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15.0 TRAFFIC AND TRANSPORT

15.1 Introduction

15.1.1 This chapter of the Environmental Statement (ES) identifies the potential impacts and effects on traffic and transport that are to be considered as part of the Environmental Impact Assessment (EIA) of the Proposed Development. The assessment has been undertaken in accordance with best practice guidance, as set out in the Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (IEMA, 2023).

15.2 Legislation, Planning Policy Context and Other Guidance

15.2.1 This Section identifies and describes legislation, planning policy and guidance that is of relevance to the assessment of Traffic and Transport effects.

Planning Policy Context

National Planning Policy

Overarching National Policy Statement for Energy (EN-1) (2023)

15.2.2 The National Policy Statement (NPS) (Department of Energy and Climate Change (DESNZ), 2023a) and specifically section 5.14 of the NPS outlines the planning policy for traffic and transport, including guidance on undertaking relevant parts of the EIA (which has been taken into account in this assessment). The most relevant paragraphs for the transport assessment are paragraphs 5.14.5, 5.14.7 and 5.14.21, respectively, which state:

“If a project is likely to have significant transport implications, the applicant’s ES (see Section 4.3) should include a transport appraisal. The DfT’s Transport Analysis Guidance (TAG) and Welsh Governments WelTAG provides guidance on modelling and assessing the impacts of transport schemes.”

“The applicant should prepare a travel plan including demand management and monitoring measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by active, public and shared transport to:

- *reduce the need for parking associated with the proposal;*
- *contribute to decarbonisation of the transport network;*
- *reduce the need to travel; and*
- *secure behavioural change and modal shift through an offer of genuine modal choice and to mitigate transport impacts.”*

“The Secretary of State should only consider refusing development on highway grounds if there would be an unacceptable impact on highway safety, residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision.”

15.2.3 In terms of the Secretary of State's decision making, Section 5.14 of the NPS states that the Secretary of State should ensure that the Applicant has sought to mitigate the impacts on the surrounding road infrastructure that may occur as a result of a new energy NSIP.

National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2023)

15.2.4 NPS 4 EN-4 (DESNZ, 2023b) should be read in conjunction with EN-1 and provides the primary basis for the decisions made regarding gas and oil infrastructure. There is no specific mention of the Traffic and Transport impact beyond a reference back to EN-1 and an acknowledgment in section 2.21 of increased HGV traffic resulting in a noise and vibration impact.

National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)

15.2.5 NPS (DESNZ, 2023c) should be read in conjunction with EN-1 and sets out how applications for electricity networks are assessed, with no specific reference to Traffic and Transportation.

National Planning Policy Framework (NPPF) (2023)

15.2.6 The Department for Levelling Up, Housing and Communities (DLUHC) National Planning Policy Framework (NPPF) (DLUHC, 2023) sets out the UK Government's national planning policies for England and provides guidance on their application. The policy also contains statements which are relevant to traffic and transport, such as:

- paragraph 108 (c) *"opportunities to promote walking, cycling and public transport use are identified and pursued."*
- paragraph 108 (d) *"the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains."*
- paragraph 115 *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*
- paragraph 117 *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."*

Department for Transport Guidance (2014) Travel Plans, Transport Assessments and Statements

15.2.7 The Planning Practice Guidance (PPG) for Travel Plans, Transport Assessments and Statements (Department for Transport (DfT), 2014) provides general guidelines for travel plans, transport assessments and statements. The guidance also contains statements which are relevant to traffic and transport and the assessment of impacts to this, such as:

“The scope and level of detail in a Transport Assessment or Statement will vary from site to site but the following should be considered when settling the scope of the proposed assessment:

- *information about the proposed development, site layout, (particularly proposed transport access and layout across all modes of transport);*
- *information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;*
- *data about existing public transport provision, including provision/ frequency of services and proposed public transport changes;*
- *a qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of transport that would result from the development and in the vicinity of the site;*
- *an assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next three years);*
- *data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highways network;*
- *an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area;*
- *an assessment of the likely associated environmental impacts of transport related to the development, particularly in relation to proximity to environmentally sensitive areas (such as air quality management areas or noise sensitive areas);*
- *measures to improve the accessibility of the location (such as provision/enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;*
- *a description of parking facilities in the area and the parking strategy of the development;*
- *ways of encouraging environmental sustainability by reducing the need to travel; and*
- *measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads.”*

Local Planning Policy

Redcar and Cleveland Local Plan (2018)

15.2.8 The Redcar and Cleveland Borough Council (RCBC) Local Plan (RCBC, 2018) sets out the vision and overall development strategy for the borough and how it will be

achieved for the period until 2032. It includes a number of policies relevant to traffic and transport, as described below.

15.2.9 Policy TA 1 (Transport and New Development) states that:

“The Council and its partners will ensure that the transport requirements of new development, commensurate to the scale and type of development, are taken into account and seek to promote sustainable travel to minimise environmental impacts and support residents’ health and wellbeing.”

15.2.10 Proposals will be supported that:

- *“improve transport choice and encourage travel to work and school by public transport, cycling and walking”;*
- *“minimise the distance that people need to travel”;* and
- *“where appropriate contribute positively to wider demand management measures to address congestion, environmental and safety issues.”*

15.2.11 Policy TA 2 (Improving Accessibility Within and Beyond the Borough) states that:

“The council will work together with neighbouring authorities, the Tees Valley Combined Authority, Tees Valley Unlimited (the Local Enterprise Partnership), the Government, developers and transport providers to improve accessibility within and beyond the borough, which will support economic, tourism and regeneration objectives for both Redcar and Cleveland and the wider Tees Valley.

This will include working with Highways England to improve capacity to the A66, A1053 and A174, particularly Greystones roundabout.”

Tees Valley Combined Authority Strategic Transport Plan 2020 – 2030 (2020)

15.2.12 The Tees Valley Combined Authority Strategic Transport Plan was developed by five constituent local authorities (Darlington Borough Council, Hartlepool Borough Council (HBC), Middlesbrough Council, Redcar and Cleveland Borough Council (RCBC), and Stockton-on-Tees Borough Council (STBC)) and was published in 2020. Its focus is to improve the transport system for local people and businesses, ensuring integration between different transport modes.

15.2.13 The plan has the following aims and aspirations to be delivered over the plan period:

- *“better transport links helping to create more jobs”;*
- *“improving the affordability, quality and reliability of people’s daily commute”;*
- *“more reliable and affordable public transport, walking and cycling options”;* and
- *“improved technology making travelling around as easy and simple as possible.”*

15.2.14 The Local Implementation Plan ‘Transport for the Future’ forms part of the Tees Valley Strategic Transport Plan which applies until 2030. The Plan seeks to improve

connectivity for all as well as promoting sustainable travel and active travel and ensuring that the network can meet the future needs.

15.2.15 There is also a proposal to work with National Highways, Middlesbrough Council and the Tees Valley Combined Authority to improve the capacity of the A66 and A174, as these are key transportation links to the wider South Tees industrial area.

15.2.16 There is acknowledgement that Teesport is a major hub for freight transport with over 2,000 lorry movements per day, with much of the transportation investment being led by National Highways, Network Rail and the Tees Valley Combined Authority. It is recognised that studies to improve capacity and resilience are required.

Other Guidance

[IEMA Guidelines on Environmental Assessment of Traffic and Movement, Jul 2023](#)

15.2.17 IEMA guidelines on Environmental Assessment of Traffic and Movement (IEMA, 2023) sets out two broad rules of thumb are applied as criteria which can be used to assist in defining the scale and extent of environmental impacts:

- include highway links where traffic flows will increase by more than 30% (or the number of HGVs would increase by more than 30%); and
- include highway links of high sensitivity where traffic flows have increased by 10% or more.

[Department for Transport Circular 01/2022: The Strategic Road Network and the Delivery of Sustainable Development \(2022\)](#)

15.2.18 The DfT published Circular 01/2022 (DfT, 2022a) which sets out the way in which National Highways will engage with the development industry to deliver sustainable development and thus economic growth, whilst safeguarding the primary function and purpose of the strategic road network.

15.3 Assessment Methodology and Significance Criteria

15.3.1 A summary of the methodology in relation to the assessment of impacts and effects of the Proposed Development is provided in this section.

15.3.2 This section includes the following:

- the methodology behind the baseline, construction, and operational assessments, including the definition of an appropriate study area;
- the methodology and terminology used in the assessment of effects; and
- identification of the information sources that have been consulted throughout the preparation of this chapter, including stakeholders consulted.

Overview

15.3.3 The environmental impact of traffic generated by the Proposed Development has been assessed with reference to the IEMA Guidance (IEMA, 2023) and other guidance as detailed in Section 15.2. The IEMA Guidance is recognised as the

industry standard methodology for the assessment of traffic and highway impacts. The IEMA Guidance outline the issues and the respective changes in volume and composition of traffic regarded as necessary before each issue results in traffic and transport impacts.

- 15.3.4 As set out in Appendix 1B: Scoping Opinion (ES Volume III, EN070009/APP/6.4), the operational phase traffic flows and traffic movements may be scoped out subject to agreement with the Local Highway Authority, and confirmation of the number and type of all operational vehicle movements (HGVs and staff). The operational phase traffic has therefore been included for completeness within this chapter as it has not been agreed with the LHA that it can be scoped out, although it should be noted that any impact is considered to be Not Significant, as discussed below.
- 15.3.5 In accordance with the IEMA Guidance (IEMA, 2023), issues including severance, pedestrian delay, non-motorised amenity, fear and intimidation and highway safety associated with the construction phase of the Proposed Development have been investigated and are reported herein.
- 15.3.6 In line with the Rochdale Envelope approach undertaken in this ES, no allowance has been made for the delivery of construction materials by water or rail (to assess worst case construction road traffic impacts). The selected Engineering, Procurement and Construction (EPC) Contractor(s) will review options for the use of rail and water when sourcing construction materials, and particularly for the movement of any Abnormal Indivisible Loads (AILs) by sea, where it has been assumed that they could potentially be delivered by ship to the Redcar Bulk Terminal (RBT) and transported to the Main Site via the South Tees Development Corporation (STDC) internal road network.
- 15.3.7 Environmental effects relating to air pollution and noise and vibration, as generated by traffic associated with the Proposed Development, are considered in Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2) and Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2), respectively.
- 15.3.8 The total construction phase, including both Phases 1 and 2, has been assessed within this chapter, assuming a worst case that Permitted Preliminary Works Phase 1 commences in Q3 2025, followed by Construction of Phase 1 in Q4 2025, with a peak of construction in month 12 (June 2026). This is based upon the total number of HGV movements required across both Phases 1 and 2, with Phase 2 having a much-reduced number of movements when compared to Phase 1.
- 15.3.9 Chapter 5: Construction Programme and Management (ES Volume I, EN070009/APP/6.2) provides greater details on the proposed construction programme for the Proposed Development.

Study Area

- 15.3.10 The Main Site is accessed from the A1085 Trunk Road, a dual / single carriageway road running north-east to south-west between Redcar and the A1053 Tees Dock Road. In the vicinity of the Main Site, the road is subject to a 60mph speed limit. Travelling south-west from the Main Site access, the A1085 Trunk Road provides a link to the A1053 Tees Dock Road, which in turn connects to the A174 to the south

and the A66 to the north. The A1053 Tees Dock Road and A174 are part of National Highways Strategic Road Network.

15.3.11 All construction access routes to the Connection Corridors north of the River Tees are assumed to be via the A1046 Haverton Hill Rd / Port Clarence Road and the B1275 from the south and the A1185 from the north.

15.3.12 The study area for the construction assessment has been identified in line with IEMA Guidance (IEMA, 2023) and is shown on Figure 15-1: Traffic Study Area (ES Volume II, EN070009/APP/6.3), and has been defined based upon two rules set out in the IEMA Guidance as follows, where a link is defined as a section of highway:

- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of HGVs would increase by more than 30%); and
- Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more.

15.3.13 To define the study area, a network of road links has been identified and then tested against the two Rules 1 and 2 of the IEMA Guidance (IEMA, 2023) as given above. The road links that have been considered in determining if the above rules are satisfied, and which form the study area, are listed below and shown in Figure 15-3: Traffic Count Locations (ES Volume II, EN070009/APP/6.3):

- A1085 Trunk Road, 100 m east of Ennis Road;
- A1085 Trunk Road, 1.34 km south of West Coatham Lane;
- A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue;
- A1085 Trunk Road, 500 m north of A1053 Tees Dock Road;
- A1085 Broadway, 235 m east of Birchington Avenue;
- A1380 High Street, 50 m east of Lackenby Lane;
- A66, 140 m east of Whitworth Road;
- A1046 Port Clarence Road, 20 m north of Beech Terrace;
- A178 Seaton Carew Road, 535 m north of Huntsman Drive;
- Unnamed Road, 725 m east of A178 Seaton Carew Road;
- A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout (National Highways (NH), 2023);
- A174 (West of Greystone Roundabout), located approximately 1 km west of the A174/A1053 Greystones roundabout (NH, 2022);
- A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street (DfT, 2022a);
- A1185 (west of A178 Seaton Carew Road), located approximately 800 m west of A178 Seaton Carew Road (DfT, 2022b); and

- B1275 Belasis Avenue, located approximately 1.6 km west of its junction with Cowpen Bewley Road.

Impact Assessment Methodology

- 15.3.14 The approach to the assessment for traffic and transport will follow the general process outlined in Chapter 2: Assessment Methodology (ES Volume I, EN070009/APP/6.2). Potential impacts will be assessed against the current and future baseline conditions as determined by available data and suitable modelling techniques, respectively.
- 15.3.15 The methodology for each assessment is outlined below, with further detail provided in the accompanying technical appendices (ES Volume III, EN070009/APP/6.4). Unless otherwise stated, the general process for each assessment must follow these steps:
- identify receptors within the appropriate study area from the Proposed Development Site;
 - identify the magnitude of any traffic impact through consideration of the scale, duration and location of activities being carried out during the construction phase;
 - establish the sensitivity of the area through determination of the sensitivity of receptors and their distance from construction activities;
 - determine the risk of significant effects on receptors occurring as a result of the magnitude of impact and the sensitivity of the area, assuming no additional mitigation (beyond the identified development design and impact avoidance measures) is applied;
 - determine the level of mitigation required based on the level of risk, to reduce potential impacts at receptors to insignificant or negligible; and
 - summarise the potential residual effects of the mitigated works.
- 15.3.16 The significance of the effect will be based on assessing the impact magnitude (i.e. the deviation from the baseline condition) and the sensitivity and value (which is synonymous with 'importance') of the receptor (see below). Temporary, permanent, direct and indirect impacts and associated significant effects without mitigation will be considered during the construction, operation and decommissioning phases of the Proposed Development in Section 15.6. It is intended that significant adverse environmental effects are avoided at the design stage and through embedded mitigation where possible, including the use of good working practices to minimise the construction impact. Embedded measures have been identified in Section 15.5.
- #### Value / Sensitivity of Receptors
- 15.3.17 The sensitivity of a road, or the immediate area through which it passes, can be defined by the type of user groups who may use it. Vulnerable users include elderly residents and children. It is also necessary to consider footpath and cycle route

networks that cross the roads within the study area. The link sensitivity criteria is presented below in Table 15-1.

15.3.18 A desktop exercise has been undertaken to classify the sensitivity of the routes within the study area. The classification of the link sensitivity is based on professional judgement. For example, if the route passes a school, care home or similar, it will have a higher sensitivity due to the presence of vulnerable users. Similarly, if the route passes through the middle of a town or village, it will have a higher sensitivity than if there was limited frontage development in the study area. Table 15-2 identifies the links, then assigns a sensitivity rating of either Negligible, Low, Medium, or High, together with the rationale.

15.3.19 This sensitivity rating, along with the magnitude, is then used to determine the significance of effect within Table 15-3.

Table 15-1: Link Sensitivity Criteria

SENSITIVITY OF RECEPTOR	DESCRIPTION
High	<p>Highway Links and Junctions:</p> <ul style="list-style-type: none"> • Two or more sensitive users present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) • Many residential properties with direct frontage to highway link being used as construction route (weekend and evening impacts) <p>Walk/Cycle Links including Public Rights of Way (PRoW): Lightly trafficked highway with on-road pedestrian/cycle route</p>
Medium	<p>Highway Links and Junctions (at least one of the following):</p> <ul style="list-style-type: none"> • One sensitive user present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) • Many residential properties with direct frontage to highway link being used as construction route (daytime impact) • Pedestrians using footways, ProW and/ or crossings on highway link • Cyclists using on-road designated cycle routes along highway link <p>Walk/Cycle Links including ProW: Heavily trafficked highway with off-road pedestrian/cycle route</p>
Low	<p>Highway Links and Junctions (at least one of the following):</p> <ul style="list-style-type: none"> • Few residential properties with direct frontage to the highway link being used as a construction traffic route • Workplaces with direct frontage to highway link being used as construction route • Cyclists using off-road designated cycle routes along highway link <p>Walk/Cycle Links including ProW: Lightly trafficked highway with off-road pedestrian/cycle route</p>

SENSITIVITY OF RECEPTOR	DESCRIPTION
Negligible	Highway Links and Junctions: No receptors along link Walk/Cycle Links including ProW: Pedestrian/cycle route not running alongside highway

15.3.20 Based upon Table 15-1, a desktop exercise has been undertaken to classify the sensitivity of the routes within the Study Area, presented in Table 15-2. This sensitivity rating, along with the magnitude of impact, is then used to determine the magnitude of effect within Table 15-2.

Table 15-2: Sensitivity of Transportation Link Receptors

LINK	DESCRIPTION	LINK SENSITIVITY	RATIONALE
1	A1085 Trunk Road, 100 m east of Ennis Road	Low	The road is a dual/single carriageway road and is subject to the National Speed Limit reducing to 40-miles per hour (mph) prior to the junction with Ennis Road. There is no frontage development along the route until reaching the junction with the A1042. A shared footway/cycleway is provided either side of the carriageway which is street lit.
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. A shared footway /cycleway is provided either side of the carriageway which is street lit.
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	High	The two-lane single carriageway is subject to a 30-mph speed limit with residential properties on either side and is street lit. Pedestrian footways are provided either side of the carriageway separated by a grass verge. On-road cycle lanes are provided either side of the carriageway. The road passes Outwood Academy Redcar approximately 800 m to the south of the A1085 Trunk Road.
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. A shared footway/ cycleway is provided either side of the carriageway which is street lit.
5	A1085 Broadway, 235 m east of Birchington Avenue	Medium	The two-lane single carriageway is subject to a 30-mph speed limit with residential properties on either side and is street lit. On-road cycle lanes are provided either side of the carriageway. Pedestrian footways are provided either side of the carriageway separated by the cycle lane and on-street parking bays.
6	A1380 High Street, 50 m east of Lackenby Lane	Medium	The two-lane single carriageway is subject to a 30-mph speed limit with a pedestrian footway provided on the northern side of the carriageway. The route passes a cluster of residential properties on the north side of the carriageway.
7	A66, 140 m east of Whitworth Road	Low	The road is a dual carriageway and is subject to a 50-mph speed limit. Any frontage development is industrial in nature.

LINK	DESCRIPTION	LINK SENSITIVITY	RATIONALE
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	High	The two-lane single carriageway is subject to a 30-mph speed limit and is street lit. A shared footway/cycleway is provided either side of the carriageway. Residential properties are located on the north side of the carriageway but are located a good distance back from the highway. High Clarence Primary School is located on this road.
9	A178 Seaton Carew Road, 535 m north of Huntsman Drive	Low	The two-lane single carriageway is subject to a de-restricted speed limit. No footways are provided along the route. There is no frontage development along the route which passes through open country.
10	Unnamed Road, 725 m east of A178 Seaton Carew Road	Low	The two-lane single carriageway is subject to a 40-mph speed limit and is street lit. No footways are provided either side of the carriageway. The road provides access to a number of petro-chemical facilities; therefore, any frontage is industrial in nature.
11	A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. There are no pedestrian or cycle facilities along the route.
12	A174 (West of Greystone Roundabout), located approximately 1 km west of the A174/A1053 Greystones roundabout	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. There are no pedestrian or cycle facilities along the route.
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	Low	The two-lane single carriageway is subject to a 40mph speed limit, With a footway on both sides and street lighting. There is frontage development, but this is industrial in nature, forming a direct link to the A19.
14	A1185, located approximately 800 m west of A178 Seaton Carew Road	Low	The two-lane single carriageway is subject to a de-restricted speed limit. No footways are provided along the route. There is no frontage development along the route which passes through open country.

LINK	DESCRIPTION	LINK SENSITIVITY	RATIONALE
15	B1275 Belasis Avenue, located approximately 1.6 km west of its junction with Cowpen Bewley Road	Medium	The two-lane single carriageway is subject to a de-restricted speed limit and is street lit. A footway is provided along the northern side of the carriageway. There is no frontage development along the route which passes through open country. Some residential properties further west along the wider route.

Potential Environmental Factors

15.3.21 The following environmental factors are susceptible to changes as a result of traffic.

Severance

15.3.22 With reference to the IEMA Guidance (IEMA, 2023), severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure and can also result from the difficulty of crossing a heavily trafficked road or a physical barrier.

15.3.23 The measurement of severance is difficult and different groups in a community may be more affected by severance than others. The Guidelines for the Environmental Assessment of Road Traffic (GEART) (Institute for Environmental Assessment (IEA), 1993) set out a range of indicators for determining the significance of severance with changes of in traffic flow of 30%, 60% and 90% regarded as producing “slight”, “moderate and “substantial” changes in severance.

15.3.24 Whilst these thresholds no longer appear directly in the IEMA Guidance, it does say that they have been established through planning case law, and are still considered to provide a starting point for the assessment, whilst also considering specific local conditions. This criterion has therefore been used within the magnitude criteria for severance as set out in Table 15-3, albeit it has been slightly amended to suit the assessment criteria.

Pedestrian Amenity

15.3.25 With reference to the IEMA Guidance (IEMA, 2023), pedestrian amenity is defined as the pleasantness of a journey and is affected by traffic flow, traffic composition and pavement width / separation from traffic.

15.3.26 GEART (IEA, 1993) states that that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible negative or positive impacts upon pedestrian amenity, and whilst these thresholds no longer appear in the IEMA Guidance they are still considered to provide a starting point for the assessment with any assessment also considered specific local conditions. This criterion has therefore been used within the magnitude criteria for severance as set out in Table 15-3, albeit it has been slightly amended to suit the assessment criteria.

Fear and Intimidation

15.3.27 With reference to the IEMA Guidance (IEMA, 2023), the extent of fear and intimidation is dependent upon, the total volume of traffic, HGV composition, speed of traffic and proximity of traffic to people and the quality of any non-motorised provision.

15.3.28 In order to assess the level of fear and intimidation, a weighting system will be adopted which quantifies the degree of hazard based upon average 18-hour traffic flows for both all vehicles and HGVs along with the average vehicle speeds along a link. This is calculated for both the baseline and construction phases of the Proposed Development and the change in any degree of hazard determines

whether any magnitude is either negligible, low, medium or high, and this is set out within Table 15-3.

Road User and Pedestrian Safety

15.3.29 Highway safety is assessed by the frequency and severity of injury accidents that are attended by the police and recorded in official accident statistics. Intensification of use or changes in the composition of traffic has the potential to have an impact on collision rates. The examination of recent collision statistics on routes within the study area highlight any hotspots that need further examination.

Hazardous Loads

15.3.30 Hazardous loads are assessed based on the estimated number and composition of such loads. Where the number of movements is considered to be significant, a risk analysis will be undertaken as part of this assessment to determine the need for and level of mitigation required and the likely impact of such an event.

Driver Delay

15.3.31 The use of industry standard junction capacity modelling programs provides a methodology to quantify junction delay. Driver delay is only likely to be significant where the highway network is at or close to capacity. Whilst this has been included within this chapter, the network is predicted to operate within capacity during the construction phase, and therefore this is not predicted to have any significant effect. Refer to Appendix 15A (ES Volume III, EN070009/APP/6.4) for full details of the junction assessments.

Magnitude of Impacts

Significance Criteria

15.3.32 Using the information as set out above, the magnitude of traffic impacts is defined in Table 15-3, and the criteria for fear and intimidation has been amended to reflect the use of the IEMA Guidance (IEMA, 2023).

Table 15-3: Traffic and Transport Assessment Framework – Magnitude of Impacts

TYPE OF IMPACT	MAGNITUDE OF IMPACT			
	VERY LOW	LOW	MEDIUM	HIGH
Severance	Change in total traffic flow of < 30%	Change in total traffic flow of 30% to 60%	Change in total traffic flow of 61% to 90%	Change in total traffic flow of >90%
Pedestrian amenity	Changes in traffic flow (or HGV component) less than 50%	Changes in traffic flow (or HGV component) of 50% to 100%	Changes in traffic flow (or HGV component) of 101% to 150%	Change in traffic flow (or HGV component) of >150%

TYPE OF IMPACT	MAGNITUDE OF IMPACT			
	VERY LOW	LOW	MEDIUM	HIGH
Fear and intimidation	No change in step changes	One step change in level, with <400 veh increase in average 18hr AV two-way all vehicle flow; and/or <500 HV increase in total 18hr HV flow	One step change in level, but with >400 veh increase in average 18hr AV two-way all vehicle flow; and/or >500 HV increase in total 18hr HV flow Two step changes in level	Two step changes in level
Highway safety	Magnitude of impact derived using professional judgment informed by the frequency and severity of recorded collisions within the study area and the forecast increase in traffic			
Hazardous Loads	Magnitude of impact derived using professional judgment informed by the frequency and routeing of hazardous loads within the study area and the forecast increase in traffic			
Driver delay	Magnitude of impact derived using professional judgment informed by the increase in vehicle delay and whether a junction is at, or close to capacity			

15.3.33 Impacts are defined as changes arising from the Proposed Development, and consideration of the result of these impacts on environmental receptors enables the identification of associated effects, and their classification (major, moderate, minor and negligible, and adverse, neutral or beneficial). Each effect has been classified both before and after mitigation measures have been applied.

15.3.34 The significance of an effect, and whether an effect is regarded as 'significant' for assessment purposes, is determined as a factor of the magnitude of the impact and the sensitivity of associated receptors.

15.3.35 The following terminology has been used in the assessment to define effects:

- adverse – detrimental or negative effects to an environmental resource or receptor;
- neutral – effects to an environmental resource or receptor that are neither adverse nor beneficial; or
- beneficial – advantageous or positive effect to an environmental resource or receptor.

15.3.36 By combining the receptor sensitivity with the magnitude of impact using the assessment matrix shown in Table 15-4, traffic effects can be classified as Negligible, Minor, Moderate or Major (Adverse or Beneficial).

Table 15-4: Classification of Effects

MAGNITUDE OF IMPACT	SENSITIVITY/IMPORTANCE OF RECEPTOR			
	HIGH	MEDIUM	LOW	VERY LOW
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

15.3.37 As outlined in Chapter 2: Assessment Methodology (ES Volume I, EN070009/APP/6.2), Major and Moderate (Adverse or Beneficial) effects are considered Significant, whilst those that are Minor (Adverse or Beneficial) or Negligible are considered Not Significant.

Sources of Information / Data

15.3.38 The following sources of information have been reviewed and have informed the assessment, with further details of the traffic data being included in the paragraph below:

- traffic count data collected in 2019;
- National Highways Webtris Traffic data from 2022 and 2023;
- DfT Count data from 2022 and 2023;
- road safety data from Crashmap; and
- data provided by the Applicant in regard to the traffic generation of both the construction and operational phases.

15.3.39 Between 19 November 2019 and 25 November 2019 there were 7-day Automatic Traffic Counts (ATCs) undertaken for Net Zero Teesside (NZN) (bp, 2021) at the following locations to provide a baseline on the road links in the study area:

- A1085 Trunk Road (north of the Main Site roundabout);
- A1085 Trunk Road (south of the Main Site roundabout);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (South of British Steel Lackenby Entrance);
- A1085 Broadway;
- A66 (west of A1053);
- B1380 High Street;

-
- A178 Seaton Carew Road;
 - A1046 Port Clarence Road, 20m north of Beech Terrace;
 - Unnamed road serving Seal Sands; and
 - B1275 Belasis Avenue.
- 15.3.40 In addition to the ATC data collected in 2019 data from the NH Webtris database (NH, n.d.) has also been utilised to reflect the most recent traffic flows as follows.
- 15.3.41 Data from the NH Webtris database (NH, n.d.) was obtained for the month of May 2022 and May 2023 for the following two links.
- A1053 Greystone Road (May 2023), and
 - A174 (west of Greystone roundabout) (May 2022).
- 15.3.42 Data from 2022 from the DfT road traffic database (DfT, 2022b and DfT, 2022c) was obtained for the following two links:
- A1046 Port Clarence Road, south of Port Clarence Road, and
 - A1185 (west of A178 Seaton Carew Road).
- 15.3.43 In addition to the above data, traffic counts were undertaken for the NZT project on Tuesday 19 November 2019 between the hours of 06:00 to 10:00 and 16:00 to 20:00 at the following junctions on the local highway network for the overall network morning (AM) and evening (PM) peak hours:
- MCC 1: A1085 / West Coatham Lane / Main Site access roundabout;
 - MCC 2: A1085 / A1053 roundabout; and
 - MCC 3: A1053 / A174/B1380 roundabout.
- 15.3.44 As set out in Section 15A.4: Existing Conditions in Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), the data obtained in 2019 is still considered to be valid, as the data obtained on the four links from 2022 and 2023 has been compared with data on the same links from 2019, with no material change in traffic flows being shown.

Consultation

Scoping Opinion

- 15.3.45 An EIA Scoping Opinion was requested from the Inspectorate on 6 April 2023. A response was received on 17 May 2023. For the Scoping Opinion and the Applicant's responses to them, refer to Appendix 1B and 1E respectively (ES Volume III, EN070009/APP/6.4).
- 15.3.46 A response was received with reference to Section 3.8 Traffic and Transport, which sets out comments in relation to operational traffic, future baseline, AILs and Hazardous Loads, which have been considered within this chapter, although no significant changes were required to the assessment.

Statutory Consultation

15.3.47 The PEI Report was published for statutory consultation on 14 September 2023 and the consultation period ended on 26 October 2023. A second statutory consultation was held between 13 December 2023 and 23 January 2024, and additional targeted consultation was held between 9 February 2024 and 10 March 2024. The matters raised have been reviewed and an explanation of how the Applicant has had regard to them is set out in the Consultation Report (EN070009/APP/5.1).

Use of the Rochdale Envelope

- 15.3.48 In order to ensure a robust assessment of the likely significance of the environmental effects of the Proposed Development, the EIA is being undertaken adopting the principles of the 'Rochdale Envelope' approach where appropriate in line with the Planning Inspectorate's ('the Inspectorate's') Advice Note 9 (The Inspectorate, 2018). This involves assessing the maximum (or where relevant, minimum) / realistic worst-case parameters for the elements where flexibility needs to be retained (building dimensions or operational modes for example).
- 15.3.49 As set out in Chapter 5 (ES Volume I, EN070009/APP/6.2), permitted preliminary works for Phase 1 are expected to start in the third quarter (Q3) of 2025 (subject to the granting of the DCO), with the main civils works beginning in Q4 of 2025. Construction of Phase 1 is anticipated to last approximately 32 to 36 months and is expected to be complete in Q2 2028.
- 15.3.50 The early enabling works for Phase 2 may overlap with commissioning for Phase 1 in Q2 2028. It is expected that the main civils works for Phase 2 will begin in Q3 of 2028 (after Phase 1 is commissioned) and be completed by the end of 2030. It is proposed that there will be no overlap between the main construction phases of Phases 1 and 2.
- 15.3.51 The assessment within this chapter is based purely on the peak of construction in June 2026 during Phase 1 only. This is because the combination of the Phase 2 construction peak plus the operational staff within Phase 1 results in a lower level of car trip and HGV trips on the network. Further detail on this is provided in Section 15A.5: Proposed Development Trip Generation of Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4).
- 15.3.52 Given the above, this assessment presents a reasonable 'worst-case' approach.
- 15.3.53 Details regarding the maximum and minimum parameters adopted for building sizes within the Rochdale Envelope defined for the Proposed Development do not have any material impact on vehicle numbers accessing the Main Site and the Connection Corridors. Similarly, where flexibility is to be retained in the Application, this is unlikely to have a material difference on the volumes of traffic accessing the Proposed Development Site during the construction phase. However, the assessment will consider worst case traffic flows as associated with the peak of construction.

Assumptions and Limitations

Assumptions

- 15.3.54 In line with the Inspectorate's Scoping Opinion, the following assumptions have been made with regard to the construction phase of the Proposed Development:
- phase 1 construction will start in Q4 2025 (PPW Phase 1 to commence in Q3 2025) and finish in Q2 2028;
 - phase 2 construction will commence in Q3 2028 (Enabling Works Phase 2 to commence in Q1 2028) and finish in Q4 2030;
 - the peak of construction will occur in Phase 1 in June 2026 (Month 12);
 - through the adoption of the Framework Construction Workers Travel Plan¹ (CWTP(s)) (developed by the EPC Contractor(s) in substantial accordance with the Framework CWTP (EN070009/APP/5.15)) an average car occupancy of 2 construction workers per car will be maintained throughout the construction phase;
 - at the peak of construction there will be a total of 1,300 Construction Workers and 111 HGVs per day one-way, which equates to a total two-way movement of 1,300 workers and 111 HGVs arriving and 1,300 workers and 111 HGVs departing each day;
 - no allowance for the delivery of construction materials by water or rail has been made but the selected EPC Contractor(s) will review options for the use of rail and water when sourcing construction materials, and particularly for the movement of Abnormal Invisible Loads (AILs) by the sea, which would potentially arrive at the RBT and be transported by road using the internal road network; and
 - all construction access routes to the Connection Corridor north of the River Tees are assumed to be via the A1046 Haverton Hill Rd / Port Clarence Road and the B1275, with the potential for temporary construction compound access points off the A178 Seaton Carew Road, A1185, Nelson Avenue, Cowpen Bewley Road and the unnamed road to Seal Sands (commonly known as Seal Sands Road).
- 15.3.55 The following assumptions have been made for the operational phase of the Proposed Development:
- once operational there will be a total of 100 staff working on Phase 1 by 2028 and a further 30 staff once Phase 2 becomes operational in Q4 2030.

Limitations

- 15.3.56 For the purposes of this assessment no allowance has been made for the delivery of construction materials by water or rail (in order to assess the worst-case

¹ It is possible that more than one Final CWTP(s) and Final CTMP(s) could be brought forward for approval by the EPC Contractor(s) depending on the phasing / work packaging approach undertaken. For the purposes of this Chapter, references to 'the' or 'a' Final CWTP / CTMP, should therefore be read as meaning any Final CWTP(s) / CTMP(s) that is brought forward.

construction road traffic impact), but the EPC Contractor(s) will review options for the use of rail and water when sourcing construction materials.

- 15.3.57 Driver delay has not been reviewed, within this chapter, as it is not considered to be required due to the capacity assessments of the local highway network as included within the Transport Assessment at Appendix 15A (ES Volume III, EN070009/APP/6.4), which conclude that the network will continue to operate within capacity during the construction phase. Therefore, as defined in the IEMA Guidance (IEMA, 2023), this is not at or close to capacity, as a result delays are not considered to be significant.

15.4 Baseline Conditions

Existing Baseline

Local Highway Network

- 15.4.1 The Main Site is located approximately 2 km north-west of Redcar and will be accessed via the existing roundabout junction with the A1085 and West Coatham Lane. The Connection Corridors cover land to the north and south of the River Tees as shown on Figures 4-1 to 4-8 (ES Volume II, EN070009/APP/6.3).
- 15.4.2 The A1085 Trunk Road is a dual / single carriageway road running east to west between Redcar and the A1053 Tees Dock Road and in the vicinity of the Proposed Development, is subject to a 60mph Speed Limit. The carriageway is street lit and a shared footway / cycleway is provided on either side of the road.
- 15.4.3 On the south side of the River Tees, travelling west from the Main Site access, the A1085 provides a link to the A1053 which in turn connects to the A174 to the south and the A66 to the north. The A1053 and A174 are part of National Highways strategic network. All other routes are managed by RCBC.
- 15.4.4 On the north side of the River Tees, the access to the construction works would be centred around the A178 Seaton Carew Road, which is a single carriageway road subject to a 60mph speed limit and provides the main north – south route within the vicinity of the works. An unnamed road would then provide a direct access from a roundabout with Seaton Carew Road directly into the Seal Sands area.
- 15.4.5 Access to the wider network and the A19 to the west would be via either the A1185, which heads towards the A689 Wolviston interchange in the north or via the A1046 Haverton Hill Road or B1275 Belasis Avenue to access the A19 in the south. Although there is a low bridge (4.6 m / 15' 3") on the A1046 which may restrict some HGV movements.

Walking

- 15.4.6 The Chartered Institution of Highways and Transportation (CIHT) document '*Providing for Journeys on Foot*' (CIHT, 2000) suggests a maximum walking distance of 2 km for journeys to work.

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- 15.4.7 Considering a 2 km walking catchment area, the potential for walking access to the Main Site is small with only the built-up area of Dormanstown on the western edge of Redcar located within a 2 km walking distance of the Main Site.
- 15.4.8 In terms of pedestrian facilities, a footway is provided on both sides of West Coatham Lane and Broadway West which is street lit. In addition, a shared footway / cycleway is provided along the entire length of the A1085 Trunk Road on either side of the carriageway.
- 15.4.9 At the A1085 / West Coatham Lane Roundabout, dropped kerbs and tactile paving are provided on all arms of the junction. Central refuges are also provided on the A1085 to allow pedestrians to cross the dual carriageway.
- 15.4.10 Given the limited walking catchment area, it is not therefore anticipated that walking trips will likely represent a practical mode for construction, operational and/or decommissioning staff.

Access Land

- 15.4.11 Access Land, in the context of the Proposed Development and its location, is considered to be land over which the English coastal route passes, and land to either side of it. Please refer to The Access to the Countryside (Coastal Margin) (England) Order 2010 (HM Government, 2010) for the full definition.
- 15.4.12 Access Land to the south of the River Tees which is within the Proposed Development Site is under a permanent restriction (HM Government, 2016) and as such is not considered within this ES as a potential access route for the public / construction workers journeys to work.
- 15.4.13 Access Land to the north of the River Tees which is within the Proposed Development Site is also under a permanent restriction (HM Government, 2019) and as such is not considered within this ES as a potential access route for the public / construction workers journeys to work.

Cycling

- 15.4.14 Cycling is a viable alternative to private car for journeys up to 8 km, providing a healthy, sustainable and environmentally friendly form of transport.
- 15.4.15 In respect of acceptable cycle distances, 'Local Transport Note 2/08: Cycling Infrastructure Design', published by the Department for Transport states that many utility cycle trips are less than 3 miles (approximately 5 km), but for commuter journeys a distance of 5 miles (approximately 8 km) is not uncommon. An 8 km catchment area includes Redcar, Marske-by-the-Sea and the suburbs of Eston, Normanby and South Bank to the east of Middlesbrough.
- 15.4.16 Within the vicinity of the Main Site there is a shared cycle / footway along the length of the A1085 Trunk Road between Redcar and Middlesbrough. Given the cycling infrastructure already in place on the local road network, there is potential for staff living within this catchment area to travel to the Proposed Development Site by bicycle and then use the internal links on internal roads within the South Tees

Development Corporation (STDC) and those being developed through the STDC Masterplan.

Public Transport

- 15.4.17 The nearest bus stops to the Main Site are located on West Coatham Lane approximately 250 m south-east of the Main Site entrance. Pedestrian crossing facilities in the form of drop kerbs and tactile paving are provided on all five arms of the A1085 / West Coatham Lane / Site Access Roundabout allowing for safe crossing of this junction.
- 15.4.18 There are five services that stop at the West Coatham Lane bus stops, namely services 62, X3, X3A, X4 and X4A. All bus services are run by Arriva Bus.
- 15.4.19 Bus Service 62 runs between Middlesbrough and New Marske via Dormanstown and Redcar. Service 62 operates a half hourly service Monday to Saturday apart from Sunday which operates an hourly service. The first bus departs Middlesbrough at 06:43 and New Marske at 06:25. The last bus departs Middlesbrough at 20:05 and New Marske at 19:45.
- 15.4.20 Bus Service X3 runs between Middlesbrough and Lingdale via Dormanstown, Redcar and Saltburn. Service X3 operates an hourly service Monday to Saturday. The first bus departs Middlesbrough at 08:25 and Lingdale at 06:44. The last bus departs Middlesbrough at 17:25 and Lingdale at 17:54.
- 15.4.21 Bus Service X3A runs between Middlesbrough and Brotton. Service X3A operates an hourly service Monday to Saturday. The first bus departs Middlesbrough at 08:50 and Brotton at 09:15. The last bus departs Middlesbrough at 17:55 and Brotton at 17:15.
- 15.4.22 Bus Service X4 runs between Middlesbrough and Whitby via Redcar and Saltburn. Service X4 operates a half hourly service Monday to Saturday apart from Sunday which operates an hourly service. The first bus departs Middlesbrough at 06:02 and Whitby at 05:59. The last bus departs Middlesbrough at 18:10 and Whitby at 17:04.
- 15.4.23 Bus Service X4A runs between Middlesborough and Whitby via Redcar and Saltburn. Service X4A operates an hourly evening service Monday to Sunday.
- 15.4.24 Given the frequency of bus services, whilst there is a reasonable level of service, given the type of activity in relation to construction workers and the facilities within the wider site it is not considered that this will form a realistic choice for workers travelling to the Main Site.
- 15.4.25 The nearest railway station to the Proposed Development Site is British Steel, Redcar, which is located within the Proposed Development Site. The station is located on the Tees Valley Line and is operated by Northern Rail.
- 15.4.26 Historically, there were two eastbound services per day to Saltburn via Redcar and two westbound services per day to Bishop Auckland via Middlesbrough and Darlington. Northern Rail suspended all services to and from the station on 14 December 2019 due to the lack of passengers using the station.

15.4.27 However, there is potential for the station to be re-opened in the future for both construction staff and operational staff to use the train as a more sustainable mode of traveling to work. However, as there is no certainty of this being brought forward, it has not been assumed for the purposes of the assessment. The nearest station to the Main Site that is still open is Redcar Central, located approximately 3 km to the east.

Existing Traffic Flows

15.4.28 The following highway links form the highway network of interest for this assessment and baseline 24-hour Annual Average Daily Traffic (AADT) two-way link flows are provided in Table 15-5.

Table 15-5: 2019 Baseline Annual Average Daily Traffic (AADT) Flows

	LINK	TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
1	A1085 Trunk Road, 100 m east of Ennis Road	12,274	1,049	8.5%
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	14,387	1,275	8.9%
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	11,791	762	6.5%
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	16,058	2,012	12.5%
5	A1085 Broadway, 235 m east of Birchington Avenue	8,093	521	6.4%
6	A1380 High Street, 50 m east of Lackenby Lane	9,835	826	8.4%
7	A66, 140 m east of Whitworth Road	19,865	3,662	18.4%
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	7,612	896	11.8%
9	A178 Seaton Carew Road, 535 m north of Huntsman Drive	7,814	998	12.8%
10	Unnamed Road, 725 m east of A178 Seaton Carew Road	4,206	860	20.4%
11	A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout (May 2023 data)	12,808	1,204	9.4%
12	A174 (West of Greystone Roundabout), 1 km west of the A174/ A1053 Greystones roundabout (May 2022 data).	30,651	2,008	6.6%

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street. (May 2022 data)	14,010	1,115	8.0%
14	A1185, 800 m west of A178 Seaton Carew Road (May 2022 data)	4,874	1,050	21.5%
15	B1275 Belasis Avenue	2,451	72	2.9%

Personal Injury Accidents

- 15.4.29 Accident data has been taken into consideration in line with the Travel Plans, Transport Assessments and Statements Planning Practice Guidance (DfT, 2014), which advises an analysis of any road traffic incidents that have occurred within the most recent five-year period within the locality of the Proposed Development Site.
- 15.4.30 Personal Injury Accident (PIA) data has been obtained from the Crashmap.co.uk website (CrashMap, 2023) and accounts for accidents that have occurred within the selected areas between 1 January 2017 and 31 December 2022 (the most up to date data available at the time of preparing this assessment).
- 15.4.31 A full analysis of the most recent PIA data has been included in Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), therefore only a summary of the data is included within this chapter.

Personal Injury Accidents – South of the Tees

- 15.4.32 Within the defined area to the south of the River Tees, a total of 50 accidents occurred over the five-year study period (2017 to 2021). Of these accidents, 41 were classed as slight in severity, eight were classed as serious, and one was classed as fatal. A breakdown of all accidents within this time period, within the study area south of the River Tees, is provided in Table 15-6.

Table 15-6: Accident Data Summary – South of the River Tees

YEAR	ACCIDENT SEVERITY			
	SLIGHT	SERIOUS	FATAL	TOTAL
2017	5	1	0	6
2018	10	3	0	13
2019	7	0	0	7
2020	6	3	1	10
2021	13	1	0	14
TOTAL	41	8	1	50

North of the Tees

15.4.33 Within the defined area outlined to the north of the River Tees, a total of 12 accidents occurred over the five-year study period (2017 to 2021). Of these accidents, nine were classed as slight, three were classed as serious, and none were classed as fatal. A breakdown of all accidents within this time period, within the study area north of the River Tees, is provided in Table 15-7.

Table 15-7: Accident Data Summary – North of the River Tees

YEAR	ACCIDENT SEVERITY			
	SLIGHT	SERIOUS	FATAL	TOTAL
2017	1	1	0	2
2018	2	0	0	2
2019	5	1	0	6
2020	0	1	0	1
2021	1	0	0	1
TOTAL	9	3	0	12

15.4.34 From the above, there is not considered to be any existing underlying road safety problem that will impact upon the Proposed Development.

Future Baseline

15.4.35 It is currently anticipated that (subject to the necessary consents being granted and an investment decision being made), PPW Phase 1 will begin in Q3 2025 with the construction of Phase 1 commencing in Q4 2025 and be completed in Q2 2028, and the Enabling Works Phase 2 will start in Q1 2028 and Construction Phase 2 will start in Q3 2024, and be complete in Q4 2030.

15.4.36 The actual peak of construction will occur during Phase 1 in month 12 (June 2026) based on the construction workforce and HGV profile (see Section 15.6). This has therefore been used as the worst-case. During the peak of construction, both construction of the Main Site and the associated pipeline network and utility connections will take place concurrently.

15.4.37 Therefore, based upon the above a future baseline year of 2026 will be taken forward into the assessments.

TEMPRO Factors

15.4.38 The future baseline year flows have been derived by applying the national standard programme Trip End Model Presentation Program (TEMPRO) growth factors (TEMPRO 7.2b) to the above flows and are indicated in Table 15-8. These growth factors have been taken into account when comparing the baseline and future traffic scenarios.

Table 15-8: TEMPRO Traffic Growth Factors

YEAR	GROWTH FACTOR FROM TEMPRO
2019 to 2026 Daily	1.054
2019 to 2026 AM Peak	1.055
2019 to 2026 PM Peak	1.055
2022 to 2026 Daily	1.048
2023 to 2026 Daily	1.036

15.4.39 The above has been used to predict the future baseline traffic at the year of peak construction and which will also make an applicable allowance for future developments within the local area. This future baseline scenario has been taken forward into the cumulative assessment also, as assessed within Section 15.8 of this Chapter.

Future Baseline Traffic

15.4.40 Future year baseline traffic flows for the assessment year of peak of construction are presented in Table 15-9.

Table 15-9: 2026 Baseline Traffic Flows AADT

	LINK	TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
1	A1085 Trunk Road, 100 m east of Ennis Road	12,948	1,107	8.5%
2	A1085 Trunk Road, 1.3 km south of West Coatham Lane	15,176	1,345	8.9%
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,438	804	6.5%
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	16,940	2,122	12.5%
5	A1085 Broadway, 230 m east of Birchington Avenue	8,537	549	6.4%
6	A1380 High Street, 50 m east of Lackenby Lane	10,375	871	8.4%
7	A66, 140 m east of Whitworth Road	20,955	3,863	18.4%

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,030	945	11.8%
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,243	1,053	12.8%
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,437	907	20.4%
11	A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout	13,265	1,247	9.4%
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	32,129	2,105	6.6%
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	14,686	1,169	8.0%
14	A1185, 800 m west of A178 Seaton Carew Road	5,109	1,101	21.5%
15	B1275 Belasis Avenue	2,586	76	2.9%

15.4.41 The above shows that the highest baseline HGV percentage is on the A66, and on the unnamed road to the north side of the River Tees.

Other Developments

15.4.42 The full shortlist of cumulative development sites, presented in Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2), has been included with further details provided within Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4).

15.5 Proposed Development Design and Impact Avoidance

15.5.1 The EIA process aims to avoid, prevent, reduce or offset potential environmental effects through design and / or management measures. These are measures that are inherent in the design and construction of the Proposed Development (also known as 'embedded measures').

15.5.2 The following impact avoidance measures have either been incorporated into the design or are standard construction or operational practices. These measures have,

therefore, been taken into account during the impact assessment and will be secured by a Requirement of the Draft DCO (EN070009/APP/4.1).

Construction

- 15.5.3 The Framework Construction Environmental Management Plan (CEMP) (EN070009/APP/5.12), which sets out the key measures to be employed during the construction of the Proposed Development, to control and minimise the impacts on the environment. The Framework CEMP sets out how impacts upon Traffic and Transport will be managed during construction. A Final CEMP(s) will be prepared by the EPC Contractor(s) in accordance with the Framework CEMP prior to construction.
- 15.5.4 The submission, approval, and implementation of the Final CEMP(s) will be secured by a Requirement of the Draft DCO (EN070009/APP/4.1).
- 15.5.5 The EPC Contractor(s) will implement a range of good practice mitigation measures during the construction phase to minimise traffic impacts upon local highways – this includes:
- The EPC Contractor(s) will implement a Final CWTP(s) which will include measures and procedures to encourage construction workers to adopt modes of transport which reduces reliance on single occupancy private car use (a Framework CWTP upon which this will be based has been prepared and included with the ES (EN070009/APP/5.15)).
 - Assessing the potential for implementation of construction worker minibuses and car sharing options (to be considered as part of the Framework CWTP (EN070009/APP/5.15)), with the aim that this would then be adopted by the EPC Contractor(s) as part of the Final CWTP(s);
 - Each EPC Contractor(s) will implement a Final Construction Traffic Management Plan (CTMP(s)) to control the impact of HGVs on the local road network during construction (a Framework CTMP has been prepared and included with the ES (EN070009/APP/5.16)).
 - Working with suppliers to ensure that all relevant materials (including chemicals) brought to the Proposed Development Site that are classified as hazardous are transported in compliance with applicable regulations including the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG Regs) (as amended) (HM Government, 2009), during the construction, commissioning and (operational) phases. This will include, for example, consignments being marked with the familiar “Emergency Access Codes” and including a telephone number for advice in the event of an emergency.
 - Implementation of a Final CEMP(s) which will be produced by the EPC Contractor(s) in accordance with the Framework CEMP (EN070009/APP/5.12) prior to construction and will be produced in accordance with the framework, which deals with matters which will influence traffic flows (e.g. efficient waste

management). This will be secured via Requirement of the Draft DCO (EN070009/APP/4.1).

- As set out in Section 6 of the Framework CTMP (EN070009/APP/5.16), a formal process of liaison between all stakeholders (Contractors, RCBC Highways and NH) would be set up, with one of the objectives being to liaise with other contractors in order, where possible, to co-ordinate works and programme.

Operation

- 15.5.6 Workforce numbers during operation will be a maximum of 130 people (staff) following the opening of both Phases 1 and 2 (with a maximum of 100 staff being employed as part of Phase 1 only). Operations staffing will be on a shift basis to be spread over a 24-hour period.
- 15.5.7 However, during 28-day maintenance periods which are likely to occur approximately every four years, there would be up to 400 people on site. Any impact of this would, be managed through the adoption of a plant turnaround travel plan, produced by the Applicant as required and approved by the LPA.

Decommissioning

- 15.5.8 A Decommissioning Environmental Management Plan (DEMP) would be produced pursuant to a Requirement of the Draft DCO (EN070009/APP/4.1). The DEMP would consider in detail all potential environmental risks on the Proposed Development Site and contain guidance on how risks can be removed or mitigated. This will include details of how traffic and transport should be managed during decommissioning. The DEMP would also include an outline programme of works.
- 15.5.9 To minimise the impacts of decommissioning upon local highways, a Decommissioning Traffic Management Plan (DTMP) would be prepared to control the impacts of decommissioning worker traffic and HGVs, this is secured pursuant to a Requirement in the Draft DCO (EN070009/APP/4.1).
- 15.5.10 Due to this activity being several years in the future, the baseline conditions cannot be estimated with any accuracy and as such no further assessment is possible, although any impact is likely to be similar to the construction phase.

15.6 Impacts and Likely Significant Effects

Construction

Introduction

- 15.6.1 This section sets out a summary of the trip generation during the construction phase only, with full details being included within Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4).
- 15.6.2 The Proposed Development will be served from a total of seven construction compounds, shown in Figure 5-1: Construction Access and Temporary Construction Compounds (ES Volume II, EN070009/APP/6.3).
- 15.6.3 The proposed accesses to each of the above compounds are set out as follows:

South of the River Tees

- Main Site Compound would take access through the internal road network directly from the A1085 / Steel House Gate / West Coatham Lane roundabout;
- RBT Satellite Compound would take access through the internal road network directly from the A1085 / Steel House Gate / West Coatham Lane roundabout; and
- Wilton International Satellite Compound would take access through the internal road network directly from the A1085 / Steel House Gate / West Coatham Lane roundabout via the southern arm into the Wilton site to the south of the A1085.

North of the River Tees

- Seal Sands Compound, with access from the unnamed road to the east of the Seal Sand roundabout, and whilst there are some existing access points into the site - these will need to be improved in order to form an appropriate construction access;
- Greatham Satellite Compound has an existing access onto the A178, but would need to be checked to ensure that it can safely accommodate all vehicle movements, and some works may be required;
- Cowpen Bewley Satellite Compound currently has two potential means of access either via the A1185 via an existing road which currently serves the Saltholme Power Station or alternatively via an access to the Saltholme 275kv Substation. Should these not be available then a new construction access would need to be constructed onto the A1185; and
- Billingham Industrial Park Satellite Compound has an existing access from Haverton Hill Road via the entrance to the CF Billingham Site East Gate.

15.6.4 It has been assumed that all construction compounds to the south of the River Tees will be accessed via the A1085 Trunk Road / Teesworks Steel House Gate roundabout.

15.6.5 With all construction traffic to the north of the River Tees using the A178 Seaton Carew Road or A1185 to access the unnamed road to the east of the Seal Sands roundabout.

15.6.6 The assessment below includes all elements of the Proposed Development Site, including the Main Site and the Connection Corridors north and south of the River Tees. The below provides only a summary with full details being included within Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4)

Construction Workers

15.6.7 With reference to Section 15A.4 of Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), there is predicted to be a total of 1,300 Construction Workers on site during the peak of construction, which is split

between the Main Site and the Connection Corridors on both sides of the River Tees, as outlined below.

- 15.6.8 Based upon measures as set out in Framework CWTP (EN070009/APP/5.15), it has been assumed that there will be an average of 2 workers per car, resulting in 650 daily car trips for the total number of 1,300 Construction Workers at the peak of construction.
- 15.6.9 The worker car trips can then be further divided with 71% travelling to and from the Main Site and 29% travelling to and from the construction compounds associated with the Connection Corridors. With the workers for the Connection Corridors being split to each compound in accordance with the assumed length of pipeline served by each location.
- 15.6.10 The table from Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), setting out how the 650 construction worker car trips are distributed across the construction activities is repeated here for ease of reference. Please note any minor variations in totals are due to rounding errors and do not materially affect any of the assessments.

Table 15-10: Construction Worker Traffic Data

LOCATION	PERCENTAGE SPLIT OF TRAFFIC (%)	ARRIVALS	DEPARTURES	TWO WAY
Main Site				
Construction worker car trips per day to Main Site (Main Site Compound)	100%	462	462	923
Total	100%	462	462	923
Pipeline North of the River				
Construction car trips per day to Billingham Industrial Park Satellite Compound	21%	24	24	48
Construction car trips per day to Cowpen Bewley Satellite Compound	26%	29	29	58
Construction car trips per day to Greatham Satellite Compound	28%	32	32	64
Construction car trips per day to Seal Sands Compound	25%	28	28	56
Total	100%	113	113	226

LOCATION	PERCENTAGE SPLIT OF TRAFFIC (%)	ARRIVALS	DEPARTURES	TWO WAY
Pipeline South of River				
Construction car trips per day to RBT Satellite Compound	100%	75	75	150
Construction car trips per day to Main Site Compound	0%	Zero as all Pipeline traffic to the south of the River Tees is assumed to use the RBT Satellite Compound		
Construction car trips per day to Wilton International Satellite Compound	0%	Zero as all Pipeline traffic to the south of the River Tees is assumed to use the RBT Satellite Compound		
Total	100%	75	75	150

HGVs

- 15.6.11 With reference to Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), at the peak month of construction in June 2026, there is predicted to be a total of 2,210 HGVs which assuming a 20-working day month equates to an average of 111 per day, with 81 travelling to the Main Site and 30 per day traveling to the Connection Corridors.
- 15.6.12 As with the construction workers, the HGVs travelling to and from the Connection Corridors have again been split north and south of the River Tees based upon the length of pipeline on each side of the river and the lengths of pipeline served by each construction compound.
- 15.6.13 The table from Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), setting out how the 111 one-way daily HGV trips are distributed across the construction activities can then be repeated for ease of reference. Please note any minor variations in totals is due to rounding errors and does not materially affect any of the assessments.

Table 15-11: Construction HGV Traffic data

LOCATION	PERCENTAGE SPLIT OF TRAFFIC (%)	ARRIVALS	DEPARTURES	TWO WAY
Main Site				
Construction worker car trips per day to Main Site	100%	81	81	162
Total	100%	81	81	162

LOCATION	PERCENTAGE SPLIT OF TRAFFIC (%)	ARRIVALS	DEPARTURES	TWO WAY
Pipeline North of River				
Construction car trips per day to Billingham Industrial Park Satellite Compound	21%	4	4	8
Construction car trips per day to Cowpen Bewley Satellite Compound	26%	5	5	10
Construction car trips per day to Greatham Satellite Compound	28%	5	5	10
Construction car trips per day to Seal Sands Compound	25%	5	5	10
Total	100%	19	19	38
Pipeline South of River				
Construction car trips per day to RBT Satellite Compound	50%	6	6	12
Construction car trips per day to Main Site Compound	25%	3	3	6
Construction car trips per day to Wilton International Satellite Compound	25%	3	3	6
Total	100%	12	12	24

Total Construction Traffic – Workers and HGVs

15.6.14 The total construction traffic on each link can be assigned as follows in Table 15-12, with full details being included within Section 15A.4 and Table 15A-34 of Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4).

Table 15-12: Construction Traffic Flows

LINK		DAILY CONSTRUCTION TRAFFIC	
		TOTAL VEHICLES	TOTAL HGVs
1	A1085 Trunk Road, 100 m east of Ennis Road	289	0
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	1,070	185

LINK		DAILY CONSTRUCTION TRAFFIC	
		TOTAL VEHICLES	TOTAL HGVS
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	145	0
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	1,070	185
5	A1085 Broadway, 230 m east of Birchington Avenue	238	0
6	A1380 High Street, 50 m east of Lackenby Lane	56	0
7	A66, 140 m east of Whitworth Road	719	92
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	225	36
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	225	36
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	263	36
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	197	92
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	141	92
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	113	18
14	A1185, 800 m west of A178 Seaton Carew Road	73	36
15	Belasis Avenue	113	18

Peak Construction Year Assessment

- 15.6.15 Based on the total construction traffic from Table 15-14, Table 15-13 summarises the likely changes in link flows within the study area for the assessment year peak of construction, 2026, using the 2026 Baseline traffic data from Table 15-9.

Table 15-13: 2026 Baseline Plus Peak of Construction Magnitude of Impact

LINK		2026 BASELINE		CONSTRUCTION TRAFFIC (DAILY TWO WAY)		PERCENTAGE INCREASE (%)	
		DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	12,948	1,107	289	0	2.2%	0.0%
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	15,176	1,345	1070	185	7.1%	13.7%
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,438	804	145	0	1.2%	0.0%
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	16,940	2,122	1070	185	6.3%	8.7%
5	A1085 Broadway, 230 m east of Birchington Avenue	8,537	549	238	0	2.8%	0.0%
6	A1380 High Street, 50 m east of Lackenby Lane	10,375	871	56	0	0.5%	0.0%
7	A66, 140 m east of Whitworth Road	20,955	3,863	719	92	3.4%	2.4%
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,030	945	225	36	2.8%	3.8%

LINK		2026 BASELINE		CONSTRUCTION TRAFFIC (DAILY TWO WAY)		PERCENTAGE INCREASE (%)	
		DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,243	1,053	225	36	2.7%	3.4%
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,437	907	263	36	5.9%	4.0%
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	13,265	1,247	197	92	1.5%	7.4%
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	32,129	2,105	141	92	0.4%	4.4%
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	14,686	1,169	113	18	0.8%	1.5%
14	A1185, 800 m west of A178 Seaton Carew Road	5,109	1,101	73	36	1.4%	3.3%
15	Belasis Avenue	2,586	76	113	18	4.4%	23.7%

15.6.16 As set out in Table 15-13, the increase in traffic flows, including HGVs, associated with the construction of the Proposed Development will result in some increases in traffic flows, and in accordance with IEMA Guidance (IEMA, 2023), only those highly sensitive links that show a greater than 10% increase in total traffic flows or, for all other links, a greater than 30% increase in total traffic or the HGV component, are considered when assessing the traffic impacts upon receptors.

15.6.17 The links predicted to experience an increase of above 10% are Link 2 A1085 Trunk Road, 1.34 km south of West Coatham Lane, and Link 15 Belasis Avenue, which have a low and medium level of sensitivity respectively. The increase in HGVs on the A1085 Trunk Road is 13.7% with a 23.7% increase on Belasis Avenue.

15.6.18 Considering both the link sensitivity and the associated traffic impacts, effects are assessed to be Negligible (Not Significant) for both, with the exception of Road safety on Belasis Avenue where the impact is Minor (Not Significant).

Severance

15.6.19 The predicted change in total traffic associated with the construction of the Proposed Development is considerably less than 30% on each link road (Very Low impact). Therefore, the severance effect upon all links is assessed to be Negligible (Not Significant).

Pedestrian Amenity

15.6.20 The change in total traffic (or HGV component) during the construction of the Proposed Development is considerably less than 50% on each link road (Very Low impact). Therefore, the effect upon pedestrian amenity for all links is assessed to be Negligible (Not Significant).

Fear and Intimidation

15.6.21 No step change is predicted and as such the magnitude of impact is considered to be Negligible (Not Significant).

Highway Safety

15.6.22 Accident data for the most recent five years has been acquired for the study area and is summarised in Section 15.4. The statistics provide information on the location and severity of each PIA. Given that the level of increase in traffic flows resulting from the construction of the Proposed Development on road links is negligible, the effect on highway safety is also considered to be Negligible or Minor (Not Significant).

Driver Delay

15.6.23 Based upon the above percentage increases in traffic at the peak year of construction 2025, Table 15-14 provides an overview of the magnitude of impact for each link with respect to each of the transport related impacts, based upon the magnitude of impact criteria as set out in Table 15-3.

Table 15-14: H2Teesside Peak Month of Construction – Magnitude of Impact

	LINK	SENSITIVITY	PERCENTAGE INCREASE (%)		SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
			TOTAL VEHICLES	TOTAL HGVS				
1	A1085 Trunk Road, 100 m east of Ennis Road	Low	2.2%	0.0%	Very Low	Very Low	Very Low	Very Low
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	Low	7.1%	13.7%	Very Low	Very Low	Very Low	Very Low
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	High	1.2%	0.0%	Very Low	Very Low	Very Low	Very Low
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	Low	6.3%	8.7%	Very Low	Very Low	Very Low	Very Low
5	A1085 Broadway, 230 m east of Birchington Avenue	Medium	2.8%	0.0%	Very Low	Very Low	Very Low	Very Low
6	A1380 High Street, 50 m east of Lackenby Lane	Medium	0.5%	0.0%	Very Low	Very Low	Very Low	Very Low
7	A66, 140 m east of Whitworth Road	Low	3.4%	2.4%	Very Low	Very Low	Very Low	Very Low
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	High	2.8%	3.8%	Very Low	Very Low	Very Low	Very Low
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	Low	2.7%	3.4%	Very Low	Very Low	Very Low	Very Low

LINK	SENSITIVITY	PERCENTAGE INCREASE (%)		SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY	
		TOTAL VEHICLES	TOTAL HGVS					
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	Low	5.9%	4.0%	Very Low	Very Low	Very Low	Very Low
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	Low	1.5%	7.4%	Very Low	Very Low	Very Low	Very Low
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	Low	0.4%	4.4%	Very Low	Very Low	Very Low	Very Low
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	Low	0.8%	1.5%	Very Low	Very Low	Very Low	Very Low
14	A1185, 800 m west of A178 Seaton Carew Road	Low	1.4%	3.3%	Very Low	Very Low	Very Low	Very Low
15	Belasis Avenue	Medium	4.4%	23.7%	Very Low	Very Low	Very Low	Low

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- 15.6.24 As indicated in Table 15-14 above, all of the links assessed are predicted to experience a very low magnitude of impact for each type of impact considered.
- 15.6.25 Based upon the above impact magnitude as defined in Table 15-14 and the sensitivity rating of each link taken from Table 15-2, the predicted classification of effects during the peak of construction are summarised in Table 15-15 below as based upon the criteria set out in Table 15-4.

Table 15-15: Classification of Environmental Effects at the Peak of Construction for the Proposed Development

	LINK	SENSITIVITY	SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
1	A1085 Trunk Road, 100 m east of Ennis Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	High	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
5	A1085 Broadway, 230 m east of Birchington Avenue	Medium	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
6	A1380 High Street, 50 m east of Lackenby Lane	Medium	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
7	A66, 140 m east of Whitworth Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	High	Minor Adverse Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant

LINK		SENSITIVITY	SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
14	A1185, 800 m west of A178 Seaton Carew Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
15	Belasis Avenue	Medium	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Minor Adverse Not Significant

Public Rights of Way

- 15.6.26 As discussed in Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2), construction of the Proposed Development has the potential to result in temporary and permanent loss of open space. With regard to PRoWs, two PRoWs within Cowpen Bewley Woodland Park will close temporarily during construction. However, the nature of the works will be short term, and the affected PRoWs will not be closed concurrently to allow for a route of access for users within the Park.
- 15.6.27 One PRoW (England Coast Path) will also be temporarily closed at two different points during construction. Each closure will be for six months. In addition, another PRoW (Teesdale Way LDR) will also be closed for a period of six months.
- 15.6.28 This assessment of the traffic and transport effects during construction for the Proposed Development has concluded that the traffic and transport effects within the defined study area would be Negligible to Minor Adverse (Not Significant) for all of the assessment criteria previously defined in Section 15.3.

Operation

- 15.6.29 As set out in the Scoping Opinion, *“Having considered the nature and characteristics of the Proposed Development, the Inspectorate agrees that subject to confirmation of the number and type of all operational vehicle movements (i.e. HGVs in addition to staff) in the ES description of development, operational traffic movements are not likely to result in significant effects and that an assessment of this matter can be scoped out of the ES. Agreement should be sought from the relevant Highways Authority.”*
- 15.6.30 We have therefore set out in more detail the level of traffic expected during the operational phase of the Proposed Development to demonstrate why any impact will not be severe and therefore has been scoped out of this assessment.
- 15.6.31 Operational workforce peak numbers for Phases 1 and 2 combined are expected to be a maximum of approximately 130 people (staff) on a shift basis to be spread over a 24-hour period. Although this could increase during periods of periodic maintenance to around 400 workers on site, which is considered to be relatively infrequent and would be managed in liaison with the Local Highway Authority so as to minimise any impacts through a turnaround travel plan.
- 15.6.32 There would also be a total of 50 LGV and 15 HGV movements throughout the day during the operational phase.
- 15.6.33 Once the Proposed Development is operational, traffic flows are therefore expected to be very low – significantly lower than those experienced during the construction period. The overall transportation effects during the operation of the Proposed Development are therefore not considered to be severe.

Decommissioning

- 15.6.34 Detailed information regarding the decommissioning of the Proposed Development is yet not available, given that its design life is 25 years. However, the operational life could be longer subject to market and plant condition. There are expected to be some traffic movements associated with the removal (and recycling) of material arising from decommissioning and potentially the import of materials for land restoration and re-instatement. However, vehicle numbers are not expected to be any higher than those experienced during the construction period.
- 15.6.35 Current baseline data collected for the purposes of this assessment is not valid at the year of decommissioning. However, as it is unlikely that baseline traffic figures on local roads will reduce appreciably, it is considered that the percentage increase in traffic due to decommissioning would be Negligible, and that overall, the effects of decommissioning traffic would be no greater than that of construction traffic. Notwithstanding, a DTMP would be implemented during the decommissioning phase to control the impact and routing of HGVs, this is secured via a Requirement in the Draft DCO (EN070009/APP/4.1). Therefore, no further assessment has been undertaken.

15.7 Essential Mitigation and Enhancement Measures

Construction

Essential Mitigation

- 15.7.1 No essential mitigation measures are considered necessary at this stage. However, the EPC Contractor(s) will review options for the use of rail and water transport when sourcing construction materials. The EPC Contractor(s) will also review the use of rail travel for construction staff accessing the Proposed Development Site potentially using the existing Redcar British Steel railway station (currently mothballed) if that is brought back into use.

Enhancement Measures

- 15.7.2 Potential use of the the Teesworks Park and Ride site located on the A1085 Trunk Road. It has the potential to reduce traffic generated by travel to the individual construction compounds by allowing workers to park there and then be taken by minibus to the working areas. However, as it is being delivered by a third party, it has not been assumed to be used for assessment purposes but is referenced in the Framework CWTP.

Operation

- 15.7.3 No further measures are considered for the Operation Phase outside of the Proposed Development Design and Impact Avoidance / Embedded Mitigation.

Decommissioning

- 15.7.4 No further measures are considered for the Decommissioning Phase outside of the Proposed Development Design and Impact Avoidance / Embedded Mitigation.

15.8 Cumulative Effects

15.8.1 There is the potential for cumulative traffic and transport effects as a result of the Proposed Development, where effects associated with it may act in conjunction with other planned projects and local plan allocations in the vicinity (hereafter referred to as 'other developments').

Cumulative Effects During Construction

15.8.2 The details of the other developments are included within Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4) and with reference to Appendix 15A, Table 15A-46 the additional levels of traffic due to the other developments within the study area can be given as follows in Table 15-16, with the main ones, in terms of traffic and transport, being NZT, HyGreen, York Potash, Low Grange Farm and the South Tees Development Corporation proposals for the immediate area adjacent to the Proposed Development.

15.8.3 An assessment of the potential for cumulative effects upon traffic during the peak year of the construction phase of the Proposed Development is included within Table 15-16, below.

Table 15-16: Other Developments Traffic

LINK		DAILY CUMULATIVE TRAFFIC	
		TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	2,519	404
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	8,886	1,078
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	367	36
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	9,220	1,118
5	A1085 Broadway, 230 m east of Birchington Avenue	3,558	35
6	A1380 High Street, 50 m east of Lackenby Lane	405	58
7	A66, 140 m east of Whitworth Road	9,376	1,645
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	16	7
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	24	10
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	146	58

LINK		DAILY CUMULATIVE TRAFFIC	
		TOTAL VEHICLES	TOTAL HGVS
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	7,943	1,577
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	4,003	1,173
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	24	10
14	A1185, 800 m west of A178 Seaton Carew Road	24	10
15	Belasis Avenue	24	10

15.8.4 In order to determine the magnitude of impact, the Proposed Development peak of construction traffic flows from Table 15-12 have been combined with the other developments traffic from Table 15-16 to provide a new Proposed Development plus other developments traffic scenario, which has then been considered against the 2026 baseline traffic from Table 15-9 and this is set out in Table 15-17 below.

Table 15-17: Percentage Increase in Traffic due to Other Developments and the Proposed Development in 2026

LINK		2026 BASELINE FLOW		OTHER DEVELOPMENTS PLUS PEAK OF H2TEESSIDE CONSTRUCTION TRAFFIC		PERCENTAGE INCREASE (%)	
		DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	12,948	1,107	2,809	404	21.7%	36.5%
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	15,176	1,345	9,956	1,263	65.6%	93.9%
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,438	804	512	36	4.1%	4.4%
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	16,940	2,122	10,290	1,303	60.7%	61.4%

LINK		2026 BASELINE FLOW		OTHER DEVELOPMENTS PLUS PEAK OF H2TEESSIDE CONSTRUCTION TRAFFIC		PERCENTAGE INCREASE (%)	
		DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	DAILY TOTAL VEHICLES	DAILY TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
5	A1085 Broadway, 230 m east of Birchington Avenue	8,537	549	3,796	35	44.5%	6.5%
6	A1380 High Street, 50 m east of Lackenby Lane	10,375	871	461	58	4.4%	6.7%
7	A66, 140 m east of Whitworth Road	20,955	3,863	10,095	1,738	48.2%	45.0%
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,030	945	241	43	3.0%	4.5%
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,243	1,053	249	46	3.0%	4.3%
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,437	907	409	94	9.2%	10.4%
11	A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout	13,265	1,247	8,140	1,669	61.4%	133.8%
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	32,129	2,105	4,144	1,266	12.9%	60.1%
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	14,686	1,169	136	28	0.9%	2.4%
14	A1185, 800 m west of A178 Seaton Carew Road	5,109	1,101	97	46	1.9%	4.2%
15	Belasis Avenue	2,586	76	136	28	5.3%	36.5%

15.8.5 Based upon the above percentage increases in traffic at the peak year of construction 2026 with committed development, Table 15-18 provides an overview of the magnitude of impact on each of the transport related impacts, based upon the magnitude of impact criteria as set out in Table 15-3.

Table 15-18: Proposed Development Peak of Construction with Other Developments Magnitude of Impact

LINK		SENSITIVITY	PERCENTAGE INCREASE (%)		MAGNITUDE OF IMPACT			
			TOTAL VEHICLES	TOTAL HGVS	SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
1	A1085 Trunk Road, 100 m east of Ennis Road	Low	21.7%	36.5%	Low	Very Low	Very Low	Low
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	Low	65.6%	93.9%	High	Low	High	Low
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	High	4.1%	4.4%	Very low	Very low	Very low	Very Low
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	Low	60.7%	61.4%	Medium	Low	High	Low
5	A1085 Broadway, 230 m east of Birchington Avenue	Medium	44.5%	6.5%	Low	Very low	Low	Low
6	A1380 High Street, 50 m east of Lackenby Lane	Medium	4.4%	6.7%	Very Low	Very low	Very low	Very Low
7	A66, 140 m east of Whitworth Road	Low	48.2%	45.0%	Low	Very low	Very low	Low
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	High	3.0%	4.5%	Very Low	Very low	Very low	Very Low
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	Low	3.0%	4.3%	Very low	Very Low	Low	Very Low

LINK		SENSITIVITY	PERCENTAGE INCREASE (%)		MAGNITUDE OF IMPACT			
			TOTAL VEHICLES	TOTAL HGVS	SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	Low	9.2%	10.4%	Very low	Very low	Very low	Very Low
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	Low	61.4%	133.8%	High	Medium	High	Medium
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	Low	12.9%	60.1%	Medium	Low	Medium	Low
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	Low	0.9%	2.4%	Very Low	Very low	Very low	Very Low
14	A1185, 800 m west of A178 Seaton Carew Road	Low	1.9%	4.2%	Very Low	Very low	Very Low	Very Low
15	Belasis Avenue	Medium	5.3%	36.5%	Low	Very low	Very Low	Low

15.8.6 Based upon the above impact magnitude as defined in Table 15-3 and the sensitivity rating of each link taken from Table 15-2, the predicted classification of effects during the peak of construction are summarised in Table 15-19 and below as based upon the criteria set out in in Table 15-4.

Table 15-19: Classification of Environmental Effects at the Peak of Construction for H2Teesside plus Other Developments

LINK		SENSITIVITY	SIGNIFICANCE OF EFFECT			
			SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
1	A1085 Trunk Road, 100 m east of Ennis Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
2	A1085 Trunk Road, 1.34 km south of West Coatham Lane	Low	Moderate Adverse Significant	Negligible Not Significant	Moderate Adverse Significant	Negligible Not Significant
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	High	Minor Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	Low	Minor Not Significant	Negligible Not Significant	Moderate Adverse Significant	Negligible Not Significant
5	A1085 Broadway, 230 m east of Birchington Avenue	Medium	Minor Adverse Not Significant	Negligible Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant
6	A1380 High Street, 50 m east of Lackenby Lane	Medium	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
7	A66, 140 m east of Whitworth Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant

LINK		SENSITIVITY	SIGNIFICANCE OF EFFECT			
			SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	High	Minor Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant	Minor Adverse Not Significant
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	Low	Negligible Not Significant	Negligible Not Significant	Minor Adverse Not Significant	Negligible Not Significant
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	Low	Moderate Adverse Significant	Minor Adverse Not Significant	Moderate Adverse Significant	Minor Adverse Not Significant
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	Low	Minor Not Significant	Negligible Not Significant	Minor Adverse Not Significant	Negligible Not Significant
13	A1046 Haverton Hill Road, approximately 800 m south of Port Clarence Street / Hope Street.	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant

LINK		SENSITIVITY	SIGNIFICANCE OF EFFECT			
			SEVERANCE	PEDESTRIAN AMENITY	FEAR AND INTIMIDATION	HIGHWAY SAFETY
14	A1185, 800 m west of A178 Seaton Carew Road	Low	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant	Negligible Not Significant
15	Belasis Avenue	Medium	Minor Not Significant	Negligible Not Significant	Negligible Not Significant	Minor Adverse Not Significant

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- 15.8.7 From Table 15-19 above it can be seen that with the inclusion of the other developments all links are not predicted to experience a significant adverse environmental effect, except for the following expected to experience Significant adverse effects:
- link 2 – A1085 Trunk Road, 1.34 km south of West Coatham Lane;
 - link 4 – A1085 Trunk Road, 500 m north of A1053 Tees Dock Road; and
 - link 11 – A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout
- 15.8.8 Link 4 is predicted to have a moderate effect in terms of Fear and intimidation, with Links 2 and 11 having a moderate effect in terms of Severance and Fear and Intimidation. However, all three links are located within areas that are considered to be largely industrial with no residential properties, with no footway running alongside the A1053 Greystones Road, and as such are unlikely to be subject to significant numbers of non-motorised users. Furthermore, any cumulative impact from the construction of other developments would be minimised as far as is possible through liaison with other contractors, as set out in Section 6: Consultation of the Framework CTMP (EN070009/APP/5.16) and Section 5: Roles and Responsibilities of the Framework CWTP (EN070009/APP/5.15).
- 15.8.9 In addition the effect from just the consideration of the Proposed Development concluded in Table 15-15 that the effect was Negligible (Not Significant) against all of the criteria on the above mentioned affected links.
- 15.8.10 Therefore, any effect upon non-motorised users in regard to both Fear and Intimidation and Severance is likely to be reduced, with the addition of just the Proposed Development construction traffic predicted to have a Negligible to Minor (Not Significant) effect as set out in Table 15-17. The overall effect can be reduced to Minor (Not Significant).
- 15.8.11 In addition, with reference to Appendix 15A: Transport Assessment (ES Volume III, EN070009/APP/6.4), the A1085 / Steel House Gate / West Coatham lane roundabout is predicted to operate within capacity with the cumulative construction traffic from the Proposed Development, HyGreen and Net Zero Teesside. Therefore, there is considered to be a Not Significant effect on Driver Delay.

Cumulative Effects During Operation

- 15.8.12 As set out in Section 15.6: Impacts and Likely Significant Effects, once operational the Proposed Development is not considered to result in a severe impact upon the local highway network and therefore no further assessment has been undertaken.

Cumulative Effects During Decommissioning

- 15.8.13 As set out in Section 15.6: Impacts and Likely Significant Effects, operational the decommissioning of the Proposed Development is not considered to result in any additional impact to that assessed during the construction phase and therefore no further assessment has been undertaken.

Additional Mitigation and Monitoring

15.8.14 No additional mitigation beyond that as set out in Section 15.5 is considered to be required.

15.9 Residual Effects and Conclusions

Construction

15.9.1 The additional traffic predicted to be generated by the construction of the Proposed Development based upon a robust analysis of 1,300 construction workers (both the Main Site and the Connection Corridors) and of predicted HGV movements, will result in a temporary increase of traffic flows, on the roads leading to the Main Site and the Connection Corridors north and south of the River Tees.

15.9.2 In line with the significance criteria presented herein, the residual effects of construction traffic on all road sections and junctions are anticipated to be Negligible to Minor (Not Significant). Notwithstanding this, a number of traffic management measures will be implemented during the Proposed Development's construction phase to minimise traffic impacts upon the local road network.

15.9.3 The only residual effects that are predicted in the cumulative assessment as set out in Table 15-19 above, are on the following links:

- link 2 – A1085 Trunk Road, 1.34 km south of West Coatham Lane;
- link 4 - A1085 Trunk Road, 500 m north of A1053 Tees Dock Road; and
- link 11 – A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout.

Operation

15.9.4 The generation of traffic during the operation of the Proposed Development is considered to be Negligible and therefore Not Significant and has not been assessed within this ES.

Decommissioning

15.9.5 The decommissioning of the Proposed Development is not expected to generate traffic levels any higher than during the construction phases, and therefore no assessment has been included within this ES.

15.10 Summary of Residual Effects

15.10.1 No significant effects are identified for any of the links assessed in this chapter at the peak of construction, and as such there are no significant effects identified for the operation or decommissioning phase. This is presented in Table 15-15.

15.10.2 Following the downgrading of three potentially adverse significant effects through professional judgement based on environmental considerations, there are no significant effects identified for cumulative effects. This is presented in Table 15-19.

15.11 References

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