including during construction;* and<br>• *Cumulative impacts."*<br><br>The impacts on the Users of Roads and Users / Residents of Locations are assessed as part of Section 12.11. Mitigation measures are detailed in Section 12.10 and Section 12.11 which are proposed to alleviate any adverse impacts resulting from construction traffic associated with the Proposed Development.<br><br>With regards to public access, mitigation measures are proposed in Section 12.11. Volume 4, Appendix 12.1 details a Core Path Management Plan which will address adverse impacts related to the Proposed Development's construction traffic.<br><br>The impacts of cumulative developments have been assessed as part of Section 12.12. As noted in Section 12.13, any adverse effects would be mitigated via an overarching Traffic Management and Monitoring Plan. |
| East Lothian Local Development Plan (2018) | The East Lothian Local Development Plan (LDP) was adopted by East Lothian Council in September 2018 and is established planning policy for East Lothian Council area. It sets out a planning strategy and policies to guide the future development. The following policies are relevant to the traffic and transport assessment set out within this chapter:<br><br>T1: Development Location and Accessibility – |

| Summary of Relevant Policy Framework | How and Where Considered in the Onshore EIA Report |
|---|---|
| | *"New developments shall be located on sites that are capable of being conveniently and safely accessed on foot and by cycle, by public transport as well as by private vehicle, including adequate car parking provision in accordance with the Council's standards. The submission of Travel Plans may also be required in support of certain proposals."*<br><br>T2: General Transport Impact –<br><br>*"New development must have no significant adverse impact on:*<br><br>• *Road safety;*<br>• *The convenience, safety and attractiveness of walking and cycling in the surrounding area;*<br>• *Public transport operations in the surrounding area, both existing and planned, including convenience of access to these and their travel times;*<br>• *The capacity of the surrounding road network to deal with traffic unrelated to the proposed development; and*<br>• *Residential amenity as a consequence of an increase in motorised traffic.*<br><br>T4: Active Travel Routes and Core Paths as part of the Green Network Strategy –<br><br>*"The Council will protect its existing core path and active travel networks and ensure that new development does not undermine them, including the convenience, safety and enjoyment of their use.* "–<br><br>T1: Indicative layouts of the proposed access junctions to the different elements of the Proposed Development are presented in Volume 4, Appendix 12.1.<br><br>T2: Mitigation measures are detailed in Section 12.10 and Section 12.11 which are proposed to alleviate any adverse impacts resulting from construction traffic associated with the Proposed Development.<br><br>T4: Mitigation measures are proposed in Section 12.11. Volume 4, Appendix 12.1 details a Core Path Management Plan which will address adverse impacts related to the Proposed Development's construction traffic. |
| *East Lothian Local Transport Strategy (2018-2024)* | The East Lothian Local Transport Strategy (LTS) was prepared by East Lothian Council and details the transport strategy for the period between 2018 and 2024.<br><br>In relation to Strategic Road Network, the LTS notes that:<br><br>*"The A1 trunk road is a major transport artery through the country but is now approaching capacity in some places. In* |

| Summary of Relevant Policy Framework | How and Where Considered in the Onshore EIA Report |
|---|---|
| | *particular, it is single carriageway south of Dunbar causing congestion and unreliable journey times..."*<br><br>The theoretical road capacity of roads within the study area (including the A1 (T)) are assessed in Table 12.14. |

## 12.5. CONSULTATION

12. A summary of the key issues raised during consultation activities undertaken to date specific to traffic and transport is presented in Table 12.2 below, together with how these issues have been considered in the production of this traffic and transport chapter. Further detail is presented within Volume 1, Chapter 2 of the Onshore EIA Report and the Pre-Application Consultation (PAC) Report.

**Table 12.2: Summary of Key Consultation Undertaken for the Proposed Development Relevant to Traffic and Transport**

| Date | Consultee and Type of Issue(s) Raised Consultation | | Response to Issue Raised and/or Where Considered in this Chapter |
|---|---|---|---|
| **Consultation on the Proposed Development: Scoping Opinion** | | | |
| 01/10/2020 | Network Rail<br><br>Scoping Opinion | A Traffic Assessment should be included to assess the effects of construction traffic on existing traffic flows and the public road network. Preferred construction traffic routes should be indicated. This will enable Network Rail to assess the possible impacts where/if the traffic crosses over/under their infrastructure and the suitability of these crossings. | A Transport Assessment is provided in Volume 4, Appendix 12.1. Proposed construction vehicle routes are presented in Volume 2, Figure 12.4. |
| 01/10/2020 | East Lothian Council<br><br>Scoping Opinion | The methodology proposed in the Scoping report with respect to the EIAR Transport & Access chapter is generally acceptable and can confirm that:<br><br>• There are currently no developments or infrastructure schemes that should be taken into account when considering potential cumulative traffic and transport impacts other than Neart na Gaoithe construction activities, which have been referenced | Noted.<br><br>It is anticipated that full commissioning of Neart na Gaoithe is expected to be completed in 20232. It is anticipated that construction of the Proposed Development will commence in 2025. Therefore, transport impacts associated with Neart na Gaoithe will not be assessed as part of the cumulative assessment however traffic activities associated with Neart na |

[2] https://nngoffshorewind.com/about/

| Date | Consultee and Type of Issue(s) Raised Consultation | Response to Issue Raised and/or Where Considered in this Chapter |
|---|---|---|
| | | Gaoithe are captured in the baseline traffic flows.<br><br>Since the Scoping Opinion was issued in October 2020, Crystal Rig IV Wind Farm was granted planning permission for up to 11 wind turbines, with a maximum tip height of up to 200m. A sensitivity review has been undertaken in the Cumulative Impact Assessment section of this chapter to determine the impact of construction traffic if the developments were to be constructed concurrently.<br><br>At the request of the Applicant, also included in the sensitivity review are the proposed Eastern Link Project schemes (Northern Point of Connection Converter Station and Cables and Northern Point of Connection Substation) and Branxton Grid Substation, although it should be noted that these schemes have not been currently granted planning consent. However the inclusion of these projects as part of the sensitivity review provides a robust assessment. While Branxton Grid Substation proposal's planning application has been withdrawn it is expected that this will be submitted again in the near future. |
| | • The proposed traffic and transport study area network and proposed approach is acceptable | Noted. |
| | • It is agreed that operational and decommissioning impacts will be less significant than those associated with construction. Assessments | Noted. A decommissioning plan will be prepared once the site reaches the end of its operational life and a Decommissioning Traffic Management Plan will be prepared at that time. |

| Date | Consultee and Type of Issue(s) Raised Consultation | | Response to Issue Raised and/or Where Considered in this Chapter |
|---|---|---|---|
| | | should be included of the number and type of vehicle movements for the operational and decommissioning phases but a full assessment of impacts will not be required. | |
| | | For clarity, the following matters should be covered in the EIAR/Transport Statement / CTMRP. | |
| | | • Detail of all construction delivery vehicle types and loads to and from the sites including number of trips. | Details of construction vehicle types and loads are detailed in Volume 4, Appendix 12.1. |
| | | • Detail of all site traffic (i.e. employees) including construction traffic and delivery of equipment for all onsite works (i.e. cranes, excavators etc.). This will need to be specific to each area and include details of all access/egress connection to the public road. | Details of site traffic are detailed in Volume ,4 Appendix 12.1. |
| | | • Number and type of vehicle movements for day-to-day operation of the onshore aspects. | Details of the number and types of vehicles associated with the operation of each of the sections of the Proposed Development is presented in Volume 4, Appendix 12.1. |
| | | • Timescales and construction period for all works and management of abnormal loads including traffic management on the public road. Potential road closures may be required for road crossings. | The construction programme and a description of the delivery routes for abnormal loads for the Proposed Development is provided in Volume 4, Appendix 12.1. |
| | | • Detailed and accurate swept path analysis of the construction routes (i.e. to/from the A1 from the site) to include vertical and horizontal alignments of the existing public roads for the 'worst case' delivery vehicles. This will inform the required remedial works. | Swept path analysis is provided in the Abnormal Load Route Assessment Report which are provided in Volume 4, Appendix 12.2 The Abnormal Load Route Assessment Report evaluates the substation delivery routes for abnormal access from the A1, along the local road network. It is expected that the detailed design of the abnormal load accommodation works would form a planning condition post consent. |

| Date | Consultee and Type of Issue(s) Raised Consultation | | Response to Issue Raised and/or Where Considered in this Chapter |
|---|---|---|---|
| | | • Accurate layout plans for any required remedial works to the public road and any required access junctions.<br><br>• Proposed mitigation must include a detailed condition survey of the road to be undertaken by the developer to cover the full construction route from/to the A1 (once identified) | Indicative site access junction layouts to each of the access points are provided in Volume 4, Appendix 12.1. Mitigation measures which detail temporary works to the public road to facilitate abnormal loads are provided in the Abnormal Load Route Assessment Report in Volume 4, Appendix 12.2.<br><br>The Applicant will enter into a standard roads agreement with the roads authority to protect / repair the road condition. |
| 01/10/2020 | East Lothian Council – Transport Planning<br><br>Scoping Opinion | The Council as Roads Authority will require that damage to the route during the period of construction (and decommissioning) shall be repaired by the applicant at no expense to the Council as Roads Authority. | The Applicant will enter into a standard roads agreement with the roads authority to protect / repair the road condition. |
| **Relevant Consultation Undertaken to Date** | | | |
| 25/02/2021 | East Lothian Council – Scoping | The detailed technical scope of the transport assessment, including traffic count data and traffic growth assumption. | Scope agreed and traffic survey data collected (Para 12.7) |
| 15/07/2022 | Transport Scotland | Update on progress and proposed submission dates | Progress noted. |

## 12.6. METHODOLOGY TO INFORM BASELINE

13. The baseline review focused on the nature of the surrounding road infrastructure and the current level of traffic use and was informed by desktop studies and field surveys.

### 12.6.1. DESKTOP STUDY

14. Information on traffic and transport within the traffic and transport study area was collected through a detailed desktop review of existing studies and datasets. These are summarised in Table 12.3: Summary of Key Desktop Studies & Datasets

**Table 12.3: Summary of Key Desktop Studies & Datasets**

| Title | Source | Year | Author |
|---|---|---|---|
| Accident Data (2016-2021) | crashmap.co.uk/Search | 2022 | CrashMap |
| Traffic Data (2019) | roadtraffic.dft.gov.uk | 2022 | Department for Transport |
| Sensitive Locations | google.co.uk/maps | 2022 | Google |
| Ordnance Survey (OS) plans | osdatahub.os.uk | 2022 | Ordnance Survey |
| Core Path Maps (2011) | eastlothian.gov.uk | 2022 | East Lothian Council |
| Potential supply locations for construction materials | google.co.uk searches for raw material suppliers | 2022 | Google |

### 12.6.2. SITE-SPECIFIC SURVEYS

To inform the traffic and transport impact assessment, site-specific surveys were undertaken in the form of Automatic Traffic Count (ATC) volume and speed surveys. These were undertaken in November and December 2021, over the extent of the traffic and transport study area. Survey locations are shown in Volume 2, Figure 12.2.

## 12.7. BASELINE ENVIRONMENT

### 12.7.1. OVERVIEW OF BASELINE ENVIRONMENT

Current Baseline

15. In order to establish a baseline for the traffic and transport assessment, traffic flow data for within the traffic and transport survey area was obtained from Automatic Traffic Count (ATC) volume and speed surveys which were undertaken over a 7-day period at the following locations:

    1. Skateraw;
    2. C122 (near Thurston Doggy Daycare);
    3. U209 (north of Barns Ness Terrace);
    4. C121 (north of Border Belles);
    5. C124 (near Blackberry Farm Paddocks); and
    6. C121 (Barns Ness Terrace).

16. ATC surveys were undertaken at survey locations 2 – 6 between Wednesday 24th to Tuesday 30th November 2021, while ATC surveys were undertaken at survey location 1 between Friday 3rd to Thursday 9th December as the equipment was damaged during the initial survey. The difference in dates by one week is not considered to affect the validity of the traffic survey results in this assessment.

17. Traffic flows for the A1 (T) were obtained from the Transport Scotland (TS) database for the nearest count point to the site and comprised 2019 data, so as not to be affected by Covid-19 travel restrictions:

    7. A1(T) Thortonloch – TS Count Point JTC00418.

18. For the purposes of this assessment, it is assumed that traffic flows along the A1(T), to the west of Innerwick junction, will equate to the traffic recorded at TS Count Point JTC00418:

    8. A1(T) west of Innerwick Junction.

19. To factor the 2019 traffic flows obtained from the TS database to 2021 flows, National Road Traffic Forecasts (NRTF) low growth factors were applied. The NRTF low growth factor from 2019 to 2021 is 1.016.

20. The traffic data was split into vehicle classes and summarised into Cars / Light Goods Vehicles (LGVs) and HGVs (buses and all goods vehicles > 3.5 tonnes gross maximum weight). The locations of the traffic count sites are presented in Figure 12.2: ATC Traffic Count Locations.

21. A summary of the results for the average daily traffic flows are shown in Table 12.4.

**Table 12.4: Average Daily Traffic Flows (2021)**

| No. | Survey Location | Source | Cars & LGVs | HGV | Total |
|---|---|---|---|---|---|
| 1 | Skateraw | ATC | 125 | 49 | 174 |
| 2 | C122 (near Thurston Doggy Daycare) [3] | ATC | 1419 | 424 | 1843 |
| 3 | U209 (north of Barns Ness Terrace) | ATC | 110 | 26 | 137 |
| 4 | C121 (north of Border Belles) | ATC | 94 | 34 | 128 |
| 5 | C124 (near Blackberry Farm Paddocks) | ATC | 98 | 44 | 143 |
| 6 | C121 (Barns Ness Terrace) | ATC | 93 | 45 | 137 |
| 7 | A1(T) Thorntonloch | TS | 10,134 | 1,627 | 11,760 |
| 8 | A1(T) west of Innerwick Junction | Estimated | 10,134 | 1,627 | 11,760 |

Please note minor variances due to rounding may occur.

22. The two-way five-day average and 85th percentile speeds observed at the count locations are summarised below in Table 12.5.

**Table 12.5: Speed Summary (Weekday Average Two Way Flows) MPH**

| No. | Survey Location | Source | Mean Speed | 85%ile Speed | Maximum Speed Limit |
|---|---|---|---|---|---|
| 1 | Skateraw | ATC | 28.9 | 38.6 | 60.0 |
| 2 | C122 (near Thurston Doggy Daycare) | ATC | 26.2 | 30.4 | 60.0 |
| 3 | U209 (north of Barns Ness Terrace) | ATC | 37.0 | 45.0 | 60.0 |
| 4 | C121 (north of Border Belles) | ATC | 29.6 | 37.1 | 60.0 |
| 5 | C124 (near Blackberry Farm Paddocks) | ATC | 35.0 | 44.6 | 60.0 |
| 6 | C121 (Barns Ness Terrace) | ATC | 35.7 | 45.9 | 60.0 |
| 7 | A1(T) Thorntonloch* | TS | 48.5 | 57.0 | 60.0 |
| 8 | A1(T) west of Innerwick Junction ** | Estimated | - | - | - |

*2021 two-way seven-day average and 85th percentile speeds

**There is no speed data available at count location no. 8, as this is an estimated count location based on traffic flows sourced from count location 7

23. A review of the speed survey data suggests that there is compliance with current speed limits within the traffic and transport study area.

Accident Review

24. Road traffic accident data was extracted for the last available five year period between January 2016 and December 2021 within the traffic and transport study area from the Crashmap website.

25. A total of 14 accidents were recorded within the traffic and transport study area over the five year study period, of which 10 accidents were classified as slight and four as serious.

[3] Please note construction activities were ongoing at the Neart na Gaoithe, and were recorded at this location. Construction activities have therefore been included in the baseline flows.

26. A total of 13 accidents were recorded along the A1 (T) within the traffic and transport study area and one was recorded along an unnamed road approximately 300m north-west of Bilsdean.

27. Four accidents which were recorded as slight were recorded along the A1 (T) in the vicinity of the Torness Power Station access.

28. The locations of the accidents are presented in Volume 2, Figure 12.3: Accident Location Plan and further information is provided in Volume 4, Appendix 12.1 Transport Assessment.

Cycle and Pedestrian Network

29. Within the traffic and transport study area Core Path 309 connects to Core Path 310 and comprises a tarred path which runs along the boundary of the A1 (T), within the eastern section of the site.

30. Core Path 196 connects to Core Path 197 and forms part of John Muir Way Link route. Core Path 187 also forms part of John Muir Way Link. The locations of the Core Paths are presented in Volume 4, Appendix 12.1.

31. National Cycle Route 76 is located within the site and comprises both on-road and off-road cycle route and connects Edinburgh to Musselburgh, Haddington and Skateraw in the east.

East Coast Main Line

32. The East Coast Main Line (ECML) railway lines travels through the study area, running adjacent to, and crossing, the A1 trunk road. The line is 936 miles in length and links Aberdeen and Edinburgh to London.

## 12.7.2. FUTURE BASELINE SCENARIO

33. The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, require that a "*a description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort, on the basis of the availability of environmental information and scientific knowledge*" is included within the Onshore EIA Report.

34. In order to ensure that the Proposed Development is assessed against a realistic baseline scenario, i.e. what the baseline conditions are likely to be once the Proposed Development is operational, a description of the likely future baseline conditions is provided within this section.

35. It is anticipated that construction of the Proposed Development will commence in 2025 and will take approximately 40 months to complete. For the purpose of the traffic and transport assessment, it is proposed that future year which is assessed as the future year baseline will be the year when which it is anticipated that the peak construction period will occur. (i.e. 2026).

36. The NRTF low growth factor for 2021 to 2026 is 1.027. These factors were applied to the 2021 traffic flows in Table 12.4 to estimate the 2026 Base traffic flows, which are shown in Table 12.6.

**Table 12.6: Average Daily Traffic Flows (2026)**

| Survey Location | Cars & LGVs | HGV | Total |
|---|---|---|---|
| Skateraw | 128 | 50 | 179 |
| C122 (near Thurston Doggy Daycare) | 1457 | 435 | 1893 |
| U209 (north of Barns Ness Terrace) | 113 | 27 | 141 |
| C121 (north of Border Belles) | 97 | 35 | 131 |
| C124 (near Blackberry Farm Paddocks) | 101 | 45 | 147 |
| C121 (Barns Ness Terrace) | 96 | 46 | 141 |
| A1(T) Thorntonloch | 10407 | 1671 | 12078 |
| A1(T) west of Innerwick Junction | 10407 | 1671 | 12078 |

37. If the Proposed Development did not proceed, traffic growth will occur and the links within the study network will experience increased traffic flows resulting from other development pressures, tourism traffic and population flows.

#### Identified Receptors Following Baseline Review

38. Following a review of the baseline information within the study area, the below receptors have been identified and will be considered in the assessment further in the chapter:

Skateraw residents;
Innerwick residents;
Residents along C121;
Residents along C124;
Skateraw road users;
C122 road users;
U209 road users;
C121 road users;
C124 road users
A1 (T) road users; and
Core Path users.

### 12.7.3. DATA ASSUMPTIONS AND LIMITATIONS

39. The assessment is based upon average traffic flows in one month periods. During the peak month, activities at the site may fluctuate between one day and another and at this stage of the development process it is not possible to fully develop a day by day traffic flow estimate as no Balance of Plant (BoP) contractor has been appointed. It should be noted that external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc).

40. Traffic data was obtained from existing TS database for 2019 flows as these were not affected by travel restrictions associated with the Covid-19 pandemic. A NRTF low growth factor was applied to these flows to forecast 2021 flows.

41. Although some data assumptions and limitations have been identified, it should be noted that the information presented within the assessment is sufficient to identify and assess the likely significant environmental effects on traffic and transport.

## 12.8. KEY PARAMETERS FOR ASSESSMENT

### 12.8.1. MAXIMUM DESIGN SCENARIO

42. The maximum design scenario relating to Traffic and Transport is during the peak month of the Construction Phase which has been selected as having the potential to result in the greatest effect on an identified receptor or receptor group. This scenario has been selected from the details provided in Volume 1, Chapter 5 of the Onshore EIA Report. Effects of

greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g. different infrastructure layout), to that assessed here, be taken forward in the final design scheme.

43. Peak month construction activities will see an average 669 two-way journeys, of which 522 will be Cars & LGVs and 147 will be HGVs.

44. Construction traffic data presented in this chapter will be used to inform Chapter 9: Noise.

45. Potential effects considered within this assessment are an increase in traffic flows as a result of the Proposed Development, which can cause the following impacts;

severance;
driver delay;
pedestrian delay;
pedestrian amenity;
fear and intimidation; and
accidents.

46. These are defined within Section 12.9 below.

## 12.8.2. IMPACTS SCOPED OUT OF THE ASSESSMENT

47. Impacts scoped out of the assessment were agreed with key stakeholders through consultation. These, together with a justification, are presented in Table 12.7

**Table 12.7: Impacts Scoped Out of the Assessment for Traffic and Transport (tick denotes scoped out)**

| Potential Impact | Phase[4] | | | Justification |
|---|---|---|---|---|
| | C | O | D | |
| Operational and Maintenance Traffic Impacts | | ✓ | | The traffic effects during the operational phase of the Proposed Development are likely to be insignificant as expected traffic flows will be far below the recognised criteria[5] for triggering a formal transport assessment. ELC has requested the numbers and types of vehicle movements which are anticipated to be associated with the operational and maintenance phase. These are anticipated to be as follows:<br><br>The onshore substation will not be staffed and any routine maintenance of either the onshore substation or the export cables will result in minimal vehicle movements at sporadic intervals.<br>For scheduled annual maintenance, it is anticipated that approximately 10 personnel would be required for approximately two weeks.<br>Major repairs to the export cable are not anticipated for the foreseeable future, unless they are damaged by third party works.<br><br>As such, the effects during the operational phase are scoped out of the assessment. |
| Decommissioning Traffic Impacts | | | ✓ | As some elements of the development are likely to remain in-situ (such as cable trenches, access tracks, etc), the traffic flows associated with the decommissioning works will be lower than |

[4] C = Construction, O = Operational and maintenance, D = Decommissioning

[5] Transport Scotland (2012), Transport Assessment Guidance

| Potential Impact | Phase[4] C O D | Justification |
|---|---|---|
| | | those associated with the construction phase which will comprise an average of 669 movements per day during the peak month (335 trips in and 335 trips out), of which 522 would be made by light vehicles (261 inbound and 261 outbound) and 147 by HGV (74 inbound and 74 outbound). The construction phase therefore represents a worst case assessment and as such, no greater likely significant effects are anticipated. Accordingly, no further assessment of the decommissioning phase is required.<br><br>However, it should be noted that a decommissioning plan will be prepared once the site reaches the end of its operational life and a Decommissioning Traffic Management Plan will be prepared at that time, which will be cognisant of any new habitats and environmental implications which may need to be assessed / reviewed. |

## 12.9. METHODOLOGY FOR ASSESSMENT OF EFFECTS

### 12.9.1. OVERVIEW

48. The traffic and transport assessment of effects has broadly followed the methodology set out in Volume 1, Chapter 2 of the Onshore EIA Report. Specific to the assessment of traffic and transport, the following guidance documents have also been considered:

Institute of Environmental Assessment (1993) Guidelines for the Environmental Assessment of Road Traffic;
Institution of Environmental Management and Assessment (IEMA) (2005) Guidelines for Environmental Impact Assessment (the 'IEMA Guidelines'); and
Design Manual for Roads and Bridges (2020) LA 104 – Environmental Assessment and Monitoring Impact Assessment Criteria.

49. The following rules, also taken from the IEMA Guidelines are used to determine which links within the traffic and transport study area should be considered for detailed assessment:

Rule 1 – include highway links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles is predicted to increase by more than 30%); and
Rule 2 – include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more.

50. Examples of sensitive areas include hospitals, churches, schools and historical buildings, as well as locations where it is felt that specific environmental problems may occur, such as accident black-spots and links with high pedestrian flows etc.

51. The IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development: the impacts and levels of magnitude are discussed below:

Severance – the IEMA Guidelines states that, "severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery." Further, "Changes in traffic of 30%, 60%, and 90% are regarded as producing 'slight', 'moderate', and 'substantial' [or minor, moderate, and major] changes in severance respectively". However, the Guidelines acknowledge that "the measurement and prediction of severance is extremely difficult". (Para 4.28);
Driver delay – the IEMA Guidelines note that these delays are only likely to be "significant [or major] when the traffic on the network surrounding the development is already at, or close to, the capacity of the system." (Para 4.32);

Pedestrian delay – the delay to pedestrians, as with driver delay, is likely only to be major when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. An increase in total traffic of approximately 30% can double the delay experienced by pedestrians attempting to cross the road and would be considered major;
Pedestrian amenity – the IEMA Guidelines suggests that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or its lorry component) is halved or doubled (Para 4.39). It is therefore considered that a change in the traffic flow of -50% or +100% would produce a major change in pedestrian amenity;
Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and major changes respectively; and
Accidents and safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents.

52. While not specifically identified, as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

53. To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of change assessments are correlated and classified using a scale set out in Table 3.4N of DMRB LA104 – Environmental Assessment and Monitoring, and presented in Table 12.8.

**Table 12.8: Magnitude of Impact and Typical Descriptions**

| Magnitude of Impact | Typical Description |
|---|---|
| Major | Adverse – Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements<br><br>Beneficial - Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality. |
| Moderate | Adverse – Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.<br><br>Beneficial – Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality. |
| Minor | Adverse – Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.<br><br>Beneficial – Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring. |
| Negligible | Adverse – Very minor loss or detrimental alteration to one or more characteristics, features or elements.<br><br>Beneficial – Very minor benefit to or positive addition of one or more characteristics, features or elements |

### Criteria for Assessing the Sensitivity of Receptors

54. The IEMA Guidelines notes that the separate 'Guidelines for the Environmental Assessment of Road Traffic' (1993) document should be used to characterise the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments. These guidelines intend to complement professional judgement and the experience of trained assessors.

55. In terms of traffic and transport impacts, the receptors are the users of the roads within the traffic and transport study area and the locations through which those roads pass.

56. The IEMA Guidelines includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement was used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in Table 12.9.

57. Determining the significance of effects is a two-stage process that involves defining the magnitude of the potential impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 2 of the Onshore EIA Report.

58. The criteria for defining sensitivity in this chapter are outlined in Table 12.9 below.

**Table 12.9: Definition of Terms Relating to the Sensitivity of the Receptor**

| Value (Sensitivity of the Receptor) | Description and Examples |
|---|---|
| High | User of Roads – Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.<br><br>Users / Residents of Locations – Where a location is a large rural settlement containing a high number of community and public services and facilities. |
| Medium | User of Roads – Where the road is a local A or B class road, capable of regular use by HGV traffic.<br><br>Users / Residents of Locations – Includes roads where there is some traffic calming or traffic management measures. Where a location is an intermediate sized rural settlement, containing some community or public facilities and services. |
| Low | User of Roads – Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.<br><br>Users / Residents of Locations – Includes roads with little or no traffic calming or traffic management measures. Where a location is a small rural settlement, few community or public facilities or services. |
| Negligible | User of Roads – Where roads have no adjacent settlements.<br><br>Users / Residents of Locations – Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads. Where a location includes individual dwellings or scattered settlements with no public / community facilities. |

59. Where a road passes through a given location, road users (pedestrian, cyclists, drivers, etc) are considered subject to the highest level of sensitivity defined by either the road or location characteristics.

60. The significance of the effect upon traffic and transport is determined by correlating the magnitude of the impact and the sensitivity of the receptor, as outlined in Table 12.10 below.

**Table 12.10: Matrix Used for the Assessment of the Significance of the Effect**

| Sensitivity of | Magnitude of Impact | | | |
|---|---|---|---|---|
| | **Negligible** | **Minor** | **Moderate** | **Major** |
| **Negligible** | Neutral | Slight/Neutral | Slight | Slight |
| **Low** | Slight/Neutral | Slight | Slight | Moderate/Slight |
| **Medium** | Slight/Neutral | Slight | Moderate | Large/Moderate |
| **High** | Slight | Moderate/Slight | Large/Moderate | Large |

61. Effects would be considered to be significant where they are assessed to be Large or Moderate. Where an effect could be one of Large/Moderate or Moderate/Slight significance, professional judgement would be used to determine which option should be applicable.

## 12.10. PRIMARY & TERTIARY MITIGATION

62. As part of the Proposed Development design process, a number of measures have been proposed to reduce the potential for impacts on traffic and transport (see Table 12.11: ). These include measures which have been incorporated as part of the Proposed Development's design (referred to as 'primary mitigation') and measures which will be implemented regardless of the impact assessment (referred to as 'tertiary mitigation'). As there is a commitment to implementing these measures, they are considered inherently part of the design of the Proposed Development and have therefore been considered in the assessment presented in Table 12.11 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures). These measures are considered standard industry practice for this type of development.

**Table 12.11: Measure Adopted as Part of the Proposed Development (Primary & Tertiary Mitigation)**

| Measures Adopted as Part of the Proposed Development (Primary & Tertiary Mitigation) | Justification |
|---|---|
| Construction Site Entrances | The site entrances will be designed and constructed in accordance with ELC and TS design guidelines |
| Construction Traffic Management and Routeing Plan (CTMRP) | The following measures would be implemented through a Construction Traffic Management and Routeing Plan (CTMRP) during the construction phase. The CTMRP would be agreed with East Lothian Council (ELC) prior to construction works commencing. Measures will be adopted to ensure that construction traffic associated with the Proposed Development is efficiently managed. These will likely include:<br>• Road upgrades along the routes;<br>• Route condition survey;<br>• Route management;<br>• Vehicle details;<br>• Abnormal load assessment;<br>• Vehicle routing;<br>• Escort strategy;<br>• Contingency plan; and<br>• Traffic impact mitigation measures.<br>Further details are provided in Appendix 12.1. |
| Trenchless Technology (e.g. horizontal directional drilling (HDD)) for Cabling Under the East Coast Main Line and A1 | This will ensure that there is no adverse impact on the ECML or A1 as a result of cabling activities. |

63. Further details of the mitigation measures outlined in Table 12.11 are presented in EIA Volume 4, Appendix 12.1: Transport Assessment., including a framework CTMRP.

## 12.11. ASSESSMENT OF SIGNIFICANCE

64. Table 12.12 details the receptors (as previously identified in baseline review) and their sensitivities for use within the traffic and transport impact assessment. A justification for the sensitivity has been provided, based upon the methodology contained in Table 12.9.

**Table 12.12: Receptor Sensitivity**

| Receptor | Sensitivity | Justification |
|---|---|---|
| Skateraw Residents | Negligible | Where a location includes individual dwellings or scattered settlements with no facilities |
| Innerwick Residents | Low | Where a location is a small rural settlement, few community or public facilities or services |
| Residents along C121 | Negligible | Where a location includes individual dwellings or scattered settlements with no facilities |
| Residents along C124 | Negligible | Where a location includes individual dwellings or scattered settlements with no facilities |
| Skateraw Users | High | Where the road is a minor rural road. |
| C122 Users | High | Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. |
| Users of U209 (north of Barns Ness Terrace) | High | Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. |
| C121 Users | High | Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. |
| C124 Users | High | Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. |
| A1 (T) Users | Low | Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. |
| Core Path Users | High | Minor path used by walkers and cyclists, not constructed to accommodate HGV traffic flows |

65. Based on the indicators which are stated within the IEMA Guidelines outlined in Section 12.9.2 (where 'sensitive areas' are defined to include hospitals, churches, schools and historical buildings, as well as locations where it is felt that specific environmental problems may occur), the following are identified as sensitive areas in this assessment and will therefore be subject to 'Rule 2' of the IEMA Guidelines which requires a full assessment of effects if the locations are subject to an increase in 10% of traffic:

Innerwick Residents; and
Core Path Users.

66. All other locations within the study area are subject to 'Rule 1' and are assessed if traffic flows (or HGV flows) on highway links increase by more than 30%.

### Construction Phase Activities Generating Increased Traffic

67. During the anticipated 40 month construction period, the following traffic will require access to the site:

Staff transport, either cars or staff minibuses;
Construction equipment and materials, deliveries of machinery and supplies such as cement; and
Abnormal loads consisting of transformers, reactors, cable drums, and cranes.

68. Average monthly traffic flow data were used to establish the construction trips associated with the Proposed Development and are detailed in Volume 4, Appendix 12.1. The trip

estimates have been based upon first principle estimates of traffic movements to and from the site, having established the likely volumes of construction materials, resources and components.

69. It is proposed that material associated with the construction phase of the Proposed Development will be sourced from the Central Belt and will be delivered to the site via the A1 (T).

70. Investigations are underway to identify the Port of Entry (PoE) for abnormal loads.

71. The trip estimates have been assigned to the proposed construction programme to allow the identification of the peak of construction traffic to be established. The proposed construction programme is also provided in Volume 4, Appendix 12.1.

72. The peak of construction traffic activity was identified as being Month 14 of the programme. The traffic associated with this month was then assigned to the study area network using the distribution of traffic described within Volume 4, Appendix 12.1.

73. The anticipated peak traffic flows associated with the Proposed Development's construction phase results in an average of 669 movements per day (335 trips in and 335 trips out), of which 522 would be made by light vehicles (261 inbound and 261 outbound) and 147 by HGV (74 inbound and 74 outbound).

74. The construction traffic was compared against the future baseline traffic (without construction traffic) (Table 12.16) to estimate the increase in traffic associated with this phase of the proposed Development. Table 12.13 illustrates the potential traffic impact at the peak of construction activity.

**Table 12.13: 2026 Future Baseline + Construction Traffic**

| Survey Location | Cars & LGVs | HGV | Total | % Increase in Car & LGVs | % Increase in HGVs | % Increase in Total Traffic |
|---|---|---|---|---|---|---|
| Skateraw | 390 | 109 | 500 | 204.1% | 117.2% | 179.6% |
| C122 (near Thurston Doggy Daycare) | 1687 | 520 | 2208 | 15.8% | 19.5% | 16.6% |
| U209 (north of Barns Ness Terrace) | 283 | 79 | 363 | 150.5% | 194.0% | 157.6% |
| C121 (north of Border Belles) | 97 | 35 | 131 | 0.0% | 0.0% | 0.0% |
| C124 (near Blackberry Farm Paddocks) | 101 | 45 | 147 | 0.0% | 0.0% | 0.0% |
| C121 (Barns Ness Terrace) | 96 | 46 | 141 | 0.0% | 0.0% | 0.0% |
| A1(T) Thorntonloch | 10407 | 1671 | 12078 | 0.0% | 0.0% | 0.0% |
| A1(T) west of Innerwick Junction | 10929 | 1818 | 12747 | 5.0% | 8.8% | 5.5% |

*Please note minor variances may occur due to rounding.*

75. With reference to the IEMA Guidelines, total traffic movements are predicted to increase by more than 30% at the Skateraw access road and U209 (north of Barns Ness Terrace).

76. The table suggests that total traffic flows are expected to increase by 179.6% along the road leading to Skateraw while the HGV flows are anticipated to increase by 117.2%. Although the increase in traffic flows is statistically significant, they are mainly caused by relatively low total and HGV flows along Skateraw road which sees an additional 262 Cars

& LGVs and 59 HGV daily two-way journeys during the peak month. This represents a total of approximately thirteen inbound trips every hour, which is not considered significant in terms of traffic operations.

77. The U209 (north of Barns Ness Terrace) is expected to see an increase of total traffic flows by 157.6% in the peak month, which includes an increase in HGV flows by 194.0%. This is mainly attributed to the relatively low baseline traffic flows along this road. While the increase in traffic flows is statistically significant, it is generally caused by relatively low total and HGV flows along the U209 (north of Barns Ness Terrace) which will anticipate an additional 170 Cars & LGVs and 52 HGV daily two-way journeys during the peak month. This represents a total of approximately seven inbound Car & LGVs trips and less than two HGV trips every hour which is not considered significant in terms of overall traffic flow terms.

78. Therefore, following a review of the anticipated traffic impacts relating to construction, the following receptors should be assessed further:

Skateraw Users;
U209 (north of Barns Ness Terrace) Users; and
Core Path Users.

79. It should be noted that construction phase is transitory in nature and the peak of construction activities is short lived.

80. A review of existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 “The NESA Manual”. The theoretical road capacity has been estimated by calculating the number of vehicles per hour per direction for each of the road links for a 12-hour period. The results are summarised in Table 12.14.

**Table 12.14: 2026 Future Baseline + Construction Traffic – Flows and Impact**

| Survey Location | 2026 Baseline Flow | 2026 Base + Development Flows | Theoretical Road Capacity | 2026 Base + Development Used Capacity | Spare Road Capacity % |
|---|---|---|---|---|---|
| Skateraw | 179 | 500 | 21600 | 2% | 98% |
| C122 (near Thurston Doggy Daycare) | 1893 | 2208 | 21600 | 10% | 90% |
| U209 (north of Barns Ness Terrace) | 141 | 363 | 3360 | 11% | 89% |
| C121 (north of Border Belles) | 131 | 131 | 3360 | 4% | 96% |
| C124 (near Blackberry Farm Paddocks) | 147 | 147 | 19200 | 1% | 99% |
| C121 (Barns Ness Terrace) | 141 | 141 | 3360 | 4% | 96% |
| A1 (T) Thorntonloch | 12078 | 12078 | 28800 | 42% | 58% |
| A1 (T) west of Innerwick Junction | 12078 | 12747 | 28800 | 44% | 56% |

*Please note minor variances may occur due to rounding.*

81. The results indicate that there are no road capacity issues resulting from trips associated with the Proposed Development as the 2026 Base + Development Flows are much lower than the theoretical road capacity for each of the assessed roads. Table 12.15 shows that ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

Magnitude of impact

82. The impacts of traffic associated with the construction phase of the Proposed Development on the identified receptors, prior to the application of any mitigation measures, are as follows:

Skateraw Users –

- Severance: Total increase in traffic flows greater than 90% (179.6% outlined Table 12.13), the increase in traffic may also lead to possible severance between farms. The magnitude of impact is therefore considered major.
- Driver delay: It is anticipated that there will approximately 98% spare theoretical road capacity (Table 12.14), magnitude of impact is considered negligible, as it is not expected that the addition of construction traffic will lead to congestion issues over a 12-hour period
- Pedestrian Delay: There are no pedestrian facilities along Skateraw, and it is assumed that there would be a low number of pedestrian users, however this road is considered as a *"Suggested links on quiet roads"* on East Lothian Core Maps (Map K)[6], the magnitude of impact is therefore considered minor.
- Pedestrian Amenity: The increase in traffic along this road is over 100%, however due to the lack of pedestrian facilities and the assumed low number of pedestrian users, the magnitude of impact is considered minor.
- Fear and Intimidation: The total increase in traffic flows is greater than 90% and it should also be noted that HGV traffic is also to be over 90%. However, as the baseline traffic is considered low and the assumed number of pedestrian users is also assumed to be low. It should be noted that Skateraw road is located next to the A1, and as such there will be familiarity with HGV traffic, as well as good visibility along Skateraw road. The magnitude is considered moderate.
- Accidents and Safety: The accident analysis indicated that no accidents were recorded along this road within the study period, and so there is no indication of accident trends along this road due to the layout of the road. The magnitude of impact is therefore considered to be minor.
-

83. Summary of magnitude of impact of construction traffic on Skateraw Users – The overall magnitude prior to the application of any mitigation measures would be major. The application of primary and tertiary mitigation measures such as the CTMRP would reduce this impact to minor. The impact of the construction phase on Skateraw Users is direct, short term and intermittent.

Users U209 (north of Barns Ness Terrace) –

- Severance: Total increase in traffic flows greater than 90% (157.6% outlined Table 12.13) and this road provides a link between businesses to the east of Innerwick and the A1 (T). The magnitude of impact is therefore considered major.
- Driver delay: It is anticipated that there will approximately 89% theoretical road capacity (Table 12.14), magnitude of impact is considered negligible.
- Pedestrian Delay: There are no pedestrian facilities along U209 (north of Barns Ness Terrace), however this road is considered as a *"Suggested links on quiet roads"* on East Lothian Core Maps (Map K)[7]. It should also be noted that there no dwellings along this road. The magnitude of impact is therefore considered minor.
- Pedestrian Amenity: The increase in traffic along this road is over 100%, however, it is assumed that there is low pedestrian flow along this road as there are no dwellings along this road and the surroundings are rural in nature. The magnitude of impact is considered minor.
- Fear and Intimidation: The total increase in traffic flows is greater than 90% and it should also be noted that HGV traffic is also to be over 90%. However, as the baseline traffic is considered low and the assumed number of pedestrian users as well, the magnitude is considered moderate.

[6] East Lothian Core Maps (Map K) Available at: https://www.eastlothian.gov.uk/downloads/file/23131/map_k_Innerwick_and_surrounding_area

[7] East Lothian Core Maps (Map K) Available at: https://www.eastlothian.gov.uk/downloads/file/23131/map_k_Innerwick_and_surrounding_area

- Accidents and Safety: The accident analysis indicated that no accidents were recorded along this road within the study period, and so there is no indication of accident trends along this road due to the layout of the road. The magnitude of impact is therefore considered to be minor.

84. Summary of magnitude of the impact of construction traffic on Users U209 (north of Barns Ness Terrace) – The overall magnitude prior to the application of any mitigation measures would be major. The application of primary and tertiary mitigation measures such as the CTMRP would reduce this impact to minor. The impact of the construction phase on Users of U209 (north of Barns Ness Terrace) is direct, short term and intermittent.

Core Path Users –

- Severance: Total increase in traffic flows is expected to be greater than 90%, and the Core Paths will be severed by the construction of the Landfall element, the magnitude of impact is therefore considered major.
- Driver delay: The magnitude of impact for driver delay along the Core Paths is considered negligible.
- Pedestrian Delay: The magnitude of impact regarding pedestrian delay on the Core Paths is considered major, as there would previously not have been traffic in the vicinity of the Core Paths.
- Pedestrian Amenity: The magnitude of impact is considered major as there will be traffic in the vicinity of the Core Path network where there previously would have been no traffic.
- Fear and Intimidation: As there would previously not have been traffic in the vicinity of the Core Paths, the increase in traffic will be greater than 90%, therefore the magnitude of impact is considered major.
- Accidents and Safety: As there is to be an increase in traffic flows of over 90% along this road, the magnitude of impact is considered to be moderate.
- The impact of the construction phase on Core Path Users is direct, short term and intermittent. The overall magnitude is major.

85. Summary of magnitude of the impact of construction traffic on Core Path Users –The overall magnitude of impact prior to the application of any mitigation measures would be major. The application of primary and tertiary mitigation measures such as the CTMRP would reduce this impact to minor. The impact of the construction phase on the Core Path Users is direct, short term and intermittent.

86. In conclusion, the impacts are predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the construction impact will affect the receptors directly.

Sensitivity of the receptor

87. The sensitivity of the receptors brought forward for assessment as a result of the impact of traffic associated with the construction phase of the Proposed Development which have been previously described in Table 12.12, and are as follows:

Skateraw Users – High Sensitivity;
Users U209 (north of Barns Ness Terrace) – High Sensitivity; and
Core Path Users – High Sensitivity.

88. For each of the receptors listed in the above, the vulnerability as a result of traffic associated with the construction phase is high, without the inclusion of any mitigation measures.

89. The recoverability once the construction phase is complete is high. It is expected that once the construction phase has been completed that traffic characteristics in the study area will return to pre-construction trends.

Significance of Effect

90. The likely significance of effects has been determined using the guidance and thresholds discussed above in the Impact Assessment Criteria section of this chapter.

91. The assessment of the significance of effect has assumed that primary and tertiary mitigation measures, which includes the CTMRP, are in place and an assessment of the likely effects has been undertaken using the previously described thresholds. The results of this for each of the receptors are presented in Table 12.15:

**Table 12.15: Overall Construction Phase Effects Summary**

| Receptors | Severance | Driver Delay | Pedestrian Delay | Amenity | Fear & Intimidation | Accidents & Safety |
|---|---|---|---|---|---|---|
| Skateraw Users | Moderate/ Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant |
| Users of U209(north of Barns Ness Terrace) | Moderate/ Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant | Slight<br>Not Significant |
| Core Path Users | Moderate/ Slight<br>Not Significant | Slight<br>Not Significant | Moderate/ Slight<br>Not Significant | Moderate/ Slight<br>Not Significant | Moderate/ Slight<br>Not Significant | Slight<br>Not Significant |

92. Table 12.15 details that Skateraw Users, Users of U209 (north of Barns Ness Terrace) and Core Path Users are not deemed significant prior to the introduction of secondary mitigation measures.

Secondary mitigation and residual effect

*Secondary Mitigation*

93. Although none of the effects shown in Table 12.15 are anticipated to be significant following the implementation of primary and tertiary mitigation measures, the following secondary mitigation will complement the primary and tertiary mitigation measures outlined in Table 12.11 to reduce the significance of effects associated with construction traffic during the construction phase.

## Abnormal Load Transport Management Plan

94. There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.

95. All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the planning authority, relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods before peak times while general construction traffic would generally avoid the morning and evening peak periods.

96. Potential conflicts may occur at locations where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms or where loads may straddle the centre line, where fast moving oncoming traffic may be encountered.

97. The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

98. Advance warning signs would be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers. Flip up panels (shown in grey) could be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the Traffic Management contractor.

99. The location and numbers of signs would be agreed post consent with the planning authority and relevant roads authorities and would form part of the wider traffic management proposals for the project.

100. The Abnormal Load Transport Management Plan would also likely include:

Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;
A diary of proposed delivery movements to liaise with the communities to avoid key dates and local events;
A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
Proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the Applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

### Core Path Management Plan

101. Consideration will be given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the core path. These measures will be formulated into a Core Path Management Plan.

102. Engagement has been undertaken with ELC community access officer with regards to the John Muir Link. It has been agreed that if John Muir Link is to be disrupted during construction there will be appropriate diversions or alternative access.

103. The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the core path and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where core path users may interact with construction traffic.

104. Signage will be installed on the site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This will also be emphasised in weekly toolbox talks.

105. The British Horse Society provides general recommendations on the interactions between HGV traffic and horses. It is understood that horses can be nervous of large vehicles, particularly when they do not often meet them.

106. The main factors causing fear in horses in this situation are:

Something approaching them, which is unfamiliar and intimidating;
A large moving object, especially if it is noisy;
Lack of space between the horse and the vehicle;
The sound of air brakes; and
Anxiety on the part of the rider.

107. The British Horse Society recommends the following actions that will be included in the site training for all HGV staff:

On seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible;

If the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so);
The vehicle should not move off until the riders are well clear of the back of the HGV;
If drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them; and
All drivers delivering to the site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

108. The training listed above will be undertaken by drivers during a toolbox talk at the site induction.

### Roads agreement

109. ELC may request that an agreement to cover the cost of abnormal wear on its network is made. To this end, the Applicant proposes to enter into a Section 96 agreement to cover wear and tear on the public road deemed to have occurred as a result of the Proposed Development. Any repair works would be undertaken at the Applicant's expense, rather than by the local authorities.

110. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route would be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction phase. Any necessary repairs would be coordinated with ELC. Any damage caused by traffic associated with the Proposed Development during the construction period that would be hazardous to public traffic would be repaired as soon as practicable.

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

112. There would be a regular road review and any debris and mud would be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.

### Staff Travel Plan

113. A Staff Travel Plan would be deployed, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

Appointment of a Travel Plan Coordinator (TPC);
Provision of public transport information;
16 seat mini-bus service for transport of site staff;
Promotion of a car sharing scheme; and
Car parking management.

#### *Residual Effect*

114. This section considers the assessment of traffic effects following the incorporation of primary and tertiary mitigation, as well as the secondary mitigation measures identified above.

115. Table 12.19 summarises the assessment of residual effects identified in the evaluation with mitigation in place. In summary, it is determined that the residual effects are not significant following the implementation of mitigation measures.

116. It should be borne in mind that the assessment has focussed on the peak in construction traffic activities and that the percentage increases noted are high, given the relatively low level of HGV traffic on the existing network.

117. The construction period is transitory in nature and all impacts will be short lived and temporary.

### 12.11.1. PROPOSED MONITORING

118. Construction related traffic will be monitored in line with the CTMRP.

119. Site entrance roads will be well maintained and monitored during the lifetime of the development.

## 12.12. CUMULATIVE EFFECTS ASSESSMENT

### 12.12.1. METHODOLOGY

120. The Cumulative Effects Assessment (CEA) considers the impact associated with the Proposed Development together with other relevant plans, projects and activities. Cumulative effects are therefore the combined effect of the Proposed Development in combination with the effects from a number of different projects, on the same receptor or resource. Please see Volume 1, Chapter 2 of the Onshore EIA Report for detail on CEA methodology.

121. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 4, Appendix 2.4). Each project or plan has been considered on a case by case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

122. The specific projects scoped into the CEA for traffic and transport, are outlined in Table 12.16.

123. In traffic and transport terms, only developments that have been consented can be assumed to be committed developments and thus generally be included in a cumulative assessment. However, the Applicant considered that Branxton Grid Substation and the Eastern Link Project proposals (Northern Point of Connection Converter Station and Cables and Northern Point of Connection Substation) should also be included in the assessment.

**Table 12.16: List of Other Projects Considered Within the CEA for Traffic and Transport**

| Project/Plan | Status | Distance from Study Area (km) | Description of Project/Plan | Dates of Construction | Dates of Operation | Overlap with the Proposed Development |
|---|---|---|---|---|---|---|
| **Tier 1** | | | | | | |
| Berwick Bank Wind Farm Offshore | In Planning | Approx. 60km | Offshore Wind Farm Development | Contiguous to the OnTW | N/A | There is no traffic overlap as the port or ports of embarkation are not located in this study area |
| **Tier 2** | | | | | | |
| Crystal Rig IV | Consented | Approx. 10 km | Onshore Wind Farm Development | Commence before 21 March 2024 | N/A | Potential to overlap during Construction Phase |
| Branxton Grid Substation | In Planning | Within 1 km | Substation | Commence during 2023 | N/A | Potential to overlap during Construction Phase |
| Eastern Link Project | In Planning | Within 1 km | Converter Station and Cable Works | Commence during 2024 | N/A | Potential to overlap during Construction Phase |

### 12.12.2. MAXIMUM DESIGN SCENARIO

The maximum design scenario(s), which for the traffic and transport assessment is the peak construction traffic period, has been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been selected from the details provided in Volume 1, Chapter 5 of the Onshore EIA Report as well as the information available on other projects and plans, to inform a 'maximum design scenario'. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope, to that assessed here, be taken forward in the final design scheme.

### 12.12.3. CUMULATIVE EFFECTS ASSESSMENT

124. An assessment of the likely significance of the cumulative effects of the Proposed Development upon Traffic and Transport receptors arising from each identified impact is given below.

125. At the time of writing Crystal Rig IV Wind Farm has been granted planning permission for up to 11 wind turbines, with a maximum tip height of up to 200m.

126. In order to inform the planning authorities of possible issues if the Crystal Rig IV Wind Farm were to be constructed concurrently with the Proposed Development, a combined sensitivity review has been undertaken.

127. The proposed Eastern Link Project proposals (Northern Point of Connection Converter Station and Cables and Northern Point of Connection Substation) and Branxton Grid Substation developments are to comprise a new substation, overhead line, converter station, underground cables and marine cables near Torness, East Lothian and are to be close to the Proposed Development. While the Eastern Link Project proposals have not been granted planning consent and Branxton Grid Substation has been recently withdrawn, they are considered in the sensitivity review as it is anticipated that Branxton Grid Substation's planning application will be resubmitted and if consent is granted, it is anticipated that the projects will be constructed concurrently with the Proposed Development.

128. The peak flows for Crystal Rig IV Wind Farm, Branxton Grid Substation and the Eastern Link proposals have been obtained from planning application documents, as well as gratefully received from the EIA team on behalf of SP Energy Networks. These peak flows are presented in Table 12.17 and then compared to the 2026 future baseline year in Table 12.17.

**Table 12.17: Combined Scheme Sensitivity Review Peak Traffic Summary**

| Survey Location | Berwick Bank | | Crystal Rig IV | | Branxton Substation | | Eastern Link Converter Station and Cables | | Eastern Link Northern Point of Connection Substation | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Car / LGV | HGV | Car / LGV | HGV | Car / LGV | HGV | Car / LGV | HGV | Car / LGV | HGV |
| Skateraw | 262 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C122 (near Thurston Doggy Daycare) | 230 | 85 | 30 | 28 | 0 | 0 | 225 | 70 | 0 | 0 |
| Unnamed Road North of Barns Ness Terrace | 170 | 52 | 0 | 0 | 0 | 0 | 75 | 26 | 0 | 0 |
| C121 (north of Border Belles) | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 26 | 0 | 0 |
| C124 (near Blackberry Farm Paddocks) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| C121 (Barns Ness Terrace) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| A1(T) Thorntonloch | 0 | 0 | 30 | 28 | 0 | 0 | 0 | 0 | 0 | 0 |
| A1(T) west of Innerwick Junction | 522 | 147 | 20 | 24 | 0 | 712 | 300 | 96 | 0 | 712 |

**Table 12.18: Combined Scheme Sensitivity Traffic Impact Summary**

| Survey Location | Total Two-way Combined Scheme Trips | | | % Increase in 2026 Traffic | | |
|---|---|---|---|---|---|---|
| | Cars / LGVs | HGVs | Total | Cars / LGVs % | HGVs % | Total Traffic % |
| Skateraw | 262 | 59 | 321 | 204% | 117% | 180% |
| C122 (near Thurston Doggy Daycare) | 485 | 183 | 668 | 33% | 42% | 35% |
| Unnamed Road North of Barns Ness Terrace | 245 | 78 | 323 | 217% | 291% | 229% |
| C121 (north of Border Belles) | 75 | 26 | 101 | 78% | 74% | 77% |
| C124 (near Blackberry Farm Paddocks) | 10 | 0 | 10 | 10% | 0% | 7% |
| C121 (Barns Ness Terrace) | 0 | 0 | 0 | 0% | 0% | 0% |
| A1(T) Thorntonloch | 30 | 28 | 58 | 0% | 2% | 0% |
| A1(T) west of Innerwick Junction | 842 | 1691 | 2533 | 8% | 101% | 21% |

129. The combined traffic flows of the cumulative developments indicate that there would be a large increase in traffic flows along several of the assessed links, however there will be more than sufficient spare road capacity to accommodate this based on theoretical road capacities outlined in Table 12.13. Table 12.18 suggests that the total flows along Skateraw, C122 (near Thurston Doggy Daycare), Unnamed Road North of Barnes Ness

Terrace and C121 (north of Border Belles) will exceed 'Rule 2'of the IEMA Guidelines as traffic movements are to exceed by more than 30%. Along the A1(T) west of Innerwick Junction, the increase in HGV movements would be expected to be over 30% which exceeds the IEMA Guidelines as HGVs would be expected to increase by over 30%. Prior to the application of any mitigation measures the effects are considered significant.

## Cumulative Developments

Magnitude of Impact:

- Severance: Total increase in flows along Skateraw and Unnamed Road North of Barns Ness Terrace will increase by over 90% (180% and 229%, respectively), total flows at C121 (north of Border Belles) will increase by over 60% (77%), total flows at C122 (near Thurston Doggy Daycare) will increase by over 30% (35%) and the total HGV flows at the A1(T) west of Innerwick Junction will increase by over 90% (101%). The maximum magnitude of impact on the study area is therefore considered major.
- Driver Delay: The cumulative flows of each of the highway links which exceed the IEMA Guidelines are well within the theoretical flows for each of the links outlined in Table 12.13. The maximum magnitude of impact on the study area is therefore considered negligible.
- Pedestrian Delay: There are no pedestrian facilities along Skateraw, C122 (near Thurston Doggy Daycare), Unnamed Road North of Barnes Ness Terrace and C121 (north of Border Belles) and it is assumed that there would be a low number of pedestrian users, however this road is considered as a *"Suggested links on quiet roads"* on East Lothian Core Maps (Map K)[8]. There are pedestrian crossing facilities along the A1(T), and the addition of cumulative developments will see an increase of total traffic of 21% which is not considered significant in terms of overall traffic flows. The maximum magnitude of impact on the study area is therefore considered minor.
- Pedestrian Amenity: The increase in traffic is estimated to be over 100% along Skateraw and the Unnamed Road North of Barns Ness Terrace (180% and 229%, respectively), however due to the lack of pedestrian facilities and the assumed low number of pedestrian users, the magnitude of impact on the study area is considered minor.
- Fear and Intimidation: The total increase in traffic flows along Skateraw and Unnamed Road North of Barns Ness Terrace is greater than 90% and it should also be noted that HGV traffic is also to be over 90%. Total flows and HGV flows at C122 (near Thurston Doggy Daycare) will increase by over 30% and the total HGV flows at the A1(T) west of Innerwick Junction will increase by over 90%. It should be noted that pedestrians using pedestrian facilities along the A1(T) would be aware of the presence of HGVs along the trunk road network. However, as the baseline traffic within the study area is considered low, and it is assumed that the number of pedestrian users within the study area is also low, the maximum magnitude on the study area is considered moderate.
- Accidents and Safety: From reviewing the accident information, there was only one accident recorded within the survey period along the minor roads and 13 recorded along the A1(T). Four of the accidents which were recorded along the A1 (T) occurred in the vicinity of the Torness Power Station. Therefore the maximum magnitude on the study area is considered moderate.

[8] East Lothian Core Maps (Map K) Available at: https://www.eastlothian.gov.uk/downloads/file/23131/map_k_Innerwick_and_surrounding_area

130. Summary of magnitude of the impact of construction traffic on Cumulative Development – The overall magnitude of prior to the application of any mitigation measures would be moderate. The application of mitigation measures such as an overarching traffic plan and by introducing a phased delivery plan which would be agreed with the local council roads department, Transport Scotland and Police Scotland. The introduction of these mitigation measures would reduce this impact to minor.

131. Furthermore, it is not predicted that the potential traffic flow increases could reasonably occur on the study area for the following reasons:

It is extremely unlikely that the peak traffic conditions would occur at the same time due to differences in construction programmes, material supplies and developer resources; and
All abnormal load deliveries cannot occur at the separate sites on the same day due to restrictions on the numbers of loads moving on the network at the same time set by Police Scotland.

132. In conclusion, the impacts of the cumulative effects assessment are predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the construction impact will affect the receptors directly.

### 12.12.4. PROPOSED MONITORING

133. Should the Proposed Development and Crystal Rig IV Wind Farm, Branxton Grid Substation and the Eastern Link Project be constructed concurrently, any crossover of construction related traffic would be monitored in line with the overarching CTMRP.

## 12.13. SUMMARY OF IMPACTS, MITIGATION MEASURES, LIKELY SIGNIFICANT EFFECTS AND MONITORING

134. Information on traffic and transport within the traffic and transport study area was collected through desktop reviews, site surveys and consultation with relevant stakeholders.

135. The Proposed Development would lead to a temporary increase in traffic volumes on the study road network during the construction phase. Traffic volumes would decrease considerably outside the peak period of construction. The maximum traffic impact associated with construction is predicted to occur in Month 14 of the programme, when an additional 669 trips (522 Cars & LGVs and 147 HGVs) are included to the network.

136. Table 12.19 presents a summary of the potential impacts, mitigation measures and residual effects in respect to traffic and transport. The impacts assessed include:

Severance;
Driver delay;
Pedestrian delay;
Pedestrian amenity;
Fear and intimidation; and
Accidents and safety.

137. Overall, as presented in Table 12.19, it is concluded that there will be no significant effects arising from the Proposed Development during the construction phase following the introduction of secondary mitigation measures.

138. Table 12.20 presents a summary of the potential cumulative impacts, mitigation measures and the conclusion of likely significant effects in EIA terms in respect to traffic and transport. The cumulative effects assessed include construction traffic related effects associated with the consented Crystal Rig IV Wind Farm, Branxton Grid Substation and the Eastern Link Project. Following the introduction of mitigation measures such as the overarching Traffic Management and Monitoring Plan, the residual effects of construction traffic associated with the cumulative developments is considered slight, which is not significant in EIA terms.

**Table 12.19: Summary of Likely Significant Environmental Effects, Mitigation and Monitoring**

| Description of Impact | Phase C | Phase O | Phase D | Magnitude of Impact | Sensitivity of Receptor | Significance of Effect | Secondary Mitigation | Residual Effect | Proposed Monitoring |
|---|---|---|---|---|---|---|---|---|---|
| **Skateraw Users** | | | | | | | | | |
| Severance | ✓ | | | Moderate/Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Driver delay | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Pedestrian delay | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Pedestrian amenity | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Fear and intimidation | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Accidents and Safety | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| **Users of U209 (north of Barns Ness Terrace)** | | | | | | | | | |
| Severance | ✓ | | | Moderate/Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Driver delay | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport | Slight | In line with CTMRP |

| Description of Impact | Phase C | Phase O | Phase D | Magnitude of Impact | Sensitivity of Receptor | Significance of Effect | Secondary Mitigation | Residual Effect | Proposed Monitoring |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Management Plan and Roads Agreement | | |
| Pedestrian delay | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Pedestrian amenity | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Fear and intimidation | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| Accidents and Safety | ✓ | | | Slight | High | Not Significant | Abnormal Load Transport Management Plan and Roads Agreement | Slight | In line with CTMRP |
| **Core Path Users** | | | | | | | | | |
| Severance | ✓ | | | Moderate/Slight | High | Not Significant | Core Path Management Plan | Slight | In line with CTMRP and Path Management Plan |
| Driver delay | ✓ | | | Slight | High | Not Significant | Core Path Management Plan | Slight | In line with CTMRP and Path Management Plan |
| Pedestrian delay | ✓ | | | Moderate/Slight | High | Not Significant | Core Path Management Plan | Slight | In line with CTMRP and Path Management Plan |
| Pedestrian amenity | ✓ | | | Moderate/Slight | High | Not Significant | Core Path Management Plan | Slight | In line with CTMRP and Path |

| Description of Impact | Phase C | Phase O | Phase D | Magnitude of Impact | Sensitivity of Receptor | Significance of Effect | Secondary Mitigation | Residual Effect | Proposed Monitoring |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Management Plan |
| Fear and intimidation | ✓ | | | Moderate/Slight | High | Not Significant | Core Path Management Plan | Slight | In line with CTMRP and Path Management Plan |
| Accidents and Safety | ✓ | | | Slight | High | Not Significant | Core Path Management Plan | Slight | In line with CTMRP and Path Management Plan |

**Table 12.20: Summary of Likely Significant Cumulative Environment Effects, Mitigation and Monitoring**

| Description of Impact | Phase C O D | Magnitude of Impact | Sensitivity of Receptor | Significance of Effect | Secondary Mitigation | Residual Effect | Proposed Monitoring |
|---|---|---|---|---|---|---|---|
| **Crystal Rig IV, Branxton Substation and Eastern Link Project proposals (Northern Point of Connection Converter Station and Cables and Northern Point of Connection Substation)** | | | | | | | |
| Severance | ✓ | Large | High | Significant | Overarching Traffic Management and Monitoring Plan | Slight | In line with the overarching Traffic Management and Monitoring Plan |
| Driver delay | ✓ | Slight | High | Significant | Overarching Traffic Management and Monitoring Plan | Slight | In line with the overarching Traffic Management and Monitoring Plan |
| Pedestrian delay | ✓ | Moderate/Slight | High | Significant | Overarching Traffic Management and Monitoring Plan | Slight | In line with the overarching Traffic Management and Monitoring Plan |
| Pedestrian amenity | ✓ | Moderate/Slight | High | Significant | Overarching Traffic Management and Monitoring Plan | Slight | In line with the overarching Traffic Management and Monitoring Plan |
| Fear and intimidation | ✓ | Large/Moderate | High | Significant | Overarching Traffic Management and Monitoring Plan | Slight | In line with the overarching Traffic Management and Monitoring Plan |
| Accidents and Safety | ✓ | Large/Moderate | High | Significant | Overarching Traffic Management and Monitoring Plan | Slight | In line with the overarching Traffic Management and Monitoring Plan |

## 12.14. REFERENCES

Institute of Environmental Assessment (1993) Guidelines for the Environmental Assessment of Road Traffic

Institution of Environmental Management and Assessment (IEMA) (2005) Guidelines for Environmental Impact Assessment

Design Manual for Roads and Bridges (2020) LA 104 – Environmental Assessment and Monitoring

Scottish Government (2023). National Planning Framework 4. Available at: https://www.transformingplanning.scot/national-planning-framework/adopted-npf4/


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